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Virtual Conference:  
5 December 2023  
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# JICRISD 2023

**Jakarta International Conference on Research Innovation  
and Sustainable Development**

Theme: "Addressing the Environmental Impact on Human Health:  
Climate Change and Natural Disasters"

## Analysis of Endorphin Exercise in Controlling Blood Pressure

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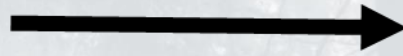
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# BACKGROUND

**Exercise**



**Endorphin**



**Blood Pressure**

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# SUBJECTS AND METHOD



## Subjects

- One Group pre-test post-test
- Random sample 16 people with hypertension
- Limo Community Health Center, Depok, West Java



## Method

- Quasi experimental study
- Dependent: blood pressure  
Independent: endorphine exercise
- Blood pressure → sphygmomanometer
- Analyzed using paired t-test

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# RESULT

	<b>N</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Mean</b>	<b>Std. Deviation</b>	<b>Saphiro-Wilk</b>	<b>P-value*</b>
TD_sistolik_1	16	138	213	156.25	20.821	0.002	0.975
TD_sistolik_2	16	131	220	153.63	19.466	0.000	
TD_diastolik_1	16	80	150	101.13	14.742	0.000	0.844
TD_dastolik_2	16	80	152	99.81	15.074	0.000	

\* Wilcoxon

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# CONCLUSION

There was not significant relationship between endorphins exercises and blood pressure of hypertensive patients

- Hypertension related hypalgesia → circulating plasma endorphin levels were correlated with pain treshold → plasma endorphins may link the pain perception pattern to blood pressure levels
- ✓ Researchers can't monitored directly the techniques are done correctly or not based on instruction, yet the cadres do
- ✓ Researchers can't be measured directly duration of each techniques, yet cadres do
- ✓ 88% of repondents didn't to the endorphine exercise regularly, it should be done regularly to get significant result



# Research Limitations

- Exercise-related behaviors, including:
  - ✓ Forms and duration
  - ✓ Blood pressure control in hypertensive patients require proactive cadres to routinely assess the patient's blood pressure.
  - ✓ To produce a better output, the exercise program may have to be conducted longer if the average systolic and diastolic blood pressure is still high

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