

ISSN-0976-0245 (Print) • ISSN-0976-5506 (Electronic)

Volume 10

Number 11

November 2019



# Indian Journal of Public Health Research & Development

An International Journal

## SCOPUS IJPHRD CITATION SCORE

Indian Journal of Public Health Research and Development  
Scopus coverage years: from 2010 to 2017 Publisher:  
R.K. Sharma, Institute of Medico-Legal Publications  
ISSN:0976-0245E-ISSN: 0976-5506 Subject area: Medicine:  
Public Health, Environmental and Occupational Health  
CiteScore 2015-0.02  
SJR 2015-0.105  
SNIP 2015-0.034



Website:

[www.ijphrd.com](http://www.ijphrd.com)

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**Print-ISSN:** 0976-0245-**Electronic-ISSN:** 0976-5506, Frequency: Quarterly  
(Four issues per volume)

**Indian Journal of Public Health Research & Development** is a double blind peer reviewed international journal. It deals with all aspects of Public Health including Community Medicine, Public Health, Epidemiology, Occupational Health, Environmental Hazards, Clinical Research, and Public Health Laws and covers all medical specialties concerned with research and development for the masses. The journal strongly encourages reports of research carried out within Indian continent and South East Asia.

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## Printed, published and owned by

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309. Evaluation of Correlation between Chronological Age and Delayed Eruption in Down Syndrome: An Original Research .....1387  
*Satyabrata Patnaik, Swati Saraswata Acharya, Sobhan Mishra, Abhik Sinha, Payada Patnaik, Amrita Sahu*
310. Storage Media to Preserve the Avulsed Tooth .....1391  
*Susant Mohanty, Antarmayee Panigrahi*
311. Fundamentals of the Research Question/ Hypothesising the Research Question .....1395  
*Swati Patnaik, Shakti Swaroop*
312. Comparing the Anti-Plaque and Anti-Gingival Effectiveness of Punica Granatum and Chlorhexidine Containing Mouthwash: A Single Blinded Randomized Clinical Trial .....1399  
*A. Ashwatha Pratha, Jayashri Prabakar*
313. Adherence of Hypertension Drugs among 30 Years and above Age Group Urban Population of Eluru, India .....1406  
*Ratna Balaraju, K. Chandra Sekhar, Shatrughna Bhayya*
314. A Study on Attitude of Female Teachers Towards Inclusive Education with Special Reference to Schools in Chennai District .....1411  
*K. Kalaiselvi, M. Vetrivel*
315. A Descriptive Study to Assess the knowledge on Fertility and Infertility among Adolescent Girls in a Selected College at Kanchipuram District Tamil Nadu, India .....1416  
*R. Renuga, R. Vaishnavi, S. Saritha, K. Vanitha*
316. The Effectiveness of Gymnastics of the Elderly to Decrease the Blood Pressure of the Elderly in the Elderly Health Care Werda Tama (PLWT) Wayut, Jiwan, Madiun.....1419  
*Karina Nur Ramadhanintyas., Hari Basuki Notobroto, Rachmah Indawati*
317. A Descriptive Study on Practice of Self Medication in Urban Field Practice Area of Perambalur Municipality, Tamilnadu, India .....1422  
*Karthikeyan K., Tamilarasan M., Rock Britto*
318. Prevalence and Determinants of Depression among the Elderly in Rural Field Practice Area of a Medical College in Perambalur District, Tamilnadu: A Cross-Sectional Study .....1428  
*Karthikeyan K., Sriandaal V, Tamilarasan M.*
319. Lumbosacral MRI Findings in Chronic Lower Back Pain .....1434  
*Kermanj Ismail Bakr, Israa Mohammed Sadiq*
320. Spatial Association Patterns of Geographic Factors and Opisthorchis Viverrini Infection in the Northeast of Thailand .....1440  
*Kittipong Sornlorm, Wongs Loahasiriwong*
321. CT Guided Radiofrequency Ablation of Osteoid Osteoma .....1445  
*Muruges E., Devimeenal J., Krishna Prasanth B., Pavan Kumar N.*
322. Factors Affecting the Unmet Dental Needs and Dental Service Utilisation among Urban Slum Dwellers of Chennai City, India .....1451  
*Lakshmi Krishnan, Arthi Balasubramaniam, Kiran Iyer, P.D. Madan Kumar*

# The Effectiveness of Gymnastics of the Elderly to Decrease the Blood Pressure of the Elderly in the Elderly Health Care Werda Tama (PLWT) Wayut, Jiwan, Madiun

Karina Nur Ramadhanintyas<sup>1,2</sup>, Hari Basuki Notobroto<sup>3</sup>, Rachmah Indawati<sup>3</sup>

<sup>1</sup>Student Master of Public Health at Airlangga University Surabaya, <sup>2</sup>STIKES Bhakti Husada Mulia Madiun, East Java, <sup>3</sup>Departement of Biostatistics, Faculty of Public Health, Airlangga University Surabaya, Indonesia

## Abstract

**Introduction:** one of the indicators of success in development is the increasing life expectancy age. Some studies of the elderly are actively moving and exercising more is healthy and has a lower risk for chronic diseases. Elderly exercise be one way for the elderly to move the body so that blood pressure is always controlled.

**Objective:** to know the effect of gymnastics on blood pressure in elderly in the Elderly health care Werda Tama (PLWT) Wayut, Jiwan, Madiun.

**Method:** this research is Quasi Experiment with design one group pretest-posttest. The sample in this study, 21 people were taken by random.

**Results:** The test Results of the Paired T Test to compare blood pressure before and after treatment (gymnastics seniors) obtained a value of 0,018 means that elderly exercise is effective for lowering blood pressure elderly.

**Conclusion:** Elderly exercise can lower blood pressure. For further research using a sample of more with research method case control.

**Keyword:** *Elderly, gymnastics, one group pretest-posttest.*

## Introduction

One of the indicators of success in development is the increasing life expectancy age. Bureau of the census USA issued a report the demographic data of the population international, that Indonesia is no year 1990-2025 will have a rise in the number of elderly by 414%<sup>[1]</sup>. Elderly bring the consequences of the rising variety of cardiovascular diseases. A disease that is often experienced by the elderly is blood pressure<sup>[2]</sup>.

Handling health problems regarding blood pressure can be classified into the handling of nonpharmacologic

and pharmacologic. Administration of antihypertensive drugs in a long period of time will cause side effects. Because the onset of side effects such handling of non farmakologis highly recommended way of weight loss restrictions on tobacco and alcohol, physical exercise and relaxation<sup>[3]</sup>.

Physical exercise for seniors one of which is the gymnastics of the elderly which is the handling of non-pharmacological recommended. <sup>[4]</sup>, in his research if the elderly exercise done regularly can prevent loss of functional diakibatkan olehpenakit cardiovascular. Other benefits of elderly exercise that lower blood pressure, lose weight and strengthen the muscles of the heart<sup>[5]</sup>.

This research can provide benefits in the field of nursing to improve and maintain the health of the cardiovascular in the elderly with use handling of non-pharmacological that does not harm the environment health.

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### Corresponding Author:

**Hari Basuki Notobroto**

Departement of Biostatistics, Faculty of Public Health, Airlangga University Surabaya, Indonesia, 60115, e-mail: haribasuki.n@fkm.unair.ac.id

### Method

This type of research is quantitative using the method of experimental design with one group pretest-posttest. The population of research are the elderly in the Elderly health care Werda of All the Village Wayut Kecamatan Jiwan, Madiun Regency. The sample in this study as many as 21 people.

Elderly every morning at 09.00 PM for 7 days taken blood pressure data, then given treatment gymnastics for 15 minutes and wait 30 minutes then (09.45 WIB) rechecked blood pressure after treatment gymnastics.

### Results

Elderly health care Werda Tama (PLWT) one of the elderly health care under the auspices of the health center Klagenserut Jiwan Madiun. PLWT is the integrated service post for the elderly in the Village Wayut, which is driven by the community (cadres).

**Table 1: Characteristics of study respondents in PLWT Wayut, Jiwan, Madiun February 2019**

No	Characteristic	Frequency	Percentage
1	Age		
	60-64	13	61,9
	65-69	7	33,3
	70-75+	1	4,8
<b>Total</b>		<b>21</b>	<b>100</b>
2	Gender		
	Men	3	14,3
	Women	18	85,7
<b>Total</b>		<b>21</b>	<b>100</b>

No	Characteristic	Frequency	Percentage
3	Body Mass Index		
	Less (<18,5)	3	14,3
	Normal (18,5-25)	12	57,1
	Excess (>25)	6	28,6
<b>Total</b>		<b>21</b>	<b>100</b>

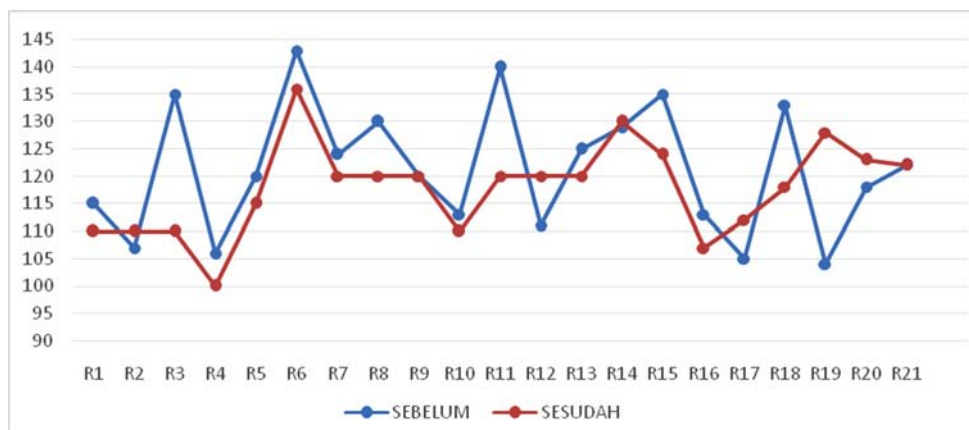
Normality test Shapiro-wilk with  $\alpha=0,05$ . Distribution of Data is normal if  $p\text{-value} > \alpha$  and the data is not normally distributed if  $p\text{-value} < \alpha$ . The results of the normality distribution of data is normal that data blood pressure pre-test value  $p\text{-value} 0,503$  and blood pressure post-test value  $p\text{-value} 0,651$ .

Table 2 Analysis of the Blood Pressure Systole before and after a given treatment elderly exercise on the respondents in the PLWT Wayut Jiwan, Madiun Februari 2019.

Variable		Mean	Min-Max	p-value	$\alpha$
Pre-test	Sistole	121,33 mmHg	104-143 mmHg	0,018	5%
Post-test	Sistole	117,85 mmHg	100-136 mmHg		

Table 2 above shows the results of paired t test with  $p\text{-value} 0,018$  these results suggest treatment elderly exercise is effective for lowering blood pressure systole respondents. As illustrated in the following chart :

Picture 1 the results of the blood pressure systole of the elderly before and after the gymnastics of the elderly on the respondents in the PLWT Wayut Jiwan, Madiun February 2019



### Discussion

The results of the analysis in table 2 shows that the average blood pressure systole of the respondents before

treatment (pre-test) 121,33 mmHg. To get blood pressure stable handling that is done to the respondents in the tudy this is the gymnastics of the elderly<sup>[3]</sup>. And the results of

the average blood pressure systole of respondents after treatment (post-test) 117,85 mmHg.

This study consisted of 18 female respondents and 3 male respondents and it turns out that gender did not influence the treatment given to the response of the body, in accordance with research [6] in Australia which states that gender affects the risk of incidence of hypertension but not with response to treatment in lowering blood pressure.

This study describes elderly exercise can lower blood pressure, koesterol, weight and maximize oxygen intake, muscle mass, total body potassium er fat-free soft tissue, and body fat [7]. And also the results of the research [8] in Korea which provide aerobic exercise there are elderly women, that aerobic axercise does not give the changes in left ventricular function but showed a positive influence on the body, namely the absorption of oxygen and fat to the maximum. [9] Prove excercise affect parasypatic cardiac control by means of the affect insulin sensitivity and glucose metabolism secondary, so that can reduce arterial stiffness and arteriosclerosis that will facilitate blood flow and lower blood pressure.

## CONCLUSION

Elderly exercise is effective in lowering the blood pressure with the difference in blood pressure systole before and after a given treatment (p-value 0,018) with  $\alpha=0,05$ . Changes in blood pressure systole what happens is the average before treatment elderly exercise 121,33 mmHg decreased to 117,85 mmHg.

Other researchers are advised to develop gymnastics for the elderly and other method to lower blood pressure which is optimal.

**Acknowledgments:** This article is part of thesis in the Education of Public Health, AIRLANGGA university, Indonesia. We are grateful to the individuals who participated in this project.

**Conflict of Interest:** The author states that there is no conflict of interest regarding the publication of this article

**Source of Funding:** This work was financially supported by STIKES Bhakti Husada Mulia Madiun, East Java, Indonesia.

**Ethical Clearance:** This study was approved by the Ethical Commission of Health Reserch, number 261/HRECC.FODM/V/2019, Faculty of Dental Medicine, University of Airlangga, Surabaya.

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