Original Article

Frequency of Coronary Artery Disease in Adult Patients Based Upon their Sleep Duration

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ABSTRACT

Objective: The study's main aim is to look at the occurrence of the coronary artery disease in adults based upon their sleep duration.

Study Design: Cross-Sectional Study

Place and Duration of Study: This study was conducted at the Wah Medical College located at Wah Cantt, also Gomal Medical College in D.I. Khan January, 2018, to December, 2018.

Materials and Methods: The research included about 400 of the patients with coronary artery disease who were 18 to 65 years old and of either sexual orientation. The patients' average age was 48.96 12.5 years, with a range of 18 to 65 years. 277 (69.25 percent) of the 400 patients were men, while 123 (30.75 percent) were women.

Results: The average BMI of the people in the study was 29.27 4.42 kg/m2. 45.75 percent of patients had a BMI of less than 27.5 kg/m2, while 54.25 percent had a BMI of more than 27.5 kg/m2. 234 (58.5%) of the people in the study had diabetes, 189 (46.23%) have high blood pressure (hypertension), 229 (56.24%) smoke, 243 (60.70%) have dyslipidemia and about 238 of the people (59.5%) are diagnose with coronary artery disease family background. This study supposed that the recurrence of CAD in adults who slept for less than six hours and over eight hours was more prevalent.

Conclusion: Research suggests that coronary artery disease recurrence is more common for adults who have slept for less than six hours and 8 hours. We therefore propose coordination at the community level of educational programmes to teach individuals how to sleep (6-eight hours), in order to lower the danger of coronary artery conditions.

Key Words: coronary artery, short sleep, adult, CAD

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INTRODUCTION

Myocardial infarction, stable angina, shaky angina & sudden death are all symptoms of Coronary artery disease.1 Retrosternal chest pain radiating to the bear, arm, jaw, or back is a common symptom that arises in response to increased metabolic activity, such as exercise or vigorous strain, and improves with rest .[2]

One of the prime etiology of heinousness and mortality in today's world is computer-aided programming. In 20212, Cardiovascular diseases (CVD) took the lives of 17.5 million people worldwide, accounting for 31% of all deaths. An expected 7.4 million of these deaths were attributed to CAD.[3] In Pakistan, one out of every four patients over the age of 40 suffers from the symptoms of fundamental CAD.[4]

The potential of numerous new or evolving threat variables to affect the advancement of CAD has been demonstrated in ongoing studies, opening up new avenues for avoidance. A sleeping disorder, a lack of sleep, and a fluctuating rest time have become prevalent in recent years. Rotating rest designs have a detrimental effect on wellbeing, growing mortality rates, [5] types 2 diabetes[6] hypertension, and obesity.[7] Less rest radically breaks down metabolic framework, endocrine[8,] and resistant pathways.[9]

Increased appetite, high-calorie consumption, and a sedentary lifestyle contribute to obesity and low glycemic control, which raises cardiovascular risk. According to a pooled study, those who's sleeping duration is disburbed or they sleep for less than 7–8 hours on daily basis may have the higher threat of coronary artery disease. Short periods of rest increase the risk of coronary artery disease by causing inflammation.[10] Excessive tiredness is linked to depression, low financial status, unemployment, and reduced physical activity, as well as puzzling causes

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such as long periods of rest and dreariness, as well as mortality from coronary artery disease (CAD). [11, 12]

Our research is designed to determine whether or not CADs are recurring after admission to a tertiary care hospital. Since the correlation for both CAD and rest time does not occur locally, the aim of the research is to assess the patient CAD frequency by repository time. The results can produce close data and preventive steps to reinforce the result and the board can be taken.

MATERIALS AND METHODS

From January 1 to December 31, 2018, researchers at the Pakistan Institute of Medical Sciences in Islamabad, & in D.I. Khan conducted a cross-sectional analysis at their cardiology departments. A total of 400 patients between the ages of 18 and 65 with coronary artery disease of either sexual orientation were included in the study. Anxiolytic or entrancing medications were not permitted, as were patients with Body Mass Index of in excess of 30 kg/m2. The test was ordered with the blessing and approval of the Shaheed Zulfiqar Ali Bhutto Medical University's morals council in Islamabad. Following informed consent, patients presenting in the outpatient and crisis divisions were evaluated with a detailed history of symptoms, electrocardiography, and cardiovascular indicators, as well as other risk factors such as family history, smoking, the high sugar level in the blood, and dyslipidemias, as well as previous heart problems. The rest period was also measured based on the average number of sleep' hours per day over the previous year, such as 0-6 hours, 06-08 hours, and > 08 hours. The proforma was filled out for every discovery.

Data Analysis: SPSS 14.0 was used to carry out the research. Sexual identity, BMI, diabetes, hypertension, smoking, dyslipidemia, CAD family history, and patients with CAD as a percentage of the total population were all studied. For quantitative factors such as age, mean SDs were calculated. Age, gender, BMI, diabetes, hypertension, dyslipidemia, smoking, and family ancestry were all identified, and impact modifiers were excluded using the chi-square test. The value of P' significance of less than 0.06 was considered enormous.

RESULTS

The mean patient age was 48.96 ± 12.5 years, ranging from 18 to 65 years. Of the 400 patients, 277 (69.25%) were male and 123 (30.75%) female. In our study, the ratio of men to women is 2.3:1, as shown in Figure 1.

The research population's average BMI was 29.27 4.42 kg/m2. 45.75 percent of patients had a BMI of less than 27.5 kilograms per square meter, while 54.25 percent had a BMI of more than 27.5 kilograms per square meter. 234 (58.5%) of those examined had diabetes mellitus, 189 (47.25%) suffered from high blood pressure, 229 (57.25%) had cigarettes, 243 (60.70%) have dyslipidemia and about 238 of the people (59.5%) are diagnose with coronary artery disease family history of heart diseases. As shown in Table 1, the CAD recurrence was 158 (39.5%), 110 (27.5%) and 132 (33%) respectively, among 0-6, 06-08 and > 08-hour patients.

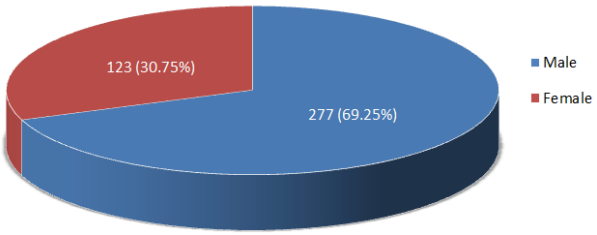

Figure No.1: Patients % age according to their gender (n=400)

Table No.1: CAD frequency in sleep-based patients

Duration of Sleep	CAD Frequency (%)	
	Yes	No
Less than 6 hours	156 (38.50%)	243 (60.50%)
6 to 8 hours	111 (27.50%)	291 (70.50%)
Greater than 8 hours	133 (33%)	269 (67%)

Gender-wise hierarchy of CAD's frequency based upon the sleep durations shown in Table 2.

Table No.2: Sleep duration was used to stratify the incidence of CAD by sexuality

Duration of Sleep	Man (n=277)	Women (n=123)	P-value
Less than 6 hours	109 (39.33%)	48 (39.2%)	0.950
6-8 hours	74 (26.30%)	37 (30.8%)	0.442
Greater than 8 hours	95 (34.2%)	38 (30.88%)	0.505

DISCUSSION

Not only are the mainstream trends affected by the quantity and essence of rest, but also trends in the general public that require more work, greater accountability and non-stop office use. This increases fatigue, slowdown and daily indications of the language.[13]

Sleep deficiency has detrimental consequences for the frameworks of our bodies, including metabolism, endocrine, and immune systems.[14] The U-formed linkage between rest and vascular events shows that many instruments play a role in intermechanics.[15]

Temporary sleep deprivation in healthy individuals led to physiological changes such as glucose bigotry, increased insulin obstruction, improved tone, and increased blood pressure, according to studies.[16] Elevated concentrations of C-receptive protein, directly related to CAD, were also related to sleep deprivation.[17]

The drawn out cardiovascular outcomes of lack of sleep are unsatisfactory. More limited or longer rest periods

than 7 hours have been linked to increased BMI in epidemiological studies.[18]

The age ranged from 18 to 65 in our study, with a mean time of 48.96 12.45 years. 277 (69.25 percent) of the 400 patients were men, while 123 (30.75 percent) were women. The ratio between men and women was about 2.3:1. Coronary artery disease repetition was 159 (39,05%), 111 (27,05%) or 132 between the individuals who slept for 6 hours, 6-8 hours or above 8 hours (33 percent). The CAD prevalence was 29.2%, 17.43%, and 18.5%, so according Sabanayagam C et al., among Americans who slept less than 5, 6, 6 or 8 hours and 9 hours.[19].

Aggarwal et al's study found that the prevalence of CAD was 6.9%, 5.8%, and 10.1% respectively among sleepers under 6 hours, 6-8 hours, and over 8 hours. They also discovered a strong connection between the amount of time spent resting and the risk of heart failure, heart attack, and stroke.[20]

Long and short durations of sleep were independently linked to CAD mortality, regardless of smoking, alcohol consumption, or BMI, according to Shankar et al. Compared to a 7-hour rest period, the risk of death was 1.57 for a 5-hour rest period and 1.79 for a 9-hour rest period. These results indicated that rest time may be a significant indicator of coronary artery disease. Qureshi et al. used National Health and Nutrition Survey (NHANES I) data to show persons sleeping for more than eight hours had a greater danger of stroke (relative danger: 1.5 96 percent). CI: 1.1 to 2.1).[21]

Our study's findings, such as the U-shaped rest period bends and the incidence of numerous events of CV, are consistent with earlier reports that found U-shaped connections between the rest period and the risk of mortality.[22,23]

Cappuccio FP et al. found that both long (9 hours) and brief (5 hours) rest periods raised the risk of a coronary event (RR=1.38, 95 percent CI 1.05–1.84; RR=1.36, 95 percent CI 1.2–1.85).[24] Chien and colleagues observed a higher risk of CVD in those who had a sleeping disorder and a long rest time (>9 hours) relative to people who slept 7–8 hours (HR=2.7, 95 percent CI 1.11-3.86). The WHI associate's measured impact was similar to Chien et al's study among a moderately aged Chinese population.[25]

Our findings also show a connection between a longer rest period and sleep deprivation, which increases the risk of coronary artery disease by twofold. These findings apply to postmenopausal women.

CONCLUSION

Research suggests that coronary artery disease recurrence is more common for adults who have slept for less than six hours and 8 hours. We therefore propose coordination at the community level of educational programmes to teach individuals how to sleep (6-eight hours), in order to lower the danger of coronary artery conditions.

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Conflict of Interest: The study has no conflict of interest to declare by any author.

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