

The Negative Impact of Bariatric Surgery on Sleep Quality among UAE Residents

Fatima A. Al Muhairi¹, Maitha M. Al Hajeri¹, Salma A. Al Mansoori¹, Fatima J. Al Hashmi¹,
Emma Wei Chen¹

¹Pre-Medicine Bridge Program, Khalifa University of Science & Technology

1 Background

Obesity lowers the quality of life with regards to sleep quality. Bariatric surgery, on the other hand, has become a popular measure in treating obesity in many countries including UAE. However, there are concerns that post-surgery, the individuals experience difficulties in sleep.

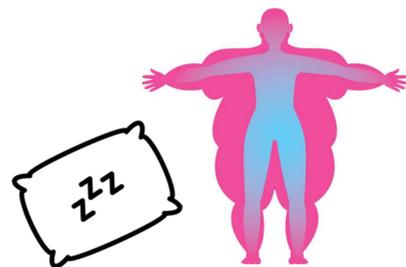
What are the impacts of bariatric surgery on bariatric patients?

- Bariatric surgery has been effectively associated to long-term maintenance of body weight after reduction (Abusnana et al, 2015).
- Bariatric surgery can also improve weight-related comorbidities such as sleep apnea (Ashrafian et al, 2014).
- Despite of the improvement on sleep apnea, few study has done to investigate whether bariatric surgery can increase sleep quality (Toor et al, 2011).

What is the relationship between bariatric surgery and sleep quality?

The current study aims to:

- Investigate the correlation between bariatric surgery and sleep quality among residents in the UAE.
- Assess the sleep quality among bariatric and non-bariatric obese individuals in the UAE.
- Investigate how other factors such as age, gender, and mental health state may moderate the relationship between bariatric surgery and sleep quality.



4 Conclusion

Bariatric patients experience poorer sleep quality than obese non-bariatric individuals in general. Furthermore, while female patients with low post-surgery BMI sleep better than those with high post-surgery BMI, male patients seem to suffer from poor sleep quality regardless of their BMI. These findings would help to extend our understanding of the outcomes of bariatric surgery, which would be valuable for implementing regional strategies to address treatment programs for obesity.

2 Method

A retrospective cohort study was employed.

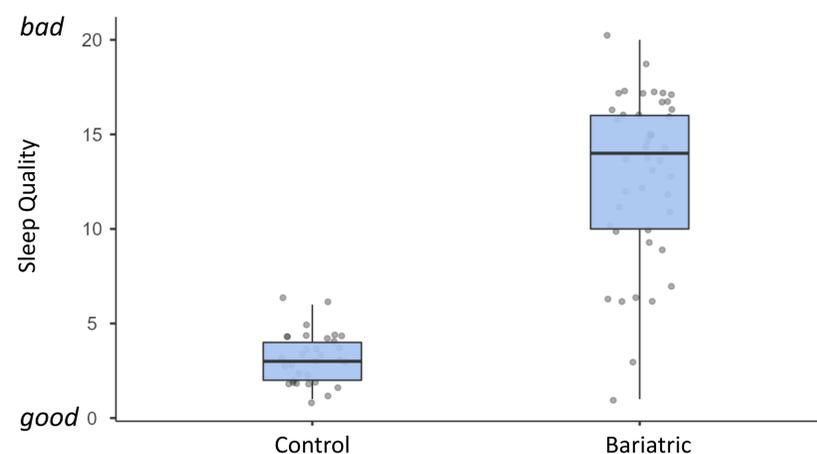
Participants:

- 104 UAE residents were included in the study: 53 in the Bariatric group, 51 in the Control (Non-Bariatric) group. Recruitment criteria are below:
 - BMI ≥ 30 kg/m²
 - No Mental or Physical health issues
- Consents were obtained prior the participation.

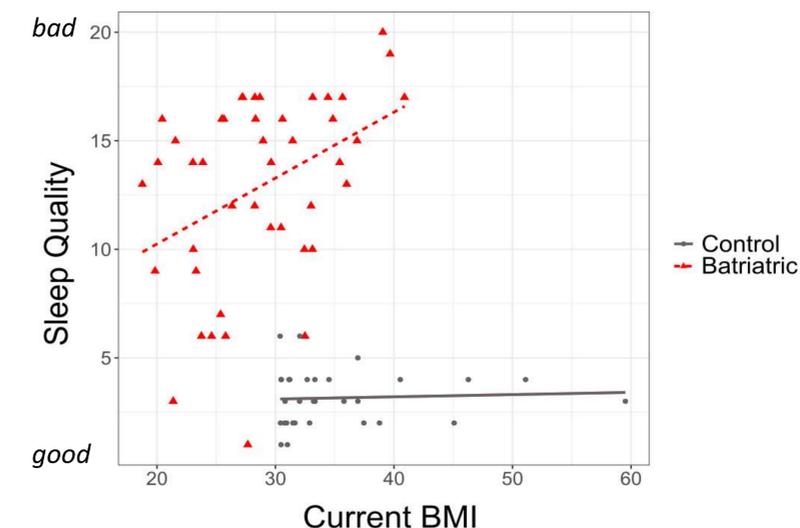
Procedure & Measures:

- Data were collected from the participants via an online-based survey – Google Forms was utilized.
- The survey composed of four main parts;
 1. **Survey of demographic information**, including Age, Gender, Nationality, etc.
 2. **Medical Outcomes Health Survey** – Investigating physical and mental health.
 3. **Beck Depression Inventory Short Form** – Evaluating participant's level of depression.
 4. **Pittsburg Sleep Quality Index** – Evaluating participant's sleep quality.
- Data were analyzed using Jamovi Software.

3 Results



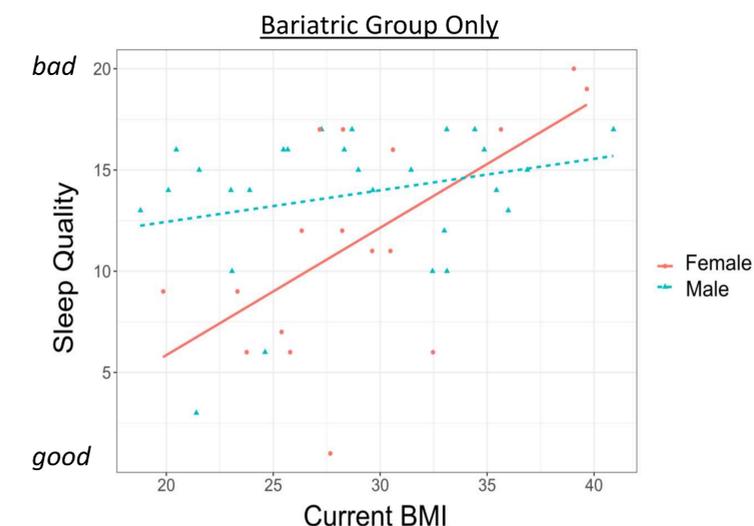
Bariatric patients have poorer sleep quality than the control group ($t = 12.2, p < 0.001$).



Only for the bariatric group, higher BMI is associated with poorer sleep quality ($r = 0.39, p = 0.008$).

| Predictor | β | t | p |
|--|----------------|---------------|--------------|
| Intercept | | 1.384 | 0.175 |
| Age | 0.0841 | 0.604 | 0.550 |
| Gender: 1 – 0 | -0.6130 | -2.648 | 0.012 |
| TotalBDIScore | 0.1616 | 1.129 | 0.266 |
| CurrentBMI | 0.1887 | 1.136 | 0.263 |
| When-surgery-is-done-binary: | | | |
| < 3 y – > 3 y | 0.2100 | 0.745 | 0.461 |
| Gender * CurrentBMI: (1 – 0) * CurrentBMI | 0.6879 | 2.289 | 0.028 |

A regression model with Sleep Quality as the dependent variable, and Age, Gender, Depressive symptoms, Current BMI and When the surgery was done as predictors was tested to be significant ($R^2 = 0.34, p = 0.012$).



Male bariatric patients may have poorer sleep quality than female patients in general. More importantly, higher BMI is strongly associated with worse sleep for female patients only.