iCirculation
https://www.sciltp.com/journals/icirculation

Supplementary Materials

Effect of Urinary Sodium-to-Potassium Ratio Monitored Intensive Salt Reduction Intervention in Community Hypertensive Patients: Cluster Randomized Controlled Trial

Rui Guo [1,†], Junli Tang [2,†], Danru Liu [2], Jie Ren [2], Genzhao Yang [3], Jing Dong [2], Xiaolei Guo [4,*] and Bingyin Zhang [2,*]

[1] Yantai Center for Disease Control and Prevention, Yantai 264003, China
[2] Department for Chronic and Non communicable Disease Control and Prevention, Shandong Center for Disease Control and Prevention, Jinan 250014, China
[3] Department for Prevention Health Care, Liangcheng New Village Sub-District Community Health Service Center, Shanghai 200343, China
[4] Shandong Center for Disease Control and Prevention, and Academy of Preventive Medicine, Shandong University, Jinan 250014, China
* Correspondence: guoxiaolei@126.com (X.G.); 13153785152@163.com (B.A.); Tel.: 0531-8267-9690 (X.G.); +86-188-5317-8682 (B.A.)
† These authors contributed equally to this work.

How To Cite: Guo, R.; Tang, J.; Liu, D.; et al. Effect of Urinary Sodium-to-Potassium Ratio Monitored Intensive Salt Reduction Intervention in Community Hypertensive Patients: Cluster Randomized Controlled Trial. *Applied Energy Science* **2026**, *1*(2), 11. https://doi.org/10.53941/icirculation.2026.100011

Table S1. Baseline characteristics of dietary survey participants.

Characteristics	Control (n = 33)	Low-Intensity Intervention (n = 35)	High-Intensity Intervention (n = 30)	*p*-Value
Age (year), Mean (SD)	60.55 (5.39)	59.74 (7.61)	63.90 (5.60)	0.025
BMI(kg/m^2), Mean (SD)	27.49 (3.83)	27.48 (2.80)	26.82 (4.17)	0.701
Men, n (%)	7 (21.2)	14 (40.0)	10 (33.3)	0.243
Education status, n (%)				
Primary school and less	25 (75.8)	24 (68.6)	22 (73.3)	0.287
Junior high school	7 (21.2)	8 (22.9)	3 (10.0)	
High school and above	1 (3.0)	3 (8.6)	5 (16.7)	
Smokers, n (%)	2 (6.1)	8 (22.9)	3 (10.0)	0.102
Alcohol drinkers, n (%)	5 (15.2)	5 (14.3)	2 (6.7)	0.532
Moderate and above Physical activity, n (%)	13 (39.4)	7 (20.0)	4 (13.3)	0.067
Diabetes, n (%)	11 (33.3)	10 (28.6)	6 (20.0)	0.490
Dyslipidemia, n (%)	17 (51.5)	23 (65.7)	22 (73.3)	0.186
Salt taste preference, n (%)				0.603
Low	10 (30.3)	13 (37.1)	8 (26.7)	
Moderate	16 (48.5)	13 (37.1)	11 (36.7)	
high	7 (21.2)	9 (25.7)	11 (36.7)	
Take hypertension medication, n (%)	31 (93.9)	29 (82.9)	29 (96.7)	0.118
History of cardiovascular diseases, n (%)	10 (30.3)	6 (17.1)	8 (26.7)	0.427

Table S2. Results for Salt intake from multivariable-adjusted models.

	Control			Low-Intensity Intervention					High-Intensity Intervention				
	Baseline Mean (SD) (n = 33)	**12-Month Mean (SD) (n = 33)**	**Change from Baseline (*β*, 95% CI)**	**Baseline Mean (SD) (n = 35)**	**12-Month Mean (SD) (n = 33)**	**Change from Baseline (*β*, 95% CI)**	**Adjust Difference * (*β*, 95% CI)**	***p*-Value**	**Baseline Mean (SD) (n = 30)**	**12-Month Mean (SD) (n = 29)**	**Change from Baseline (*β*, 95% CI)**	**Adjust Difference * (*β*, 95% CI)**	***p*-Value**
Salt intake (g/d)	7.58 (2.48)	7.18 (2.40)	−0.40 (−1.54,0.73)	8.60 (3.41)	5.41 (2.05)	−3.20 (−4.31, −2.06)	−2.78 (−4.30, −1.26)	<0.001	8.12 (2.41)	4.74 (1.43)	−3.39 (−4.59, −2.18)	−2.98 (−4.56, −1.41)	<0.001

Model-based change for Salt intake, sodium-to-potassium ratio, and blood pressure were adjusted for age, BMI, sex, education level, physical activity, drink status, smoke status, diabetes, dyslipidemia, Salt taste preference, take hypertension medication and history of cardiovascular diseases. * Results were obtained from mixed linear model, the "Adjusted Difference" is the estimate for the group × time interaction term, reflecting the net effect of the intervention from baseline to the final assessment.

Table S3. Results for Salt intake from multivariable-adjusted models by subgroup.

	Salt Intake	
	Intervention Effect * (Low-Intensity Intervention vs. Control, *β*, 95% CI)	**Intervention Effect * (High-Intensity Intervention vs. Control, *β*, 95% CI)**
Age(years)		
<60	−3.68 (−5.80, −1.55)	−3.71 (−6.76, −0.66)
≥60	−1.86 (−3.85, 0.13)	−2.86 (−4.66, −1.06)
P for interaction	0.250	0.644
Gender		
Male	−1.80 (−3.88, 0.28)	−3.27 (−5.51, −1.03)
Female	−3.22 (−5.15, −1.30)	−2.73 (−4.64, −0.81)
P for interaction	0.408	0.758
Good blood perssure control		
No	−2.40(−4.23, −0.58)	−2.05(−3.85, −0.26)
Yes	−4.51(−6.71, −2.31)	−5.87(−8.31, −3.43)
P for interaction	0.225	0.038
The degree of hypertenion		
Grade 1	−3.35(−5.08, −1.62)	−3.33(−5.06, −1.59)
Grade 2 and Grade 3	−1.52(−3.37,0.33)	−2.20(−4.46,0.06)
P for interaction	0.255	0.548

Model-based change for Salt intake, sodium-to-potassium ratio, and blood pressure were adjusted for age, BMI, sex, education level, physical activity, drink status, smoke status, diabetes, dyslipidemia, Salt taste preference, take hypertension medication and history of cardiovascular diseases. * Results were obtained from mixed effect logistic regression model, the "Intervention Effect" is the estimate for the group × time interaction term, reflecting the net effect of the intervention from baseline to the final assessment.