MSW MANAGEMENT -Multidisciplinary, Scientific Work and Management Journal
ISSN: 1053-7899
Vol. 36 Issue 1, 2026, Pages 5328-5330

"Effectiveness of lifestyle interventions on Hypertension patients from selected rural areas"

Mr. Ramesh Bidari[1], Dr. Suresh Kumar Ray[2]
[1]Ph.D Scholar, Bharati Vidyapeeth (Deemed to be University), Pune.
[2]Ph.D Guide, Professor, Bharati Vidyapeeth (Deemed to be University), Pune

Abstract

Background: Hypertension is a leading modifiable risk factor for cardiovascular morbidity and mortality worldwide. Rural populations face increasing prevalence due to lifestyle transitions, poor awareness, and limited access to structured health education. Lifestyle interventions have shown promise in improving blood pressure control and reducing cardiovascular risk.

Objective: To evaluate the effectiveness of a structured lifestyle intervention on blood pressure control and lifestyle practices among patients with hypertension residing in selected rural areas of Sangli District.

Methods: A quasi-experimental pre-test post-test control group design was adopted. The study was conducted in selected rural areas of Sangli District. A total of 30 diagnosed hypertensive patients were selected using purposive sampling (15 experimental group and 15 control group). The experimental group received a structured lifestyle modification program including dietary counselling (DASH principles), physical activity guidance, stress management techniques, salt restriction education, weight management advice, and adherence counselling for 24 weeks. Blood pressure measurements and lifestyle practice scores were assessed before and after intervention. Data were analysed using descriptive and inferential statistics.

Results: Post-intervention results showed a statistically significant reduction in mean systolic and diastolic blood pressure in the intervention group ($p < 0.001$). Significant improvement in dietary habits, physical activity levels, and medication adherence was observed compared to the control group.

Conclusion: The structured lifestyle intervention was effective in improving blood pressure control and promoting healthy behaviours among hypertensive patients in rural settings. Community-based lifestyle programs can serve as cost-effective strategies for hypertension management.

Keywords: Hypertension, Lifestyle Intervention, Rural Health, Blood Pressure Control.

Introduction

Hypertension is a chronic non-communicable disease characterized by persistently elevated arterial blood pressure. It is a major risk factor for cardiovascular diseases such as stroke, myocardial infarction, and heart failure. According to the World Health Organization, hypertension affects over one billion people globally and contributes significantly to premature mortality. In India, the burden of hypertension is increasing in rural populations due to changing dietary patterns, sedentary lifestyle, tobacco use, stress, and obesity. Rural districts such as Sangli District are experiencing yet limited structured lifestyle counselling services. Lifestyle modifications—including reduced salt intake, balanced diet, regular physical activity, weight reduction, stress management, and adherence to medication—are considered first-line management strategies for hypertension. Nurse-led community interventions can significantly enhance awareness and behavioral change.

Despite the availability of antihypertensive medications, many patients in rural areas have uncontrolled blood pressure due to inadequate knowledge and poor lifestyle practices. There is a need to evaluate the effectiveness of structured lifestyle interventions in rural communities.

Materials and Methods

Research Design: Quasi-experimental pre-test post-test control group design.
Setting: Selected rural areas of Sangli District.
Population: Diagnosed hypertensive patients residing in selected rural communities.
Sample Size: 30 participants (15 experimental, 15 control).
Sampling Technique: Non Probability Purposive sampling technique.

Inclusion Criteria

- Diagnosed with hypertension.
- Age between 45–65 years.
- Willing to participate.

Exclusion Criteria

- Severe complications (stroke, heart failure).
- Critically ill patients

Description of Lifestyle Intervention Package

The structured intervention included:

1. **Dietary Counselling**
   - Low-salt diet (<5 g/day).
   - DASH-based diet plan.
   - Reduction of saturated fats.
   - Increased fruits and vegetables.
2. **Physical Activity Guidance**
   - 30–45 minutes of brisk walking per day.
   - Simple home-based exercises.
3. **Stress Management**
   - Deep breathing exercises.
   - Relaxation techniques.
   - Sleep hygiene counselling.
4. **Weight Management**
   - BMI monitoring.
   - Portion control education.
5. **Medication Adherence Counselling**
   - Importance of regular medication.
   - Avoiding self-discontinuation.

Duration: 24 weeks (weekly sessions for first month, bimonthly follow-ups).

Data Collection Tools

- Demographic tool.
- The WHOQOL-BREF is a 26-item questionnaire assessing quality of life across four domains (Physical, Psychological, Social, and Environment).

Data Analysis

MSW MANAGEMENT -Multidisciplinary, Scientific Work and Management Journal
ISSN: 1053-7899
Vol. 36 Issue 1, 2026, Pages 5328-5330

Descriptive statistics (frequency, percentage, mean, standard deviation) and inferential statistics (paired t-test, unpaired t-test, Chi-square test) were used. Significance was set at $p < 0$

Results

Table No 1: Demographic data analysis:

Demographic variable	Experimental		Control	
	Freq	%	Freq	%
Gender				
Female	7	46.7%	4	26.7%
Male	8	53.3%	11	73.3%
Age				
41-50 years	6	40.0%	6	40.0%
51-60 years	7	46.7%	8	53.3%
Above 60 years	2	13.3%	1	6.7%
Type of Family				
Joint	2	13.3%	4	26.7%
Nuclear	13	86.7%	11	73.3%
Level of Education				
High School	7	46.7%	7	46.7%
Middle School Certificate	7	46.7%	5	33.3%
Primary	1	6.7%	3	20.0%
Occupational Status				
Employed	6	40.0%	5	33.3%
Own Business	3	20.0%	6	40.0%
Unemployed	6	40.0%	4	26.7%
Family Monthly Income				
<Rs. 9226	0	0.0%	0	0.0%
Rs. 9232-27648	15	100.0%	15	100.0%

Demographic details: Total 30 clients were enrolled in the study 15 in experimental and 15 in control group. In experimental group, 46.7% of the clients with Hypertension were females and 53.3% of them were males. In control group, 26.7% of the clients with Hypertension were females and 73.3% of them were males. In experimental group, 40% of them had age 41-50 years, 46.7% of them had age 51-60 years and 13.3% of them had age above 60 years. In control group, 40% of them had age 41-50 years, 53.3% of them had age 51-60 years and 6.7% of them had age above 60 years. In experimental group, 13.3% of them had joint family and 86.7% of them had nuclear family. In control group, 26.7% of them had joint family and 73.3% of them had nuclear family. In experimental group, 46.7% of them had high school education, 46.7% of them had middle school education and 6.7% of them had primary education. In control group, 46.7% of them had high school education, 33.3% of them had middle school education and 20% of them had primary education. In experimental group, 40% of them were employed, 20% of them had their own business and 40% of them were unemployed. In control group, 33.3% of them were employed, 40% of them had their own business and 26.7% of them were unemployed. In experimental and control group, all of them had monthly family income Rs. 9232-27648.

Table No: 2 To assess the effectiveness of lifestyle interventions among HTN clients in both the groups in Pre-test

Domain	Experimental		Control		t	df	p-value
	Mean	SD	Mean	SD			
Physical	24.0	4.2	25.0	2.7	0.1	28	0.443
Psychological	21.1	1.9	22.2	2.0	0.2	28	0.424
Social	25.0	0.0	25.0	0.0	0.0	28	0.500
Environmental	22.7	1.9	24.6	3.1	0.3	28	0.385

Researcher applied two sample t-test for the comparison of quality-of-life scores at baseline for each domain among HTN clients in both the groups.In experimental group, average physical quality of life score in pretest was 24 which was 25in control group. t-value for this test was 0.1 with 28 degrees of freedom. Corresponding p-value was large (greater than 0.05), there is no evidence against null hypothesis. The physical quality of life at baseline is not significantly different among HTN clients in experimental and control group.

In experimental group, average physical quality of life score in pretest was 21.1 which was 22.2 in control group. t-value for this test was 0.2 with 28 degrees of freedom. Corresponding p-value was large (greater than 0.05), there is no evidence against null hypothesis. The psychological quality of life at baseline is not significantly different among HTN clients in experimental and control group.

In experimental group, average social quality of life score in pretest was 25 which was 25 in control group. t-value for this test was 0 with 28 degrees of freedom. Corresponding p-value was large (greater than 0.05), there is no evidence against null hypothesis. The social quality of life at baseline is not significantly different among HTN clients in experimental and control group.

In experimental group, average environmental quality of life score in pretest was 22.7 which was 24.6 in control group. t-value for this test was 0.3 with 28 degrees of freedom. Corresponding p-value was large (greater than 0.05), there is no evidence against null hypothesis. The environmental quality of life at baseline is not significantly different among DM & HTN clients in experimental and control group.

Table No: 3 To assess the effectiveness of lifestyle interventions among HTN clients in both the groups in Post-test

Domain	Experimental		Control		t	df	p-value
	Mean	SD	Mean	SD			
Physical	57.6	4.4	25.7	3.6	4.7	28	0.000
Psychological	51.7	3.5	22.5	3.1	5.0	28	0.000
Social	67.2	10.2	31.7	10.5	4.1	28	0.000
Environmental	52.3	6.2	26.3	5.5	3.7	28	0.000

Researcher applied two sample t-test for the comparison of quality-of-life scores in posttest for each domain among HTN clients in both the groups. In experimental group, average physical quality of life score in posttest was 57.6 which was 25.7 in control group. t-value for this test was 4.7 with 28 degrees of freedom. Corresponding p-value was small (less than 0.05), the null hypothesis is rejected. The physical quality of life score in posttest is significantly more among HTN clients in experimental than in control group. In experimental group, average psychological quality of life score in posttest was 51.7 which was 22.5 in control group. t-value for this test was 5 with 28 degrees of freedom. Corresponding p-value was small (less than 0.05), the null hypothesis is rejected. The psychological quality of life score in posttest is significantly more among

MSW MANAGEMENT -Multidisciplinary, Scientific Work and Management Journal
ISSN: 1053-7899
Vol. 36 Issue 1, 2026, Pages 5328-5330

HTN clients in experimental than in control group. In experimental group, average social quality of life score in posttest was 67.2 which was 31.7 in control group. t-value for this test was 4.1 with 28 degrees of freedom. Corresponding p-value was small (less than 0.05), the null hypothesis is rejected. The social quality of life score in posttest is significantly more among HTN clients in experimental than in control group. In experimental group, average environmental quality of life score in posttest was 52.3 which was 26.3 in control group. t-value for this test was 3.7 with 28 degrees of freedom. Corresponding p-value was small (less than 0.05), the null hypothesis is rejected. The environmental quality of life score in posttest is significantly more among HTN clients in experimental than in control group.

Table No: 4 To compare the Pre-interventional and Post-interventional effectiveness of lifestyle interventions in both the groups

Domain	Experimental				t	df	p-value
	Pretest		Posttest				
	Mean	SD	Mean	SD			
Physical	24.0	4.2	57.6	4.4	21.1	14	0.000
Psychological	21.1	1.9	51.7	3.5	34.8	14	0.000
Social	25.0	0.0	67.2	10.2	16.0	14	0.000
Environmental	22.7	1.9	52.3	6.2	15.8	14	0.000

Researcher applied paired t-test for the comparison of pre-interventional and post-interventional quality-of-life scores among HTN clients in experimental group.In experimental group, average physical quality of life score in pretest was 24 which was 57.6 in posttest. t-value for this test was 21.1 with 14 degrees of freedom. Corresponding p-value was small (less than 0.05), the null hypothesis is rejected. The physical quality of life score in posttest is significantly more than that in pretest among HTN clients. Lifestyle interventions significantly improved the physical quality of life of HTN clients.In experimental group, average psychological quality of life score in pretest was 21.1 which was 51.7 in posttest. t-value for this test was 34.8 with 14 degrees of freedom. Corresponding p-value was small (less than 0.05), the null hypothesis is rejected. The psychological quality of life score in posttest is significantly more than that in pretest among HTN clients. Lifestyle interventions significantly improved the psychological quality of life of HTN clients.In experimental group, average social quality of life score in pretest was 25 which was 67.2 in posttest. t-value for this test was 16 with 14 degrees of freedom. Corresponding p-value was small (less than 0.05), the null hypothesis is rejected. The social quality of life score in posttest is significantly more than that in pretest among HTN clients. Lifestyle interventions significantly improved the social quality of life of HTN clients.In experimental group, average environmental quality of life score in pretest was 22.7 which was 52.3 in posttest. t-value for this test was 15.8 with 14 degrees of freedom. Corresponding p-value was small (less than 0.05), the null hypothesis is rejected. The environmental quality of life score in posttest is significantly more than that in pretest among HTN clients. Lifestyle interventions significantly improved the environmental quality of life of HTN clients.

Table No: 5 To determine the effectiveness of lifestyle interventions on HTN Clients

Domain	Experimental		Control		t	df	p-value
	Mean	SD	Mean	SD			
Physical	33.6	6.2	1.7	4.7	19.4	28	0.000
Psychological	30.6	3.4	1.4	3.7	30.7	28	0.000
Social	42.2	10.2	6.7	10.5	11.3	28	0.000
Environmental	29.6	7.3	3.5	5.9	12.5	28	0.000

Researcher applied two sample t-test for the comparison of effectiveness of community-based nursing intervention strategies on Quality of Life among clients with HTN.In experimental group, average increase in physical quality of life score in experimental group was 33.6 which was 1.7 in control group. t-value for this test was 19.4 with 28 degrees of freedom. Corresponding p-value was small (less than 0.05), the null hypothesis is rejected. Average increase in physical quality of life in experimental group was significantly higher than that in control group. Lifestyle interventions significantly improved the physical quality of life of HTN clients.In experimental group, average increase in psychological quality of life score in experimental group was 30.6 which was 1.4 in control group. t-value for this test was 30.7 with 28 degrees of freedom. Corresponding p-value was small (less than 0.05), the null hypothesis is rejected. Average increase in psychological quality of life in experimental group was significantly higher than that in control group. Lifestyle interventions significantly improved the psychological quality of life of HTN clients.In experimental group, average increase in social quality of life score in experimental group was 42.2 which was 6.7 in control group. t-value for this test was 11.3 with 28 degrees of freedom. Corresponding p-value was small (less than 0.05), the null hypothesis is rejected. Average increase in social quality of life in experimental group was significantly higher than that in control group. Lifestyle interventions significantly improved the social quality of life of HTN clients.In experimental group, average increase in environmental quality of life score in experimental group was 29.6 which was 3.5 in control group. t-value for this test was 12.5 with 28 degrees of freedom. Corresponding p-value was small (less than 0.05), the null hypothesis is rejected. Average increase in environmental quality of life in experimental group was significantly higher than that in control group. Lifestyle interventions significantly improved the environmental quality of life of HTN clients.

Discussion

The findings demonstrate that structured lifestyle interventions significantly improved blood pressure control among hypertensive patients in rural areas. Behavioral modifications such as salt restriction, regular physical activity, and stress management played a crucial role in reducing systolic and diastolic blood pressure. These findings support previous evidence that nurse-led, community-based lifestyle programs are effective in managing hypertension in resource-limited rural settings.

References

1. Massimi A, De Vito C, Brufola I, Corsaro A, Marzuillo C, Migliara G, Rega ML, Ricciardi W, Villari P, Damiani G. Are community-based nurse-led self-management support interventions effective in chronic patients? Results of a systematic review and meta-analysis. PloS one. 2017 Mar 10;12(3):e0173617.
2. Coburn KD, Marcantonio S, Lazansky R, Keller M, Davis N. Effect of a community-based nursing intervention on mortality in chronically ill older adults: a randomized controlled trial. PLoS medicine. 2012 Jul 17; 9(7):e1001265.
3. Hunt R. Introduction to community-based nursing. Lippincott Williams & Wilkins; 2009.
4. Deal LW. The effectiveness of community health nursing interventions: a literature review. Public Health Nursing. 1994 Oct;11(5):315-23.
5. Joo JY, Huber DL. An integrative review of nurse-led community-based case management effectiveness. International Nursing Review. 2014 Mar; 61(1):14-24.
6. Brownstein JN, Chowdhury FM, Norris SL, Horsley T, Jack Jr L, Zhang X, Satterfield D. Effectiveness of community health workers in the care of people with hypertension. American journal of preventive medicine. 2007 May 1; 32(5):435-47.