

## STRESS AMONG CARDIOVASCULAR PATIENTS: ROLE OF GENDER, AGE AND NATURE OF PATIENTS

### Psychology

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### ABSTRACT

An attempt was made in the present investigation to study the role of gender, age and nature of patients on stress among cardiovascular patients in the age group of 40-60 years. The subjects of the present investigation were drawn from various Districts of Andhra Pradesh, India by using random sampling technique. Perceived stress scale developed by Cohen et al., (1983) was used to assess stress among cardiovascular patients. Means, SDs and ANOVA were employed to analyze the data. The findings of the study revealed that gender and age have significant impact on stress among cardiovascular patients.

### KEYWORDS:

Stress, Cardiovascular patients, Surgical patients, Non surgical patients.

### INTRODUCTION

Cardiovascular diseases are the leading cause of death globally. Cardiovascular disease (CVD) is a generic term that includes a number of specific diseases. An estimated 17.7 million people died from CVDs in 2015, representing 31% of all global deaths. Of these deaths, an estimated 7.4 million were due to coronary heart disease and 6.7 million were due to stroke (WHO, 2017).

Stress can be defined as a real or interpreted threat to the physiological or psychological integrity of an individual that results in physiological and behavioral responses. Stress has been viewed as an absence of inner peace and also as loss of control. Hence, it is important to understand the underlying mechanisms that influence this association. Moreover, men and women tend to react differently with stress—both psychologically and biologically. These differences also need to be studied in order to have a better understanding in the gender difference observed for many disorders, which are likely to be contributed by the gender difference in stress reactivity and responses.

Gender is an important determinant of human health, and there is a clear pattern for the sex-specific prevalence rates of various mental and physical disorders. Susceptibility to infectious diseases, hypertension, aggressive behavior, and drug abuse is generally observed to be higher in men. Conditions such as autoimmune diseases, chronic pain, depression, and anxiety disorders were relatively more prevalent among women (Lundberg, 2005). Gender-specific disease pattern may be partly attributed to effects of sex hormones as some of these gender differences emerge during reproductive years and gradually diminish after menopause. Individual differences in stress reactivity have been proposed as a potentially important risk factor for gender-specific health problems in men and women (Kajantie and Phillips, 2006).

Female sex hormones attenuate the sympatho-adrenal and Hypothalamic- pituitary axis (HPA) responsiveness. This leads to sluggish cortisol feedback on the brain and less or delayed containment of the stress response. Tendency of women to develop depression was related to the compromised cortisol feedback effects on HPA arousal (Goldstein, 2006).

Age-related differences were observed in many aspects of the stress processes. The type of problem did vary by age. The middle-aged men were more likely to report problems at work, marital problems, divorce and with their children, who were primarily adolescents and young adults. At this life stage, many of the men reported problems with their children using drugs and alcohol, getting into trouble with the law, or had concerns about launching them into adulthood. Life satisfaction changes across an individual's lifespan, perhaps as a result of changing life roles as individuals develop from young to middle to late adulthood. Life satisfaction declines slightly from early adulthood to middle age. Middle aged people with low life satisfaction perceive more stress. Extroverts are happier than the introverts hence the high life satisfaction helps them to perceive low stress levels (Richard lucas and Baird, 2004).

Stress brings stimulation to sympathetic nervous system; this in turn stimulates releasing of corticotrophin hormone, cortisol, adrenaline and noradrenaline. These hormones bring about vasoconstriction and releasing excess of glucose to meet the forth coming fight. On observation of stress resilience that is confidence, social support and capacity to recover from negative events including social and spiritual potentials, have increased from preoperative to follow up period.

In view of the foregoing, an attempt is made in the present investigation to study the role of gender, age and nature of patients among cardiovascular patients. The objective of the present study

- To assess the role of gender, age and nature of cardiovascular patients on stress.

### Hypotheses

1. Gender would significantly influence stress among cardiovascular patients.
2. Age would significantly influence stress among cardiovascular patients.
3. Nature of patients would significantly influence stress among cardiovascular patients.

### Sample

The sample consisted of 320 (160 male and 160 female) cardiovascular patients in the age group of 40-60 years. The subjects of the present investigation were drawn randomly from various Districts of Andhra Pradesh, India. These individuals were personally interviewed and data were collected using structured interview schedule.

### Tool

Each subject in the sample was administered perceived stress scale (Cohen, et al., 1983). Instructions pertaining to the instrument were given in Telugu, the mother tongue of subjects and the responses were noted by the investigator. It consists of 10 items. Each item is rated on a 5-point scale ranging from never (0) to very often (4). For Positively worded items 4, 5, 7 and 8 the scores were reversed. Scores of 20 or higher are considered as high stress and low score indicates low level of stress.

### Variables studied

In the light of the hypotheses formulated, the following variables are studied

### Independent variables

1. Gender
2. Age
3. Nature of patients

### Dependent variable

1. Stress

**Analysis of Data**

The obtained data treated statistically in order to test the hypotheses. The Means and SDs (standard deviations) of the scores were calculated. To find out the influence of the Independent variables (Age, gender and nature of patients) on dependent variable (Stress), the data were subjected to ANOVA (Analysis of variance).

**RESULTS AND DISCUSSION**

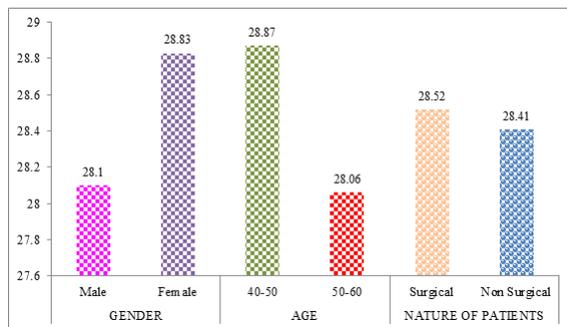
**Table-I: Means and SDs for scores on Stress.**

Age		Gender			
		Male		Female	
		Nature of Patients		Nature of Patients	
		Surgical	Non-Surgical	Surgical	Non-Surgical
40-50 years	Mean	29.19	27.76	29.25	29.30
	SD	5.85	7.23	4.41	4.41
50-60 years	Mean	26.30	29.15	29.35	27.45
	SD	7.37	6.75	5.23	6.09

Male=28.10      Surgical=28.52      40-50 years=28.87  
 Female=28.83      Non-Surgical=28.41      50-60years=28.06

A close observation of table-I shows that female surgical cardiovascular patients in the age group of 50-60 years have obtained high score (M=29.35), indicating their high stress compared with other groups. Male surgical cardiovascular patients in the age group of 50-60 years have obtained low score (M=26.30) indicating low stress compared to other groups.

An observation of table-I indicates that female cardiovascular patients have high stress (M=28.83) than the male cardiovascular patients (M=28.10). Surgical cardiovascular patients have high stress (M=28.52) than non-surgical cardiovascular patients (M=28.41). Cardiovascular patients in the age group of 40-50 years have high stress (M=28.87) than the age group of 50-60 years (M=28.06).



**Figure-1: Graphical Representation of Stress scores for Gender, Age and Nature of patients among cardiovascular patients**

There are differences in the mean scores of the groups related to stress. However, in order to test whether gender, age and nature of patients have any significant impact on stress among cardiovascular patients, the data were further subjected to ANOVA (analysis of variance) and the results are presented in Table-II.

**Table-II: Summary of ANOVA for scores on Stress.**

Source of Variance	Sum of Squares	df	MSS	'F'
<b>Gender (A)</b>	156.833	1	156.833	4.75*
<b>Nature of Patients (B)</b>	20.831	1	20.831	0.63@
<b>Age (C)</b>	378.301	1	378.301	11.48**
<b>(A x B)</b>	1.852	1	1.852	0.05@
<b>(A x C)</b>	86.056	1	86.056	2.61@
<b>(B x C)</b>	48.313	1	48.313	1.46@
<b>(A x B x C)</b>	16.949	1	16.949	0.51@
<b>Within</b>	10281.566	312	32.954	
<b>Corrected total</b>	10990.887	319		

\*\* - Significant beyond 0.01 level

\* - Significant at 0.05 level

@ - Not significant

The first hypothesis stated that gender would significantly influence stress among cardiovascular patients.

It is evident from the table-II that the obtained 'F' value of 4.75 is significant at 0.05 level implying that gender has significant influence on stress among cardiovascular patients. As the 'F' value is significant the first hypothesis, which stated that gender would significantly influence stress among cardiovascular patients, is accepted as warranted by the results.

When we take the means into consideration female cardiovascular patients (M=28.83) have obtained high score than male cardiovascular patients (M=28.10), which indicates that gender has significant influence on stress among cardiovascular patients.

The reasons for the gender differences are not clear, and some believe that females are more sensitive and therefore they are more prone to stress. While both men and women recognize the impact of stress on physical health, men appear to be somewhat more reluctant to believe that it's having an impact on their own health than women do. Estrogen levels in menopause transition and after menopause plays role in up regulation of the renin-angiotensin system, with an increase in plasmin activity. Sympathetic activity was also increased in postmenopausal women. Body weight may increase during the first years since menopause and body fat distribution changes from a gynoid to a more android pattern. Central obesity with an increase in visceral fat occurs more frequently after menopause, with a higher presence of comorbid risk factors and components of the metabolic syndrome might have contributed to experience more stress in women compared to men.

Compared to men women experience much more fluctuation in hormone levels which is often associated with stress and another reason might be women tend to involve in the relationships than men and suffer more when they are disrupted. More married women and house wives are engaged with work at home, taking care of their child, caring of elderly, family responsibilities, all these factors increase stress in women compared to men.

Findings of the present investigation support the earlier findings of Kip et al., (2004) and Vasan et al., 2001, who found that women experience more stress compared to men.

The second hypothesis stated that age would significantly influence stress among cardiovascular patients.

It is evident from the table-II that the obtained 'F' value of 11.48 is significant at 0.01 level implying that age has significant influence on stress among cardiovascular patients. As the 'F' value is significant the second hypothesis, which stated that age would significantly influence stress among cardiovascular patients, is accepted as warranted by the results.

When the means into consideration patients between 40-50 years of age group have obtained high score (M=28.87) than the patients between 50-60 years (M=28.06), which indicates that cardiovascular patients with age group of 40-50 years have high stress.

Emotional stress was more subtle, but if it's chronic, the eventual consequences can be harmful. At any age, stressed-out brains sound an alarm that releases potentially harmful hormones such as cortisol and adrenaline. Ideally, the brain turns down the alarm when stress hormones get too high. Stress hormones provide energy and focus in the short term, but too much stress over too many years can throw a person's system off-balance. Overloads of stress hormones have been linked to many health problems, including heart disease, high blood pressure, and weakened immune function.

The reason might be middle aged people struggle to establish a career, achieve financial security or juggle work and family demands, taking care of their children all these factors result in development of the stress compared to older people.

Findings of the present study corroborate with earlier findings of Aldwin, (1990) and Xu et al., (2015), who found that middle-aged men were more likely to report problems at work, marital problems, divorce, with their children. At this life stage, many of the men reported high stress than old age people.

The third hypothesis stated that nature of patients would significantly influence stress among cardiovascular patients.

A close observation of the table-II indicates that the obtained "F" value of 0.63 is not significant at 0.05 level implying that nature of patients has no significant influence on stress among cardiovascular patients. As the "F" value is not significant the third hypothesis, which stated that nature of patients would significantly influence stress among cardiovascular patients, is not accepted as unwarranted by the results.

When the means are taken into consideration patients with surgical cardiovascular patients (M=28.52) have obtained high score than non-surgical cardiovascular patients (M=28.41), which indicates that surgical cardiovascular patients have high stress compared to non surgical patients and the difference is not significant.

The reason is that both surgical and non surgical cardiovascular patients under go stress due to several factors such as pre-operative and post-operative anxiety fear regarding outcome of the surgery and health status of the individual. Anxiety, fatigue, depression and pain would be same for both surgical and non surgical cardiovascular patients. So only there was no influence of nature of patients on stress among cardiovascular patients.

Findings of the current study corroborate with the earlier findings of Esteghamat et al., (2014), who found that the prevalence of anxious and depressive moods was same in both surgical and non-surgical patients.

### Conclusions

In a nutshell, the present study clearly reveals that:

1. Gender has significant influence on stress. Female cardiovascular patients have high stress levels than male cardiovascular patients.
2. Age has significant influence on stress among cardiovascular patients. The subjects in the age group of 40-50 years have high stress levels than the subjects in the age group of 50-60 years.
3. Nature of patients has no significant influence on stress but there is difference in stress mean scores among surgical and non-surgical cardiovascular patients.

### Implications

The present investigation has brought out the impact of gender, age on stress among cardiovascular patients. The present finding implies that females and the subjects in the age group of 40-50 years have high stress levels. There appears to be urgent need to counsel the middle aged people and women which would be meaningful and helpful. There is a need to extend the services of psychologists, social workers and N.G.O's to reduce stress of female cardiovascular patients as well as patients in the age group of 40-50 years through counseling and interventional programmes like social support, exercise and relaxation techniques, health screening programmes, enhancing assertiveness, improving perceived health status and leisure activities.

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