

# Evaluation Dietary Sodium and Potassium Effects on Blood Pressure in Women Mirpur AJK

Dietary Sodium and Potassium Effects on Blood Pressure

Saeed Ahmed<sup>1</sup>, Khuram Shahzad Khan<sup>2</sup>, Burhan ul Haq Muhammad Saqib<sup>1</sup>, Muhammad Shoaib<sup>3</sup>, Shahzeb Saeed<sup>5</sup> and Asnad<sup>4</sup>

## ABSTRACT

**Objective:** The objective of this study to evaluate dietary sodium and potassium effects on blood pressure in women Mirpur AJK.

**Study Design:** Cross sectional study

**Place and Duration of Study:** This study was conducted at the Department of KIC, Physiology and Biochemistry Mirpur Azad Jammu and Kashmir from January, 2020 to July, 2021 for a period of one and a half year.

**Materials and Methods:** We select 210 women from Mirpur AJK and their blood pressure was assessed both systolic and diastolic pressure. We take history from women and those women take more sodium as compare potassium in their diet placed in Group A and those women take more potassium as compare to sodium in their diet placed Group B.

**Results:** Those women whose take sodium more in their diet their blood pressure was higher that as Systolic BP - 24 hours is (139.9 + 9.2 mmHg) and Diastolic BP - 24 hours is 88.6 + 5.9 mmHg, Those women who take Potassium higher as compare to sodium in their diet, their blood pressure is lower which is Systolic BP - 24 hours 123.4 + 6.3(mmHg) and Diastolic BP - 24 hours 80. 9 + 6.5 mmHg.

**Conclusion:** Sodium salt consumption in diet increased blood pressure with adverse effect in women and potassium salt intake in diet decrease blood pressure in women. There is recommended that women should take potassium containing diet.

**Key Words:** Dietary Sodium, Dietary Potassium, Blood Pressure

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## INTRODUCTION

Sodium is important for fluid balance and cellular homeostasis. Homeostasis defines the role of sodium in fluid matrix of the body.<sup>1</sup> For homeostasis quantity of sodium is required associated with intake of sodium at optimum level.<sup>2</sup> BP replies to changes in dietary sodium vary widely, foremost to the perception of salt-sensitive (SS) BP.<sup>3,4</sup> Those person who eat sodium per day more than (6.0g) they are at the risk of taking of hypertension.<sup>5,6</sup>

Result showed special effects of dietary sodium on blood pressure have also produced opposing results,

<sup>1</sup>. Department of Cardiology / Physiology<sup>2</sup> / Community Medicine<sup>3</sup> / Biochemistry<sup>4</sup>, Mohtarma Benazir Bhutto Shaheed Medical College, Mirpur, AJK.

<sup>5</sup>. Research Scholar, Army Medical College, Rawalpindi.

Correspondence: Dr. Asnad, Associate Professor of Biochemistry, Mohtarma Benazir Bhutto Shaheed Medical College, Mirpur, AJK.

Contact No: 0332-3698204

Email: drasnadkhan@gmail.com

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while current indication proposes that most BP upsurges are related with sodium consumptions of more sodium.<sup>7</sup> The connection among families and minors is mainly unexamined.<sup>8</sup> Numerous of scientific research designate that cumulative consumption potassium decreases BP in hypertensive grown-ups.<sup>9,10</sup> However, inhabitants-based research has unsuccessful to demonstration such an connotation.<sup>11</sup> In younger populations research showed that potassium effect are limited and restricted.<sup>12</sup> The objective of this study to evaluate effect on blood pressure after intake dietary sodium and potassium in women Mirpur AJK.

## MATERIALS AND METHODS

This cross-section study was directed in department of KIC, Physiology and Biochemistry Mirpur Azad Jammu and Kashmir from January 2020 to July 2021 after approval from hospital ethical committee. We select 210 women from Mirpur AJK and their blood pressure was assessed both systolic and diastolic pressure. We take history from women and those women take more sodium as compare potassium in their diet placed in Group A and those women take more potassium as compare to sodium in their diet placed Group B. We check their blood pressure at least six weeks in KIC Mirpur AJK.

**Statistical Analysis:** SPSS for Windows version 20 (SPSS, Inc., Chicago, IL, USA) was employed for all statistical analyses.

## RESULTS

We select 210 women for sodium and potassium diet from Mirpur AJK and their blood pressure was analyzed. Those women whose take sodium more in their diet their blood pressure was higher that as Systolic BP - 24 hours is (139.9 + 9.2 mmHg) and Diastolic BP - 24 hours is 88.6 + 5.9 mmHg, those women who take Potassium higher as compare to sodium in their diet, their blood pressure is lower which is Systolic BP - 24 hours 123.4 + 6.3(mmHg) and Diastolic BP - 24 hours 80. 9 + 6.5 mmHg. We take blood samples from both groups women and analyzed the samples on micro lab 300 for serum lipid profile. (Cholestol, HDL, LDL, VLDL and Triglyceride). For the study we use kits made of Merck Pvt.

**Table No.1: Participant characteristics of women**

	(n=105) Dietary sodium	(n=105) Dietary potassium
Age (years)	30.4 ± 6.2	30.7 ± 7.6
Female (%)	70	30
Body weight (Kg)	68.1 ± 11.4	74.4 ± 11.5
BMI (kg/m <sup>2</sup> )	25.3 ± 2.6	25.4 ± 2.7
SBP sitting (mmHg)	138.9 ± 7.2	135.4 ± 7.3
DBP sitting (mmHg)	84.6 ± 6.7	85. 7 ± 5.7

**Table No.2: Ambulatory blood pressure monitoring. Mean values of blood pressure in women**

(n=105) Dietary sodium Women	(n=105) Dietary potassium Women
Systolic BP - 24 hours (mmHg)	Systolic BP - 24 hours (mmHg)
139.9 + 9.2	123.4 + 6.3
Diastolic BP - 24 hours (mmHg)	Diastolic BP - 24 hours (mmHg)
88.6 ± 5.9	80. 9 ± 6.5

**Table No.3: Biochemical profile of women**

(n=105) Dietary sodium	(n=105) Dietary potassium
Fasting Blood Glucose(mg/dl)	
132.8 ± 4.2	98.4 ± 4.9
Total Cholesterol (mg/dl)	
245. ± 12.8	192.6 ± 30.5
LDL (mg\dl)	
127.8 ± 22.5	116.5± 18.5
HDL (mg\dl)	
57. ± 8.5	42.5 ± 9.2
Triglycerides (mg\dl)	
179.2 ± 32.5	143.3 ± 31.2

## DISCUSSION

(Na) was unconnected to blood pressure variations through puberty, although amongst contributors with consumptions (4000mg/d) and more. Numerous research on children and minors have observed blood pressure and sodium intake, counting an previous research that create no strong connotation among girls .<sup>13</sup>Sodium is important for fluid balance and cellular homeostasis. Homeostasis define the role of sodium in fluid matrix” of the body .For homeostasis quantity of sodium is required associated with intake of sodium at optimum level.<sup>2</sup>BP replies to changes in dietary sodium vary widely, foremost to the perception of salt-sensitive (SS) BP. Those person who eat sodium per day more than (6.0g) they are at the risk of taking of hypertension Result showed special effects of dietary sodium on blood pressure have also produced opposing results, while current indication proposes that most BP upsurges are related with sodium consumptions of more sodium .<sup>7</sup> The connection among families and minors is mainly unexamined .<sup>8</sup>Numerous of scientific research designate that cumulative consumption potassium decreases BP in hypertensive grown ups. However, inhabitants-based research has unsuccessful to demonstration such an connotation.<sup>11</sup> In younger populations research showed that potassium effect are limited and restricted. This cross section study was directed in department of KIC, Physiology and Biochemistry Mirpur Azad Jammu and Kashmir from January 2020 to July 2021 after approval from hospital ethical committee. We select 210 women from Mirpur ajk and their blood pressure was assessed both systolic and diastolic pressure. We take history from women and those women take more sodium as compare potassium in their diet placed in Group A and those women take more potassium as compare to sodium in their diet placed Group B. We check their blood pressure at least six weeks in KIC Mirpur AjkConsequences from dissimilar research stages in (NH and NE) Examination result have been mutable.<sup>14,15</sup> Research data across numerous survey stages found that advanced sodium consumptions were related with advanced occurrence of raised Blood pressure.<sup>16</sup> We select 210 women for sodium and potassium diet from Mirpur ajk and their blood pressure was analyzed. Those women whose take sodium more in their diet their blood pressure was higher that as Systolic BP - 24 hours is (139.9 + 9.2 mmHg) and Diastolic BP - 24 hours is 88.6 + 5.9 mmHg, Those women who take Potassium higher as compare to sodium in their diet, their blood pressure is lower which is Systolic BP-24 hours 123.4 + 6.3(mmHg) and Diastolic BP-24 hours 80. 9 + 6.5 mmHg. We take blood samples from both groups women and analyzed the samples on Microlab 300 for serum lipid profile. (Cholestol, HDL, LDL, VLDL and Triglyceride). For

the study we use kits made of Merck Pvt. One research showed that SBP augmented by (0.4mmHg) for each-day upsurge in sodium consumption.<sup>17</sup> The result showed that potassium concentration and intake short and little effect on blood pressure as sodium intake or consumption in diet.<sup>18</sup> In study in boarding schools sodium consumption decrease blood pressure (1.7-mm Hg and 1.5-mm Hg) with decrease 15% to 20% sodium consumption.

## CONCLUSION

Sodium salt consumption in diet increased blood pressure with adverse effect in women and potassium salt intake in diet decrease blood pressure in women. There is recommended that women should take potassium containing diet.

### Author's Contribution:

Concept & Design of Study: Saeed Ahmed  
 Drafting: Khuram Shahzad Khan,  
 Burhan ul Haq  
 Muhammad Saqib  
 Data Analysis: Muhammad Shoab,  
 Shahzeb Saeed, Asnad  
 Revisiting Critically: Saeed Ahmed, Khuram  
 Shahzad Khan  
 Final Approval of version: Saeed Ahmed

**Conflict of Interest:** The study has no conflict of interest to declare by any author.

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