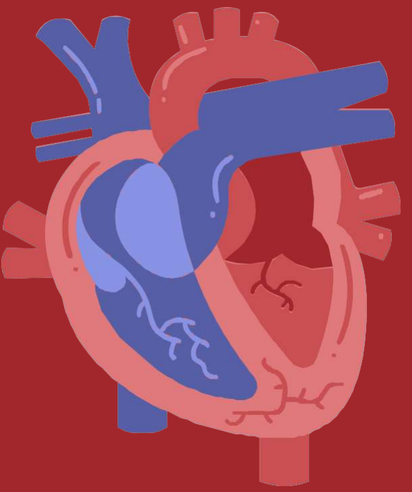
Ministry Of Education And Science Of Kyrgyz Republic
Osh State University

INSIGHT INTO THE

BP, PULSE & SPO2 OF FOREIGN

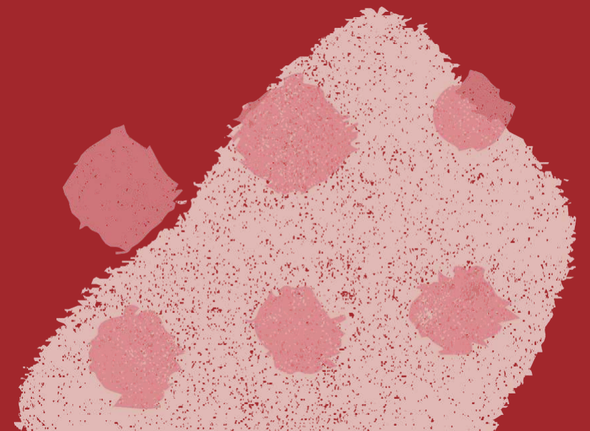
STUDENTS IN OSH



PhD student

1st year

Paizyldaev Timur



ABOUT SURVEY

We have taken an initiative to conduct a survey on the foreign medical students studying in Osh about their BP, Pulse rate and Oxygen saturation levels. A group of 100 students is considered to carry out this survey. We have analysed the previous and current data and statistics, performed the required tests on the students and have interpreted the results accordingly.

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PREVIOUS DATA...

There is growing evidence that the prevalence of high blood pressure is increasing, and it may have serious consequences. However, research on the prevalence and influencing factors of high blood pressure among university students is still relatively scarce. This study aims to investigate the prevalence and influencing factors of high blood pressure among university students worldwide, in order to provide scientific evidence for the prevention and management of this survey. From April to May 2020, 4892 students aged 18 to 29 years were selected as the survey subjects, and on-site physical measurements and questionnaire surveys were conducted. The prevalence of high blood pressure was described.

Restricted cubic spline was used to analyze the dose-response relationship between sleep duration, BMI and the risk of high blood pressure. Logistic regression was used to analyze the risk factors.

Multiplicative and additive models were used to analyze the interaction between sleep duration and BMI.

The results showed that the overall prevalence of high blood pressure among students aged 18 to 29 years worldwide was 9.9%, with a higher prevalence in females than males (12.1% vs 7.9%) and in urban areas than suburban areas (11.8% vs 7.7%).

The prevalence was lowest in students with normal weight (8.3%) and highest in those who were obese (12.5%). The prevalence fluctuated to some extent among different age groups, but overall, it increased with age.

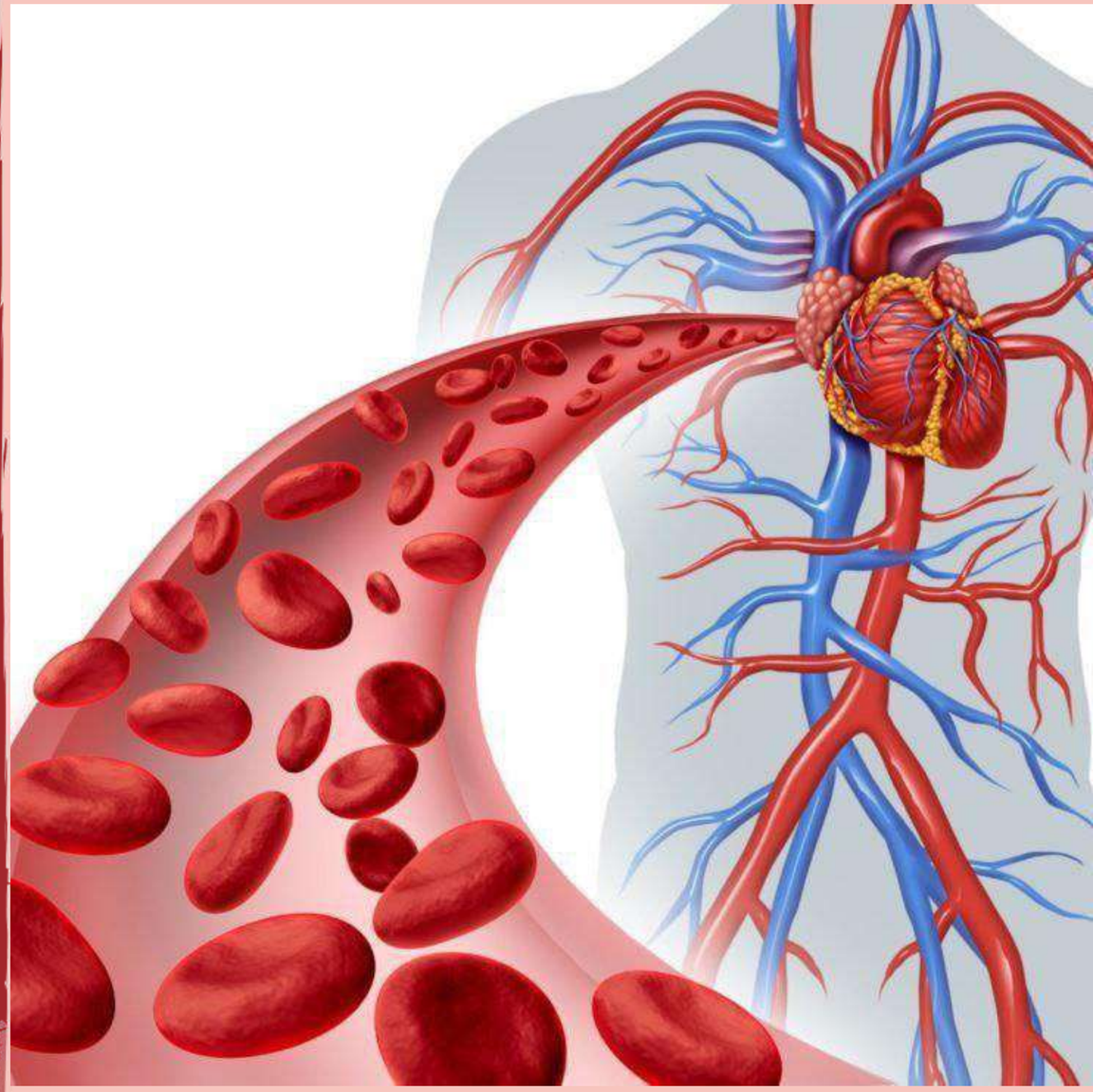
Accurate Values
Automatically averages 3 values for more precise readings

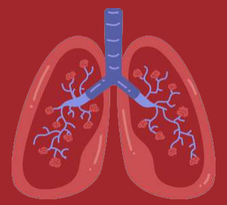
Speaker Function
Provide a simple option to hear your results

Multivariable analysis showed that the risk of high blood pressure in female students was 1.90 times higher than that in male students (95% CI: 1.54–2.35), and the risk in suburban areas was 0.65 times lower than that in urban areas (95% CI: 0.52–0.81). Students with a BMI ≥21 kg/m2 had a 1.58 times higher risk than those with a BMI <21 kg/m2(95% CI: 1.28–1.96), while those with a sleep time ≥8 hours had a 0.80 times lower risk than those with a sleep time <8 hours (95% CI: 0.65–0.99).

AIM

The aim of this survey is to answer how the changing environment ,study stress,genetic factors,previous medical history,different acquired habits and diseases will lead to various conditions related to hypotension & hypertension and how it will directly or indirectly effect the blood pressure pressures,pulse rate and spo2 of the students.





HYPOTHESIS

Dr. Irvine Page proposed the Mosaic Theory of Hypertension in the 1940s advocating that hypertension is the result of many factors that interact to raise blood pressure and cause end-organ damage.

Over the years, Dr. Page modified his paradigm, and new concepts regarding oxidative stress, inflammation, genetics, sodium homeostasis and the microbiome have arisen that allow further refinements of the Mosaic Theory.

INTRODUCTION TO SURVEY

After the analysis of the above provided data, we conducted a survey on a group of 100 students of our university from 1st-5th year, of the age group 18-29 yrs. Out of these students, 50 were males and 50 females. The blood pressure, pulse rate and oxygen saturation levels of these students were measured at different time intervals of the daY.

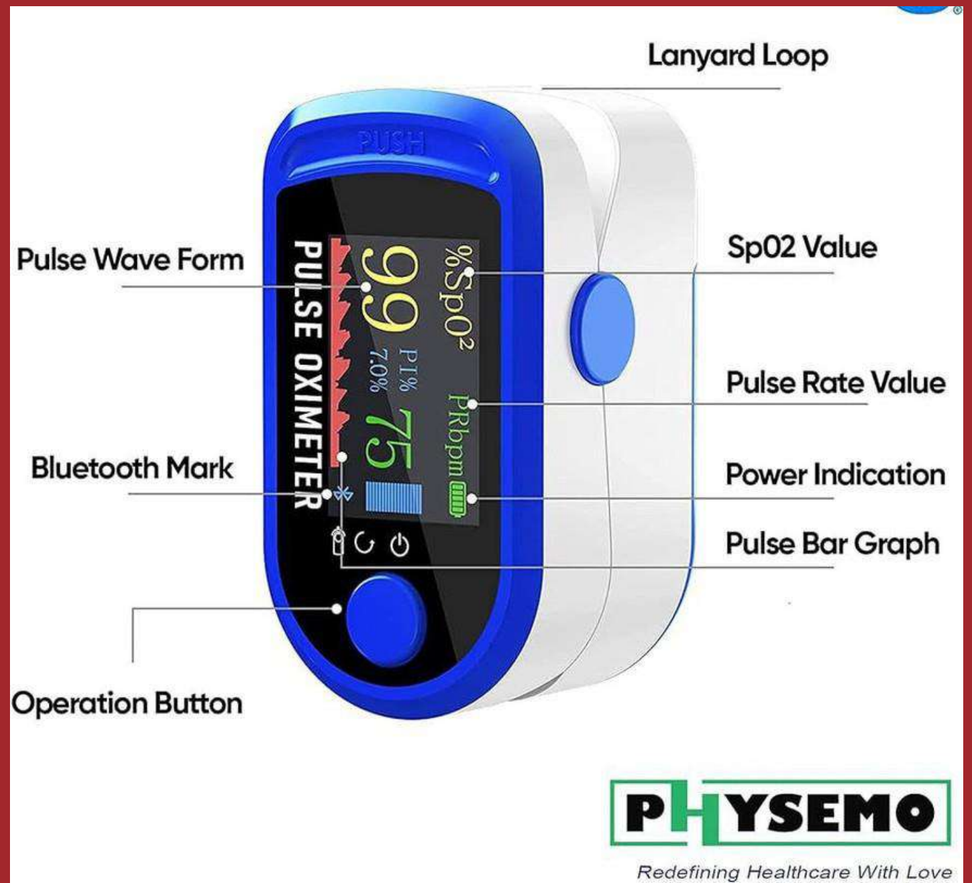
INTRODUCTION TO SURVEY

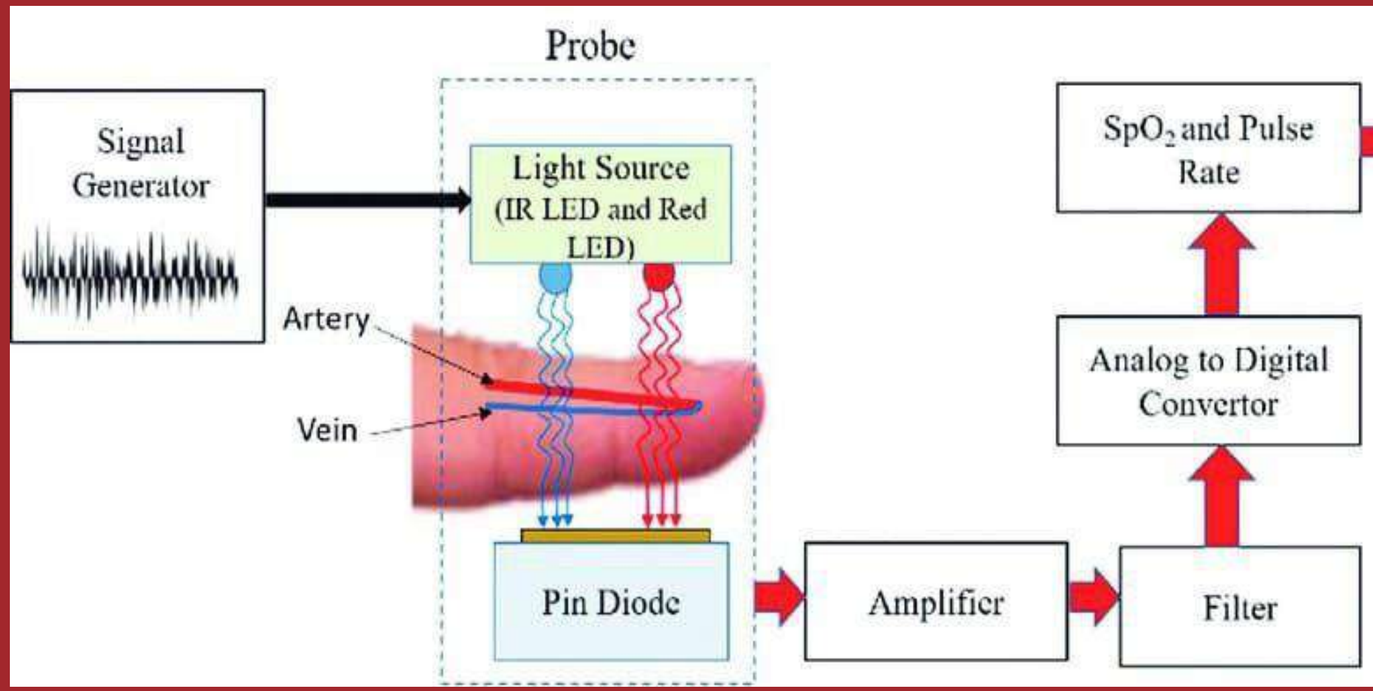
We also collected the history of the students wherever required.

The equipments used to carry out this survey are sphygmomanometer, oximeter. The data collected was analysed and results were interpreted accordingly.

INSTRUMENT & MATERIAL USED

PULSE OXIMETER





PULSE OXIMETER

An oximeter is a medical device used to measure the oxygen saturation level in the blood, commonly referred to as Sp02. This portable and non-invasive instrument has become a crucial tool for monitoring respiratory health, especially in conditions like chronic obstructive pulmonary disease (COPD), asthma, and during the ongoing COVID-19 pandemic.

Parts of an Oximeter:

Probe or Sensor:
The probe or sensor is a small device typically attached to a clip that is placed on a patient's fingertip, earlobe, or other suitable sites with good blood flow. It contains light-emitting diodes (LEDs) and a photodetector.

Light-Emitting Diodes (LEDs):
Oximeters use LEDs to emit specific wavelengths of light, usually red and infrared light. These lights penetrate the skin and tissues, allowing the device to measure the absorption of light by oxygenated and deoxygenated hemoglobin in the blood.

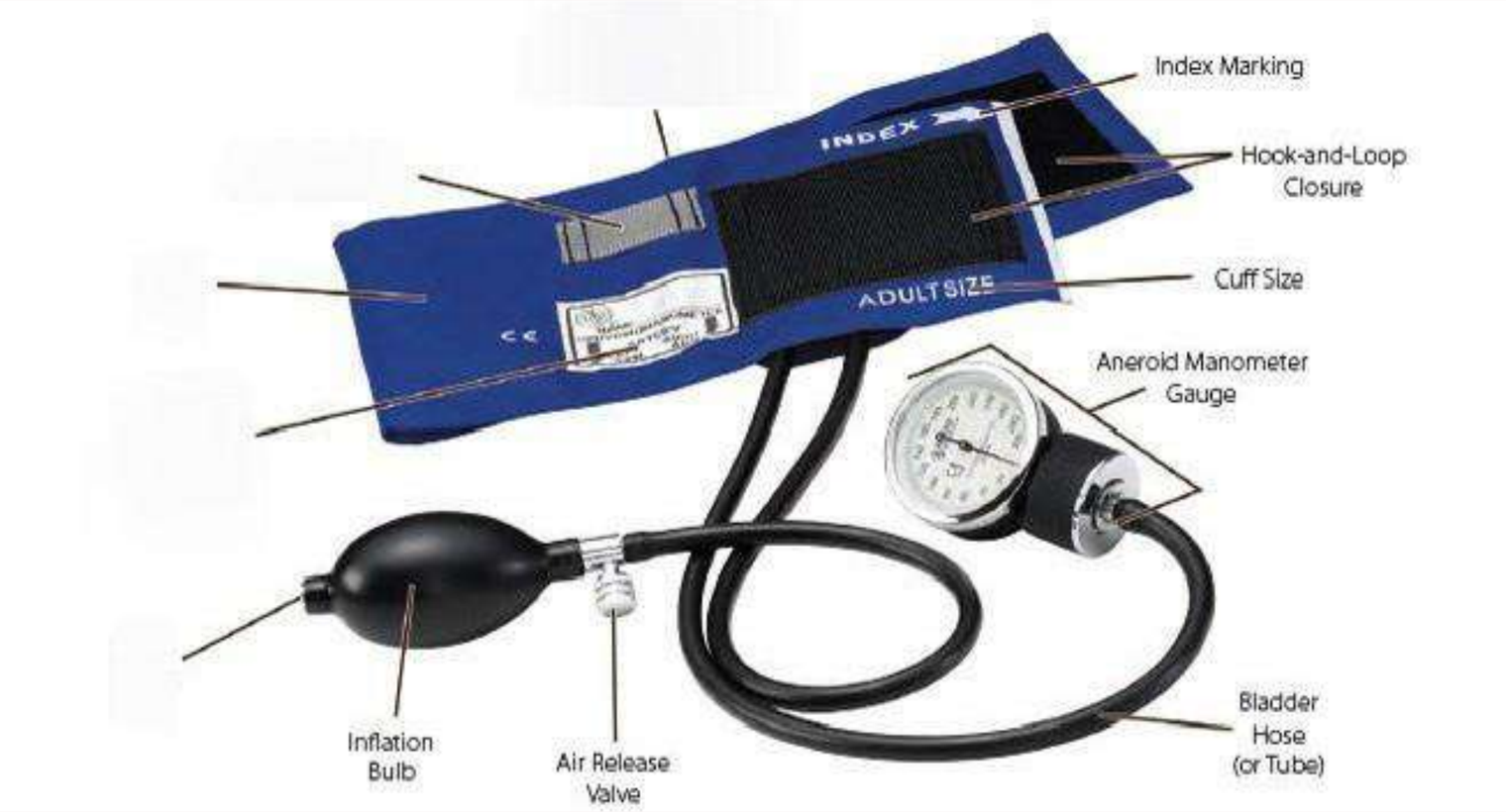
PULSE OXIMETER

.Photodetector:
The photodetector is a component that measures the amount of light that passes through or is absorbed by the tissues. It detects the changes in light absorption caused by oxygenated and deoxygenated hemoglobin, enabling the calculation of oxygen saturation levels.

Microprocessor:
The microprocessor is the electronic component responsible for processing the signals received from the photodetector. It performs calculations to determine the oxygen saturation level and displays the results on the oximeters screen.

INSTRUMENT & MATERIAL USED

SPHIGMOMANOMETER



SPHIGMOMANOMETER

The mercury sphygmomanometer is a crucial medical instrument used to measure blood pressure accurately.
Comprising several key components, this classic device has been a cornerstone in healthcare for over a century.

1.Pressure Cuff:
The pressure cuff is an inflatable sleeve wrapped around the upper arm. Its function is to apply external pressure to the brachial artery, temporarily stopping blood flow.

2. Inflation Bulb:
It is connected to the pressure cuff.
The inflation bulb is a rubber squeeze bulb used to inflate the cuff. When squeezed, the bulb pumps air into the cuff, gradually increasing the pressure on the brachial artery.

3. Pressure Control Valve:
The pressure control valve is a mechanism that allows for the gradual release of pressure in the cuff. This controlled release is essential for obtaining accurate and reliable blood pressure accurately. It allows to measure systolic and diastolic pressures

SPHIGMOMANOMETER

4. Mercury Manometer:
It is the main element that displays blood pressure readings. It consists of a vertical glass tube filled with mercury. As pressure increases in the cuff, it causes the mercury column to rise. The height of the mercury column, measured in millimeters of mercury (mmHg), corresponds to the pressure exerted on the cuff.

5. Scale and Calibration:
The scale on the mercury manometer is calibrated to measure blood pressure in millimeters of mercury.
Calibration ensures the accuracy of the instrument.