Professor Minsu Park

Assignment 4

Health- Visualization

December 7, 2021

Final Project

Obesity in the UAE: Nationality, Culture, and Lifestyle

Safal (ss13750), Aigerim (az2177), Joao Bosco (jbd393), Alyaa (aaa1229)

[Github]

Introduction

UAE culture has been criticized for impacting obesity rates in women more significantly than in men due to traditional restrictions (AlNohair). Anecdotally, NYUAD's men's volleyball and basketball teams have participated in competitions with other universities in Abu Dhabi during the Fall 2021 term while women's teams have not; the reason being that other collegiate women's teams in Abu Dhabi were not allowed to compete in other campuses. However, when noting that women are indeed more immobile and less physically active (Mabry), a biased observer might then take this information and stretch to assume that culture in the UAE is the sole cause of the gender disparity in obesity, or even the obesity itself. In fact, the UAE is progressing and culture is not the only factor affecting obesity. Oversimplifying the roots of obesity and pinning them to sexist culture solidifies the prejudiced view of the Orient, even though there are multiple factors affecting the rates, which is unfair to the UAE culture. In this paper, we will focus on how the availability and proximity of gendered facilities is a factor that has an impact on the obesity rates in UAE residents.

Research Question

The purpose of this paper is to find out if there are factors apart from **Emirati** culture that are causing obesity in women of UAE. Even though the stereotypical view is that women are oppressed in the Gulf, we want to know what's beyond this narrative – especially given that, from the literature we have explored, we found disparities in the obesity rate among women as well. In order to find out other factors that might be affecting this gender gap, we dive deeper into one of them: how accessibility and availability of gendered facilities affect obesity rates in UAE national and expat women.

Literature review

Obesity is a prevalent problem in the Gulf region. Out of the ten countries with the highest rates of obesity in the world, four of them can be found in the Gulf: Kuwait, Bahrain, Saudi Arabia, the United Arab Emirates. (Papandreou) This has not always been the case; in fact, it occurred due to rapid socio economic shifts in the region, which led to a rapid increase in obesity rates to the point where they are close to those of the United States and other Western nations. (Mabry) This is important due to the negative health consequences associated with obesity, which range widely; these include increased risk of heart disease, diabetes, stroke, and decreased length and quality of life. (National Heart)

Obesity is caused by a high daily caloric intake and lack of physical activity. Out of the countries in the Gulf Cooperation Council, most adults fall short of the international standard recommendation of 150 minutes of weekly exercise. In the GCC around 40% of males meet the recommendation, while less than 30% of women do. (Mabry) At the very least, this is partly the reason why obesity has such a strong gendered aspect in the UAE – the estimated rates of obesity in the country are 25% for males, and 42% for females – this can be seen in Figure 1. (AlNohair)

It is also important to note that the high rates of obesity are not limited only to Emirati nationals. According to a government-sponsored study which counted 2,724 respondents (the UAE National Diabetes and Lifestyle Study, or UAEDIAB), the rate of obesity in the UAE was 32.3% (and the rate of overweight being 43.0%) in the expatriate population. Moreover, the data collected from this survey also demonstrates higher female rates of obesity than male rates of obesity in the expatriate population. (Sulaiman et al)

Figure 1 and Figure 2 show this relationship in detail. As was discussed previously, Emirati Nationals have significantly higher rates of female obesity than male obesity; this observation also applies to most other groups, as well. As can be seen in Figure 2, for surveyed Arabic-,Western-, and African-originating expatriates, this also holds true. The notable exception is the Asia-originating group, for which the data is reversed: there is relatively more male obesity.

In general, however, it can be said that for most groups in the UAE there is a clear pattern of higher female obesity. Hence, it is somewhat unlikely that national Emirati culture is the sole factor in determining gender disparities in obesity (or even the most important); as such, it is important to discover what other reasons might be behind this difference.

Figure 1 (Sulaiman et al)

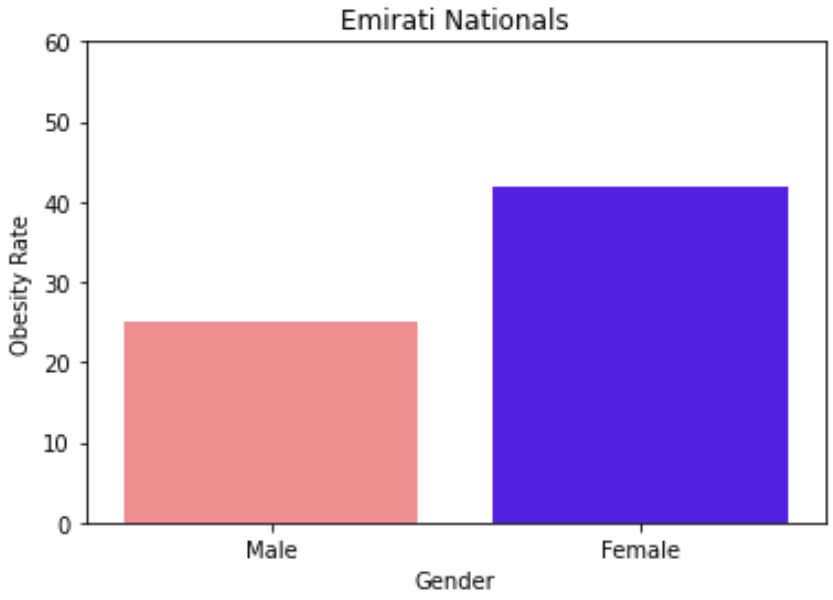
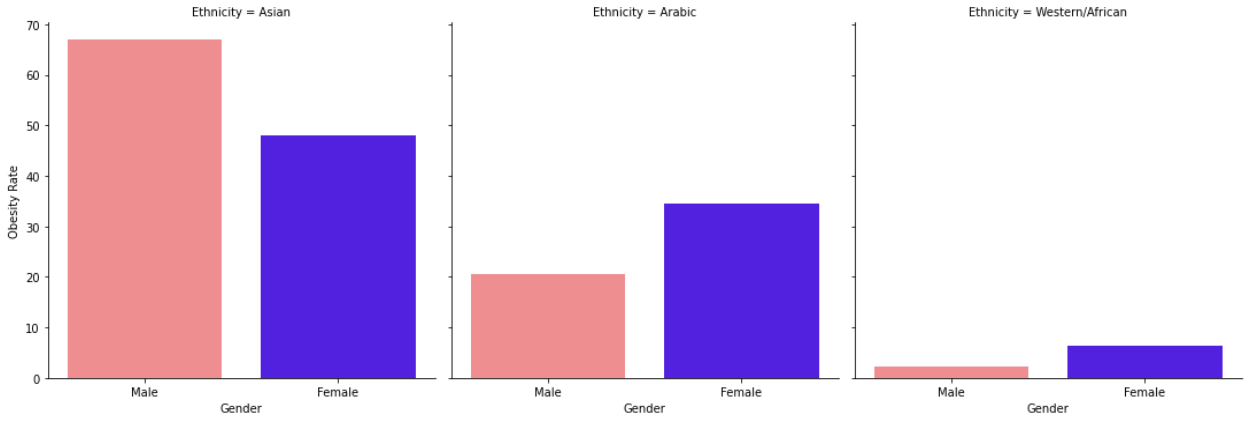


Figure 2 (Sulaiman et al)

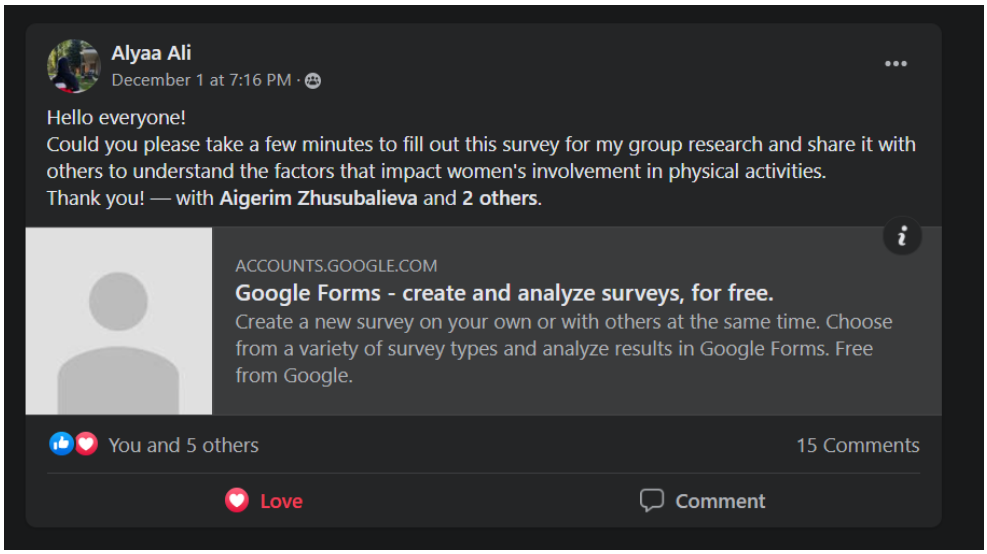


A problem with the UAEDIAB research, that we try to account for with our own survey, is that there is a disproportionate amount of men relative to women, and Asians relative to other groups. Only 16.8% participants in the UAEDIAB survey thought that gendered facilities would be helpful. This figure is across all genders, and fails to account for whether the respondent is male or female. Intuitively, it would make sense that this would skew the data, given that it is typically women who report benefiting from gendered facilities.

Methodology

For this study, we use both quantitative and qualitative data in order to cover the entire range of women's physical activity and health. Quantitative component is the most recent obesity rates from Sulaiman et al. This specific source is chosen because it provides the obesity rates by gender and ethnicity, giving an insight into differences among ethnicities. The qualitative component, on the other hand, is a survey created for this project specifically. The survey focuses on the physical activity and availability of gendered facilities and is sent out on NYUAD's student Facebook group "Room Of Requirement"(RoR) as shown in the figure below. We chose

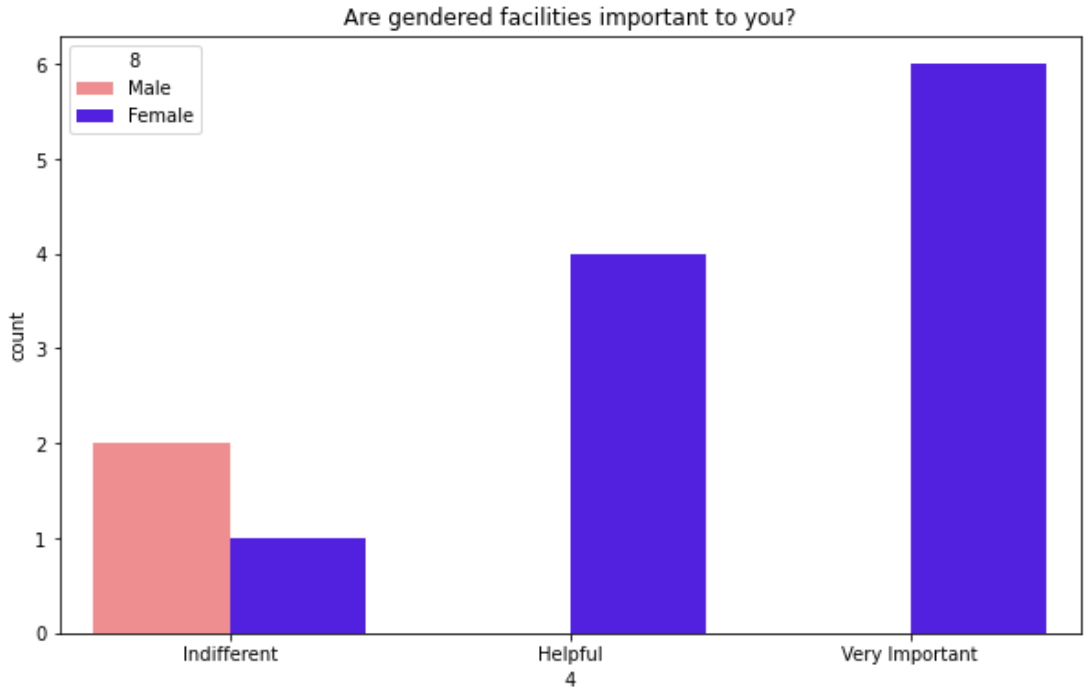
to post on RoR because we were able to reach the community of UAE residents and citizens through the group in the most efficient way possible. Getting thick data from the respondents contributes to getting understanding of underlying factors that are overlooked in quantitative data. To ensure the privacy of respondents we anonymized the email collection (such that each participant could only respond once, but we could not know who they were). This was due to consideration for those responding, and because they might be less willing (or even unwilling) to answer if it was not anonymized.



After collecting the data, it is visualized to give a better understanding of the meaning behind it. Combination of quantitative and thick data provides us a way to delve into the factor of availability and accessibility of gendered facilities and how it affects women's physical activity and hence obesity rates which was originally not clear from the quantitative data. For purposes of transparency, as well as potential replication, we will be making the survey data, plots, and the report publicly available on GitHub.

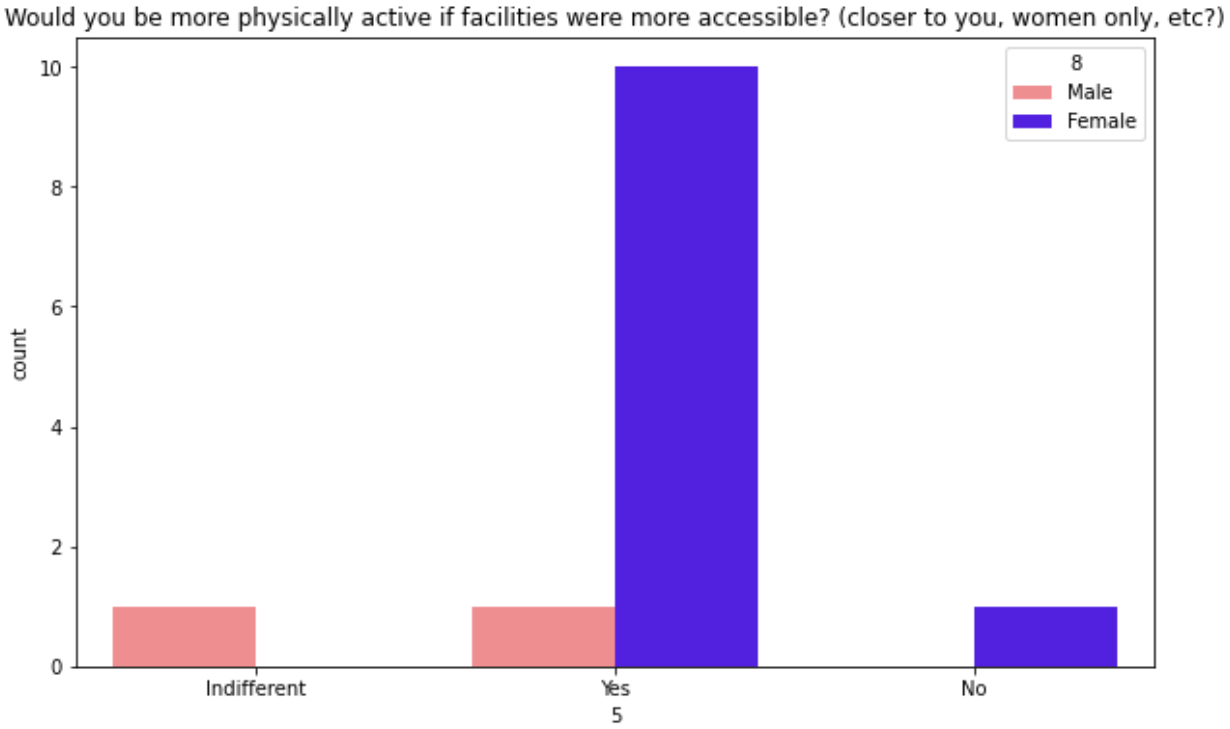
Analysis

In total, there are 13 people who participated in the survey, 11 of whom are females and 2 males all in the age range 18-23. 7 respondents are UAE nationals or citizens and 6 respondents are residents, which gives an almost even division. Having the perspective of both Emiratis and non-Emiraties supports our paper by showing that despite the cultural differences (assuming that non-emiratis have a different cultural background), women are still physically inactive, meaning that the core problem is not in the culture itself but rather in the lifestyle. Since this survey was conducted mainly to understand female participation in physical activities, it may have caused more women to participate in the survey than men since it's more important to them. In the next section, we go into more detail about the insight of the survey results.



As it can be seen on the graph above, male respondents indicated that they are indifferent towards gendered facilities and almost all female respondents indicated it is helpful or very

important for their physical activity to have gendered facilities. Keeping this in mind, we can sense how the original data from the UAE health report could have been skewed by the male respondents being essentially the percentage of people who would be physically active if gendered facilities were reduced to just 16.8%. Having this in-depth view on the basis of gender allows us to have a clearer understanding of the importance of gendered facilities.



The graph above follows our analysis. In addition to availability of gendered facilities, there are other factors like proximity, opening hours, etc. that affect if a person can access the facilities. This gives us a general idea of how many women would be more willing to participate if the facilities were more accessible/convenient. However, further research could be done about specific factors to get a more conclusive answer.

Limitations

There are a few aspects of the analysis that we could account for, which can impact the interpretation of the data collected. Any proposed policy solutions or interventions coming from research such as ours would impact real people, and hence any aspects ignored could mean real negative consequences for these people. As considered in the beginning, predefined views and biases can lead to generalizations. While it might have seemed at first glance that this gender disparity in obesity was caused due to characteristics intrinsic to the Emirati culture, considering expatriates quickly dispels this notion. Hence, the solution we explore here is not to change "oppressive" Emirati culture, but instead to see if gendered facilities would be a good solution.

An important assumption made here is that we take obesity to be the result of being physically inactive. Essentially, this might exclude other relevant causes of obesity: diet, genetics, etc. While there is some data that might indicate that lack of exercise is the primary cause of obesity (link), we might be failing to consider other hypotheses. For one example, there might be different societal pressures related to dieting when we compare men to women (Rolls). One potential way that this would lead to higher obesity rates for women is if this pressure leads women to overeat, though this could turn out not to be the case. Additionally, while unlikely, maybe we will find out in the future that genetics play a significant role in causing obesity. A further analysis that considers different diets in the UAE might be beneficial to supplement the data we found in the survey.

There were a few limitations related to the way we carried out the survey. For one, we should have asked about not only the creation of gendered facilities, but also about improving the ease of access to these facilities; this might mean having women-only hours at more convenient times of the day. This could impact responses because participants might have not cared about both things, which we failed to account for. A second limitation was that all responses came from

NYUAD students. One example of how that could be systematically biasing responses is due to the existence of a women-only gym on campus. It could be the case that if we were to get responses from women without easy access to gendered facilities, they would not find them as important. Thirdly, more data points would have painted a more complete picture of ways to improve the obesity rates in the UAE; though, potentially at the cost of considering the data more carefully. Finally, it is possible that we systematically biased the results of the survey by only proposing easier access to gendered facilities as a solution to the disparity in obesity rates. We did not offer other solutions (that the respondents could rank in order), or ask the survey participants for their opinions on the matter.

If we or anyone else tries to replicate the survey at some other point in time. We would make sure to address all the points raised above. By asking respondents about more convenient timings to go to the gym, we would have a more complete understanding of the ways in which men and women see these facilities. By asking people outside NYUAD, we would not be biased towards only those in our university, and instead could ask people who could actually stand to benefit from more women-only gyms, instead of people of those who already benefit from them. Finally, we could have potentially thought of more solutions for the obesity rate differences, so as not to bias those responding by only proposing one solution. All of the improvements for our survey listed would significantly improve the collection of data, and would mean that any interventions would be more effective in addressing the obesity pandemic. Hence, these are human-centered considerations to solve this problem.

Conclusion

Women in the UAE have higher obesity rates than men not only due to cultural restrictions but other factors as well, one of them being access to gendered facilities in terms of availability and proximity. This holds true according to the survey and quantitative data. Pairing the quantitative census report with the survey results shows how access to gendered facilities is in fact significant. We acknowledge that there are some limitations related to our paper, though. In the future, we would consider other aspects such as how changes in diet could impact obesity rates in the UAE, and try to improve certain aspects of our data collections in order to get more accurate data. The main way to this is through asking better questions in the survey, not biasing participants with one response, and not only surveying NYUAD students.

Overall, though, it seems that having gendered facilities is important to women, who are the fraction of the population being most impacted by obesity; to be clear, women in the UAE would be more physically active if they had more or better access to facilities. A starting point to tackling this problem would be to provide more of the currently lacking facilities such as gyms, pools, and sports courts in a way that takes into account the women for whom gendered facilities are important.

Works Cited

AlNohair, Sultan. "Obesity in Gulf Countries." *International Journal of Health Sciences*, Qassim University, Kingdom of Saudi Arabia, Jan. 2014, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4039587/#b5-ijhs-8-1-0079.

National Heart, Lung, and Blood Institute.*Clinical Guidelines on the Identification, Evaluation, and Treatment of Overweight and Obesity in Adults*. 2002. Accessed January 25, 2012.

Papandreou, Mourad TA, Jildeh C, Abdeen Z, Philalithis A, Tzanakis N. Obesity in Mediterranean region (1997–2007): a systematic review. *Obesity Reviews*. 2008;9(5):389–399. [PubMed] [Google Scholar]

Rolls BJ, Fedoroff IC, JF Guthrie. "Gender Differences in Eating Behavior and Body Weight Regulation." *Health Psychology : Official Journal of the Division of Health Psychology, American Psychological Association*, U.S. National Library of Medicine, https://pubmed.ncbi.nlm.nih.gov/2055211/.

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5667520/

https://med.stanford.edu/news/all-news/2014/07/lack-of-exercise--not-diet--linked-to-rise-in-obesity--stanford-.html#:~:text=An%20examination%20of%20national%20health,dri

ving%20the%20surge%20in%20obesity.&text=Inactivity%20rather%20than%20overeating%20could,University%20School%20of%20Medicine%20researchers.

https://pubmed.ncbi.nlm.nih.gov/2055211/