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Post-Operative Pain Due To Preoperative Anxiety: A Prospective Study

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ABSTRACT

Background: To evaluate the impact of preoperative anxiety on subsequent incidence of postoperative complications. **Methods:** A Uncontrolled clinical trial study of 100 patients from the department of surgery and department of gynecology and obstetrics in government hospital Gandhi Nagar were given a questionnaire containing 21 questions, based on DASS SCALE after verbal informed consent. The patients were selected randomly after taking proper history. The findings so obtained were correlated to the postoperative complications of the same. Data were collected and assessed by student 't' test and p value < 0.05 was taken as significant. **Results:** 10% of patients had mild, 5% had moderate and 3% had severe scores for anxiety preoperatively. The stress scores were 9%, 6% and 3% of mild, moderate and severe variety respectively.97% of the patients did not suffer from depression. Only 3%had mild depression. The anxiety, stress and depression scores directly influenced the recovery of the patients. **Conclusion:** Preoperative anxiety, and stress is directly proportional to the duration of postoperative stay in the hospital.

Keywords: DASS Scale questionnaire, Preoperative anxiety, depression, stress.

INTRODUCTION

Anxiety is a core problem which hinders postoperative recovery. It is a common occurrence that a substantial proportion of patients develop anxiety preoperatively as soon as the date of surgery is announced.[1] This is because Surgery is a stress condition and has an effect on the physical and mental health of a patient.[2] This occurrence of anxiety has a predisposition to certain group of people, such as those already suffering from an anxiety disorder, people with chronic disease like cardiac disorders, diabetes etc, type A personalities. There are some other scenarios associated with preoperative anxiety, such as prolonged hospital stay before operations, the cost of medical treatment, acute treatment of the ailment, uncertain prognosis etc. Preoperative anxiety is also related to nutritional status and the type of surgery.[3] It is also related to gender that is, it is more in females than males.[4]

The basic aim of our study is to establish, any correlation between preoperative anxiety and other variables like depression, stress etc with occurrence of postoperative pain. This is because the effect of anaesthesia and pain killers is different in anxious patients as compared to non-anxious patients.[5] Anxiety reducing interventions preoperatively can therefore decrease the post-operative morbidity.

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MATERIALS AND METHODS

The study was a Uncontrolled clinical trial study of conducted on 100 patients, (20 males and 80 females) who were admitted for elective abdominal surgery in the department of surgery and department of gynecology and obstetrics in Government Gandhi nagar Hospital Jammu from January 2018 to September 2018 . The sample size of 100 was taken for convenience. They were given the DASS (Depression, Anxiety and Stress scale) questionnaire after verbal informed consent immediately after their admission. It was DASS scale 2 which had a total of 21 items. Patients were selected randomly and those having known psychiatric ailments were excluded from the study.

The scores obtained from the DASS questionnaire were multiplied by 2 (As DASS 1 has 42 items) to get the final DASS score. The surgical and anaesthetic team were similar for each of the patient admitted in this study.

The identity of the patients was not disclosed The DASS 21 has three scores each corresponding to a different subscale in which the minimum is zero

and maximum is 21. The final score is equal to the sum of the scores obtained in the seven items in the end. [Figure 1 & 2] The higher the score the more negative the state of the mind is, and more is the morbidity. The scores of depression, anxiety and stress so obtained were analysed statistically and tabulated. These scores were then correlated with complications like increased doses of induction agents required during anaesthesia and increased amount of analgesics required after surgery.

RESULTS

The present study was conducted on 100 patients who were between 20 to 55 years of age. Amongst them 80 were women and 20 were men. All patients were given DASS questionnaire preoperatively and their anxiety, depression and stress scores evaluated. Most of them were discharged within 72 hours after surgery, but patients with increased anxiety, depression and stress scores preoperatively, had a prolonged hospital stay postoperatively, ranging from 1-7 days. [Figure 3].

Statistical analysis

Statistical analysis was done using the software SPSS version 21. Mean of Pre-test scores and Post-test scores for all the parameters were compared using Paired samples t-test. Cognitive gain was calculated as Post-test score minus Pre-test score. For all statistical evaluations, probability of value <0.05 was considered significant.

Table 1: Distribution of patients for different levels of severity of Depression, Anxiety and Stress

%Age	Absent	Present			
		Mild	Moderate	Severe	Ex. Severe
Depression	97	3	0	0	0
Anxiety	82	10	5	3	0
Stress	82	9	6	3	0

Table 2: Difference in Depression, Anxiety and Stress scores among patients of different sexes

	Females	Males
Total	80	20
Normal	65	17
Stress and Anxiety Mild Moderate Severe Extremely severe	8 4 3 0	2 1 0 0
Depressio N	3	0

Table 3: Showing mean depression, anxiety and stress scores.

DASS	Mean	S.D	Minimum	Maximum
Depression	4.29	2.90	0	12
Anxiety	4.47	3.74	0	19
Stress	7.42	6.74	0	32

Preoperative Observation:

82% of the patients had no anxiety and stress, while 97% had no depression. Mild scores of anxiety, stress and depression was seen in 10%, 9% and 3% of the patients respectively. Moderate scores of anxiety and stress were seen in 5% and 6% of the cases. Only 3% had severe level of anxiety and stress but moderate and severe depression was not observed. [Table 1] The 3 patients with severe anxiety and stress had previous history of surgery and they suffered from excessive pain postoperatively. So, their postoperative stay was increased. Out of 80 females, 65 were normal and 8, 4 and 3 had mild, moderate and severe score of anxiety and stress respectively. .Amongst males 17 out of 20 were normal, and only 2 and 1case had mild and moderate score of anxiety and stress respectively. The three patients with mild depression were females [Table 2]. In both males and females the mean score of depression was 4.29+ 2.90, mean score of anxiety was 4.47+ 3.74, and mean score of stress was 7.42+ 6.74 [Table 3].

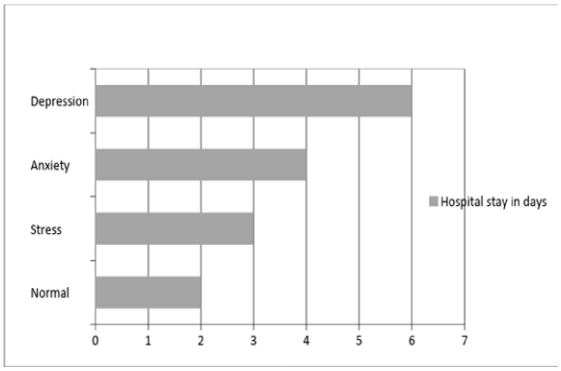
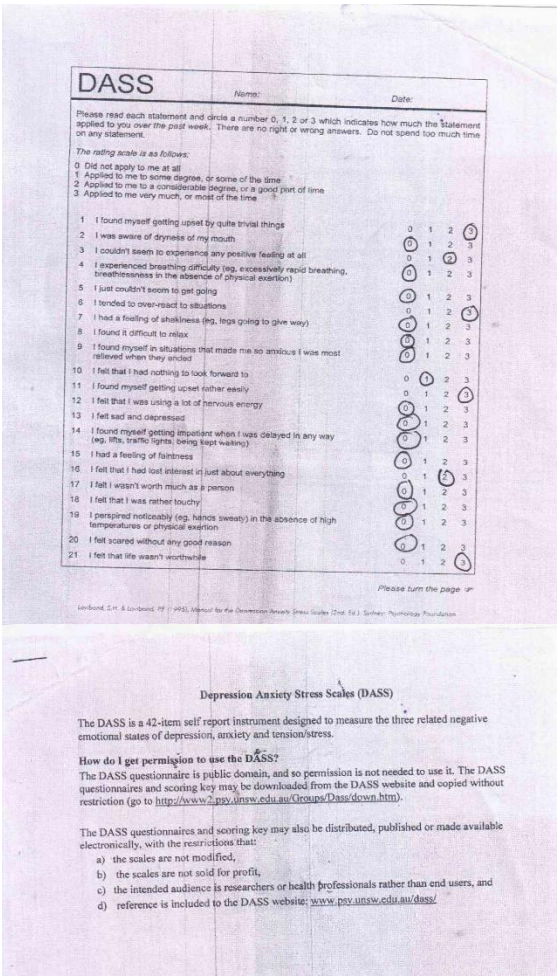


Figure 1:

Postoperative complication

The levels of anxiety, stress and depression in the preoperative period determines the duration of postoperative stay in the hospital. The normal patients were discharged after 2 days while the patients with depression, anxiety and stress stayed in the hospital for 3 to 6 days due to varied nonspecific complaints of which the most common was increased pain.



DASS

Name: Date:

Please read each statement and circle a number 0, 1, 2 or 3 which indicates how much the statement applied to you *over the past week*. There are no right or wrong answers. Do not spend too much time on any statement.

The rating scale is as follows:

0 Did not apply to me at all
1 Applied to me to some degree, or some of the time
2 Applied to me to a considerable degree, or a good part of time
3 Applied to me very much, or most of the time

1	I found myself getting upset by quite trivial things	0 1 2 3
2	I was aware of dryness of my mouth	0 1 2 3
3	I couldn't seem to experience any positive feeling at all	0 1 2 3
4	I experienced breathing difficulty (eg, excessively rapid breathing, breathlessness in the absence of physical exertion)	0 1 2 3
5	I just couldn't seem to get going	0 1 2 3
6	I tended to over-react to situations	0 1 2 3
7	I had a feeling of shakiness (eg, legs going to give way)	0 1 2 3
8	I found it difficult to relax	0 1 2 3
9	I found myself in situations that made me so anxious I was most relieved when they ended	0 1 2 3
10	I felt that I had nothing to look forward to	0 1 2 3
11	I found myself getting upset rather easily	0 1 2 3
12	I felt that I was using a lot of nervous energy	0 1 2 3
13	I felt sad and depressed	0 1 2 3
14	I found myself getting impatient when I was delayed in any way (eg, lifts, traffic lights, being kept waiting)	0 1 2 3
15	I had a feeling of faintness	0 1 2 3
16	I felt that I had lost interest in just about everything	0 1 2 3
17	I felt I wasn't worth much as a person	0 1 2 3
18	I felt that I was rather touchy	0 1 2 3
19	I perspired noticeably (eg, hands sweaty) in the absence of high temperatures or physical exertion	0 1 2 3
20	I felt scared without any good reason	0 1 2 3
21	I felt that life wasn't worthwhile	0 1 2 3

Please turn the page

Lovibond, S.H. & Lovibond, P.F. (1995). Manual for the Depression Anxiety Stress Scales (2nd. Ed.). Sydney: Psychology Foundation

Depression Anxiety Stress Scales (DASS)

The DASS is a 42-item self report instrument designed to measure the three related negative emotional states of depression, anxiety and tension/stress.

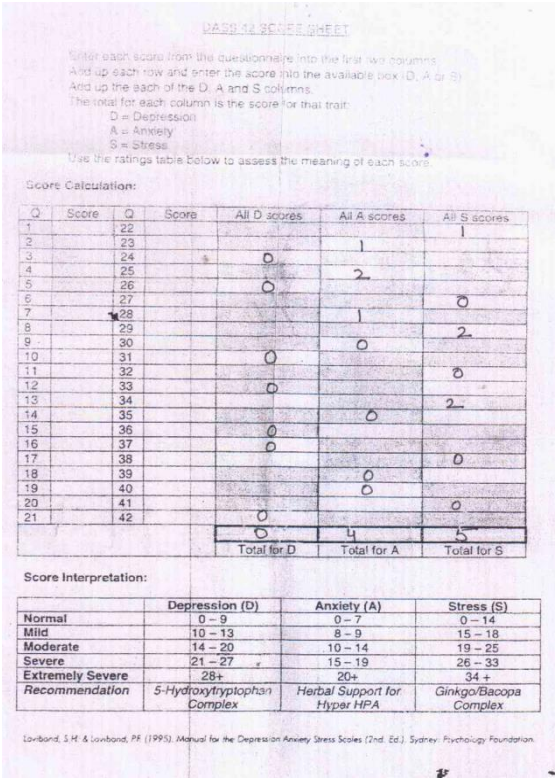
How do I get permission to use the DASS?

The DASS questionnaire is public domain, and so permission is not needed to use it. The DASS questionnaires and scoring key may be downloaded from the DASS website and copied without restriction (go to http://www2.psy.unsw.edu.au/Groups/Dass/down.htm).

The DASS questionnaires and scoring key may also be distributed, published or made available electronically, with the restrictions that:

a) the scales are not modified,
b) the scales are not sold for profit,
c) the intended audience is researchers or health professionals rather than end users, and
d) reference is included to the DASS website: www.psy.unsw.edu.au/dass/

Figure 2:



DASS 42 SCORE SHEET

Enter each score from the questionnaire into the first two columns.
Add up each row and enter the score into the available box (D, A or S).
Add up the each of the D, A and S columns.
The total for each column is the score for that trait:
D = Depression
A = Anxiety
S = Stress
Use the ratings table below to assess the meaning of each score.

Score Calculation:

Q	Score	Q	Score	All D scores	All A scores	All S scores
1		22				1
2		23			1	
3		24		0		
4		25			2	
5		26		0		
6		27				0
7		28			1	
8		29				2
9		30			0	
10		31		0		
11		32				0
12		33		0		
13		34				2
14		35			0	
15		36		0		
16		37		0		
17		38				0
18		39			0	
19		40			0	
20		41				0
21		42		0		
				0 Total for D	4 Total for A	5 Total for S

Score Interpretation:

	Depression (D)	Anxiety (A)	Stress (S)
Normal	0 – 9	0 – 7	0 – 14
Mild	10 – 13	8 – 9	15 – 18
Moderate	14 – 20	10 – 14	19 – 25
Severe	21 – 27	15 – 19	26 – 33
Extremely Severe	28+	20+	34 +
Recommendation	*5-Hydroxytryptophan Complex*	*Herbal Support for Hyper HPA*	*Ginkgo/Bacopa Complex*

Lovibond, S.H. & Lovibond, P.F. (1995). Manual for the Depression Anxiety Stress Scales (2nd. Ed.). Sydney: Psychology Foundation.

Figure 3

DISCUSSION

Post-operative pain is influenced by physiologic, sensory, affective, cognitive, sociocultural and behavioral factors.[5] A number of studies have indicated that preoperative factors like age, sex, anxiety, type of surgery can have an effect on post-operative pain.[6-8] In the present study 82% of the patients had mild levels of stress and anxiety. 15% had moderate levels of stress and anxiety. Only 3% had severe level of stress and anxiety. This is not in accordance to Apostole, Ventura, Cactono and costa (2008),[9] in which stress and anxiety was mild in 50 to 62% of the cases, moderate in 16 to 21% and severe in20 to 29% of the cases. In this study the rise in DASS score in some patients was related to previous history of surgeries which is not in concordance with Santos et al (2009),[10] and Riberio (2010).[11] Some authors like Passos (2009),[12] are of the opinion that stress and anxiety increase, if patient is suffering from malignancy. This observation goes with our study as 2 of the 3 patients who had severe anxiety were diagnosed with cancer preoperatively. Correlation of preoperative anxiety to post-operative pain was found by calculating the consumption of pain killers by these patients post operatively. This finding of our study goes with the study of Yung Wei Hsu,[13] in journal of American society of anaesthesiologists.

To find out relation between preoperative anxiety and post-operative pain we controlled other factors which would influence the pain that is we took into consideration only married females between age group of 35-50 years who were undergoing laparotomy. Even the surgical and anaesthesiologist team were same. We even excluded patients with previous history of depression from our study. A large number of workers have worked on the relation between preoperative anxiety and post-operative complications, but they did not reach a consensus. Some like Kain Z N et al,[14] say there is a relation while others like Boeke S et al,[15] state that there is no relation. In our study we observed that preoperative anxiety and postoperative complications are directly proportional.

CONCLUSION

In minimal access surgery there is stress on early ambulization of the patients who also resume their duties earlier than patients, who are operated by open methods .Therefore a lot of importance is being given to lesser duration of hospital stay. One of the factors responsible for increased morbidity is preoperative depression, anxiety and stress in the patients. Lesser the amount of stress, better would be the outcome of surgery. So, by preoperative counselling we can decrease the level of stress and

anxiety in patients so that their recovery is quicker. Therefore we conclude that preoperative anxiety is a preventable and a very important indicator of post-operative pain and other vague nonspecific symptoms which lead to increase in hospital stay and hence increased morbidity.

REFERENCES

1. Varcolis, E 1994, Reducing stress and anxiety In: E. Varcolis(ed) , Foundation psychiatric mental health nursing. W B Saunders company: Phialdelphia, Pennsylania USA ,pp 342,983,1034
2. Ribeiro,P Preoperatorio O universo da apreensao e desconhecimento Estudo de factores que influenciam o nivel de ansiedade estado do doenoste no preoperatorio Revista Investigacao em Enfermagem 22 (2010)
3. Hibbert A- O Stress nos doentes cirurgicos uma perspective fisiologica In K. Manley . L. Belliman (Eds) Enfermagem cirurgica – Pratica avancada pp 159-173 Loures Portugal Lusociencia 2003
4. Nijkamp,M;Kenens,C.,Dijker,A.,Ruiter, R., Hiddema, F. And Nuijtis, R. 2004. Determinants of surgery related in cataract patients. The British Journal of opthamology, 88(10):1310-1314
5. M. F. Zafar, F. A. Khan- frequency of preoperative anxiety in Pakistani surgical patients. J. Pak Med Assoc,59,pp359-363,2009
6. Loeser J. D., Melzack R.,; Pain, an overview.Lancet;353:1607-7,1999
7. Kalkman CJ,Visser K, Moen J,Bonsel GJ, Grobbee DE,Moons KG: Preoperative prediction of severe postoperative pain. Pain 2003; 105: 415-23, Kalkman , CJ Visser,K Moen, J Bonsel, GJ Grobbee, DE Moons, KG.
8. Lynch EP,Lazor MA, Gellis JE,Orav J, Goldman L, Marcantonio ER, : patient experience of pain after elective non cardiac surgery, Anaesth Analg 1997:85,117-23 Lynch , EP Lazor,MA Gellie, JE Orav, J Goldman ,L Marcantonio, ER
9. Apostolo J., Ventura A., Cactano C., and Costa S.; Depressao ansiedade s tress cm utentes de euldados desaude primanos, Revista Referencia2(8),45-49,2008
10. Santos A, Santos J, Melo D, and Junior A; Estresse pre-operatorio; comparaco entre pacientes do SUS e convencionados , psiocologia Refllexao e Critica. 22 (2) 269 -276. Retrieved from http:// scielo.br//prc/v22n2/a14v22n2. Pdf.2009
11. Ribeiro , P., Pre operatorio O universo da apreensao e desconhecimento ; Estudo de factores que influenciam o nivel de ansiedade estado do doente no preoperatorio .Revista investigacao em Enfermagem 22, 2010
12. Passos ansiedade. Depresao , desesperenca e estresse do enfermo cirurgico oncologico(Dissertacao de mestrado) Retrieved from chttp://tede.bibiloteca.ucg.br/tde_busca/ arquivo.php?codArquivo =586.2009
13. Yung-Wei Hsu, Jacques Somma, Yu-Chun Hung, Pei –Shan Tsai, Chen – Hsein Yang, Chien – Chuan Chen, predicting post operative pain by preoperative pressure pain assessment. The Journal of the American Society Anaesthesiology ,Inc. Vol. 103,613-618, September 2005.
14. Kain ZN, Sevarino F, Alexander GM, Pincus S,Mayes LC:Preoperative pain in women undergoing hysterectomy :A repeated-measures design . J psychosom Res ; 49:417-22 Kain, ZN Sevarino , FAlexander, GM Pincus , S Mayes ,LC,2000
15. Boeke S, Duivenvoorden HJ, Verhage f,Zwaveling A: Prediction of postoperative pain and duration of hospitalization using two anxiety measures. Pain ;45:293 -7 Boeke, S Duivenvoorden, HJ Verhage, F Zwaveling, A, 1991

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