

Lifestyle Factors and Mindfulness in enhancing Quality of Life of women with Hypertension

Dr. Naina Sharma*, Manmeet Kaur**

**Assistant Professor, Department of Distance Education, Punjabi University, Patiala*

***Research Scholar, Department of Psychology, Punjabi University, Patiala*

Corresponding Author: Dr. Naina Sharma

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I. INTRODUCTION

Rise in hypertensive patients is a cause of concern and calls for action in the prevention and management for this condition. The purpose of this study was to identify the working women in the age range of 25-40 years having above normal blood pressure and then to study the effectiveness of the tailored intervention program in the management of hypertension. The tailored intervention program was given to the identified working women who volunteered to participate in the 6 week management program (N=40; 40% high school teachers, 20% in clerical job and 40% working in banks). The sessions were tailored in a fashion to optimize the quality of life by incorporating awareness and knowledge about: hypertension, life style factors, self-awareness including relaxation and breathing exercises. Outcome measures collected at 6 weeks post-baseline were six domains of WHO- QOL measure (Physical and Psychological capacity, Level of Independence, Social Relationships, Environment and Spirituality/Religion/Personal Beliefs) and the systolic and diastolic readings. A repeated measures analysis of variance was conducted with pre and post test scores. The results indicate significant improvement on various domains of quality of life: Overall, women benefited from the intervention.

Keywords: Quality of Life, Lifestyle Factors, Mindfulness, Hypertension

The rising problem of hypertension in India today is the biggest cause of concern for public health workers. With rising stresses in the domestic and professional areas, hypertension is soon to become an epidemic. Hypertension is defined as repeatedly elevated blood pressure, above 140 over 90 mmHg. This translates to a systolic pressure over 140 and a diastolic pressure over 90. Doctors prescribe 120 over 80 mmHg as the normal limit for young people and 140 over 90 for older people over the age of 60. Hypertension can be categorised into three levels based on severity, being mild, moderate and severe.

High blood pressure is classified as either primary (essential hypertension) or secondary hypertension. CDC statistics indicate that 90–95% of cases are primary, defined as high blood pressure due to nonspecific lifestyle and genetic factors. The remaining 5–10% of cases are characterized as secondary high blood pressure as it occurs due to an identifiable reason, such as chronic kidney disease, birth control pills or endocrinal disorder. Hypertension is termed as a silent killer as people are generally asymptomatic and can't be screened just on the basis of symptoms like headaches, vertigo, tinnitus, blurred vision or fainting as these are often mistaken as signs of anxiety. The diagnosis of hypertension involves three readings with the help of Sphygmomanometer over a period of month and consistent rise in systolic and diastolic pressure (above the normal range of 120-80 mmHg).

The count of people suffering from hypertension is rising rapidly in both the developed and developing countries (Ibrahim & Damasceno, 2012; Kearney et al., 2005). Statistically, high blood pressure is expected to cause 7.1 million deaths all over the world, which is 13% of the total number of deaths every year (Tesfaye et al., 2007). Hypertension is being identified as the root cause of multiple health disorders and ultimately fatal diseases. Hypertension further leads to cardiovascular diseases and kidney problems, with an estimated 70% of both men and women in the age group of 60-70 being hypertensive (Farag et al., 2014). Many studies suggest that three fourths of the people affected by hypertension (639 million) live in developing countries, where the problem is exacerbated by low levels of awareness about this silent killer, and due to lack of adequate healthcare facilities (Ibrahim & Damasceno, 2012; WHO, 2002). Coming to the scenario in India, hypertension contributes to 57% of the total number of deaths due to stroke and 24% of the total coronary heart disease related deaths every year (Gupta, 2004). Gupta et al. (2009) reported hypertension prevalence of women is more than men in different cities of India (30% men and 34% women in Jaipur, 31% men and 41% women in Thiruvananthapuram, 43% men and 45% women in Mumbai). Review of studies on hypertension in India has shown high prevalence in both urban and rural areas (Gupta et al., 2013). It becomes evident therefore, that

hypertension has become a looming threat that has engulfed all age groups of the nation. This problem however, can be averted by adopting a healthy lifestyle.

There are varieties of risk factors involved that can lead to hypertension. Apart from genetic factors, geographical habitat and ethnicity, the major variable that can cause or prevent hypertension are lifestyle choices leading to obesity, stress, sedentary lifestyle, alcohol consumption, use of contraceptives and high sodium intake. Obesity is a chief contributor to the problem of hypertension in India. Worryingly, obesity has been on the rise in India, especially in women, as highlighted by the National Family Health Survey (NFHS-4, 2015-16). Obesity among women increased from 15% to 31% in a period of ten years from 2006 to 2015. It was also observed that obesity was more widely prevalent in Indian women than in men (IIPS, 2007). Being overweight and accumulating excess amounts of unhealthy fat has been attributed as the major contributor to hypertension (Mandal, Kumar, Roy & Chatterjee, 1947). Calculated risk estimates suggest that 75% and 65% of the total number of men and women respectively suffering from hypertension fall in the category of Body Mass Index above 21 kg/m². It is hence a calculated conclusion that there exists a positive correlation between BMI and high blood pressure in the Indian backdrop (Chakraborty, Bose & Bisai, 2009; Hazarika, Biswas & Mahanta, 2003; Kumar, Sudhir, Srinivasan & Punith, 2008; Meshram et al., 2012). Several factors can influence compliance with antihypertensive treatment. Thus, because of its close correlation with lifestyle, hypertension can be prevented, attenuated or treated by adopting healthy habits by mindfulness training.

Mindfulness as postulated by Zinn (2003) is training the mind to pay attention to the present time in a purposeful and without judge way. Mindfulness meditation has been found to be highly effective for patients who suffered from various medical conditions as it helps them to gain freedom their own emotional patterns and habits (Kobat Zinn, 2013). Plethora of studies indicates the impact of hypertension in quality of life and vice a versa.

QOL is conceived as an aspect of individual subjectivity, a psychological quantum expressing the satisfaction of particular people with their individual lives. There are different approaches to define quality of life; like generic definitions of QOL that apply to humanity as a whole and secondary attempts to define health related QOL or disease specific QOL. According to Leventhal & Colman (1997), QOL judgment is a process in which the individual assesses his/her personal experience in various life domains and then integrates these into one overall judgment. QOL is a broad multidimensional concept in which the focus is on the individual's subjective experience. Domains such as emotional & physical health, social networks, material resources and work have been proposed as components of QOL. Researchers (Trevisol, Moreira, Kerkhoff, Fuchs, and Fuchs, 2011) have found that people with hypertension had a poorer quality of life indicator than people without the condition. By establishing a proven link between the disease and HRQOL, then developing interventions programs aiming at improving HRQOL will become a new relevant therapeutic objective in hypertensive subjects. It is essential to enhance the quality of life and manage hypertension to reduce the consequences of it on health.

This paper outlines various lifestyle changes and mindfulness training that can tackle the problem of hypertension in women, with an emphasis on the scenario in India. The paper proposes an intervention program to generate greater awareness about healthier dietary habits, regular check-ups and better lifestyle with an increased physical activity. This study also aims at generating greater understanding regarding the risk factors that eventually lead to hypertension, and preventive measures. This paper develops an intervention program to improve the lifestyle of women suffering from hypertension.

Objectives

Keeping in view the need of the study following objectives were framed:

- To study if the tailored intervention program based on life style factors and mindfulness training promote the quality of life of hypertensive women.
- If enhanced quality of life helps in the management of hypertension.

II. METHOD

For sampling initially 300 questionnaires related to basic health assessment were given to working women and 40 women in the age range of 35 to 45 years were identified having 7-9 mmHg above normal levels. 40% women were school teachers, 20% were in the clerical job and 40% were working in the banks. Only those women were selected who volunteered for the intervention program of three months.

Tools: WHO Quality of Life measure was used to measure health perceptions on 6 domains of quality of life (Physical and psychological capacity, level of Independence, social relationships, environment and spirituality). The questionnaire consisted of 100 items on five point Likert scale ranging from 1-5. (1 indicates low negative perceptions and 5 high positive perceptions). Sphygmomanometer was used to measure systolic and diastolic measures.

Procedure: The study was conducted in two phases. In the first phase a questionnaire was given to 300 working women to assess the basic health indicators like age, educational level, marital status, job status, smoking/alcohol use, physical exercise, medical history, number of medications taken, were determined by questionnaire (identification questionnaire). Weight and height were measured to determine the body mass index (calculated as weight in kilograms divided by height in meters squared). The women reported of suffering from borderline or mild hypertension i.e. systolic pressure above 120 and diastolic pressure above 80 mm of Hg were contacted on phone to be a part of this study.

In the second phase, sixty women were identified with hypertension and forty women volunteered to be a part of this study. The study was based on Transtheoretical model developed by James Prochaska, Carrlo DiCliments and John Norcross (1992, 1994) based on the contention that people progress as well as regress through five behavioural stages (Pre-contemplation, Contemplation, Preparation, Action & Maintenance) in order to make changes in behaviour. The study lasted for three months, and was divided into six sessions. This means there were two sessions in a month which required sixty minutes of one module. The modules were designed on Transtheoretical Model of health behaviour likewise:

Module 1: After an ice-breaking session, information on hypertension- causes, treatment and consequences of untreated hypertension was divulged.

Module 2: The subjects were motivated to follow an active lifestyle, like going for brisk walks, eating healthy, lowering sodium intake and correcting the sleep pattern. Dietary Approach to stop Hypertension (DASH) was followed in this session. Patients were advised to limit the salt intake to less than 3gm a day and not to take high salt processed foods like packaged soups, pickles, salty snacks etc. Subjects were advised to consume mainly plant based foods like fruits, vegetables, pulses and whole grain foods. Patients were also motivated to become physically active and were suggested thirty minutes of physical activity for at least six days a week. The subjects were explained other ways of controlling/reducing weight like increasing water intake and meticulously planning their diet with respect to their sitting job.

Module 3: Comprised of self-awareness exercises to understand the stressors, emotional complexes and relationship issues in one's personal life. This session started with strength and weakness analysis and identification of stressors in one's life by drawing the role map for understanding the priorities in roles and relationships. Positivity and hope with the help of dialectical behaviour therapy was fostered.

Module 4: Aimed to instruct the subjects on breathing and relaxation techniques. 6 deep breaths in 30 second were practiced with the subject. Jacobson's Progressive muscle relaxation strategies were explained to the subject.

Module 5: Explained the importance of music therapy and mental relaxation. Music was played and the subject was guided deep breathing and focusing on just the moment of the breath.

Module 6: Wrap up session included reaffirmation from the subjects on adhering with the suggested life style factors. In all these modules a transtheoretical approach was followed in behavioural change of the subjects.

III. RESULTS

Figure 1 depicts Health profile of 300 working women (Phase 1). The descriptive analysis of the socio-demographic profile of 300 women indicated that 70% women do not go for any physical exercise and 40% women take more than 6 cups of tea in a day, 27% eat fried food like samosas, Kachoris almost every day, 34% are obese, 40% have sleep disturbances and 20% reported family history of hypertension.

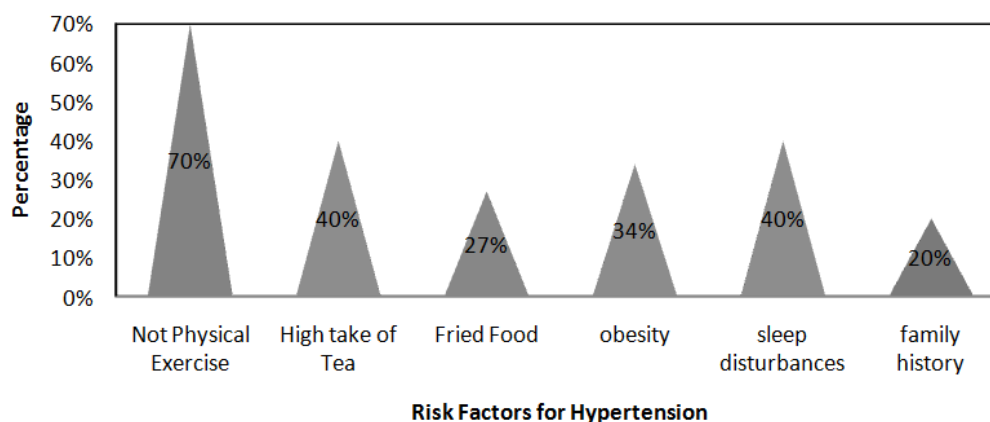
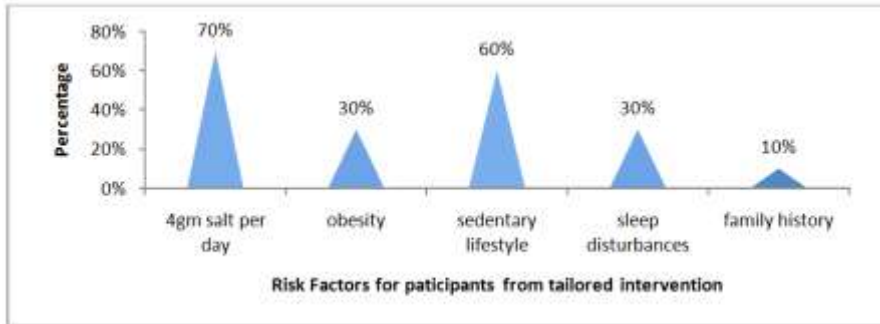


Figure 2 depicts Health profile of 40 working participants (Phase 2). Analysis of the data of Phase two of 40 working women with borderline to mild hypertension is as following: At the baseline it was observed that 60% of the subjects were at high risk of obesity and 40% were at moderate risk. 55% of the subjects were suffering from hypertension from the last two to three years and 45% were suffering from the past one year.

70% of the subjects were taking more than 4gm of salt per day, 60% were living a sedentary lifestyle, 30% suffer from obesity and 30% reported sleep disturbances. Only 10% women reported having a family history of hypertension.



To assess the efficacy of the tailored intervention programme on women suffering from hypertension, t-test was applied on all the dimensions of quality of life scale and also on the measures of hypertension (systolic and diastolic blood pressure) before and after the intervention programme.

Quality of Life Domains	Mean (pre-test)	Mean (post-test)	t-ratio
Physical Capacity	12.75	12.82	0.28
Psychological	13.08	13.64	2.52**
Level of Independence	13.93	14.49	2.77**
Social Relationships	9.66	10.08	2.24**
Environment	14.07	15.02	5.11**
Spirituality/ Religion/ Personal Beliefs	14.28	15.54	7.18**
Total	77.76	81.57	5.08**

**p<0.01

Table 1: Showing mean and t-values of women for six domains of quality of life

BP Measures	Mean (pre-test)	Mean (post-test)	t-ratio
Systolic	138.27	124.30	17.34**
Diastolic	106.60	89.90	8.36**

**p<0.01

Table 2: Showing mean and t-value of BP measures

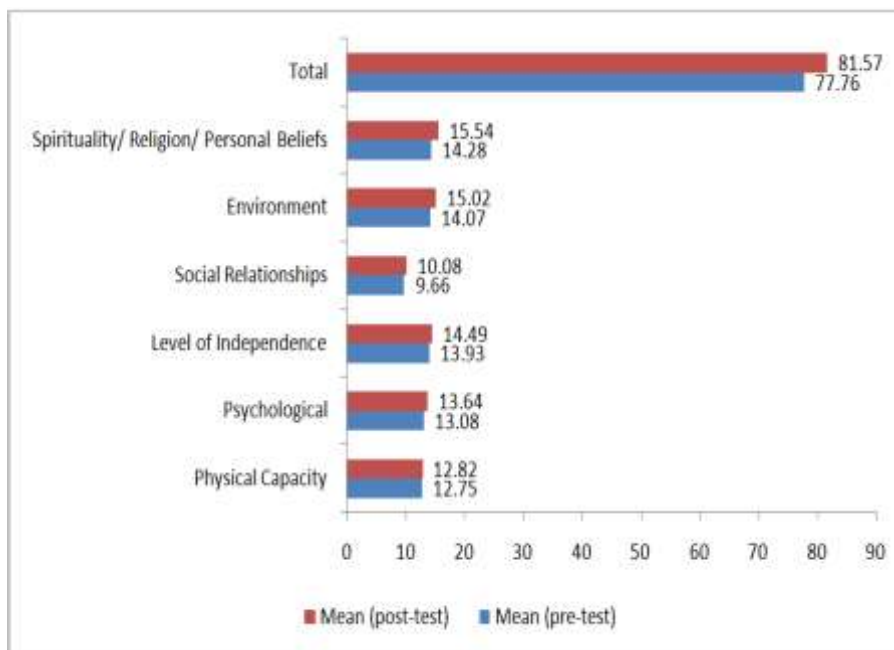


Figure 3: Showing mean pre and post-test values of women for six domains of quality of life

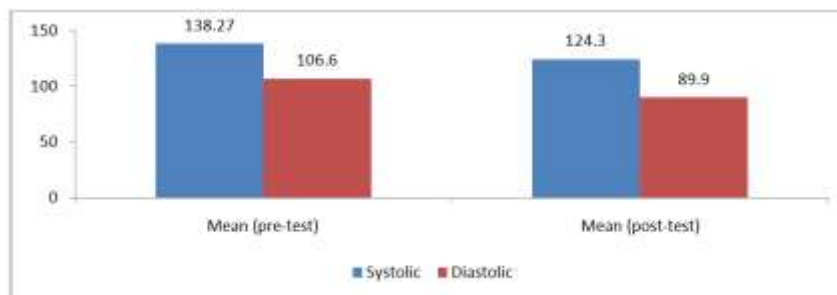


Figure 4: Chart showing mean systolic and diastolic BP for pre and post-test

The results indicate significant improvement in various domains of quality of life: psychological capacity (Mean 13.08 vs 13.64) ($t=2.52^{**}$), level of independence (Mean 13.98 vs 14.49) ($t=2.77^{**}$), social relationships (Mean 9.66 vs 10.08) ($t=2.24^{**}$), environment (Mean 14.07 vs 15.02) ($t=5.11^{**}$), spirituality (Mean 14.28 vs 15.54) ($t=7.18^{**}$) and overall quality of life (Mean 77.76 vs 81.57) ($t=5.08^{**}$). Furthermore, there were significant differences in systolic readings (Mean 138.27 vs 124.30) ($t=17.34^{**}$) and diastolic readings (Mean 106.60 vs 89.90) ($t=8.36^{**}$).

IV. DISCUSSION

The physical domain indicating physical energy, vitality/fatigue, pain and sleep didn't show significant difference as the participants of the programme were all working women so to maintain work life balance involved a lot of physical energy. Psychological capacity comprising positive/negative feelings, self-esteem, concentration, thinking and memory shows a significant improvement in the participants after the intervention program. Exercises related to self-awareness, deep breathing and sketching the priorities helped the subjects to have a better understanding of their biopsychosocial health. A plethora of research findings suggest the utility of various other mind-body therapies that are used by adult subjects suffering from medical conditions such as hypertension have been found to be helpful in keeping this problem in check (Shinde, Shinde, Khatri, et al., 2013; Anthony, Bourdeaux, et al., 2003; Bertisch, Wee, Phillips, et al., 2009). Researchers Kaushik et al., 2006 conducted extensive studies on the effects of mental relaxation and controlled, slow breathing in reducing blood pressure and hence eventually controlling and managing hypertension and further found that slow breathing proved to be more effective in reducing BP as compared to mental relaxation.

The domain level of independence encompassing mobility, activities of daily living dependence on medicinal substances and work capacity has also shown significant improvement after the intervention program as the awareness related to right eating habits and following exercise regime helped the patients to gain better levels of independence. The role of diet and exercise has been endorsed by James, Oparel et al. (2014). Likewise the domains related to social relationships and environment also showed significant improvement as the participants were more optimistic and hopeful after following the exercises related to self-awareness especially by being more objective and not labelling other persons behaviour. Spiritual/ personal beliefs improved as in the fifth session the participants were given meditation sessions. Transcendental meditation is defined as a standardised technique of meditation in which a person repeats, or chants, a mantra to enable himself/herself towards an elevated state of mental concentration. This state of higher concentration in turn leads to a greater sense of relaxation and physiological calming (Paul-Labrador, Polk, Dwyer, et al., 2006). Research conducted has yielded enough evidence that indicates that single component interventions, for example transcendental meditation are effective in a few conditions, including hypertension, with probable long term effects.

V. CONCLUSION

Based on the trans-theoretical model the tailored intervention on fostering holistic health uplifted the overall health condition of women living with hypertension. Women turned out to be the most sensitive towards the self-awareness and breathing exercises. Furthermore, focus group sessions revealed life style factors are a primary cause of progressively lowering quality of life of young women who are engaged in professions while managing households. It was also discovered that a change in multiple domains that constitute quality of life can bring the problem of hypertension in women under control without resorting to medication. The intervention programme is so designed as to infuse awareness in women, and continue the practices taught about in the programme after the intervention is over.

VI. RECOMMENDATIONS

The problem of hypertension is rapidly evolving into a full blown global epidemic, with its epicentre in developing countries, and it is high time that measures be taken at an institutional level to implement intervention programmes such as the one conducted in this study to address the issue and to rein this problem

into control. Although medical research suggests men to be more susceptible to hypertension, it does not immunise women from this disease. Hence, awareness needs to be generated regarding the symptoms and the prevention of hypertension among women living in both urban and rural areas. Measures need to be taken to not only help subjects diagnosed with hypertension but also prevent those in the high risk group from becoming hypertensive. Hence, based on this pilot study a few recommendations are framed in the control and management of hypertension.

- Awareness, knowledge and understanding of the life style factors associated with hypertension must be a part of school and college curriculum for the prevention of hypertension by making students aware of healthy lifestyle choices at an early stage.
- Women need to be encouraged and supported by the family to follow an active life style to avoid obesity. Especially post childbirth, it is important that women give their bodies some form of exercise.
- Self –awareness, meditation and progressive muscle relaxation should be facilitated in all the health care centres, and work -shops should be organized at the work places.
- This intervention needs to be conducted with respect to different socio-demographic profiles like age, gender, socio-economic status etc.

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