

CHAPTER 1

INTRODUCTION

1.1 Background

According to the data of Riskesdas (Riset Kesehatan Dasar) 2018, Indonesian Citizens who do light physical activity (less than 150 minutes/week of activity) is approximately only 26.1% nationwide. For the East Java population, the percentage is 21.3%. This number may indicate that only about a quarter of Indonesian Citizens maintain their health by doing light physical activity – leaving the $\frac{3}{4}$ of the population.

Physical inactivity (lack of physical activity) has been identified as the fourth leading global mortality risk factor (6 percent of deaths worldwide). In addition, physical inactivity is estimated to be the main cause of approximately 21–25 percent of breast and colon cancers, 27 percent of diabetes, and approximately 30 percent of the burden of ischaemic heart disease (World Health Organization, 2019). Physical inactivity may also result in a variety of detrimental effects, such as: muscle atrophy & joint pain, weight gain, quick loss of breath, constipation, increased visceral fat, cardiac decline, and depression.

Exercise is any bodily activity that maintains or enhances physical fitness and overall health and wellness (Kylasov A, Gavrov S, 2011). Physical exercises are generally grouped into three types, depending on the overall effect they have on human body. There are aerobic exercise, anaerobic exercise, and flexibility exercise. Anaerobic exercise, which includes strength and resistance training, can strengthen, firm, and increase muscle mass, as well as improve bone density,

balance, and coordination (National Institutes of Health, National Heart, Lung, and Blood Institute 2006). Yoga does count as a strengthening exercise, and at least 2 sessions per week will help to meet the guidelines on muscle-strengthening activities (National Health Service, 2021). Yoga is an alternative and ancient form of physical activity which may help in achieving recommended levels of physical activity for some individuals. Yoga may be well known as an alternative to traditional aerobic and strength training programs because it requires only little space, almost no equipment, has very limited harmful side effects and, with its aim on relaxation, body awareness, and meditation, provides a qualitatively different exercise experience which may be perceived as less strenuous and more pleasurable for some individuals (Hagins et al 2007).

Based on the above reasons, the author finds it important to do research about Effects of Hatha Yoga on lung function, oxygen saturation, and heart rate. The author hopes that this research can help the participants and the advancement of medical knowledge.

1.2 Research Questions

Is there an increase of lung function on people who do Hatha Yoga and is there a change of oxygen saturation, heart rate, and hemoglobin on people who do Hatha Yoga?

1.3 Research Purpose

1.3.1 General Purpose

To learn the effects of Hatha Yoga Exercise to peripheral oxygen saturation, blood hemoglobin level, heart rate, and lung function

1.3.2 Specific Purpose

To learn the increase of lung function and the change of oxygen saturation, heart rate, and hemoglobin on people who do Hatha Yoga

1.4 Research Benefit

1.4.1 Academic Benefit

Through this research is expected to know effects of Hatha Yoga to peripheral oxygen saturation, blood hemoglobin level, heart rate, and lung function

1.4.2 Practical Benefit

This research is expected to provide knowledge towards effects of Hatha Yoga to peripheral oxygen saturation, blood hemoglobin level, heart rate, and lung function