

## Psychosocial Factors among Hypertensive Women

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### ABSTRACT

Prevalence of hypertension in women has been increasing day by day, it was reported that in India the overall prevalence of hypertension is 15.4 per cent among men and 15.9 per cent among women<sup>1</sup>, keeping in view the mounting prevalence of hypertension in women, the present investigation aimed to compare hypertensive and non-hypertensive women on stress, anger styles, type A behaviour and subjective well-being. The sample comprised of 200 women i.e. 100 were hypertensive women and 100 healthy women labeled as non hypertensive women within the age range of 45 yr - 60 yr. The study provided strong evidence for the detrimental effects of anger, stress and type a behavior. Thus, there are various programs which should be given to patients that help them to modify their behavior and promote different ways to enhance optimism, subjective well-being and effective coping among women and consequently reduce the risk of hypertension.

**Keywords:** Hypertension; Women; Anger experienced; Anger expression; Type A behaviour; Stress

### 1. INTRODUCTION

Health is the greatest field of collaboration among medical practitioners, yoga experts and above all psychologists. It is major concern of the stakeholders and practitioners all over the world. In the contemporary world of speed, selfishness and connectivity hypertension has assumed high seniority. The impact of modernisation, globalisation and over competitiveness has been very complex in many dimensions. In India, Non Communicable diseases were responsible for 53 per cent of deaths and 44 per cent of disability adjusted life years lost. World Health Organisation South East Asia Region reported that nearly 1.5 million people die due to hypertension making it a leading risk factor for mortality. The developing country like India is likely to face encumbrance because of non-communicable diseases in future of which hypertension is one of the cause of mortality and morbidity in elderly population<sup>2</sup>. Hypertension or high blood pressure is also known as silent killer as it occurs without symptom because it takes time to get diagnosed causing health problems like stroke and other cardiovascular diseases. The blood flow of our heart is based on the beat of which the heart pumps the blood and the pressure of heart does not stay at same level every time as it varies based on activities at a specific point of time<sup>3</sup>.

### 2. PREVALENCE

Suresh Kumar highlighted the severity of diseases in India and stated that every 10<sup>th</sup> individual suffer from hypertension and every sixth person has diabetes marking the reason to have mental illness and the burden is also escalating<sup>4</sup>. The

epidemiological study of World Health Organisation reported that nationally non-communicable diseases accounted for 53 per cent of all deaths in India and the reason of deaths were mostly due to cardiovascular diseases. In India, cardiovascular diseases have been gaining increasing importance because of the rising incidence of the disease over the years. These are now listed as first top five causes of deaths in the Indian population of which hypertension is one of the major illnesses<sup>5</sup>. World Health Organisation reported that in India, the estimated prevalence was found to be 33.2 per cent for males and 31.7 per cent for females. Elevations in blood pressure in women have been reported and related to cardiovascular risk, with the prevalence of hypertension being particularly high among women aged  $\geq 60$  years. Also it has been reported that more than 25 per cent of the adult females in the world is hypertensive<sup>6-7</sup>.

Sharma<sup>8</sup>, *et al.* stated that cardiovascular disease remains number one threat to women's health in developing countries. Women might also experience high mortality due to cardiovascular diseases as compared to men, it could be due to menopause because during the later stages of life, more number of women contributes to the cardiovascular disease-inflicted population as compared to men.

### 3. RISK FACTORS IN HYPERTENSION

Hypertension increases with age in both men and women. High blood pressure is an incessant, non-occasional state of raised blood pressure which rises with age. It develops secondary to ecological factors, as well as multiple genetic factor, whose inheritance appears to be complex. According to Franklin<sup>9</sup>, *et al.* after the age of 50 yr the systolic blood pressure starts increasing and leads to higher cardiovascular

and cerebrovascular diseases<sup>10</sup>.

Dietary patterns also have an adverse impact on health like eating excess salt is considered to be a cause of developing hypertension. Intake of salt in excess amount greatly accounts to the occurrence of hypertension and other cardiovascular diseases. Studies conducted over several years have recommended to minimise salt intake as prevention key and control of high blood pressure. The other major factor contributing to hypertension being a key public health problem is obesity as it consists excessive storage of body fat and weight and is considered to be one of the causative factors of hypertension<sup>11</sup>.

The individuals heart responds to different activities in a different manner such as drinking and eating. Consumption of alcohol in surplus amount has been related to hypertension<sup>12</sup>. This can be due to the fact that the kidney and liver works to get rid of the waste from the blood stream thus more pressure is exerted on the arteries. Research have reported that excessive intake of alcohol increases the chances of having chronic diseases of which hypertension is a major one<sup>13</sup>. The sedentary lifestyle factors also play a chief role in the development of hypertension. It can be described as life with little or without any physical activity. The sedentary lifestyle surge can be accredited to our modern living, suburbanisation and globalisation of the foodstuff industry. Additionally, technology advancement has also played an enormous role in reducing the level of morbidity at work. The world today has most jobs which requires sitting behind the desks for long hours during day and following this sitting on television for long hours and playing video games at leisure time has resulted in diseases like hypertension and cardiovascular diseases due to lack of physical activity<sup>14</sup>.

#### 4. PSYCHOLOGICAL RISK FACTORS

##### 4.1 Stress and Hypertension

Stress plays a pivotal role in an individual life in day to day life and the strain faced by the individual has been associated as an independent factor contributing to hypertension in number of occupation<sup>14</sup>. Factors like work-related stress, resulting in the imbalance between job demands, job control and domestic chores are the factors that plays a significant role in the etiology of hypertension in the modern era. Stress is difficult to analyse at the physiological and psychosocial levels due to its multi factorial causes<sup>15</sup>.

##### 4.2 Anger and Hypertension

Whenever a women experience anger they try to keep it unknown or secretive of a fear that it will menace not only their femininity but also their surroundings and relationships<sup>16</sup>. In a study by Larkin<sup>17</sup>, essential hypertension was found to be related with specific social ability insufficiencies that are apparent only during the self-assured expression of anger. Also an investigation by Gerin<sup>18</sup>, *et al.* reported that augmented rumination has been linked constantly to hypertension during recovery periods. For example, after a rage reminiscence of incident, ruminators were more likely to brood about their resentment feelings than non-ruminators during a recovery period in which they were not distracted.

##### 4.3 Type A Behaviour and Hypertension

The Type A behaviour is a personality type which is characterised by being in a hurry every time, impatient, aggressiveness, competitiveness and a sense of urgency in overcoming obstacles to perform task. The link between Type A behaviour and hypertension has been very significant and reported in earlier review of literatures. A study by Sanz<sup>19</sup>, *et al.* found that sustained hypertensive patients showed higher levels of trait anxiety, Type A behaviour pattern, and hard-driving behaviours, competitiveness as compared to individuals without hypertension. Also, research conducted by Sharma<sup>20</sup> reported that Type A personality is one of the most promising coronary behaviour patterns, with its combination of rush, impatience and competition.

#### 5. RISK FACTORS SPECIFIC TO WOMEN

##### 5.1 Age

Blood pressure increases with age in both men and women. Hypertension is an incessant state of elevated blood pressure which increases with age. World Health Organisation<sup>21</sup> stated that worldwide, women are slightly outnumbered by men but, as women tend to live longer than men, they represent a higher proportion of older adults with the population of 54 per cent within the age of 60 year and older have essential hypertension.

##### 5.2 Menopause

With ageing there comes a hormonal change in women which is a major cause of hypertension. The changes that occurs during menopause with estrogen production decline, their thyroid levels (underactive and overactive) can affect the rise in the pressure of blood<sup>11</sup>. Mahajan<sup>22</sup>, *et al.* explained that menopause is the most striking event occurring during the middle age of women and represents the end of women reproductive life. The symptoms associated with menopause that increases in age such as, fatigue, cold sweats, backaches, whereas loss of interest, pressure tightness in head and body weight gain.

##### 5.3 Smoking

Smoking tobacco or long term exposure to second hand smoke increases the risk of chronic illnesses. Smoking rates have been reported highest in women suffering the supreme societal drawback and such disadvantage is multidimensional and structurally entrenched creating difficulty for individuals to change their social position or the health related to that position<sup>23</sup>.

##### 5.4 Stress

Stress is a process where a human being faces undue strain produced by surroundings following to changes in physical and psychological facets that surge the risk of disease. Psychological stress has been identified as a probable reason in the etiology of hypertension. Risk factors such as high cholesterol, hypertension, and smoking fail to fully predict coronary artery disease incidence, and thus researchers have focused on other possible risk factors like social, psychological, psycho-physiological, environmental factors and their possible

interactions, such as acute emotional stress interacting with standard risk factors, or exacerbating existent coronary artery disease. Ibrahim<sup>24</sup>, *et al.* reported that the professional worry and poorer self-rated health relationship was dependable across both levels of poorer health (poor/fair and good versus very good/excellent).

### 5.5 Role Stress

Husband and wives tend to develop divergent role identities and identity hierarchies because of social traditions and structures. Women are socialised to give importance majorly to domestic relationships whereas men are entertained to give worth to themselves predominantly in terms of their occupational experiences. The role discrepancy may effect on the exposure and reactivity to role associated stressors that partners practice<sup>25</sup>. Hashmi<sup>26</sup>, *et al.* reported that married employed women face more problems in their lives like they experience more tensions, strains and depression as compared to non-employed married women. This might be due to working married women not able to contribute considerably for the wellbeing of their family. Their attention is diverted because of working in two situations, they are unable to give proper attention to their marital lives and this causes stress and depression.

## 6. PROTECTIVE FACTOR

### 6.1 Subjective Well-being

Subjective well-being is associated by number of factors, the association between subjective well-being and health is strongly implicated with numerous studies stating that healthier individuals tend to be more contented<sup>27</sup>. It may buffer against the damaging health concerns of strain and apply direct influence on bodily systems, or may motivate healthy behaviour. Individuals who are contented with their lives and experience frequent positive emotions have reduced risk for developing cardiovascular diseases<sup>28-29</sup>.

### 6.2 Rationale of the Study

Hypertension is a leading health issue for women in stressful jobs in addition to anxiety, stress since they have dual responsibility at the workplace and at home. Stress plays a havoc with hormonal imbalance in a woman. Also, swaying between home and work leaves no time for these women to plan their own well-being<sup>30</sup>. Need for the present study arose as research suggests hypertension is more harmful for women. According to the latest research of World Health Organisation<sup>31</sup> hypertension was found to be more dangerous for women than men, as it was found that men and women aged 53 yr and older, the percentage of vascular disease was more prevalent in women than men with same level of hypertension. These facts combined with the realisation that hypertension increases morbidity and mortality in women subjects and also emphasises the need for investment in psychological research to identify psychosocial factors playing a role specifically in women hypertensive.

## 7. OBJECTIVE

The main objective of the study was to compare study

of hypertensive and non-hypertensive women on stress, anger styles, Type A behaviour and subjective well being.

## 8. HYPOTHESES

Based on the literature review following hypotheses were proposed

- Hypertensive women were expected to score higher on stress viz. perceived stress. anger experienced viz. state anger and trait anger, anger expression styles viz. anger in, anger out and total anger expressed; type a behaviour and negative affect as compared to non-hypertensive women
- Hypertensive women were expected to score lower on anger expression style viz. anger control as compared to non-hypertensive women
- Non-hypertensive women were expected to score higher on subjective well being viz. satisfaction with life and positive affect as compared to hypertensive women.

## 9. METHODOLOGY

### 9.1 Sample

The sample comprised of 200 women out of which 100 were hypertensive women and 100 healthy women labeled as non-hypertensive women within the age range of 45-60 years, the particular age group was considered because in this age range more of women suffer from menopausal stage and which further leads to disease like hypertension. The hypertensive women were chosen from OPD's of government and private hospitals and non-hypertensive women were chosen randomly from various parts of Chandigarh, Panchkula and Mohali.

## 10. INCLUSION CRITERIA

- Only those hypertensive patients would be included who have had the disease for at least 5 years
- Only married women will be included
- Subjects included shall be at least educated up to 10+2
- Sample shall be confined to those residing in urban areas only.

## 11. TESTS AND TOOLS

The following standardised tests were used

### 11.1 Test 1

Perceived Stress Scale was developed in 1983 by Cohen<sup>32</sup>, *et al.* is one of the commonly used psychological instruments used across the globe for measuring stress. The PSS-10<sup>32</sup> measures individual's appraisal of their life rating themselves on a 4 point Likert scale from 0 = never to 4 = very often. The total score range from 0-40 and the items 4, 5, 7 and 8 are the reverse score items. The tests as it is applicable widely, the alpha reliability for the measure has been found to be from 0.75-0.86<sup>32-33</sup>.

### 11.2 Test 2

The Spielberger state-trait anger expression inventory developed by Spielberger<sup>34</sup> is a self-rating questionnaire. The test comprises of 44 question with 3 part (state anger, trait anger and anger expression) questionnaire. It assesses self-

reported feelings (experiences) of anger and its expression. State anger i.e. how you feel right now consist of 10 item. The subject chooses from the response format. (1) Almost never, (2) Sometimes, (3) Often, (4) Almost always. Trait anger comprise of 10 items and refers to how you generally feel with four response options: (1) Almost never, (2) Sometimes, (3) Often, (4) Almost always. The range of possible scores for the two subscales varies from minimum of 10 to maximum of 40. The third part has 24 question measuring three dimension of anger expression viz. anger out, anger in, anger control. anger out, anger in and anger control subscales are computed by summing the column of item scores for each scale. The range of possible scores for three subscale varies from a minimum of 8 to maximum of 32. A total of anger expression score is obtained by the following formula.

$$\text{Anger Expression} = \text{Anger Out} + \text{Anger In} - \text{Anger control} + 16 \text{ (a constant of 16 is added)}$$

### 11.3 Test 3

Type A Behaviour Pattern Scale developed by Bortner<sup>35</sup> defined Type A Behaviour in terms of hard driving, ambitious and time conscious behaviour. It is a self-report measure and is used widely to assess Type A behaviour, which consist of the 14 items with 11-point rating scale where the individual has to circle the number of question that reflects the way you behave in everyday life. The Bortner Scale has reported the reliability estimate of 0.68<sup>35-36</sup>. The inter rater reliability correlation coefficient of 0.93 for other studies have also reported the similar results<sup>37</sup>.

### 11.4 Test 4

Subjective Wellbeing was assessed using two scale

#### 11.4.1 Scale 1

Satisfaction with life scale developed by Diener et al.<sup>38</sup> is a five item measure to identify the overall judgement of an individual life to measure their satisfaction level. The scale has seven point likert scale ranging from strongly agree to strongly disagree with scores ranging from 5-35.

Diener<sup>39</sup>, et al. reported test-retest correlation coefficient of to be 0.82 and an alpha coefficient of 0.87 for under graduates. Also, Shimmack<sup>40</sup>, et al. reported that the reliability of this scale varies between 0.61 - 0.90 in different cultures.

#### 11.4.2 Scale 2

Positive and Negative affect schedule was developed by Watson<sup>41</sup>, et al. It consists of 20 items scale measuring items of positive and negative items. The scale consists of a number of words that describe different feelings and emotions. Each word is rated on a 5- point rating scale, according to the extent to which the subject felt that way during the past few weeks. The scale ranges from 1- 'Very slightly or not at all' to 5- 'Extremely'. The scale reliability for positive and negative affect has found to be 0.86 to 0.90 and 0.84 to 0.87. the psychometric properties have shown its consistency in other studies.

## 12. STATISTICAL ANALYSIS

Keeping in view the objectives of the study Means, Standard Deviations, and t-ratios were calculated. The results obtained have been tabulated in Table 1.

**Table 1. Showing mean, standard deviation and t-ratios comparing hypertensive women and non-hypertensive (n=200)**

Variables	Non-hypertensive women (n=100)		Hypertensive women (n=100)		t-ratios
	Mean	SD	Mean	SD	
Satisfaction with life	26.12	4.81	21.76	4.43	6.67**
Positive affect	28.38	9.04	24.07	7.73	3.62**
Negative affect	17.29	6.65	20.14	6.11	3.16**
Subjective well being	37.21	11.52	25.69	12.88	6.67**
State anger	13.85	4.87	15.74	4.56	2.84**
Trait anger	19.71	4.59	21.82	5.25	3.03**
Anger in	15.58	3.52	17.88	3.62	4.53**
Anger out	15.69	2.96	16.98	3.92	2.62**
Anger control	22.91	5.09	20.92	4.38	2.96**
Total anger expressed	24.57	7.91	29.84	8.01	4.68**
Type A behavior pattern	96.16	13.18	109.33	15.54	6.47**
Perceived stress	15.98	5.45	22.69	4.47	9.53**

\* t-value significant at .05 Level = 1.97

\*\* t-value significant at .01 Level = 2.60

## 13. RESULTS

The main aim of the study was to compare hypertensive and non-hypertensive women on stress, anger styles, type a behaviour and subjective well being.

### 13.1 Descriptive Statistics and t-ratios

The raw scores were analysed using appropriate statistical analyses viz. Descriptive statistics and t-test. t-ratios were calculated to find out the significant differences between means of two groups on the measured variables. Table 1 shows means, standard deviations and t-ratios comparing non-hypertensive and hypertensive women. The comparison revealed the following t-ratios to be significant. Hypertensive women scored higher than non-hypertensive women individuals on Negative Affect (t=3.16, p<.01), State Anger (t=2.84, p<.01), Trait Anger (t=3.03, p<.01), Anger In (t=4.53, p<.01), Anger Out (t=2.62, p<.01), Total Anger Expressed (t=4.68, p<.01), Type A Behaviour (t=6.47, p<.01) and Perceived Stress (t=9.53, p<.01). Non-hypertensive women scored higher on satisfaction with life (t=6.67, p<.01), Positive Affect (t=3.62, p<.01), Subjective Well Being (t=6.67, p<.01) and anger control (t=2.96, p<.01).

## 14. DISCUSSIONS

The present study main aim was to compare hypertensive and non-hypertensive women on stress, anger styles, type a behaviour and subjective well being. It was found that on the dimensions of subjective well being viz. Satisfaction with life, positive affect and negative affect; hypertensive women were higher on negative affect as compared to non-hypertensive women whereas non-hypertensive women scored higher on satisfaction with life, positive affect and subjective well being. On the dimensions of anger, hypertensive women had a higher score for state anger, trait anger, anger out and total anger expressed than non-hypertensive women; while they scored lower than non-hypertensive women on anger control.

Hypertensive women scored higher on type a behaviour and stress as compared to non-hypertensive women. Thus, it can be said that results are in line with the hypotheses proposed at the beginning of the study which substantiates that psychological factors play an important role in the pathogenesis of hypertension. Similar insights to these findings are provided by earlier studies.

Women are encouraged to suppress their anger, as the process of socialisation has made aggressive communication of anger socially more acceptable for men and this has led to the assumption that anger suppression is associated with poor cardiovascular health in women<sup>42</sup>. Hogan and Linden<sup>43</sup> reported that females who expressed their anger (anger out) resulted in lower blood pressure. Sanz<sup>44</sup>, *et al.* found that sustained hypertensive differed significantly from normotensives on all the personality variables. The results indicated that nervousness or worry or trait anxiety and hard-driving behaviours/competitiveness (a component of Type A behaviour pattern) are the significant personality characteristics reported by hypertensive. Hosseini<sup>45</sup>, *et al.* stated that trait anger and anger in were more commonly reported in people suffering from hypertension. Pakseresh and Khabjehmoughahi<sup>46</sup> found that in females high blood pressure was associated with damaging psychosocial risk factors like anger, hostility and Type A behaviour. Further in a study it was analysed that person having hypertension tend to report reduced well-being and higher levels of psychological distress<sup>47</sup>.

Owalabi and associates<sup>48</sup> opined that women working in health sector are afflicted to strenuous environment and as associated significantly to essential hypertension. A study by Bhosale and colleagues<sup>49</sup> reported hypertensive were significantly associated to surmounted stress, anxiety and type A behaviour. Thus, it was suggested that interventions which would aim to reduce anxiety, anger and managing tensions might help patients having chronic illness and would also act as a protective shield to those who are prone to coronary heart disease.

Mushtaq and Najam<sup>50</sup> studied the relationship of hypertension with psychological states of anger, stress and anxiety. The logistic regression analysis revealed that anger, anxiety and stress acted as the best predictor contributing to the hypertension. The findings also stated that all dimensions of anger are significantly and positively correlated with

hypertension. This might be explained as people with high blood pressure often practice unreasonable judgment of reality, low level of hindrance, tolerance, impractical expectations and face disappointment and helplessness.

## 15. LIMITATIONS

No study can be the last word. The present study was limited to study of hypertension in women only. A similar study could be conducted on males to study to see the effect of role of psychosocial factors in hypertension. A comparison of men and women could have given more profound result. The study can also be extended to different age groups. Further the results could have been analysed using better inferential statistics like regression and ANOVA to have better implication of the results.

## 16. IMPLICATIONS

The findings of this research have implications for promoting our understanding regarding role of anger and stress as a major predictor of hypertension which have detrimental effect on health both physical as well as mental. Cox<sup>16</sup>, *et al.* stated different methods to control anger is needed to assess effectively women's anger coping behaviours particularly with the input from psychotherapists, nurses, social workers, and other practitioners. Because womenfolk possibly will use different deviation styles depending on the setting in which the anger arises and may be necessary to progress a framework to measure sensitivity that allows for women's identification with more than one diversion style.

Further to reduce stress, regular exercise, rest, balance diet, meditation, social support and to develop better stress managing methods at work and in home that are consistent with women stress levels. This would help women increase their personal awareness and encourage them to manage stress related factors, and reduce long term risk of hypertension and other chronic diseases.

Thus, considering this, the researchers needs to put emphasis on the status and inevitability of educating individual's having hypertension about the suitable means of conveying sentiments and managing anger. These precautions will add to better preventive measures and control of the disease, alongside other factors.

## 17. CONCLUSIONS

The present investigation aimed to study hypertension among women. The primary aim of the present investigation was to compare hypertensive and non-hypertensive women. Results revealed that anger, Type A behaviour and stress played important role as risk factors in hypertension. The factors of subjective well being appeared as protective factors among women.

The study also provides strong evidence for the detrimental effects of anger, stress and type A behaviour. Thus, there are various programs which should be given to patients that help them to modify their behaviour and promote different ways to enhance subjective well being among women and consequently reduce the risk of hypertension

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