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EVALUATION OF RELATIONSHIP BETWEEN BODY MASS INDEX AND EXPERIMENTAL PAIN RESPONSES IN A YOUNG POPULATION IN NORTHERN NIGERIA

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ABSTRACT

Pain perception has been shown to differ between patients with different gender, race and culture. In addition, it has been suggested that obesity influences pain perception, and can be a risk factor for increase pain perception later in life. The aim of this study was to investigate the relationship between obesity and pain perception among a young population in Zaria, Northern Nigeria. One hundred and thirty-two (132) apparently healthy subjects between the ages of 12 to 20 years were assessed for pain using the cold pressor test and ischemic pain models. Subjects also filled a self-reported questionnaire on physical activity. Data were presented as mean \pm SD. Differences and statistical significance between the means was determined by t-test for sex differences, while effect of BMI on pain responses was analyzed using ANOVA. Values of $p \leq 0.05$ were considered significant. Result of this study showed that obese subjects had a significantly lower cold pressor pain threshold than non-obese subjects, but no statistically significant difference was observed on cold pressor pain tolerance. Ischemic pain response on the other hand, showed no statistically significant variation between all the groups tested. The study indicates that there is a relationship between obesity and pain perception among a young Nigerian population in Zaria, Nigeria.

Key words: Pain perception, Body mass index, Cold pressor test, Ischemic pain, Exercise, Obesity

INTRODUCTION

Pain serves a protective role that alerts an individual to injury from the environment or from within. A multi-dimensional sensory experience that is intrinsically unpleasant and associated with hurting and soreness. Pain can be adaptive or maladaptive. Adaptive pain contributes to survival by protecting the individual from injury or promoting healing when injury has occurred (symptomatic pain), maladaptive pain on the other hand, is an expression of the pathologic operation of the nervous system (pain as a disease) (Woolf 2004). According to the International Association for the Study of Pain (IASP) task force on

taxonomy, pain is defined as an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage (Kumar and Elavarasi 2016).

The experience of pain is characterised by robust individual differences. Inter-individual variability in the experience of pain is modified by interactions among numerous biopsychosocial factors, including genetic

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