

## Assessment of Heart Rate, Blood Pressure and Percentage Oxygen Saturation in Young Habitual Shisha Smokers in Kano, Nigeria

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**Abstract :** Background: Practice of shisha smoking involves the use of a multi-stemmed instrument to smoke tobacco or non-tobacco herbal mixture where the smoke is designed to pass through water or other liquid before reaching the smoker. The presence of tobacco content and the use of charcoal when burning the ingredients in this popular practice necessitate for investigation of many physiological parameters of habitual shisha smokers in our environment. Methods: 103 young shisha smokers, regular in the practice for more than three years living in Nasarawa, Kano state, Nigeria, were recruited for the study. The controls were 100 university students (nonsmokers) match for age (18 - 30 years), sex and BMI (20 - 24) with the smokers. Participants with known history of cigarette smoking, cardiovascular or respiratory diseases were excluded. Ethical approval was obtained from the Ministry of Health, Kano Nigeria. Heart rate, blood pressure and percentage oxygen saturation (SPO<sub>2</sub>) were measured using stethoscope, sphygmomanometer and pulse oximeter respectively. Data were analyzed using IBM SPSS version 20 and mean values of the measured parameters were compared between the smokers and controls using independent sample t-test. P-values < 0.05 were considered significant. Results: The mean Heart rate was found to be significantly higher ( $p = 0.01$ ) in the shisha smokers ( $91.32 \pm 0.84$ ) compared to controls ( $79.19 \pm 1.18$ ). Systolic and diastolic blood pressure was also higher ( $p = 0.00$ ) in the shisha smokers ( $128.75 \pm 1.11$  and  $85.85 \pm 0.78$  respectively) compared to controls with the systolic and diastolic pressure of  $116.64 \pm 0.82$  and  $80.39 \pm 0.83$  respectively. SPO<sub>2</sub> was significantly lower ( $p = 0.00$ ) in the shisha smokers ( $91.98\% \pm 0.42\%$ ) compared to the controls ( $97.98 \pm 0.18$ ). Conclusion: Habitual Shisha Smoking caused a significant increase in Heart rate, both systolic and diastolic blood pressure and a significant decrease in SPO<sub>2</sub> among youth in Kano State, Nigeria.

**Keywords :** blood pressure, heart rate, shisha, youth

**Conference Title :** ICCCMR 2018 : International Conference on Cardiology and Cardiovascular Medicine Research

**Conference Location :** Dubai, United Arab Emirates

**Conference Dates :** December 20-21, 2018