Changes in Lifestyle Habits among Medical Students Before and After Enrolling into Medical School: A Cross-Sectional Observational Survey Study

By Cheng I Yeung, Chinyere Egbuna, Oluwafunsho Oreniyi & Ornella Kaja

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Objective

To investigate lifestyle changes that occurs among medical school students at different academic levels before and after enrolling into medical school in order to cope with the demands of medical school.

- Hypothesis: Students will record a change/difference in lifestyle after enrolling into medical school.

- Research Questions:
  - What are the lifestyle changes noticed in medical school students after they begin medical school?
  - What are the changes in sleep habits ?
  - What are the changes in exercise patterns?

Introduction

- Lifestyle modification has always been the first line of treatment and guideline for prevention and management for most chronic diseases.
- Upon entering medical school, many students generally report healthier lifestyles, however, the academic demand and challenges of medical school makes it difficult for students to maintain a healthy lifestyle, thus creating potential adverse consequences on their physical and psychological health.
- The long-term consequences includes depression, suicide, cardiovascular diseases and other chronic diseases.
- The rise in prevalence of chronic diseases, such as obesity, diabetes, hypertension, and depression, emphasizes on the importance that medical school curricula should include learning opportunities on lifestyle management and behavioral counseling for future practitioners.

Design

A nationwide cross sectional observational survey by means of a questionnaire

Methods and Statistical Analysis

- A **cross-sectional observational survey** was made available for all medical students in different levels in the United States of America and Canada via **Survey-Monkey** services (https://www.surveymonkey.com/)
- The link of the survey was distributed via Facebook, Instagram, Twitter, WhatsApp and other social media outlets.
- The questionnaires used in this study **consisted of two parts**; the first part consisted of socio demographic questions and the second part consisted of questions on Health-Promoting lifestyle profile.
- **A total of 79 responses** and no personal identifiers were obtained. Data were analyzed to determine statistical significance **using a two paired t-tests for calculation of p-value <0.05.**

Demographics

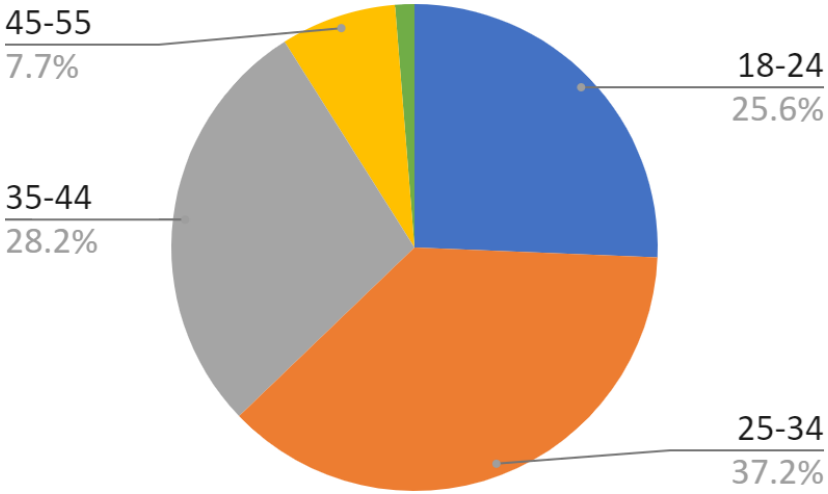

Figure 1.1 Distribution of participants according to age.

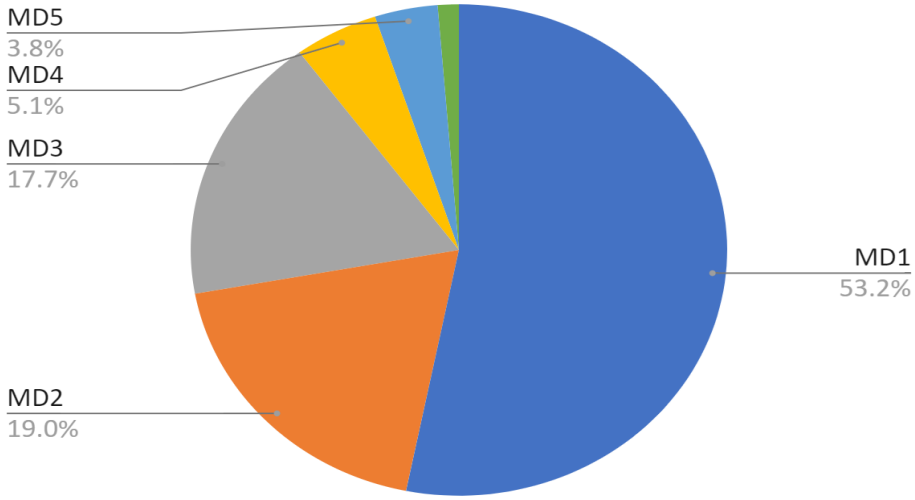

Figure 1.2 Distribution of participants according to MD Level.

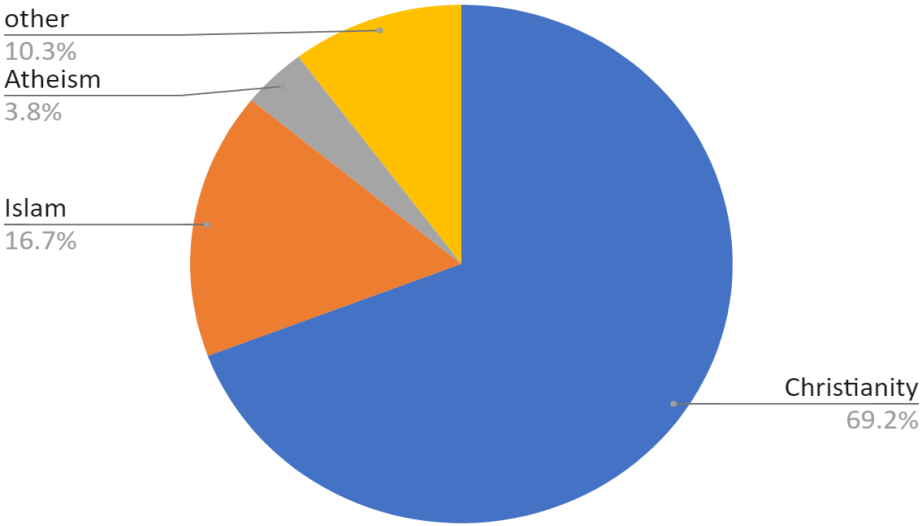

Figure 1.3 Distribution of participants according to religious group.

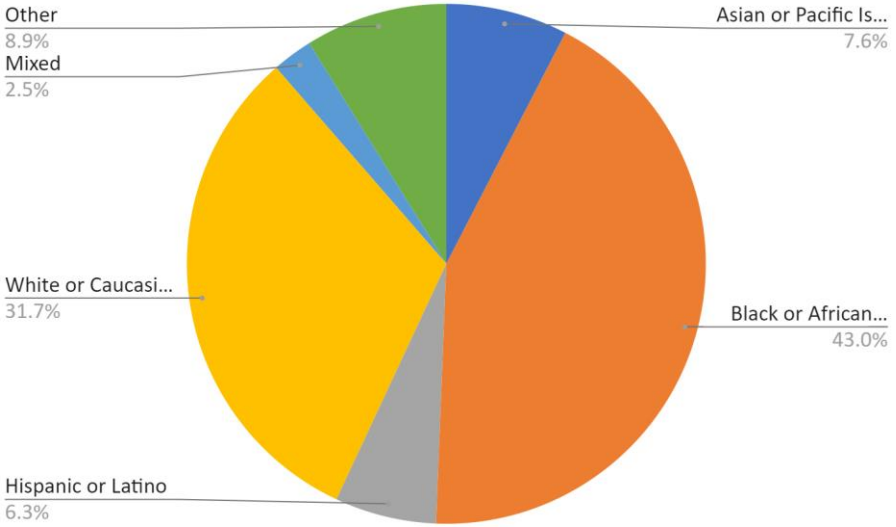

Figure 1.4 Distribution of participants according to race.

Results

- Questionnaire results

	Questionnaire	P-Value
Q7	How many hours do you sleep a day?	0.05
Q8	Describe your use of sleeping aids	0.04
Q9	which best describes your physical activity	0.007
Q10	Length of your exercise session.	0.043
Q11	Please choose frequency of exercise sessions	NS
Q12	Option which best describes your weight change	0.004
Q13	How would you describe your health in general?	NS
Q14	Please choose the overall satisfaction with life	NS
Q15	How do you deal with stress?	0.03
Q16	Best describes your spiritual awareness.	0.005
Q17	Best describes your spiritual awareness.	0.03
Q18	Option that best describes your study habits	0.05

Results

- The result showed changes in physical activity emphasizing more on **sedentary behaviors, less socializing, weight gain, and less amount of sleep**.
- The result of the analysis portrayed that the average hours of sleep per day changed **from about 8 hours to between 5 to 7 hours** a day (p=0.05).

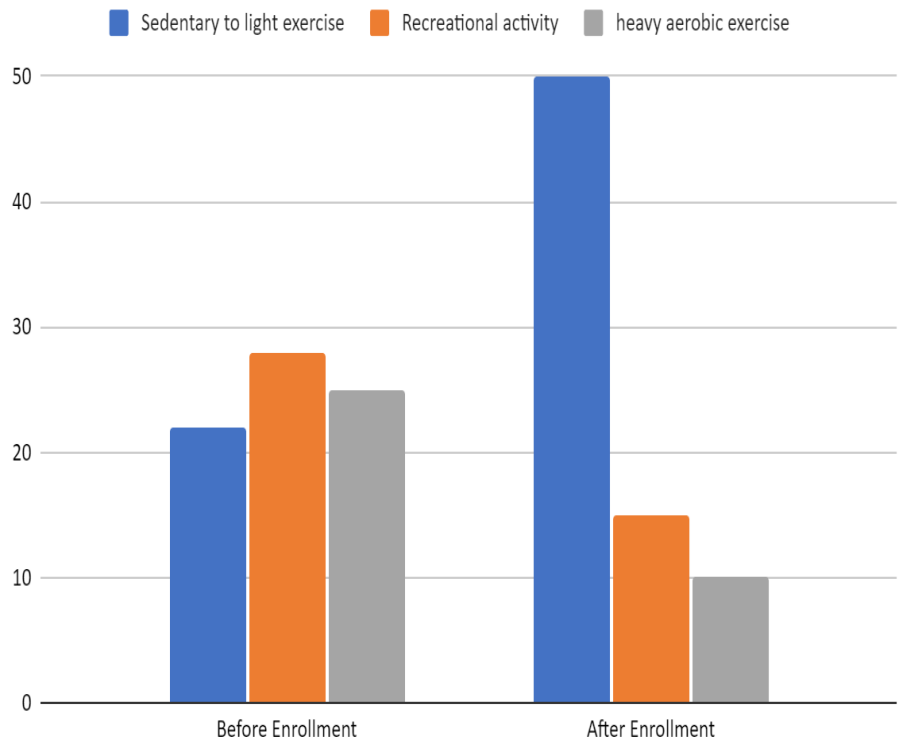

Figure 1.7 Response rate to question 9 "Which category best describes your physical activity level in a week?" with a p-value of 0.007.

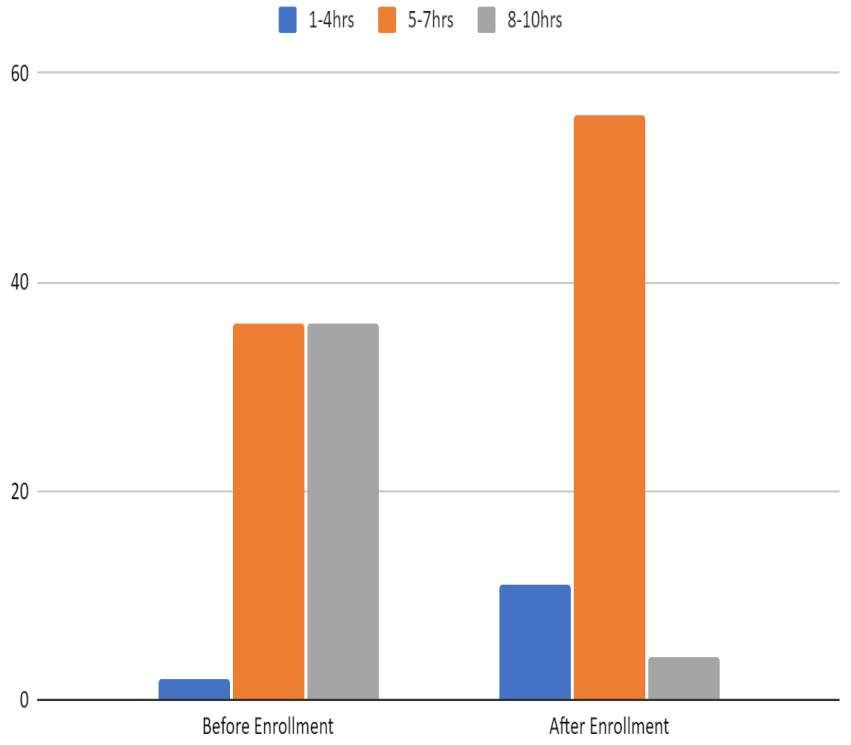

Figure 1.5 Response rate to question 7 "How many hours do you sleep a day?" with a p-value of 0.05.

Results

- We also noticed that participants reported **exercising once a week or not at all <u>after</u>** enrolling in comparison to **<u>before</u>** enrolling where they reported **exercising 3 times a week or over 5 times a week.**
- We also asked for the duration of their exercise and noticed that **after** enrollment the majority of participants reported **exercising for less than 10 minutes**, meanwhile **before** they enrolled, the majority reported exercising for **over 45 minutes.**

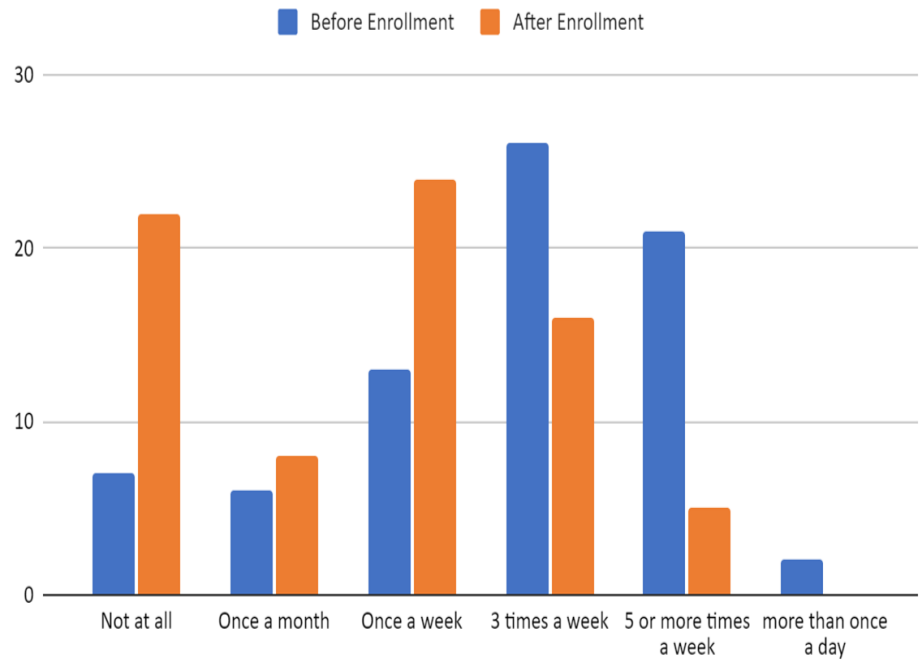

Figure 1.9 Response rate to question 11 “Please choose frequency of exercise sessions” with no significant p value change.

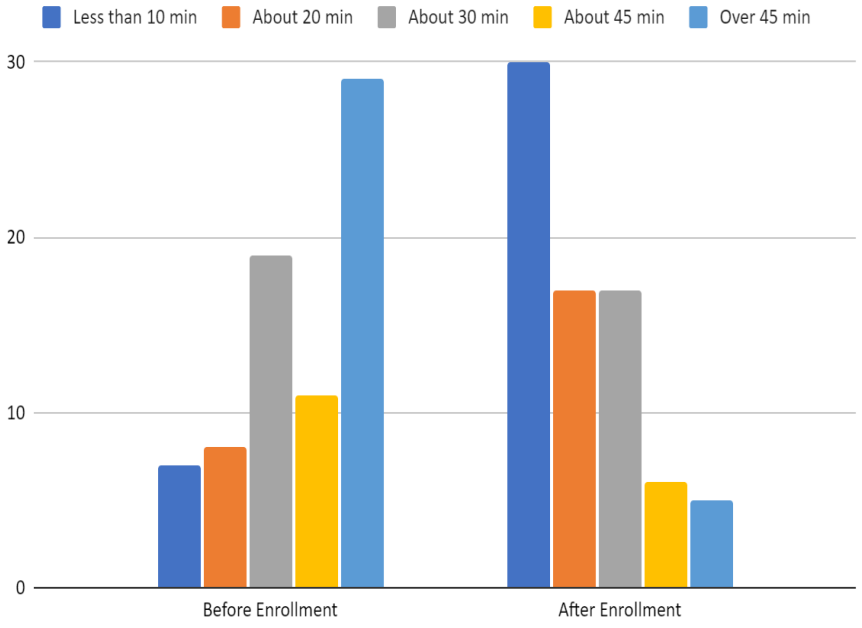

Figure 1.8 Response rate to question 10 “Choose the length of your exercise session” with a p-value of 0.043.

Results

- When students were asked how they dealt with stress before enrolling into medical school, the majority chose exercise/socializing; however, when asked about after enrolment the number of students who said socializing and exercise decreased and more students used smoking/caffeine, counselling/therapy, or medications instead with a p-value of 0.03.
- Spirituality can be considered a big part of socializing. Our data showed an insignificant decrease in the use of spiritual relics, after enrollment and more students reported going to their religious place on special religious occasions.

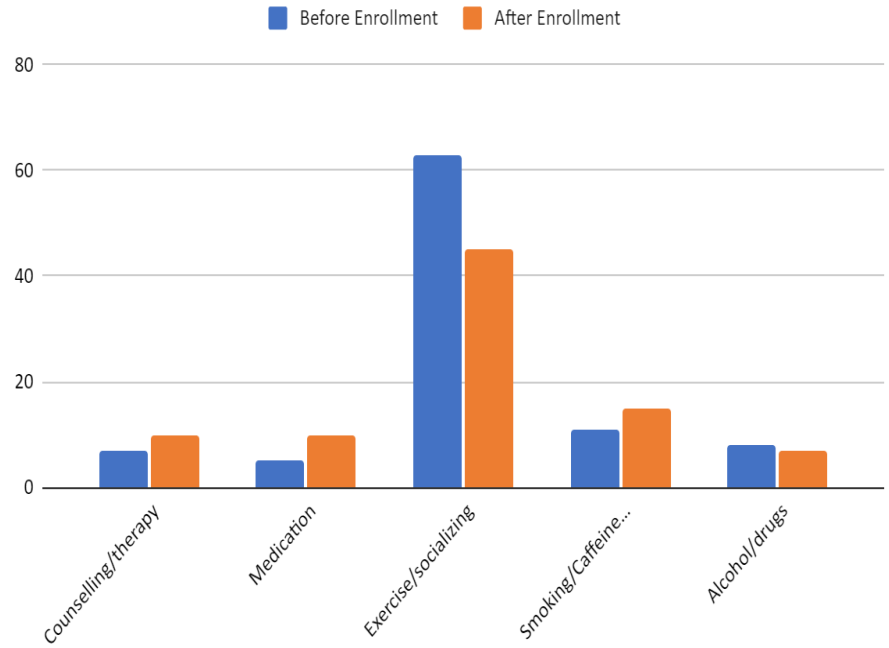

Figure 1.11 Response rate to question 15 "How do you deal with stress?" with P-value of 0.03.

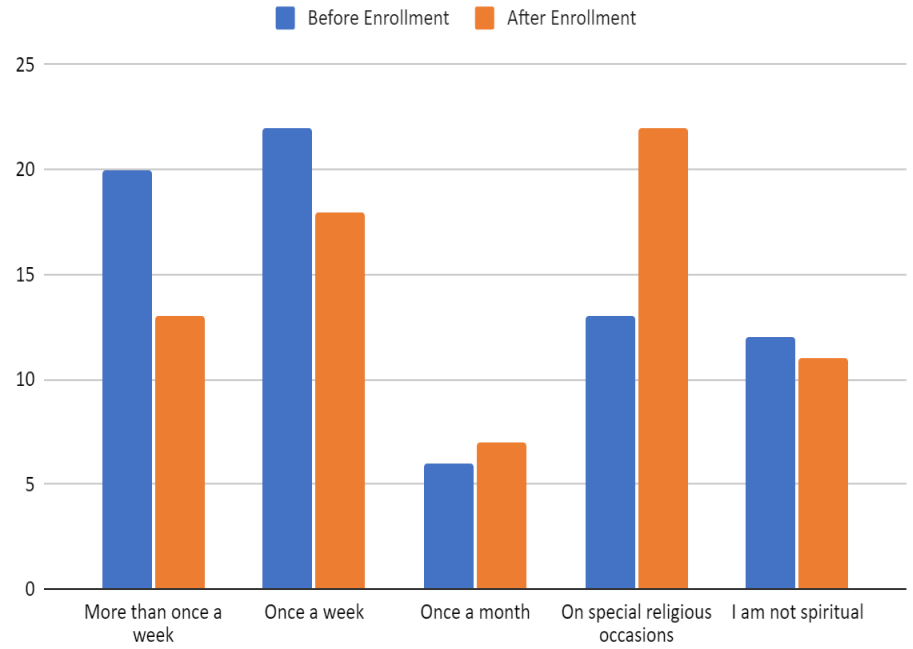

Figure 1.12 Response rate to question 16 "How often do you go to your spiritual place?" with a p-value of 0.005.

Results

- Our data showed that after enrolling, the majority **(57.5%)** of medical school students spent **5-10 hours** studying a day and **23.3%** studied **10-15 hours a day**.
- These reports had a cascading effect as the students who recorded having a **stable weight** before enrollment noticed **weight gain of about 10 pounds** while some even noticed weight gain of **over 10 pounds** after enrollment.

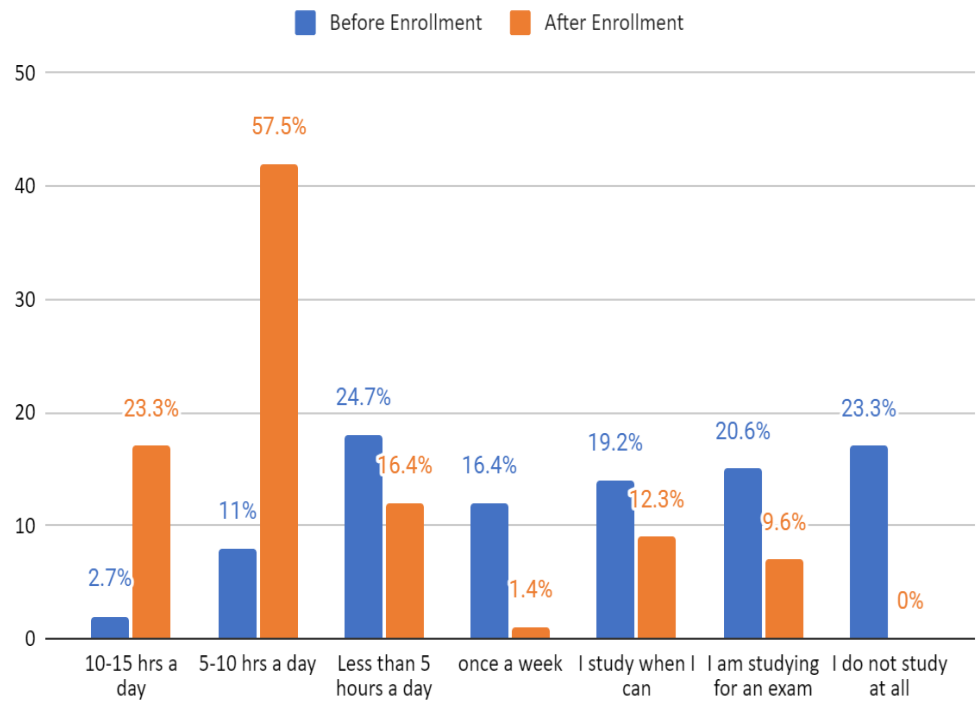

Figure 1.13 response rate to question 18 "How would you describe your study habits?" with a p-value of 0.05.

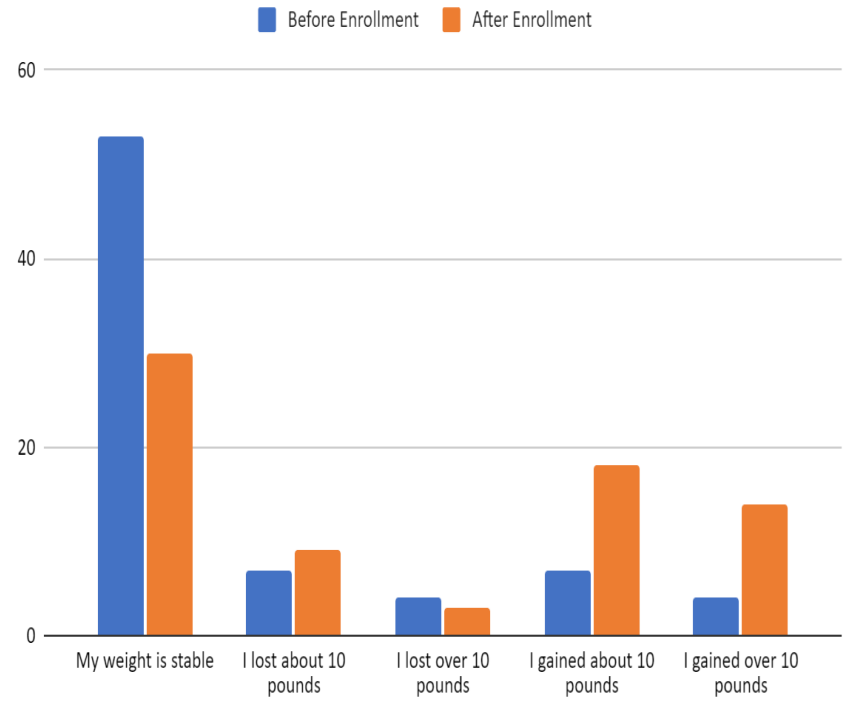

Figure 1.10 Response rate to question 12 "Please choose the option that best describes your weight change" with a p-value of 0.004.

Results

- The majority of the participants reported their health to be **very good, good or excellent** (30, 18. 17 respectively) **before** enrollment.
- After enrollment the majority of participants reported that their overall health was **good, very good or fair** (26, 18, 17 respectively) however this change was <u>not significant</u>.

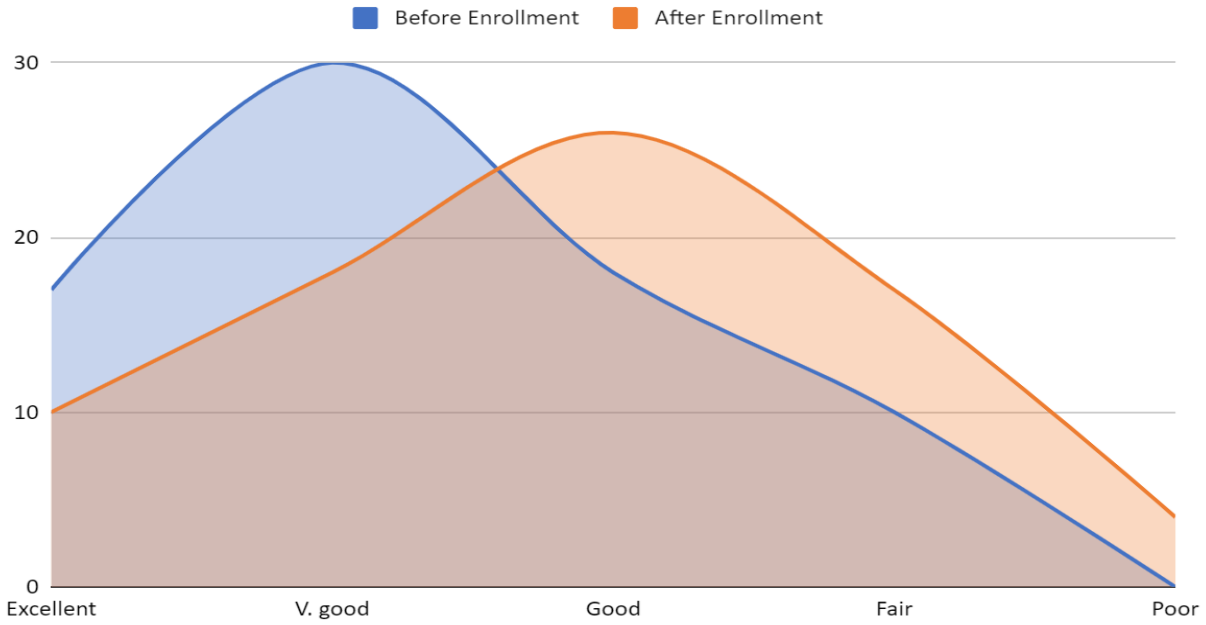

Figure 1.14 Response rate to question 13 “How would you describe your own health in general?” with no significant change.

Discussion

- This study was done during the pandemic which may have added or removed more stress from the participants.
- In the study done by Balanza-Martinez et al. (2021), it was found that **during the pandemic people made lifestyle changes** due to the stress they faced at that time from home. This showed that the pandemic may have added more stress to the participants.
- Students also reported **a slight decrease in overall health** meanwhile Hui & Ramzan (2017) found a negative correlation between perceived stress and life satisfaction among medical students.
- Estupinan & Kibble (2018) found that **spirituality is a good coping mechanism against burn out**, however, our data showed a slight decrease in the use of spiritual relics and doing spiritual activities.

Discussion

- The results showed that **students made unhealthy changes** to their lifestyle habits when in a stressful environment such as medical school.
- A large number of people responded that they exercised less frequently and for a shorter period of time after enrolling.
- Almojali et al. (2017) also found that most students slept for less than 7 hours. They went to bed late, woke up early and reported poor sleep quality. This is in line with our findings, because we found that **students slept less** and reported using more sleep aids.
- A sedentary lifestyle of **reading for up to 9 hours** (Castro et al., 2020) has contributed to physical changes to the students. They **gained on average 10 pounds** after enrolling.

Conclusion

- Students made unhealthy changes to their lifestyle habits when in a stressful environment such as medical school.
- Participants spent more time studying thereby leaving little time for other things. (e.g., exercise, sleep, and spirituality).
- The participants also reported an increase in weight which was significant. Therefore, medical schools should integrate changes that encourage exercise such as walking by reducing the use escalators/elevators and a gym on campus.
- Medical schools should be encouraged to integrate wellness and spiritual programs such as church/mosque & bible clubs to boost wellness and prevent student burnout.
- Students in a traditional university (i.e., not online) reported a **higher Satisfaction With Life Score (SWLS)** because being in person creates a sense of community among students thereby boosting SWLS.

Limitations and Further Recommendations

- We had a satisfactory response rate, however, we felt that maybe a larger sample size might have shown more changes. Therefore, another study with a bigger sample size is recommended.
- This study was done during the pandemic which may have added or removed more stress from the participants. We recommend doing another study after the pandemic is over.
- Recall bias and response bias could not be ruled out completely due to the use of self reported questionnaires.

Acknowledgements

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