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# Tackling poor nutrition, lack of physical activity, and obesity in the general population.

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## Abstract

**Background:** Addressing the critical public health issues of poor nutrition, lack of physical activity, and obesity is essential for reducing non-communicable diseases. These factors contribute significantly to global morbidity and mortality, necessitating a comprehensive approach to improve dietary habits and increase physical activity among the general population.

**Methods and Materials**: Utilizing an online survey targeted at medical students aged 19-25 from Kursk State Medical University, this study analyzes dietary habits, physical activity levels, and obesity perception. The survey, supplemented by academic literature and expert consultation, offers a multidimensional view of the prevailing health behaviors among students.

**Results**: The findings indicate a concerning prevalence of unhealthy dietary choices, insufficient physical activity, and a notable perception of obesity among the participants. Statistical analysis of the survey results highlights the need for targeted interventions to address these health issues.

**Conclusion**: The study underscores the importance of integrated strategies to promote healthy eating and regular physical activity. It calls for educational campaigns, policy measures, and individual behavioral changes to combat the growing challenge of obesity and associated health risks in the general population.

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**Tackling poor nutrition, lack of physical activity, and obesity in the general population.**

Poor nutrition is a serious condition when a person's diet does not contain the right amount of nutrients. The two most common terms used are overnutrition, in which a person receives more nutrients than they require, and undernutrition, where a person lacks the nutrients they need. A lack of physical activity is defined as insufficient physical activity to maintain optimal health and prevent premature death. The body mass index (BMI) can be used to measure obesity, which is defined as excessive or abnormal fat accumulation that poses a health risk.

As we all know, premature death from non-communicable diseases is more likely to occur in people who engage in modifiable behaviors like an unhealthy diet and a sedentary lifestyle through lack of physical activity [1,2,3], which puts up to 71% of all deaths globally, every year [2]. Individualizing intake to encourage consumption of nutrient-dense foods like vegetables and fruits, whole grains, lean proteins, and healthy fats, and limiting consumption of added sugars, sodium, saturated fat, and alcohol across the lifespan are common nutrition recommendations for a healthy diet [4].

Adults, as recommended, should participate in 150 to 300 minutes of moderate-intensity aerobic activity once a week, 75 to 150 minutes of vigorous-intensity aerobic activity once a week, or a combination of the two. Adults should also participate in resistance training activities that target all major muscle groups at least twice a week [5]. As we all know, disease prevention is significantly influenced by diet and physical activity, but most adults and youngsters do not meet the general population's recommendations [1,4]. The World Health Organization (WHO) has stated that the unhealthy eating routine and stationary way of life by idleness are driving global well-being risks [2].

**Problem Statement**

Physical inactivity and poor diet are both commonly reported to be associated with a wide range of chronic diseases, such as coronary heart disease (CHD), hypertension, type 2 diabetes, and stroke, and, together, contribute significantly to the disease burden [6]. Diet is a highly intricate exposure, which can be examined and surveyed in many ways, including macronutrient composition, micronutrients, food items/groups, food indexes (e.g., glycemic index), certain eating behaviors (e.g., skipping breakfast), and overall dietary patterns. As complex human demeanor, there are many collaterals we can discuss when it comes to physical activity and diet in terms of health effects and assessment [7].

The goal of this capstone project is to provide a complex analysis of intercepting issues of poor nutrition, lack of physical activity, and obesity, especially in the general population, mainly in the level of students, as well as discuss the impact that these issues can exhibit in the future if not tackled today. This systematic review examined the following research questions: What is the current statistic of unhealthy diets and sedentary lifestyles due to physical inactivity in the general population, specifically among Kursk State Medical University students, and what is the best method to overcome these issues?

**Literature Review[1]**

Obesity occurs when an individual does not spend their energy as much as they take in their energy from food consumption. The World Health Organization (WHO) acknowledges that physical activity is the most critical factor in determining energy expenditure; therefore, essential to maintaining energy balance and weight control. Obesity is difficult to reverse once it is established; if it is set in childhood or adolescence, it is likely to persist into adulthood, increasing the risk of morbidities like chronic heart disease, type 2 diabetes, and many others. Hence why, preventing obesity is crucial. Unhealthy ways of living life contribute the most to the issue. For example, diet and physical inactivity are the most notable

determinants of stoutness; understanding the risk factors and how they add to obesity is essential to prevent and treat it.

Obesity can have a negative impact on a person's physical, mental, psychosocial, and financial well-being, as well as their quality of life. It was estimated that the disease has a more significant negative impact on a person's quality of life of a person more than 20 years of age. Moreover, the lack of physical activity may bring more barriers to the social and psychological well-being of a person and may increase the risk of developing mental illnesses; the two most common occurrences are depression and anxiety. These may cause the individual to lose their ability and desire to have good lifestyle choices such as healthy eating and physical activity, as it is ordinary for mental illness to influence a person to have eating disorders and increased sedentary behavior, progressing obesity as an illness.

Results of the existing research about tackling poor nutrition, lack of physical activity, and obesity in the general population do not allow a firm conclusion to be drawn about the issue, as a more precise categorization should be targeted. However, the research found that among the 160 students who participated, most are practicing an unhealthy diet balance, lack of physical activity, and are concerned about obesity.

**Project Goals and Objectives**

1) To identify the number of students with poor nutrition, insufficient physical exercise, and obesity in Kursk State Medical University.
2) To help create awareness in prioritizing regular physical activity because it has a wide range of health benefits, from increasing your endorphin levels to improving the health of your joints.
3) To acknowledge the importance of maintaining a healthy weight. It improves your quality of life and lowers your risk of a wide range of diseases.
4) To stress the cruciality of eating a balanced diet. Diets with excessively processed, high-calorie foods are linked to infirmity and psychological issues such as depression and anxiety.
5) To help educate people about the importance of health, among other aspects of life, through balanced nutrition and good physical exercise.
6) To develop a healthier environment for not only the students but the workers in the university.
7) To promote a healthy lifestyle among students and university admins for the betterment of society.

**Materials and methods**

The research was conducted online, with the target participants being a group of medical students aged 19 -25, consisting of both female and male genders from Kursk State Medical University, Russia. A questionnaire was distributed online among the students via their emails. The questionnaire consists of 3 parts, which the students had to answer correspondingly.

Apart from the questionnaire, research papers, journals, magazines, and documents found in the library will be used as references for my exploration. Also, with the help of the internet, publications found online were used to guide the research. Additionally, the Doctor of Public Health at the university has provided a consultation to aid in the study.

The questions found in the questionnaire are as follows:

*Part 1:*

- How would you rate your diet? Excellent/Good/Fair/Poor
- How often do you drink soda? 1 or less/week 2-4/week 5-10/week 11+/week
- How often do you drink other sweetened beverages (e.g., sweet tea, sugary coffee drinks)? 1 or less/week 2-4/week 5-10/week 11+/week
- What is your daily water intake (cups)? 1 or less/day 2-4/day 5-8/day 9+/day
- How often do you eat fast food or go to a restaurant? 0-1/month 2-3/month 1-2/week 3-4/week 5+/week
- How often do you drink alcohol? 0-1/month 2-3/month 1-2/week 3-4/week 5+/week

*Part 2:*

- Do you currently exercise? Yes/No
- What do you do for aerobic activity? (ex. Walking, running, cycling, etc.)
- How frequently do you exercise aerobically _____days/week for _____ minutes/day?
- How frequently do you strength train (ex., weight lifting, machines, yoga, etc.) _____ days/week for _____ minutes/day?
- What do you do for leisure activities?
- Do you have any exercise limitations? Yes/No
- If yes, please describe.

*Part 3:*

- Do you feel that you are obese? Yes/No/Maybe
- How concerned are you about being obese? Very concerned/Concerned/Not Really/Not at all.
- How concerned are you about teenage obesity as a community issue? Very concerned/Concerned/Not Really/Not at all.
- Why do you think that most people have obesity? Hormonal Imbalance/Poor nutrition/Lack of physical activity/Genetics

**References**

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**Tables**

***PART 1: Statistical data on diet among the students of Kursk State Medical University***

Table 1: *Data on students of KSMU rating their diet.*

| Students Rating On Their Diet | Excellent | Good | Fair | Poor |
|---|---|---|---|---|
| Number of students: | 42 | 75 | 39 | 24 |

Table 2: *Frequency of students who consume soda and other sweetened beverages each week.*

| Frequency | 1 or less/week | 2-4/week | 5-10/week | 11+/week |
|---|---|---|---|---|
| Consumes Soda | 47 | 71 | 41 | 21 |
| Consumes Sweetened beverages | 21 | 78 | 32 | 49 |

Table 3: *The frequency of students at KSMU consuming water (per cup) daily.*

| Frequency | 1 or less/day | 2-4/day | 5-8/day | 9+/day |
|---|---|---|---|---|
| Number of students | 5 | 30 | 92 | 53 |

*Table 4: Frequency of students at KSMU eating fast food or going to a restaurant.*

| Frequency | 0 to 1/month | 2-4/month | 1-2/week | 3-4/week | 5+/week |
|---|---|---|---|---|---|
| Number of students | 7 | 10 | 83 | 39 | 21 |

Based on the data, the students mostly rate their diet as good (75 out of 160 students), followed by excellent (42 out of 160 students), fair (39 out of 160 students), and lastly, poor (24 out of 160 students). The number is well explained when other data from part 1 is considered.

This is because, when looking at Table 2, the frequency of students consuming soda each week is highest 2-4 times per week, and for sweetened beverages, more than 11 times per week. As we know, sweetened beverages are a vital contributor to the obesity and overweight epidemic due to the beverages' low satiety, high added sugar content, and inadequate energy replacement. Other than that, consistent consumption of these drinks has been linked to a higher risk of type 2 diabetes, cardiovascular disease, and some cancers than infrequent consumption, making these beverages a clear target for regulatory and policy actions.

In Table 3, we can see the frequency of students at KSMU consuming water (per cup) per day. Accordingly, the data gives a good result as most students drink 5-8 cups of water daily. Although the amount of water intake is an individualized number, it is recommended that a person should at least take about four to six cups of plain water each day. This differs according to how much water they consume from other drinks and food sources. Additionally, total daily water intake is influenced by various health conditions, medications, activity levels, and ambient temperature.

Finally, in Table 4, we can see the frequency of students at KSMU eating fast food or going to a restaurant. 83 out of 160 students would eat out at least 1-2 times per week, and 39 out of 160 students would eat out 3-4 times per week. Although eating out appeared to be related to wealth and social standing

before, however this present time, it's more about saving opportunity than anything else. In the case of most medical students, they are saving time when eating out. However, health-wise, it is better to have home-cooked meals because while cooking at home, individuals have control over each part of what they are preparing, including the ingredients, cooking strategies, and portion sizes, in contrast to eating out.

***PART 2: Statistical data on exercising among the students of Kursk State Medical University***

*Table 5: Number of students at KSMU who are currently exercising.*

| | Yes | No |
|---|---|---|
| Number of students | 115 | 45 |

*Table 6: Most common aerobic activities done by the students at KSMU.*

| | Walking | Running | Cycling |
|---|---|---|---|
| Number of students | 72 | 22 | 21 |

*Table 7: The frequency of students at KSMU exercising aerobically and doing strength training per week.*

| | 0 to 1/week | 2-4/week | 5-6/week | 7+/week |
|---|---|---|---|---|
| Number of students exercising aerobically | 32 | 43 | 35 | 5 |
| Number of students strength train | 71 | 36 | 8 | 0 |

*Table 8: Leisure activities of students at KSMU.*

| | Spent outdoors | Spent indoors |
|---|---|---|
| Number of students | 74 | 86 |

According to the information collected, only 115 out of 160 students participating in this survey are exercising. Among the 115 students, the most preferred aerobic exercise method is walking compared to running and cycling. According to the data, students exercise aerobically 2-4 times per week (43 out of 115 students), 5-6 times per week ( 35 out of 115 students), ), 0-1 time per week (32 out of 115 students) and at least 7 times per week (5 students). Based on the data, only 44 out of 115 students strength train more than once per week. As for leisure activities, as stated, the variance in spending outdoors and indoors is not significantly different. The number of students who would spend their free time outdoors is 74, only 12 points less than those who would spend their free time indoors.

***PART 3: Statistical data on obesity among the students of Kursk State Medical University***

*Table 9: Number of students at KSMU feeling obese.*

| | Yes | No | Maybe |
|---|---|---|---|
| Number of students | 20 | 82 | 58 |

*Table 10: Number of students at KSMU who are concerned about being obese and teenage obesity as a community issue.*

| | Very concerned | Concerned | Not really | Not at all |
|---|---|---|---|---|
| Concerned about being obese | 82 | 61 | 17 | 0 |
| Concerned about teenage obesity as a community issue. | 115 | 35 | 0 | 0 |

*Table 11: Reason for obesity from the point of view of students at KSMU.*

| | Hormonal influence | Poor nutrition | Lack of physical activity | Genetics |
|---|---|---|---|---|
| Number of students | 13 | 72 | 64 | 11 |

Obesity is when a person has a body mass index (BMI) over 30. According to the data collected, 82 out of 160 students who answered the survey feel obese. Although a majority have said they do not feel obese, the number of students who are concerned about obesity is more than half. Most of the students acknowledge that the cause of obesity is primarily due to poor nutrition and lack of physical activity when compared with genetic predisposition and hormonal influence.

**Figures**

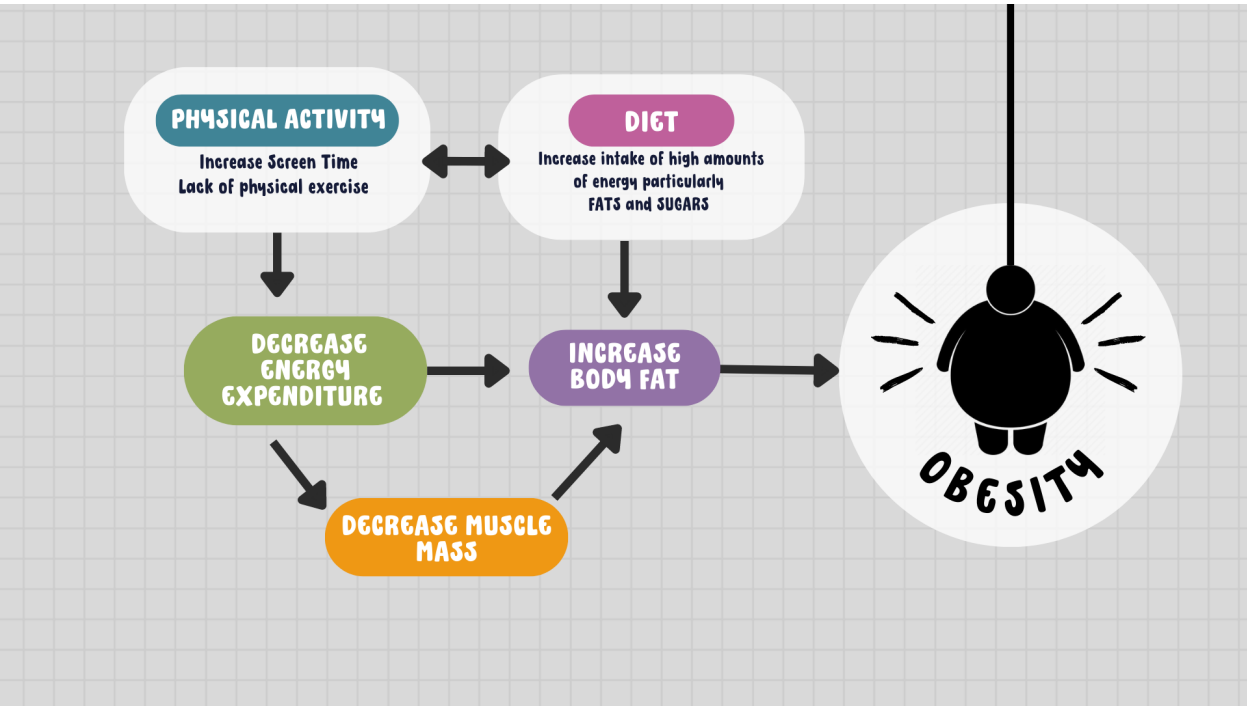


Figure 1: Relationship of poor lifestyle to the development of obesity.

As shown in Figure 1, the lack of physical activity from an increase in sleep, long time screen time, etc., and an increase in diet causes obesity simultaneously. This chain can be broken if a person regulates one of the factors. For example, a person who will decrease their screen time and increase their energy expenditure will simultaneously increase their muscle mass and reduce the chances of obesity. Conversely, a person who takes care of their diet will have a decrease in body fat, lowering the chances of obesity. The association between a healthy lifestyle (diet and physical exercise) and BMI has been shown to be correlated with the development of obesity. Nevertheless, physical activity in leisure time ought to likewise be added to the prevention of obesity.