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LEVEL OF STRESS AND PEPTIC ULCER IN SOUTH INDIA[#]

Basavarajappa, Lancy D'Souza, Mewa Sing
Department of Psychology
University of Mysore
Mysore, India

&

Romate John, P.J.
Department of Psychology
Banglore University
Banglore, India

The present study is an attempt to study the level of stress in peptic ulcer (PU) patients. There were 60 subjects each in clinical and normal control group. The findings revealed that clinical group had higher stress compared to control group, men experienced significantly higher stress than women and PU occurs between 35 to 65 years of age.

A bit of stress is a part of normal life and is not necessarily always bad. Even joyful events like marriage, birth, new job, etc., can be stressful because of the changes they entail in the person's life. Without stress, strain, tension, and demands on us, it would be hard to get going at all, and many people would lack motivation. Too much stress is bad, but so is little. Stress is inevitable in us. Since it can not be avoided, it has to be managed and coped with. Besides providing material comforts, technological improvement and modernization has intensified the stress and added new ones. Stress may be caused by physical, environmental, social, and/or psychological factors. Review of research studies in India, and other Asian countries in general on stress (Pestonjee, 1999) from clinical, and organizational perspective reveals two following major trends: (a) replication of Western findings in Asian countries, and (b) identification of indigenous pattern of stress and coping as culture specific manifestations. The present study was

[#] Correspondence concerning this article should be addressed to Lancy D'Souza, Department of Psychology, University of Mysore, Mysore-570 006, India.

undertaken to investigate the relationship of stress level with peptic ulcers.

In past years, the term stress has been widely used with varying meaning. Selye (1976) defined stress as rate of wear and tear within the body, and pointed out that at least 50 major attempts were made to define the term stress. Malott and Whaley (1983) defined stress as conditions that cause tissue damage far beyond the daily wear and tear of living. Impact of stress on individual life events, and stress coping styles or strategies, moderators of stress, counteracting stress, and physiology of stress have been widely investigated (Pestonjee, 1999).

Peptic Ulcer (PU) is a stress related condition. It refers to ulcerative disorders like Duodenal Ulcer (DU) and Gastric Ulcer (GU) (Grossman, 1981). Emotional factors are believed to be more relevant to PU (Kashlikkar, 1991). According to Meguigan (1991), the possible pathophysiology of PU is an imbalance between aggressive factors like hydrochloric acid secretion, pepsin, and defensive factors like mucosal resistance. Walker and Sandman (1981), and Bachrach (1982) have demonstrated that feeling of hostility, anxiety or both can produce hyper secretion of gastric acid, and a breakdown of the mucus lining in ulcer patients.

Many studies have reported relationship between stress, PU, and demographic variables like age, sex, education, marital status, family type, personal habits, domicile, and socioeconomic status of the PU individuals. Some other factors, like hormonal (Kimura, 1987), genitical (MacLeond, 1987), racial distribution (Morse & Furst, 1979), and personality (Thankachan & Mishra, 1996) were found to induce stress and peptic ulcer. A comprehensive review suggests that stress along with other factors play an important role in the onset of PU. This article documents a study which was carried out to explore the level of stress in PU patients of South India.

METHOD

Sample

Peptic Ulcer patients (both duodenal and gastric) from South India were drawn from Mysore, Bangalore, and Calicut. These three cities were selected randomly to represent the Southern India population. Only known PU patients, diagnosed by medical specialists who were not suffering from any other psychological or physical illness, and who were undergoing treatment at the hospital were included. Sample was

composed of 10 men and 10 women patients belonging to three different age groups. There were 60 subjects in clinical group, a similar combination of 60 normal participants constituted the control group.

Table 1

Distribution of Sample in Clinical and Control Groups, Age, and Sex

Groups	Clinical		Control		Total
Age (in years)	Men	Women	Men	Women	
20-34	10	10	10	10	40
35-49	10	10	10	10	40
50-64	10	10	10	10	40
Total	30	30	30	30	120

Instrument

Stress Assessment Test (Morse & Furst, 1979) was used to assess the level of stress in the participants. Test consists of 27 factors which are grouped under three areas namely: Factors within the control, partially under the control, and not within the control of the individual.

The split-half reliability for the total scale was found to be 0.73 (Jaggi, 1986).

Procedure

Before the administration of the test, rapport was established by one of the investigators, who was interacting with the patients regularly. During this period details regarding the illness, and other information were obtained. In the subsequent session, test was administered individually.

Scoring: Depending on the response of the subjects weightage was assigned as suggested by the test manual. Weightage ranged from 0 to 4. Positive answer getting least score (less stress), and negative answers getting high score (severe stress). Finally, weightage score for each individual was obtained separately for further analysis.

Statistical Analysis: Two-way analysis of variance was applied to find out the significance of difference in the level of stress between clinical and normal control group, men and women, and different age

groups. Mean scores were also calculated to find out the difference in the obtained stress scores.

RESULTS AND DISCUSSION

Table 2 shows the results of *ANOVA* carried out for stress scores of PU patients in relation to other factors. Table 3 shows the respective mean values for the above factors.

Table 2

Results of 2-way ANOVA for Stress of Peptic Ulcer and Other Variables

Source of Variation	*df*	*F*	*p*
Between Groups (A)	1, 58	56.29	0.001
Between Sexes (B)	1, 58	23.15	0.001
Interaction (A x B)	1, 58	3.53	0.063
Between Age Groups (C)	2, 57	0.88	0.420
Interaction (A x C)	2, 57	1.02	0.363

Table 3

Mean Values of Stress Scores of Peptic Ulcer and Other Variables

Variables		Clinical Group	Control Group	Average
Sex	Men	50.16	35.05	42.61
	Women	40.20	30.70	35.45
Age (in years)	20-34	44.40	35.55	39.77
	35-49	47.30	32.35	39.82
	50.64	43.85	31.15	37.50
Average		45.18	32.80	39.03

Level of stress between clinical and normal control group: Results show that there is significant difference between the groups with regard to the level of stress ($F = 36.29$; $p < .001$). PU patients

experience significantly more stress (M = 45.18) than the control group (M = 32.80). PU is considered to be one of the most commonly reported stress related conditions. Several research findings report that the onset of PU is often associated with stress. Present study supports previous research findings (e.g., Walker & Sandman, 1981).

Level stress between sexes: Table 3 shows that men had significantly higher stress (M = 42.61) than women (M = 35.43; F = 23.15; $p < .001$). However, the interaction effect between groups and sex was found to be nonsignificant (F = 3.53; $p < .063$) indicating a similarity in the pattern of level of stress by men and women irrespective of the group they belonged to.

High level stress in men is seen in earlier studies also. MacFarlane (1988) reported that incidence of GU is 3:2, and DU is 10:1 for men and women, respectively, and reported that it occurs between the ages of 30 and 40 years. A study by Morse and Furst (1979) revealed that males when confronted with stressful situations prone to become angry which, in turn, increases the stress level, whereas, women are more likely to become anxious and cry. This leads to the release of stress in some way, which reduces stress for them.

Biological factors are also found to influence the level of stress. Johnson and Post (1974) reports that during reproductive years women produce less stress-inducing hormones (Adreanaline-Noradrenaline and Cortisones) than men when exposed to challenging and demanding influences in psychological and social environment. Probably, this may lead to decrease in the incidence of stress related disorders in women. Elwyn (1985) found that women are protected against developing PU, and when it does occur, it occurs in a mild degree, and after the menopause these advantages will be lost, and emphasized that pregnancy hash a beneficial effect.

Level of stress between age groups: Neither the age groups (F = .88; $p < .420$) nor the interaction effect between groups and age (F = 1.02; $p < .363$) were found to be significant. Stress can be experienced in any stage of life (Kisker, 1979). The present study do not support the earlier studies. Thankachan and Mishra (1996) showed that PU occurs between the ages of 35 and 56 years, hence stress should be more in those age levels and more so in the middle age due to psychosocial factors and problems. The present study is also not in confirmation with the studies conducted by Reddy and Ramamurthi (1991).

REFERENCES

Bachrach, W.H. (1982). Psychological elements of gastro-intestinal disorders. In W. E. Fann., I. Karlan., A. D. Dokorney., & W. L. Williams (Eds). *Psychoneurology and psychophysiological disorders.* New York: Spectrum Publications.

Elwyn, F: (1985). *Lecture notes on gastroentrology.* London: Scientific Publishers.

Grossman, M. I. (1981). *Peptic ulcer: A guide for the practicing physician.* Chicago: Medical Publishers Inc.

Jaggi, O.P. (1986). *Mental tension and its cure.* Delhi: Orient Perbacks.

Johnson, G. S., & Post, B. (1974). Catecholamine of males and females over one year period. In D. R. Morse, & M. L. Furst (Eds), *Stress for success.* New York: VanNostrand.

Kashlikkar, S. (1991). The physiological mechanisms involved in the secretion of hydrochloric acid in stomach, *Medifacts, 7.*

Kimura, N. (1987). Sex differences in stress ulceration: Effects of gastration and overiectomy. *Psychobiology, 15,* 175-178.

Kisker, G. W. (1979). *Disorganized personality* (3rd ed.). New Delhi: McGraw Hill.

MacFarlane, D. A. (1988). *Text book of surgery.* Livingstone: Churchhill Publications.

MacLeond, J. (1987). *Davidson's principles and practice of medicine* (15th ed.). Vivinsspone: Churchill Publishers.

Malott, R. W., & Whaley, D.L. (1983). *Psychology.* Holmes Beach: Learning Publications.

Mcguigan, J. E. (1991). Peptic ulcer and gastritis. In J.D. Wilson., E. Brunwald., K.J. Isselbacher., K.G., Petersdorge., J.B. Martin., A.S., Fauci, A.S., and R.K. Root. (Eds.), *Harrison's principals of internal medicine.* New York: McGraw Hill.

Morse, D. R., & Furst, M. L. (1979). *Stress for success.* New York: Van Nostrand and Reinhold.

Pestonjee, D. M. (1999). *Stress and coping: The Indian experience* (2nd ed.). New Delhi: Sage India Publications.

Reddy, V. R., & Ramamurthi, P. V. (1991). The relationship between stress experience on the job, age, personality, and general ability. *Psychological Studies, 36,* 87-92.

Selye, H. (1976). *Stress in health and disease.* Massachusetts: Butterworth Inc.

Thankachan, M. V., & Mishra, H. (1996). Type-A personality pattern among duodenal ulcer patients. *Indian Journal of Clinical Psychology, 23,* 16-20.

Walker, B. B., & Sandman, C.A. (1981). Disregulation of the gastrointestinal system. In S. N. Hay, and L Cannon (Eds.), *Psychosomatic disorders.* New York: Praeger.

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