

Eating Habits, and Sleep Patterns among Medical Students While Studying For USMLE

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ABSTRACT

The research study investigates similar in eating habits and sleeps patterns among medical students studying for United State Examination Licensure Examination Step 1 and relationships between sleeping patterns, and eating habits on daily question banks performances. Research Method: Eating Habits and Sleep Patterns Among Medical Students studying is quantitative research conducted at the Pass Program in Champaign, IL. Evaluation of eating habits and sleep patterns among medical students can be conducted by using a survey. The survey would consist of close-ended questions provided to the student for evaluations. The questionnaire would require the student to respond to eating habits such as if students are eating junk food, or eating at home by preparing their meal if students are all three meals. The second part of the survey requires an evaluation of sleep patterns such as how many hours of sleep students are getting. The third part of the questionnaire would consist of questions of on student's performance. The surveys would require information on daily question banks based on eating and sleep habits such as if student performance increases or decreases with meals or if skipping meals have any effect on performance. Results: The research study provided 210 students with questionnaires from which 196 Students responded, and 151 student responses were recorded. 45 Students got eliminated due to consumption of medication and fasting during the study. The results have shown 58.5% of students preferred to prepare home-cooked meals. 25.8% of students do not skip breakfast. 54.3% of students consumed pre-packaged meals on a weekly basis due to easier access and cost-effectiveness. 58% of students stated skipping meals could alter their USMLE question back performance. 67% of students indicated a lack of sleep could change their USMLE question back performance. Students are obtaining 6 hours of sleep daily but prefer 8 hours of sleep. Conclusion: The research study has identified risk factors such as stress, lack of sleep and time management as complications while studying for national boards. The research has shown a lack of sleep to be a significant factor that altering student's daily performances on test bank rather than eating habits. Further evaluation of eating habits and sleep patterns are required to determine performances yearly as wells as other behavior patterns of students while studying for USMLE examinations.

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1. Introduction

The human body can be extremely stressed during a time of crises. Students may experience the fight and flight mode while studying for examinations leaving students lives revolves around classes and exams. The United States Medical Examinations examination is one of the most critical tests in a medical student career and time-consuming exam. Stress is a common risk factor leading to student's unhealthy lifestyle^{[1][2]}. Students' lives can be stressful due to increase class's workload and limitation on time to cook daily meals. Students studying for medical boards while attending medical university can lead to extreme stress for students leading to devastating consequences^[2]. Many medical students may not realize that an unhealthy lifestyle is leading to predisposing health conditions.

Students are required to study for more than ten hours a day. By the time students reach home after classes study seek a more natural method to cook or eat outside in fast food, restaurant or pre-packaged food. Stress is a significant factor

in medical school leading to an unhealthy lifestyle^[1]. Stress can arise with an intense schedule to accomplish all daily tasks and university workload. Students can alter their sleep patterns and eating habits based on their schedule^[2]. High stress due to lack of healthy eating can lead to anxiety or low blood sugar. Students with proper eating habits can help prevent common conditions such as hypertension, diabetes, or obesity among college population. High level of stress with class workload can alter students eating habits and lead to an unhealthy lifestyle. Unhealthy eating habits such as eating pre-packaged food, restaurant or fast food meals can lead to essential hypertension due to large sodium intake. Many students may eat unhealthy snacks such as cakes, Nutella, or potato chips. Skipping meals can contribute to unhealthy eating patterns. Many students skip meals due to lack of time management.

The Centers for Disease Control and Prevention advocates healthy adults should get 7 to 9 hours of sleep a day, although individual needs vary^[2]. Lack of sleep can be a

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risk factor for many chronic diseases and conditions, such as diabetes, cardiovascular diseases, obesity, and depression [2]. Students lack the benefit of sleep, which helps rejuvenate the mind by improving the student focus on daily tasks. Another advantage of the proper night of sleep can provide the student to retain more study material and help process short memory to long-term memory. Students in their clinical year of medical school working in a clinical setting may experience high levels of anxiety along with unhealthy lifestyle. While attending clinical clerkships in the hospital's students may experience hypoglycemia, hypertension, dizziness, fluctuations in weight or pre-diabetic symptoms contribute to an unhealthy lifestyle. Sleep patterns of students may be altered and contribute to lethargy and fatigue while attending classes or studying or studying for an examination.

Medical students under pressure can neglect their sleep habit as well as their diet. A quantitative research study is intended to investigate similarities among medical students at Pass Program in Champaign, IL. The research study examines similar eating habits, and sleep patterns among medical students while studying for United States Medical Licensure Examinations (USMLE) and correlating relationships between variables affecting daily question banks performances. The research study aims to identify specific risk factors like skipping meals and sleep consumptions among medical student. The study aims to research if students are consuming eating home-cooked meals, fast food, pre-packaged meals, or restaurant meals. The data obtained in the study would identify consumption rates of dietary food groups and sleep patterns with a correlation with daily question bank performance among students.

2. Research Method

The research study has been conducted at the pass program in the city of Champaign-Urbana in Illinois under the supervision of Dr. Francis Ihejirika at the pass program. The Eating Habits and Sleep Pattern Among Medical Students has been my practicum venture. Dr. Francis Ihejirika went about as the head executives of Ethical committee at the program. Dr. Ihejirika provided insight for research study addressing rules and regulations to the investigation and endorsed criteria to act under his supervision. Dr. Ihejirika approved all ethical concerns and research guidelines.

Personal eating habits can play a vital role in individual health especially during examinations as well as practicing medicine in the hospital. Lack of dietary intake such as skipping meals can lead to stress and anxiety in the long run. By gaining awareness and understanding, eating habits will help narrow down risk factors that are contributing to an unhealthy lifestyle among medical students that would assist in decreasing incidence of unhealthy lifestyle by educating students on lifestyle changes. A qualitative study is one of the best methods to be used in the research study. Qualitative research is a process of naturalistic inquiry that seeks an in-depth understanding of social phenomena within their natural setting [6].

Evaluation of eating habits and sleep patterns among medical students can be conducted by using a survey. The survey would consist of close-ended questions provided to the student for evaluations. The first part of the questionnaire would require the student to provide information on dietary habits such. Questionnaires investigate student's habits such as eating junk food or meal preparations. Questionnaires specifically ask the student if students are preparing breakfasts, lunch, and dinner at home with fresh ingredients. The second part of the survey would evaluate sleep patterns

such as how many hours of sleep students are acquiring. The third part of the questionnaire would consist of questions of on student's performance. The questions would require information on daily question banks based on eating and sleep habits such as if student performance increases or decreases with meals or if skipping meals have any effect on performance.

Other than the survey the students will be provided with information about the research study, evaluation methods and consent formations. The consent forms would inform students that the responses given will be confidential and will only be used for research purposes [7]. Consent forms are essential to provide students to establish trust. The dataset can be used to understand the trends of eating habits and sleep patterns of medical students such as if students are eating junk food, or cooking at home, how to offend are eating breakfast, lunch, and dinner. Respecting the privacy of participant and assuring confidentiality in research is essential.

The objective in the research study is to investigate if there are correlations between eating habits and sleep patterns of Medical students studying for the usmle examination and comparing it with daily question bank performances. The objective of the study is to identify any risk factors such as skipping meals or lack of sleep causing an incline or decline in student performances. The study conducted is at the Pass Program. Specific criteria are required to be eligible for the study. The study criteria require students to be an active student for usmle examination such as usmle Step 1, Step 2, clinical skills, and COMPLEX examination. The student will be given a survey and questionnaires to be evaluated on eating habits and sleep patterns. The eligible students must meet specific pre-requirements such as actively studying for the USMLE, currently not fasting, on a diet, or suffering from metabolic disorders, currently not taking medications that would affect their sleep or nutrition. The participant will be given to questionnaires to complete and require conducting a face-to-face interview to eliminate biases.

Scientific validity may occur in the research study if participants do not comprehend research questions in the survey and answer accordingly. The research study has presented with ethical challenges of scientific validity. To eliminate scientific validity participant were face to face interviewed. Biases can occur in studies, which can be one of the significant ethical issues in the research study. Data obtained from students can generate bias based on the responses of the questionnaire. Researchers should identify bias allowing the participant to give answers only regarding questions about research. The researchers should review data to avoid biases that can potentially be damaging the results [5]. It is imperative for the study to follow the code of ethics while conducting a research study. Biases may occur in the study with responses based on students scheduled exam date with studying for USMLE and possibility students may be aware of observation of habits that can differ results in the study. One of the potential issues that occur is students may not read the inform consent form that states the accurately informed of the purpose, methods, risks, benefits, and alternatives to the research [4]. Even with students provided with informed consent may still not be aware of the research method or purpose of the study. It is essential for the researcher to ask specific questions in the questionnaire to provide clarity to the student to generate the best response. Research should thoroughly provide information regarding analysis and procedures orally to control drop out rates and misunderstanding in studies.

3. Results

Interview students provide detail information on eating habits and sleep patterns. While conducting research students were provided with a description of the research along with all confidentiality and consent document. During the study, 210 students were presented with questionnaires at the Pass Program, and 196 Students responded. The research study eliminated forty-five students unable to meet study eligibility. Excluded students stated they consumed medication or were fasting during the study. The survey recorded 151 student responses.

Out of the 151 students males, 82 and 69 females participated in the study. The number of participants ranged from different age groups 11 students six men and five women ranged in 20-25 age group. Ninety-eight students belonged in 25-30 age group 49 men and 49 women. Thirty-seven students resided in the 30-35 age group, 19 men and 18 women. 5 Student belonged in >35 age group three men and two women. The ethnicity of students participating in the study has been diverse. The Asian population includes Chinese or another Asian ethnicity, Indian, Pakistani, Bangladesh, and Middle Eastern. The results showed 26 white, 15 African American, 69 Asian and 41 Hispanic/Latino students, however, no students participant that were from American Indian or Alaska Native heritage.

Preparation of Meals

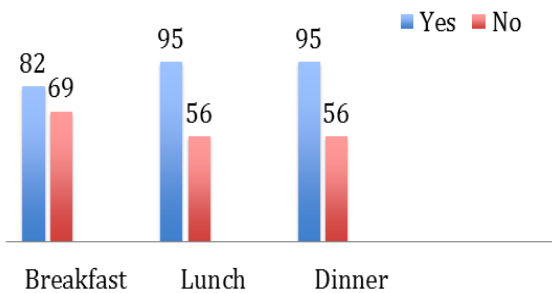


Figure 1. Meals preparation breakdown. 54.3% of students stated they prepare their own breakfast. 62.9% of students stated they prepare their own lunch and dinner.

The questionnaire asked students on regular eating habits. Do medical students preparing own breakfast their meals? Eighty-two students stated yes (41 men and 41 women), and 69 students indicated no (33 women and 36 men). When asked if students are preparing their lunch? Ninety-five students responded yes (48 men and 47 women) and 56 stated no (28 men and 28 women). When asked if medical students prepared their dinner? Ninety-five students responded yes (38 men and 57 women) and 56 students stated no (19 men and 37 women).

The research identified breakfast consumption trend among student. Medical students were asked how often they skipped meals such as breakfast, lunch, and dinner. Students were provided with options daily, once a week, twice a week, three or more times and never. The results show that many students consume breakfast. The highest present of students (37 students) stated they skip breakfast twice a week. Figure 2 provides a breakdown of the breakfast consumption results. Lunch Consumption Trend indicated lunch habits among students. Seventy-seven students stated they never skip lunch. However, 34 Students reported they skip lunch once a week. Figure 3 provides a breakdown of lunch consumption trends. Dinner trends have shown that 71 students stated they never skip dinner. However, students indicated that they do skip

dinner at least once a week (32 students) or twice a week (33 students). Figure 4 provides a breakdown of dinner consumption.

Skipping Breakfast

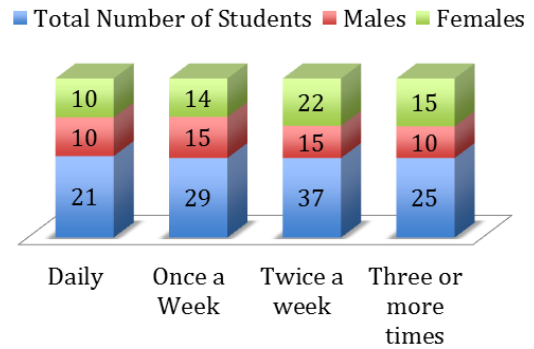


Figure 2. Breakfast trends among medical students. 13.9 % of students skip breakfast daily. 13.9 19.2% of students skip breakfast once a week. 24.5 % of students skip breakfast twice a week. 16.5 % of students skip breakfast Three times or more in a week.

Skipping Lunch

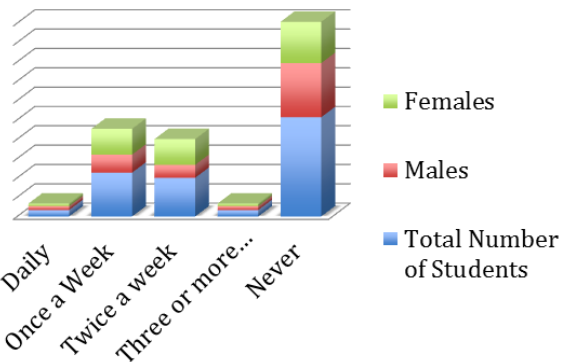


Figure 3. Lunch consumption trends. .03% of students (3 men and 2 women) skipped lunch daily. 22.5 % (20 women and 14 men) stated they skipped once a week. 19.8% (10 Men and 20 women) stated they skipped lunch twice a week. .03% of students (3 women and 2 men) stated they skipped three or more times a week. 50.9% (42 men and 35 women) students stated they never skip any meals.

Skipping Dinner

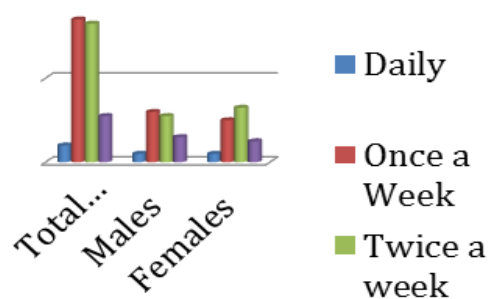


Figure 4. Dinner Consumption trends. .02% Students stated they skip dinner daily. 21.1% Students stated they skip dinner once a week. 21.8% Students stated they skip dinner twice a week. .07% Students stated they skip dinner three or more times and 47% Students stated they never skip dinner.

The second phase of research required students to participate in fact to face interview. Medical students were interviewed regarding personal eating habits. Students were asked questions regarding types of food and food group

consumptions. Students were asked about consumption regarding the daily kind of meals or snacks ramen noodles, hot Pockets, bread, cereal, sausage, burrito, tofu, or pasta. Students were asked if they consumed frozen pre-packaged foods with high fat or sodium content such as pancakes, bacon, burrito, lasagna or other pre-packaged meals. Students were asked if they ate at fast food or restaurant meals such as McDonald's, KFC, Taco Bell, TGIF, McAlister's, or Panera Bread.

While conducting face-to-face interview students were asked questions on consumption of food groups such as proteins, carbohydrates, and fat. Research has show medical students (89 students) consumed all of the above food groups daily. Carbohydrates have been reported as the highest food group that is consumed overall by medical students. While eating lunch 91 stated they students consumed grains such as pasta, tortillas, or rice daily and 85 students consumed meat daily. Fifty-one students reported they consumed vegetables daily, however; only 24 students consumed fruits daily. Dinner consumption students provided with similar results. Ninety-seven students stated they consumed grains daily and 90 students consumed meat daily. Fifty-three students reported they consumed vegetables during dinner time daily and 20 students incorporate fruits in their dinner daily. Students were asked regarding eating meals that they did not cook such as eat packaged food. Eighty-two students stated yes they eat a prepackaged meal (47 men and 35 women) and 69 students reported no they do not consume pre-packaged (27 men and 42 women). Figure 5 provides a breakdown of dietary habits such as food.

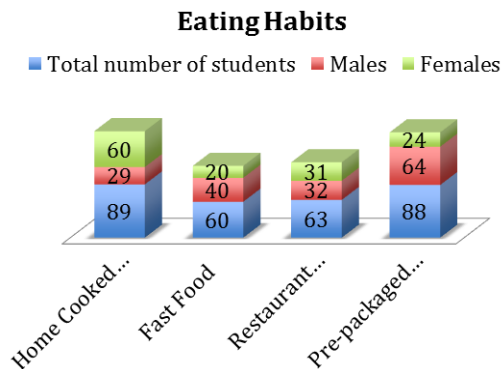


Figure 5. 58.9% students stated they cook fresh meals at home regularly. 39.7% students stated they eat fast food meals regularly. 41.7% students stated they eat restaurant meals regularly. 52.2% students stated they eat pre-packaged foods regularly.

The research study identified students' daily sleep patterns that are contributing to student's daily performance. The research study investigated correlations between sleep patterns and USMLE question bank performance. Students can alter their sleep patterns based on their busy schedule. Lack of sleep contributed to low performance. Evaluation of sleep patterns among medical students was conducted by using questionnaires and followed up with a face-to-face interview. Monitoring sleep patterns can determine any risk factors or underlying conditions that students could develop based on unhealthy lifestyles at the time of the initial study. The first question that was asked regarding sleep was if students were getting quality sleep per night. Fifty-eight students said yes (31 males, and 27 females) and 93 stated no (34 males and 62 females). The study investigated student sleep duration such as asking how many hours of sleep students are obtaining per night. The results had shown that 83 students stated they are receiving 6 hours of sleep per night,

which is an average hour of sleep that medical students are obtaining. The research study shows that 49.0% (74) of students prefer 8 hours of sleep per night and 36.4% (51) of students prefer 7 hours of sleep. Figure 6 provides details of sleep duration among medical students.

Quality of Sleep

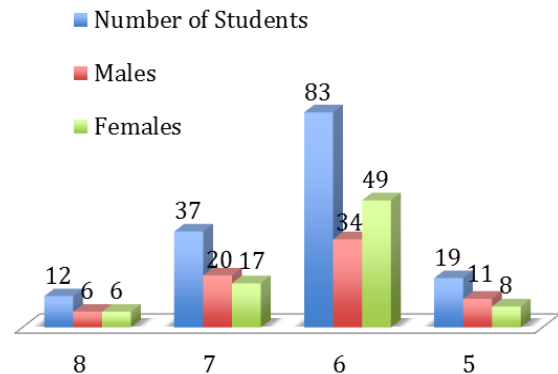


Figure 6. Sleep duration: .08% students stated they obtain 8 hours of sleep per night (Males 6 and 6 Females). 24.5% students stated they obtain 7 hours of sleep per night (Males 20 and Females 17). 54.9% students stated they get 6 hours of sleep per night (Males 34 and Females 49) 12.5% students stated they get 5 hours of sleep per night (Males 11 and Females 8).

Conducting face-to-face interviews provided crucial feedback regarding student's performance. Students were asked regarding daily achievements on questions back if skipping meals, or lack of sleep contributed to changes in study performances. When asked if they believed skipping meals can affect their USMLE question bank performance. Eighty-eight students (47 females and 41 males) stated yes skipping meals could alter their daily USMLE question bank performance. Thirty-seven students (11 women and 27 males) said skipping meals did not change their daily USMLE question bank performance. Twenty-six students (6 females and 20 males) stated they did not notice a significant change in their USMLE question bank performance. Students provided feedback regarding if they believed lack of sleep affects their question bank performance. One hundred two students (60 females and 42 males) stated yes lack of sleep could alter their daily USMLE question bank performance. Twenty-four students (10 females and 12 males) reported no that lack of sleep could not alter their daily USMLE question bank performance. Twenty-five students (8 females and 17 males) stated they did not notice a significant change in their USMLE question bank performance. The research study correlated retention and improvement with proper eating. Figure 7. A proper night of sleep ranked higher than eating habits among student to improve retention of USMLE material. The research eliminated 45 students that stated they consumption medication that suppressed individual dietary habits or sleep patterns. Students verified taking medications such as Adderall, sleep aid, dietary supplements (weight loss medications), or neuroleptics (if suppressed appetite) drugs were eliminated from the study. Other student fasting during the study for a religious holiday or currently on diets were eliminated from the study. Confidentiality was maintained for all students participating in the study. Face-to-Face interviews were conducted with student populations to eliminate the Hawthorne effect. During research, students were aware they were being observed and could provide answers altering the results.

Retention and Improvement On USMLE Examination based on Proper Eating and Sleeping

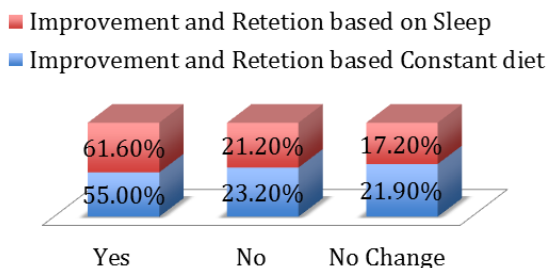


Figure 7. Retention and Improvements.

4. Conclusion

The research study investigates similar eating habits and sleeps patterns among medical students studying for USMLE Step and relationships between sleeping patterns, and eating habits on daily question banks performances. Eating habits and sleep patterns are crucial for medical student and may fluctuate among medical students due to stress and a bus schedule based on classes or during clerkships in the hospital. Recognizing sleep and eating habits trends can help determine performance levels of students that can help identify possible outcomes of the daily performance of students questions banks while studying for USMLE examinations. The daily dietary regime of medical students can lead early detections of diseases long with unhealthy habits that are contributing to stress, lack of sleep and other practices^[4].

The results of the research study have identified students preferred to prepare home-cooked meals. Many students did not skip breakfast, however, those that did skip breakfast twice a week. Students usually skipped lunch one a week based on a heavy schedule. Students skipped dinner once or twice a week. The research estimated 54.3% of students consumed pre-packaged meals on a weekly basis due to easier access and cost-effectiveness. Students are obtaining 6 hours of sleep daily but prefer 8 hours of sleep. The results have shown 58% of students stated skipping meals can alter question bank performance and 67% of students indicated lack of sleep could change their USMLE question bank performance. About 71% of the students stated it is difficult for them to prepare their meals such as breakfast, lunch or dinner. Nearly 67% of students preferred to purchase their meals such as breakfast, lunch or dinner. Most students preferred to eat meat and grains daily such as bread, pasta, or rice. Overall food group consumption has shown that 66% of students consume carbohydrates, 21% of students consume proteins while only 13% of students consumed fat daily.

Monitoring the eating habits and sleep patterns can determine any risk factors or underline conditions that student must be facing at the time of initial studying until the day of examinations. Monitoring the health status of medical students can establish any baseline for interventions. Inform, educate, and empower the students about health issues is the second essential public health services that would be viewed in the research study. Inform, educate, and can benefit students to change eating habits and sleep patterns to change lifestyle. The research study can provide a positive social change among students^[4].

The positive social change can provide details of data collected by the study can help determine risk factors for the

student populations and the public. With the data obtained the students eliminate risk factors from diet and make healthy life choices. Students can provide information to other students while studying to educate them on risk factors and implement change. The research study on eating habits and sleeping patterns can provide extensive knowledge of daily students lives. Researchers should protect confidential information, such as questionnaires, records, or any personal information relating to research to ensure trust between the candidate and the researchers^[4]. The study has identified stress as a risk factor altering eating habits and sleep patterns leading to changes in USMLE performance. Further evaluation of eating habits and sleep patterns are required to determine performances yearly as wells as other behavior patterns of students.

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