UDACITY
Part of Accenture

Sleep Health and Lifestyle Analysis

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Agenda

Results of sleep health and lifestyle analysis

- Data Description
- Typical Amount of Physical Activity
- Number of Daily Steps
- Distribution of Heart Rates

Data Description

Continuous :**Sleep Duration**

Integer: Age , Physical activity level, heart rate , daily steps.

Ordinal: **Quality of Sleep, Stress Level**

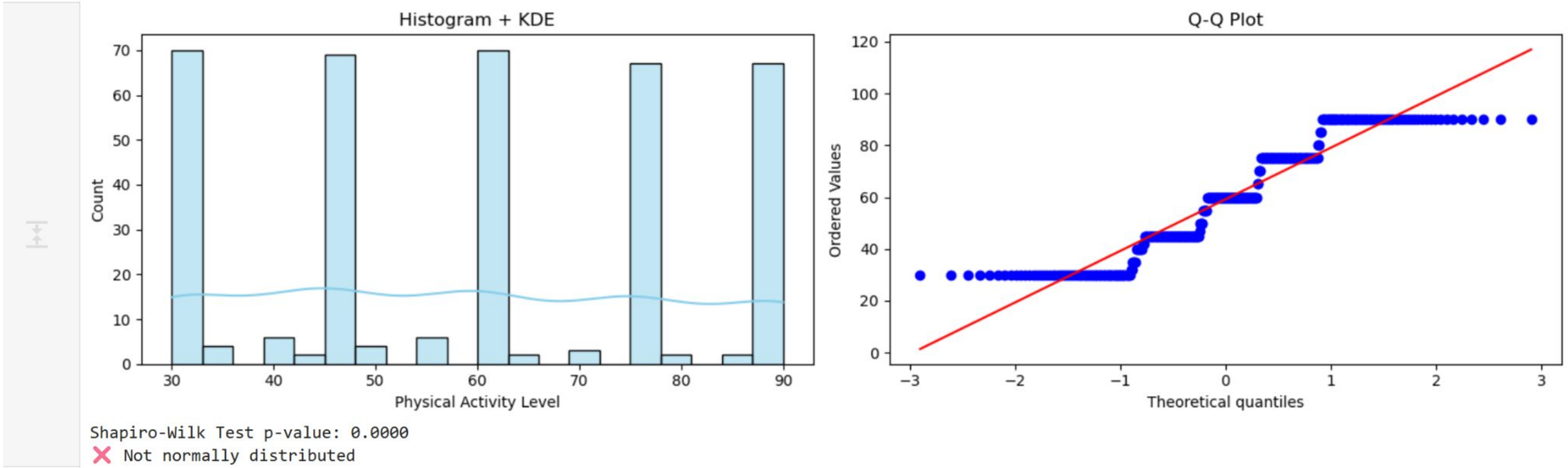
Nominal: **Occupation, Gender,** `Sleep Disorder,BMI catgeory`

Typical Amount (Minutes) of Physical Activity

Mean: 60

Median: 60

Mode: 60

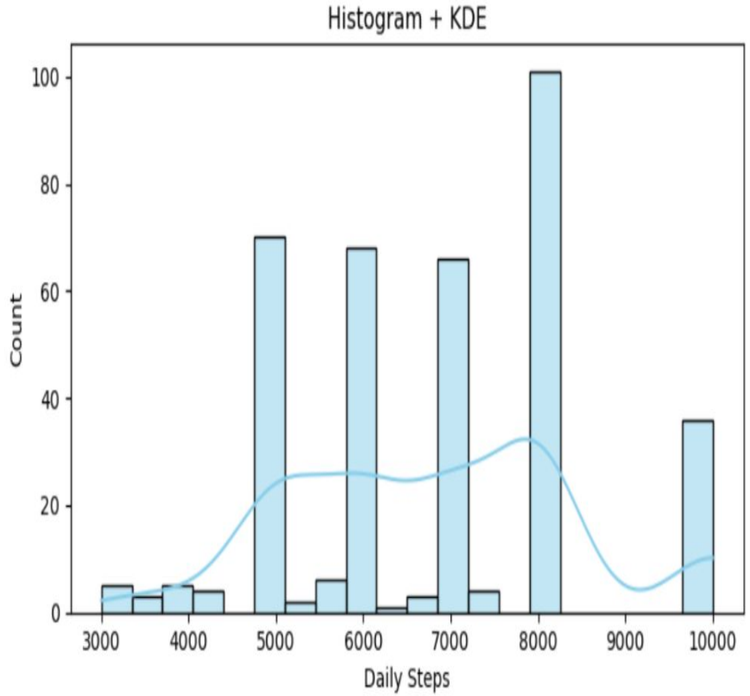


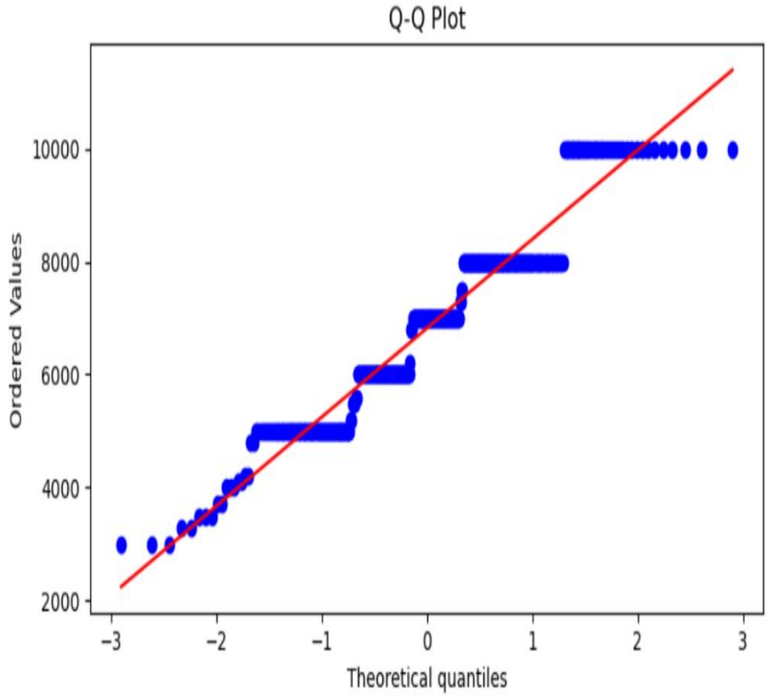
The mean, median, and mode are all equal, suggesting the distribution of physical activity is balanced and likely symmetrical.

Analysis of Daily Steps Taken

Descriptive Statistics:

- Count: 374
- Mean: 6816.84
- Median: 7000.00
- Mode: 8000
- Std Dev: 1617.92
- Min: 3000
- Max: 10000
- Range: 7000
- Skewness: 0.18
- Kurtosis: -0.40





Normality Test (Shapiro-Wilk):

➤ p-value = 0.0000

Data is NOT normally distributed

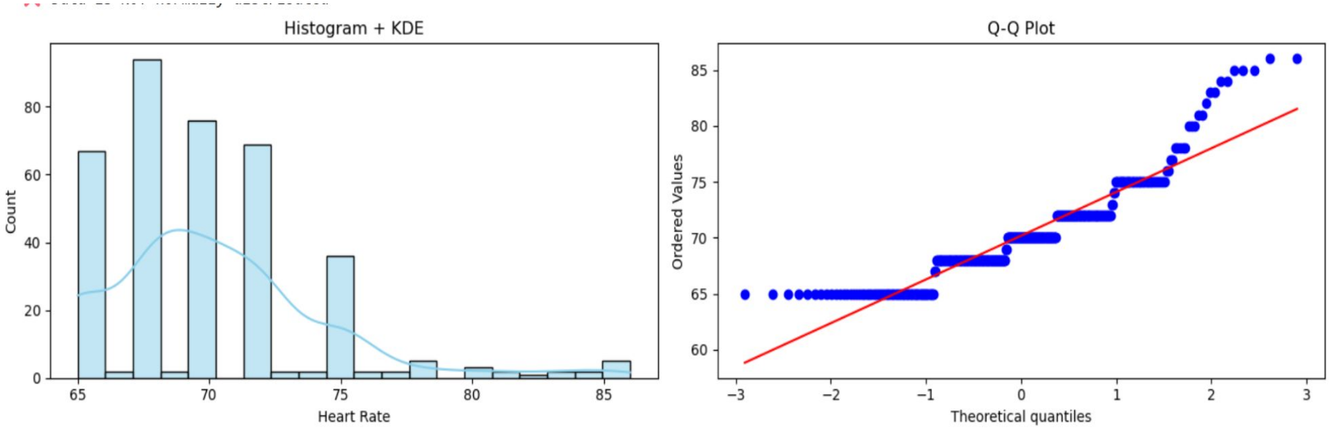
The dataset contains 374 records. The average number of daily steps is approximately 6817, with a standard deviation of 1618.
While the mean, median (7000), and mode (8000) are close, the **Shapiro-Wilk test** (p = 0.0000) clearly indicates that the data is **not normally distributed**.
The histogram and Q-Q plot support this conclusion, showing a multi-modal and slightly right-skewed distribution.

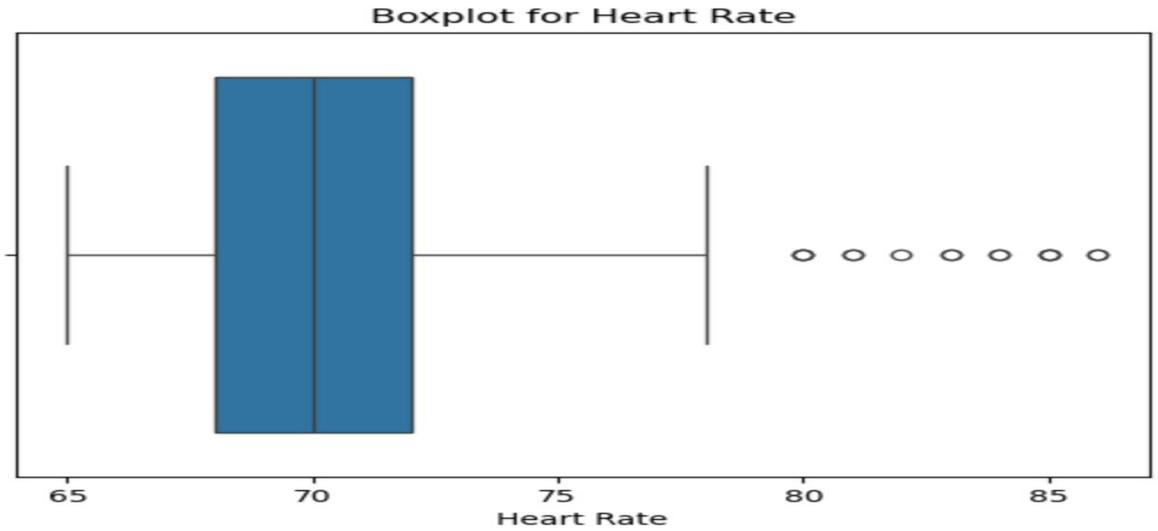
Distribution of Heart Rates

Descriptive Statistics:

- Count: 374
- Mean: 70.17
- Median: 70.00
- Mode: 68
- Std Dev: 4.14
- Min: 65
- Max: 86
- Range: 21
- Skewness: 1.22
- Kurtosis: 2.24

The heart rate data includes 374 observations with a mean of 70.17 and a median of 70, suggesting a slightly right-skewed distribution. The Shapiro-Wilk test confirms the data is **not normally distributed** (p = 0.0000).
Both the histogram and Q-Q plot support this conclusion, showing a concentration of values around 68–72 and a long right tail. This is also reflected in the **positive skewness (1.22)** and elevated **kurtosis (2.24)**.





🧪 Normality Test (Shapiro-Wilk):

➤ p-value = 0.0000
❌ Data is NOT normally distributed