Original Research Article

Sleeping Patterns among Medical Students in the Middle East: Identifying Areas for Intervention

ABSTRACT

Aims: The objective of the study was to describe the Arabian Gulf University medical students sleeping patterns and to provide recommendations for promoting healthy and better sleeping patterns among the students.
Study design and place of study: A cross sectional study was conducted on medical students enrolled in the Arabian Gulf University in the Kingdom of Bahrain.
Methodology: A self-administered anonymous questionnaire was used, which included questions on demography and sleeping patterns.
Results: Of the 535 medical students who were enrolled in years 1-4, 443 responded to the questionnaire thus resulting in a 82.8% response rate. The study showed that 40% of the medical students were attending the College without sleep at all for at least one day during the week. There were significant differences by gender, nationality, and accommodation status.
Conclusion: Sleeping patterns cluster among students according to gender, nationality and accommodation status. Urgent interventions are needed to promote healthy sleeping patterns among medical students.

Keywords: Sleep, Healthy lifestyle, Medical Students, Intervention, Policy.

1. INTRODUCTION

Insufficient sleep, or sleep deficiency, which is defined as state of inadequate or mistimed sleep, is a growing and underestimated determinant of health [1]. Insufficient sleep and irregular sleep/wake patterns, which have been documented in younger adolescents are also present at alarming levels among university student population [2]. University students are at risk for sleep disorders that might lead to academic failure [3]. Universities should acknowledge that students' sleeping patterns are significant concerns that need educational programs and interventions [4]. Studies in the Arabian Gulf region have addressed specific lifestyle behaviors of health professionals such as health-promoting lifestyle [5,6,7]. Arabian Gulf University (AGU) students are valuable advocates for families as they were able also to offer practical help in lifestyle behavior changes, communication, and community-resource use [8].

The Arabian Gulf University (AGU) is a regional university established in 1983 and based in the Kingdom of Bahrain. It has two colleges, the College of Medicine and Medical Sciences (CMMS) and the College of Graduate Studies. AGU accepts students of both genders from the Gulf Cooperation Council (GCC) countries (Bahrain, Saudi Arabia, Kuwait, Oman, UAE and Qatar), where students are admitted based on their country's quota. Thus, AGU provides a unique opportunity to suggest guidelines to medical schools in the GCC countries. The CMMS follows a problem-based, student-

centered and community-oriented curriculum. The problem-based learning (PBL) curriculum integrates basic medical sciences with related professional skills training, and community health activities. The program is of six years duration divided into three phases: the basic Sciences Phase: Phase I (Year 1), Phase II (Pre-clerkship Phase: Years 2-4) and Phase III: (Clinical Clerkships Phase: Years 5 and 6). At CMMS, English is the language of instruction [9]. The objective of the study was to describe the dietary behaviors of medical students and to identify areas of intervention for a healthier dietary lifestyle.

The aim of the study was to describe the Arabian Gulf University medical students sleeping patterns and to provide recommendations for promoting healthy and better sleeping patterns among the students.

2. METHODS

A cross sectional study was conducted among AGU Years 1 to 4 medical students, during May 2009. A census of all AGU Years 1 to 4 medical students (535) who were enrolled during the Academic Year 2008-2009, was obtained from the Admission and Registration Unit. A self administered anonymous questionnaire in the English language was used, which included questions on demography and sleeping patterns. The questionnaire was abridged from the adult questionnaire of the United Arab Emirates Health and Lifestyle Survey 2000 [10], which was validated and field tested. The questionnaire was distributed to the students in the following manner: For Year 1 students, the questionnaires were distributed at the beginning of the Biostatistics class. As Years 2 to 4 students are divided into groups of 8-10 students in the tutorial sessions which are held twice per week, hence those students were given the questionnaires by their respective tutors during their first session. The respective tutors were briefed about this process by a covering letter, which was kept along with the questionnaires in the tutorial boxes that contain the teaching materials. These boxes were collected from the medical education office by tutors before the tutorial sessions and returned back after the tutorial sessions. The completed questionnaires were put in sealed envelopes by the students and returned to the tutor who placed them in the tutorial boxes. The questionnaires were resent in the following week to the tutors for them to give students who were absent the day of data collection during the tutorial session. A covering letter was enclosed in the tutorial box to the respective tutors instructing them to distribute the questionnaires only to the students who were absent in the previous tutorial session. Data entry and analysis were done using the Statistical Product and Service Solutions (SPSS), Version 17.0. Descriptive statistics and the chi-square test was applied when appropriate.

3. RESULTS AND DISCUSSION

Of the 535 medical students who were enrolled in years 1-4, 443 responded to the questionnaire thus resulting in a 82.8% response rate. The study showed that 40.2% of the medical students attended the college without sleeping during the night at all for at least one day per week (Figure 1). There were significant differences by gender, nationalities, and accommodation status. Figure 2 shows that among male students, over half (51.4%) of the Saudi and 41.5% of the Kuwaiti attended the college without sleeping during the night at all for at least one day during the week compared to 34.1% of the Bahraini and none of the Omani. Similarly, among female students, 52.1% of the Saudi and 51.8% of the Kuwaiti students attended the college without sleeping at all for at least one day during the week compared to 21.4% of the Bahraini, 42.1% of the Omani female students and none of the Emirati (Figure 3).

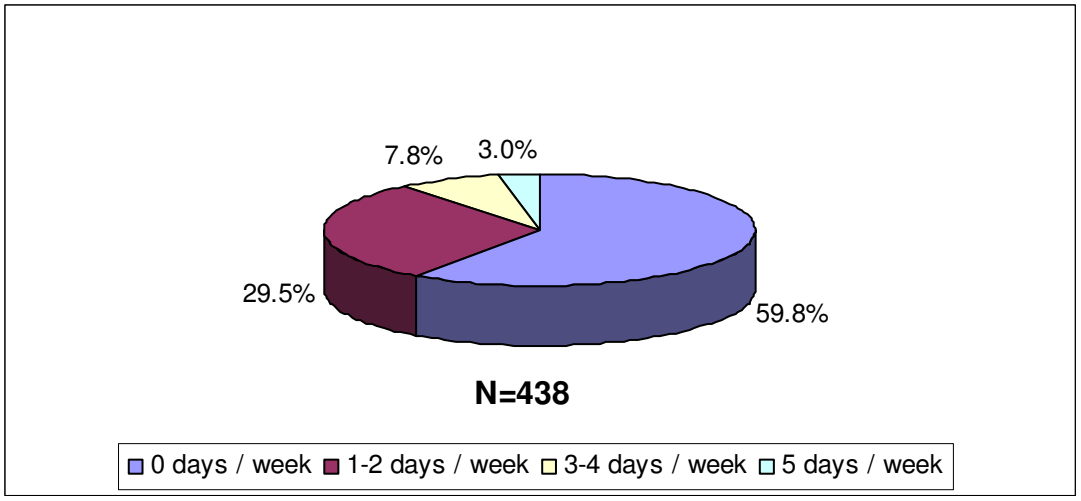

Fig 1: Frequency of College Attendance without Night Sleep at all per Week

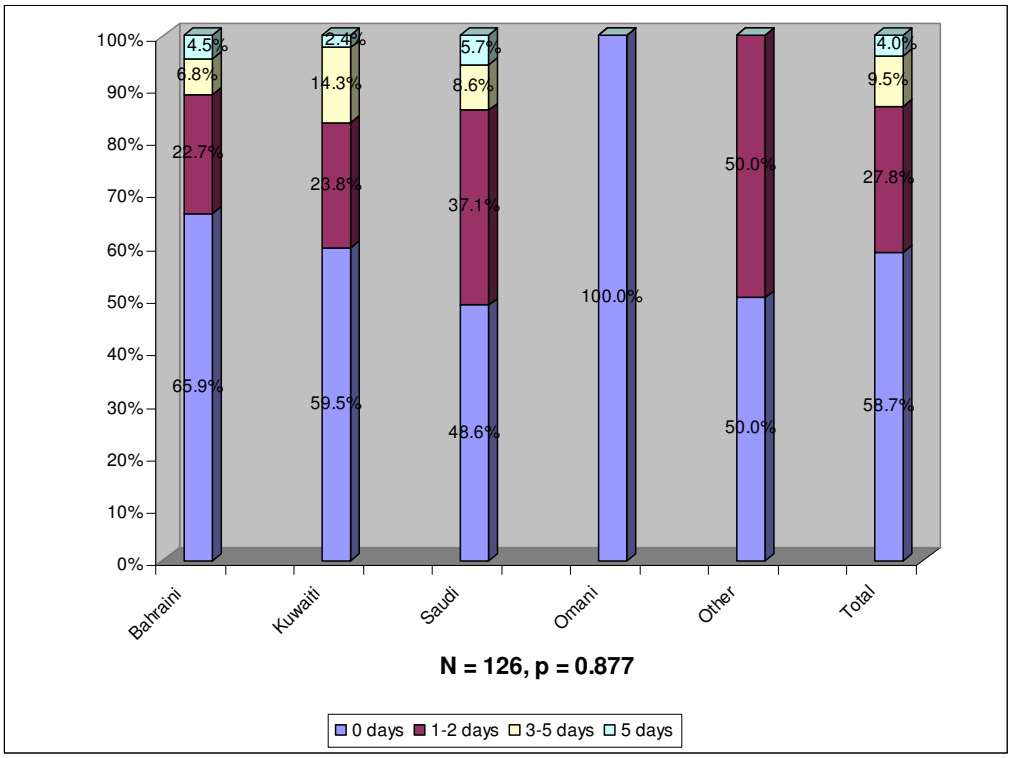

Fig. 2. Frequency of Weekly College attendance without Sleeping at night at all by Nationality among Male Students

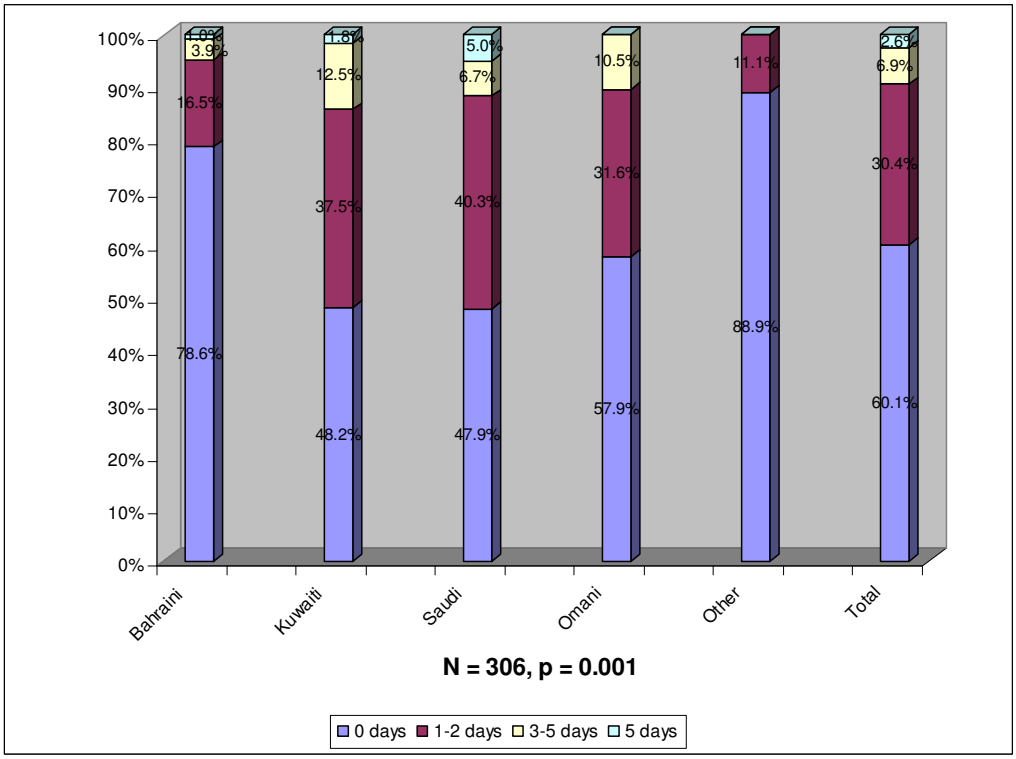

Fig. 3. Frequency of Weekly College attendance without Sleeping at night at all by Nationality among Female Students

Figures 4 and 5 show that Year 4 male students had the most appropriate sleep patterns compared to students of other medical years, as only 25% attended the college without sleeping at night for at least one day per week, compared to

43.2% in Year 1, 51.6% in Year 2, and 47.4% in Year 3. Unlike male students, there were no significant differences among females in the different medical years. However, 49.3% of Year 3 female students attended the college without sleeping at all for at least once per week compared to 39.5% in Year 1, 35.5% in Year 2 and 35.5% in Year 4. Analysis of sleeping patterns by accommodation status showed statistically significant differences whereby students living with their families had the lowest percentage (29.3%) of students attending the College without sleep at all for at least once per week, compared to those who lived in the university housing (47.7%), with relatives (55.6%), with friends (47.9%) or living alone (46.8%) (Figure 6). Moreover, 41.9% among the males who lived in the university housing and 50% of those who lived alone attended the college without sleeping at all for at least one day during the week, compared to 36.4% of those who lived with their families and 38.9% of those who lived with friends. A similar pattern was observed among females, where by 49.2% of those living in university housing and 53.3% of those who lived with friends attended the college without sleeping at all for at least one day during the week, compared to 26.8% of those who lived with their families, 33.3% with relatives and 44.4% of those who live by themselves (Figures 7 and 8).

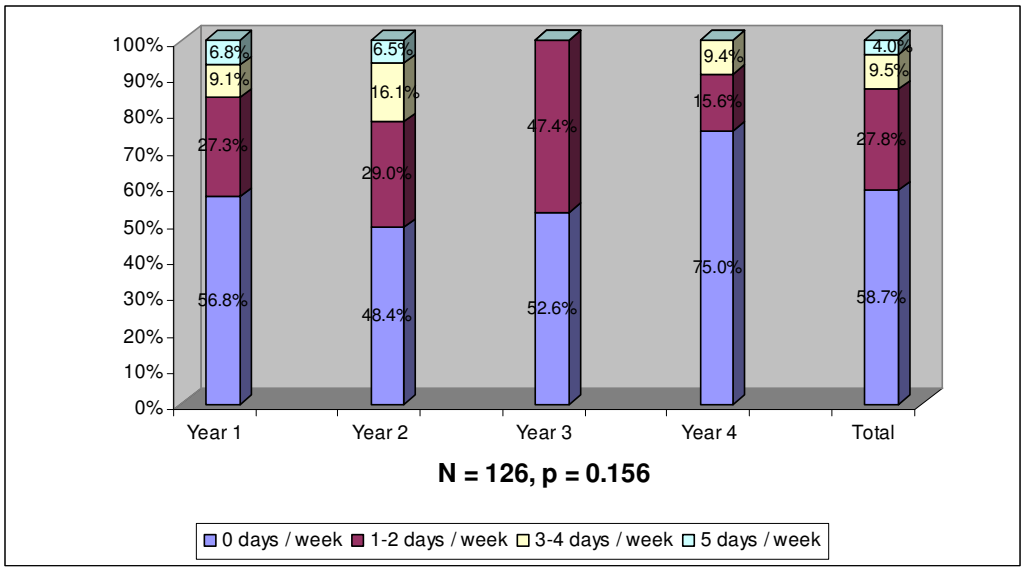

Fig. 4. Frequency of Weekly College attendance without Sleeping at night at all by Medical Year among Male Students

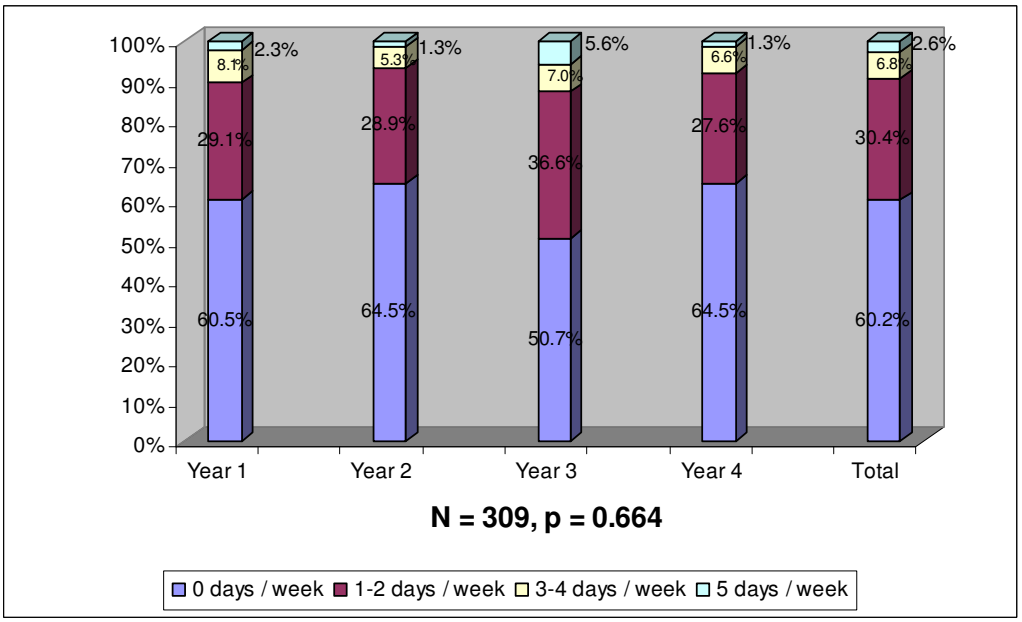

Fig. 5. Frequency of Weekly College attendance without Sleeping at night at all by Medical Year among Female Students

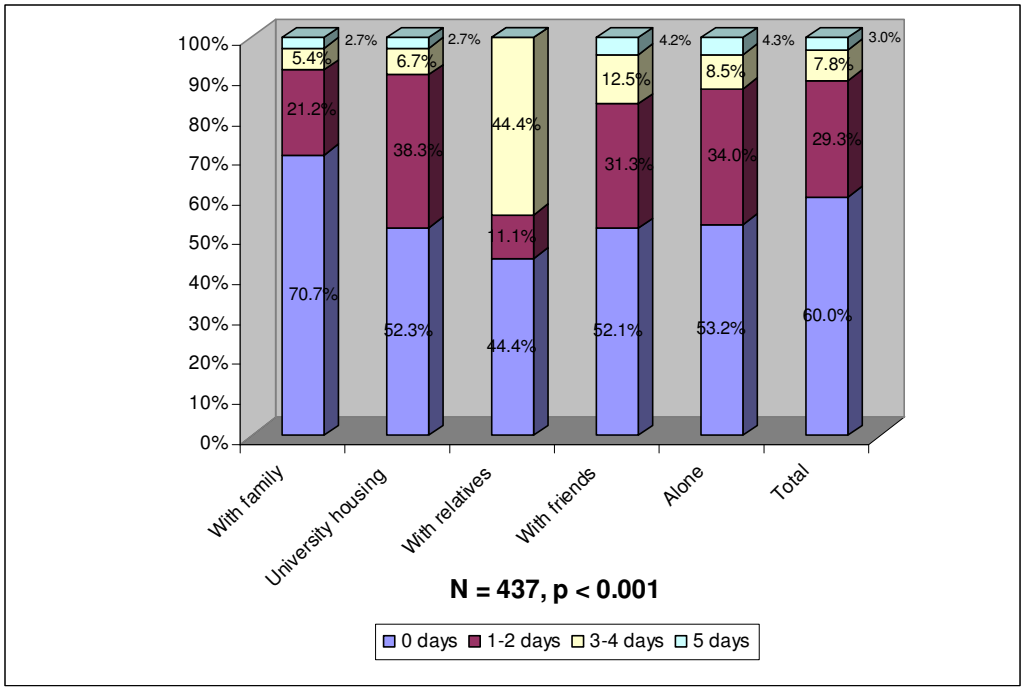

Fig. 6. Frequency of Weekly College attendance without Sleeping at night at all by Accommodation among Medical Students

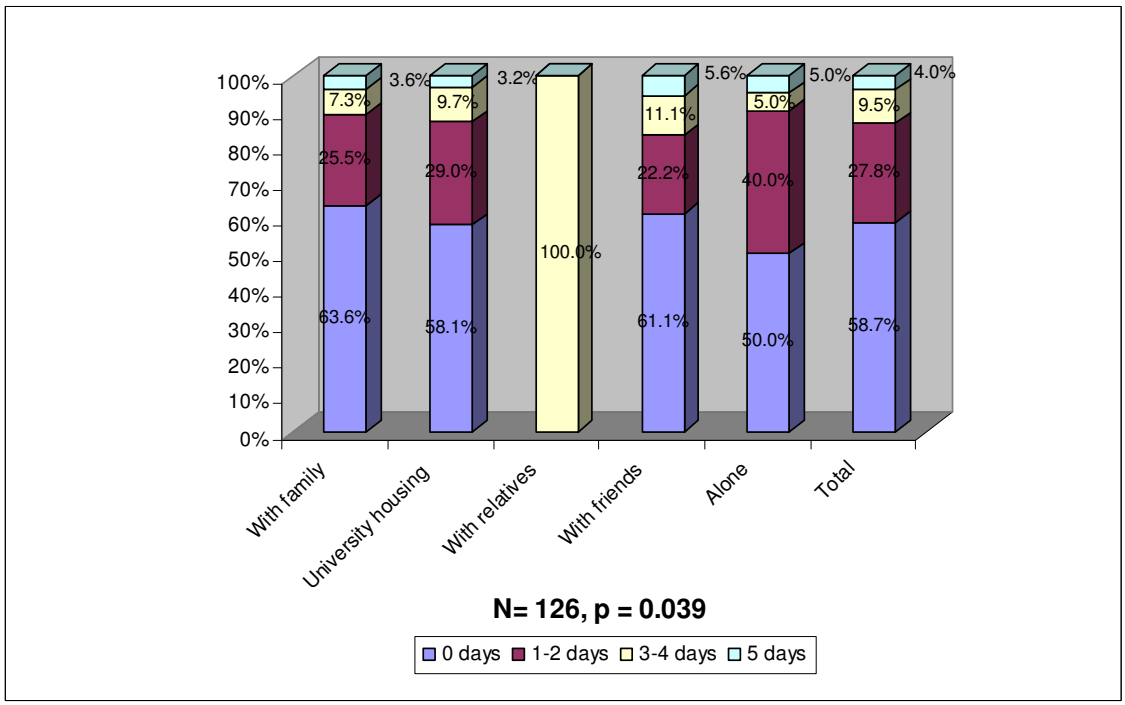

Fig. 7. Frequency of Weekly College attendance without Sleeping at night at all by Accommodation among Male Students

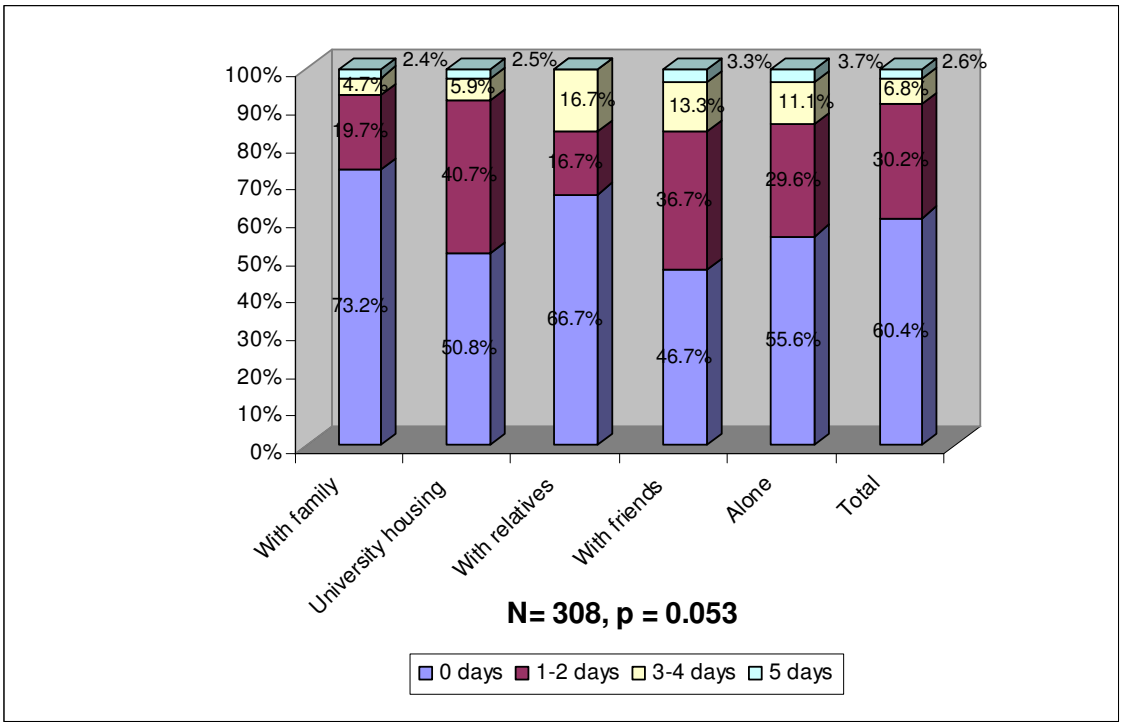

Fig. 8. Frequency of Weekly College attendance without Sleeping at night at all by Accommodation among Female Students

The study showed that 40% of the medical students were attending the college without sleep at all for at least one day during the week. There were significant differences by gender, nationality and accommodation status, but not by medical year. A similar finding was reported [11] where by many students had sleep problems that interfered with their daily performance. However there were no differences between students in different years of study for time to fall asleep, number of nights staying awake, or total time slept each night. The gender difference was explained by [12] as they concluded that gender differences in circadian typology and in biological rhythms have been revealed by using biological measurements as females were significantly more morning oriented than males.

5. CONCLUSION AND RECOMMENDATIONS

The results of the study are inline with the research hypotheses where AGU medical students do not appear to adopt healthy sleeping patterns. Moreover, sleeping patterns cluster among students according to gender, nationality and accommodation status. Urgent interventions are needed at AGU on promoting healthy sleeping patterns as part of a healthy lifestyle among medical students to improve their wellbeing. We recommend that the admission policy to the Medical School should include information about students' behavioral patterns in order to facilitate early intervention. The universities in GCC countries should consider having policies on the promotion of the students' wellbeing and healthy behavioral patterns and to reinforce knowledge regarding wellbeing and healthy behaviors throughout the medical curriculum. Provide counseling services at the university and university housings for healthy and better sleeping patterns. This will help to the early identification of students with unhealthy behavioral patterns by their academic advisors for intervention.

ETHICAL CONSIDERATIONS AND PRIVACY OF PARTICIPANTS

The Academic Committee of the Masters of Science in Health Policy and Population Studies program approved the research protocol. Study participation was on a voluntary basis and participants were assured of the confidentiality of the study by having the questionnaire anonymous and keeping the completed ones in sealed envelopes.

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