



HARVARD SCHOOL OF PUBLIC HEALTH

Department of Epidemiology

MIRT 2013 ABSTRACTS

Eveningness Chronotype, Daytime Sleepiness, Caffeine Consumption and Use of Other Stimulants Among Peruvian University Students

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Background: Problems associated with insufficient sleep and daytime sleepiness negatively affect many areas of life including cognition, emotions, work, hobbies, and both physical and mental health. Several studies have examined the relationship between caffeine and sleep disorders, but few have examined this in Latin America.

Objectives: To evaluate patterns of circadian preferences and daytime sleepiness, and to examine the extent to which the consumption of stimulant beverages is associated with daytime sleepiness and evening chronotype among Peruvian college-age students.

Methods: Peruvian undergraduates completed self-administered questionnaires in a cross-sectional study. The Morningness-Eveningness Questionnaire (MEQ) and Epworth Sleepiness Scale (ESS) were used to assess chronotype and daytime sleepiness.

Results: The prevalence of daytime sleepiness was 35% (95% CI: 32.7-36.4%) and eveningness chronotype was 10% (95%CI: 8.8-11.1%). Age, sex, cigarette smoking, and alcohol consumption were significantly associated with eveningness chronotype. Students who frequently consumed Red Bull (OR=2.43, 95% CI 1.55-3.82) and cola beverages (e.g., Coca-Cola, Pepsi) (OR=1.85, 95% CI 1.29-2.66) had higher odds of being classified as eveningness chronotype. Those who regularly consumed stimulant beverages had higher odds of daytime sleepiness (OR=1.25, 95% CI 1.03-1.53). Students who regularly consumed coffee had higher odds of daytime sleepiness (OR=1.27, 95% CI 1.06-1.53).

Conclusions: Excessive daytime sleepiness and eveningness chronotype are common among Peruvian college students. MEQ scores were associated with age, sex, smoking, and alcohol consumption. Regular stimulant beverage consumption tended to be positively associated with the eveningness chronotype. Regular consumption of stimulant beverages was positively associated with daytime sleepiness.

Morningness/Eveningness Chronotype, Poor Sleep Quality, and Daytime Sleepiness in Relation to Common Mental Disorders among Peruvian College Students

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Background: An accumulating body of evidence shows that disturbances in circadian rhythm, sleep quality, and excessive daytime sleepiness can lead to the development of common mental disorders.

Objective: This research seeks to examine the extent to which the characteristics of morningness and eveningness chronotype, daytime sleepiness and poor sleep quality are associated with common mental disorders (CMD) among a large sample of Peruvian college students, a population that has not been sufficiently evaluated in this area of research.

Methods: A total of 2,538 undergraduate students completed a self-administered questionnaire to gather information about sleep characteristics, socio-demographic and lifestyle data. Evening chronotype, sleep quality, and daytime sleepiness and evening chronotype were assessed using the Horne and Ostberg Morningness-Eveningness Questionnaire (MEQ), Pittsburgh Sleep Quality Index (PSQI), and Epworth Sleepiness Scale (ESS). Presence of CMD was evaluated using the General Health Questionnaire (GHQ-12). Logistic regression procedures were used to examine the associations of sleep disorders with CMDs while accounting for possible confounding factors.

Results: Overall, 32.9% of the participants had prevalent CMD (39.3% among females and 24.4% among males). In multivariable adjusted logistic models, those with evening chronotype (OR=1.43; 95% CI 1.00–2.05), poor sleep quality (OR=4.50; 95%CI 3.69-5.49) and daytime sleepiness (OR=1.68; 95% CI 1.41-2.01) were at a relative increased odds of CMD compared to those without sleep disturbances.

Conclusion: We found strong associations between sleep disorders and CMDs among Peruvian college students. Early education and preventative interventions designed to improve sleep habits and sleep quality may effectively alter the possibility of developing CMD among young adults. Results from our study may be used to guide sleep hygiene promotion and intervention among Latin American college students.

Daytime Sleepiness, Poor Sleep Quality, Eveningness Chronotype and Common Mental Disorders among Chilean College Students

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Background: Characteristics of sleep among college-age students—daytime sleepiness, chronotype, and mood disorders—have all been studied individually. However there is little data that evaluated the association between sleep characteristics and mental health disorders among college-age students.

Objectives: To evaluate whether daytime sleepiness, poor sleep quality and morningness and eveningness (M/E) preferences are associated with common mental disorders (CMDs) among Chilean college students.

Methods: A total of 963 college students in the Magallanes region of Chile completed self-administered questionnaires that collected information about socio-demographic characteristics (smoking status, alcohol consumption, physical activity, etc.), sleep quality characteristics, CMDs, and other lifestyle behaviors.

Results: The prevalence of CMDs was 24.3% (95% CI: 21.5-27.1%) among all students who completed the questionnaires. Prevalence estimates of both excessive daytime sleepiness and poor sleep quality were higher among females (35.4% and 54.4%) than males (22.0% and 45.8%). Cigarette smoking was statistically significantly and positively associated with having a CMD ($p=0.034$). Excessive daytime sleepiness (OR= 3.65; 95%CI: 2.56-4.91) and poor sleep quality (OR=4.76; 95%CI: 3.11-7.29) were associated with increased odds of CMD. No statistically significant association was observed between evening chronotype and CMD (OR=0.97; 95%CI: 0.43-2.61).

Conclusion: Study results show that sleep disturbances and CMDs are common among Chilean college students, and poor sleep quality and daytime sleepiness are associated with an increased risk of CMDs. Given the adverse health consequences associated with both sleep disorders and CMDs, improving sleep hygiene among college students is imperative to public health.

Daytime Sleepiness, Circadian Preference, Caffeine Consumption and Khat Use among College Students in Ethiopia

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Background: Sleep is a key component in maintaining one's state of physical and mental well-being. The achievement of an ideal amount of sleep can be elusive for college students with academic, social, and work commitments.

Objective: To estimate the prevalence of daytime sleepiness and circadian preferences, and to examine the extent to which caffeine consumption and Khat (a herbal stimulant) use are associated with daytime sleepiness and evening chronotype among Ethiopian college students.

Methods: A cross-sectional study was conducted among 2,410 college students. A self-administered questionnaire was used to collect information about sleep, behavioral risk factors such as caffeinated beverages, tobacco, alcohol, and Khat consumption. Daytime sleepiness and chronotype were assessed using the Epworth Sleepiness Scale (ESS) and the Horne & Ostberg Morningness/Eveningness Questionnaire (MEQ), respectively. Linear and logistic regression models were used to evaluate associations.

Results: Daytime sleepiness (ESS \geq 10) was present in 26% of the students (95% CI: 24.4-27.8%) with 25.9% in males and 25.5% in females. A total of 30 (0.8%) students were classified as evening chronotypes (0.7% in females and 0.9% in males). Overall, cigarettes smoking ($\beta = 2.59$, p-value = 0.003) was statistically significantly associated with evening chronotype, while excessive alcohol use ($\beta = 1.469$, p-value = 0.054) was associated with increased risk of daytime sleepiness. Use of any caffeinated beverages (OR=2.18; 95%CI: 0.82-5.77) and Khat consumption (OR=7.43; 95%CI: 3.28-16.98) increased the odds of evening chronotype.

Conclusion: The prevalence of daytime sleepiness among our study population was high while few were classified as evening chronotypes. We also found increased risk of evening chronotype with caffeine consumption and Khat use amongst Ethiopian college students. Prospective cohort studies that examine the effects of caffeinated beverages and Khat use on sleep disorders among young adults are needed.

Circadian Rhythm Preference, Poor Sleep Quality, Daytime Sleepiness and Common Psychiatric Disorders among Ethiopian College Students

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Background: Little is known regarding the relationship between biological chronotype, poor sleep quality, daytime sleepiness, and common mental disorders (CMD) among young adults in sub-Saharan Africa.

Objective: This study aims to estimate the prevalence of CMD and examine the association of sleep disorders with presence of CMD in Ethiopian college students.

Methods: In a cross-sectional survey of 2,645 undergraduate students, a self-administered questionnaire was used to ascertain demographic information and behavioral characteristics. Prevalence of CMD was determined using the general health questionnaire (GHQ-12). The Horne and Ostberg Morningness-Eveningness Questionnaire (MEQ), Pittsburgh Sleep Quality Index (PSQI) and Epworth Sleep Scale were used to assess evening chronotype, sleep quality and daytime sleepiness, respectively. We used multivariate logistic regression models to determine odds ratios (OR) and 95% confidence intervals (95% CI) for the association between sleep disorders and CMD.

Results: Among the sample population, a total of 703 students (26.6%) were characterized as having a CMD. Female students tended to report a higher prevalence of CMD (30.6%) compared to males (25.4%). After adjusting for potential confounders, daytime sleepiness (OR=2.06; 95% CI 1.63-2.58) and poor sleep quality (OR=2.96; 95% CI 2.22-3.96) were associated with increased odds of CMD. No significant association was noted between chronotype and CMD (OR=1.22; 95%CI: 0.34-4.41).

Conclusions: Our study documented a high prevalence of CMD and suggests that sleep disorders are associated with an increased risk of CMD in Ethiopian college students. These findings imply that improvement of sleep hygiene may lead to a reduction in CMD risk among college students.

Circadian Rhythm Characteristics, Poor Sleep Quality, Daytime Sleepiness and Common Mood Disorders among Thai College Students

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Background: The majority of individuals with a mental disorder experienced onset of their illness prior to turning 24 years old. In parallel to the onset of mental disorders a growing body of epidemiologic literature suggests that the prevalence of sleep disorders among young adults is increasing globally.

Objective: To investigate the relationship between common mood disorders (CMDs) and select sleep characteristics (morning-evening chronotype, poor sleep quality and daytime sleepiness) among Thai college students.

Methods: A cross-sectional study was conducted among 2,970 Thai undergraduate students. Students were asked to complete a self-administered questionnaire that collected information about lifestyle and demographic characteristics. The Horne and Ostberg Morningness-Eveningness Questionnaire (MEQ), Pittsburgh Sleep Quality Index (PSQI), and Epworth Sleepiness Scale (ESS), were used to evaluate circadian preference, sleep quality and daytime sleepiness respectively. The General Health Questionnaire-12 (GHQ-12) was used to evaluate presence of CMDs. Logistic regression models were used to estimate adjusted odds ratios (ORs) and 95% confidence intervals (95% CIs) of CMDs in relation to the covariates of interest.

Results: A total of 337 students were classified as having CMD (11.2%; 95% CI 10.1-12.3%). Evening chronotype (OR=3.35; 95% CI 2.09-5.37), poor sleep quality (OR=4.89; 95% CI 3.66-6.54) and daytime sleepiness (OR=1.95; 95% CI 1.54-2.47) were statistically significantly associated with CMD.

Conclusions: Our study demonstrated that CMDs are common among Thai college students. Further, evening chronotype, poor sleep quality and excessive daytime sleepiness were strongly associated with increased risk of CMD. These findings highlight the importance of educating students and school administrators about the importance of sleep hygiene on mental health.

Daytime Sleepiness, Circadian Preference, Caffeine Consumption and Use of Other Stimulants among Thai College Students

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Background: Caffeine consumption, daytime sleepiness, and evening chronotype have been implicated as risk factors for a number of adverse health outcomes. Globally, use of caffeinated stimulants and beverages are popular among college students. However, to our knowledge, no studies have examined the influence of caffeinated beverages on the daytime sleepiness and evening chronotype of college students in Southeast Asian populations.

Objective: We conducted this study to evaluate the prevalence of daytime sleepiness and evening chronotype, and to assess the extent to which both are associated with the use of caffeinated stimulants among 3,000 Thai college students.

Methods: Demographic and behavioral characteristics were collected using a self-administered questionnaire. The Epworth Sleepiness Scale and the Horne and Ostberg Morningness-Eveningness Questionnaire were used to evaluate prevalence of daytime sleepiness and circadian preference. Multivariable logistic regression models were used to evaluate the association between sleep disorders and consumption of caffeinated beverages.

Results: Overall, the prevalence of daytime sleepiness was 27.9 % (95% CI: 26.2-29.5%) while the prevalence of evening chronotype was 13% (95% CI: 11.8-14.2%). Students who use energy drinks were more likely to be evening types. For instance, the use of M100/M150 energy drinks was associated with a more than 3-fold increased odds of evening chronotype (OR 3.50; 95% CI 1.90-6.44), while Red Bull users were more than twice as likely to have evening chronotype (OR 2.39; 95% CI 1.02-5.58). Additionally, those who consumed any energy drinks were more likely to be daytime sleepers. For example, Red Bull (OR 1.72; 95% CI 1.08-2.75) or M100/M150 (OR 1.52; 95% CI 1.10-2.11) consumption was associated with increased odds of daytime sleepiness.

Conclusion: Our findings emphasize the importance of implementing educational and prevention programs targeted toward improving sleep hygiene and reducing the consumption of energy drinks among young adults.