

Effects of Diaphragmatic Breathing Exercise on Blood Pressure and Heart Rate in Prehypertensive Clients at Universitas Advent Indonesia

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Abstract

Elevated blood pressure is a progressive condition. A preliminary study was conducted and revealed that there is a potential for elevated blood pressure in students at Universitas Advent Indonesia. The purpose of this study was to determine whether there is a change in blood pressure and heart rate in clients with elevated blood pressure before and after diaphragmatic breathing exercise. This study used an interrupted time series design with multiple treatment replications. Respondents were selected by purposive sampling. A total of 17 respondents participated in this study. Systolic blood pressure (SBP), diastolic blood pressure (DBP), and heart rate were measured before and after the diaphragmatic breathing exercise (DBE) for five days. Data was calculated using repeated measures analysis of variance. The results showed that there are significant differences ($p < .05$) in SBP and DBP after performing diaphragmatic breathing exercise, while there is an insignificant difference ($p > .05$) of heart rate before and after diaphragmatic breathing exercise. The DBE was effective in decreasing systolic and diastolic blood pressure among prehypertensive clients. Recommendation for further research is to study the effects of other breathing exercises, such as pursed lip breathing, on blood pressure and heart rate.

Keywords: diaphragmatic breathing exercise, elevated blood pressure, heart rate