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Prevalence of Obesity in People of Urban Dwellers in Karachi. A Cross-Sectional Study

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ABSTRACT

There is a growing concern about the increasing rates of obesity and overweight individuals. Whereas, obesity is a complex, multi-factorial, and largely preventable disease. Severe-obesity significantly raises the risk of complications related to obesity, including coronary heart disease and end-stage renal disease. The study will be conducted from February 2024 to July 2024. A total of 385 individuals will selected to participate through convenient sampling technique, providing information through a validated questionnaire (Questionnaire for assessment of KAP of obese individuals about obesity). Traditional height and weight evaluation methods will be used to determine body mass index (BMI). Overweight and obesity will categorize using South Asian cut-off points: BMI ≥ 23 (Normal), 25.0 - 29.9 (Overweight), and ≤ 30 (Obese). Data analysis will be performed using SPSS version 29.0. All research population components, with one notable exception of gender, had p-values greater than 0.05 for the KAP of obesity appraisal. We have discovered that a significant portion of Pakistani adults struggle with being overweight. To prevent obesity in adults, the government and other health agencies should take the lead in initiating programs about dietary awareness and physical activity.

Keywords: *BMI (body mass index), diabetes, epidemic, obesity, overweight, obese, Pakistani adults.*

INTRODUCTION

Across the globe, there is a growing concern about the increasing rates of obesity and overweight individuals.[1] Whereas, obesity is a complex, multi-factorial, and largely preventable disease.[2] Severe-obesity significantly raises the risk of complications related to obesity, including coronary heart disease and end-stage renal disease.[3,4] Epidemiological research has established a clear association between high BMI or obesity and the prevalence of various chronic conditions such as diabetes mellitus, chronic kidney disease, cardiovascular ailments, several types of cancer, and a range of musculoskeletal disorders.[5] The global issue of obesity continues to escalate, affecting over 2 billion people worldwide.[6] The term "epidemic" was perhaps first used to refer to obesity in a significant public document, the 1998 WHO report on global obesity. Although the term has been around for a while, it's unclear if it truly describes the obesity "epidemic". [7] From 1999-2000 through 2015-2016, there was a discernible rise in the prevalence of obesity.[8] According to the World Health Organization, obesity has indeed reached epidemic levels, with 650 million individuals categorized as obese and 1.9 billion as overweight. In England alone, statistics show that 26% of adults and 10% of children were classified as obese in 2016. This surge in obesity-related cases has significant economic implications, with the annual cost of obesity-related

illnesses to the UK's National Health Service (NHS) currently standing at £6.1 billion and projected to triple by 2050.[9,10]

The prevalence of obesity is a global concern, although its impact varies significantly based on factors such as geographical location, ethnicity, and socioeconomic conditions.[11,12] Developing nations like Pakistan face a unique challenge characterized by both underweight and overweight populations. In actuality, historical data show that for the previous 300 years, humans have been steadily raising their BMI. From the early 1700s, the economist R Fogel used data from healthy populations in economically developed countries (Scandinavian countries, France, United Kingdom) to examine the relationship between physical size and productivity. [13]

D. D. Kim et al. argue that obesity represents a multifaceted disease influenced by various factors. Over the past four decades, the global prevalence of overweight and obesity has doubled, affecting approximately one-third of the world's population. This rise in obesity rates transcends geographic, ethnic, and socioeconomic boundaries, impacting individuals across all age groups and genders. However, certain demographic groups, such as older individuals and women, are more prone to obesity compared to others.[14] Sobocki P et al. assert that obesity is a leading cause of depression, a prevalent psychiatric disorder that significantly impairs both social interactions and professional functioning. Individuals experiencing a depressive episode due to obesity may face a quality of life comparable to that of a patient recovering from a severe stroke.[15]

Jia WP's study indicates that higher body mass indices (BMIs) are globally associated with numerous non-communicable diseases, including cancer, dyslipidemia, type 2 diabetes mellitus, hypertension, and cardiovascular disease. The prevalence of these diseases is particularly notable in developing nations.[16]

METHODOLOGY

Study Design: A cross-sectional study was conducted in 2024 among working and non-working male and female living in urban areas of Karachi age between 20-50years.

Sampling Techniques: The study was conducted by convenient sampling technique in different households, offices and university setups by KAP questionnaire to gather information about the individual's knowledge, attitude and practices related to their eating habits, physical activity.

Outcome Measure: Questionnaire for Assessment of KAP of Obese Individuals About Obesity, was used to gather the data for conducting this research. The chosen outcome measures comprehensively assess the incident of being obese in the urban areas of Karachi.

Data analysis procedure: The obtained results were subjected to descriptive analysis based on the distribution of the studies variables, means and standard deviations. A chi-square test used to compare observed results with expected results. For the statistical analysis SPSS used.

Ethical Consideration: This study ensured informed consent through written consent forms and clear explanations of the research purpose and procedures. Participants' confidentiality was maintained throughout the study and secure data storage. This study's benefits outweigh the potential risks, and no conflict of interest.

Reliability: Reliability of a questionnaire as a survey instrument ensures the accuracy of measures by assessing its internal consistency. There are different methods available to evaluate the internal consistency of the questionnaire. As we used SPSS, Cronbach alpha was used to assess reliability. Cronbach's alpha is a measure of internal consistency, which describes how closely related a set of items are as a group. It is a measure of scale reliability having a statistical standard that Cronbach's alpha of

0.70 and up 0.79 has acceptable internal consistency, 0.80 and up to 0.89 is good and 0.90 and above considered as excellent internal consistency.

RESULT

This chapter discusses the results of statistical applications on dependent variables, independent variables, and their mutual relations. It reviews two aspect of data analysis i.e. (i) Data dissection and its visualization aiming to provide research glimpse briefly to general audience and (ii) Statistical descriptions including descriptive statistics, correlation & chi-square analysis, and diagnostic analysis.

Chart: 1 Gender Distribution Pie Chart

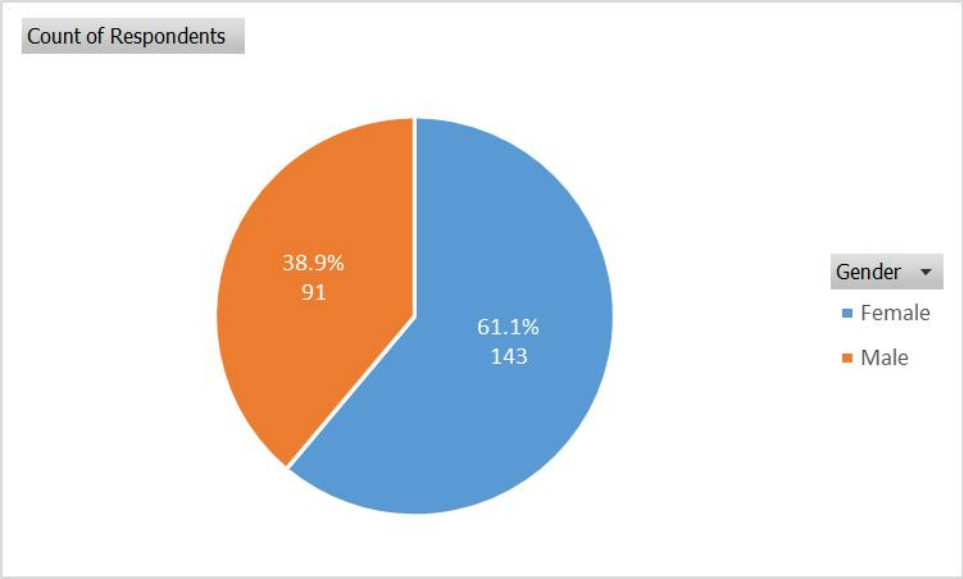

Table 1: Gender Distribution

Gender	Number of Participants	Percentage
Male	143	61.1%
Female	91	38.9%

Chart 2: Correlation Matrix

Table 2: Correlation Analysis of KAP Components:

KAP Components	Knowledge	Attitude	Practice	Overall KAP
Knowledge	1	.242**	0.042	.289**
Attitude	.242**	1	.181**	.496**
Practice	0.042	.181**	1.000	.300**
Overall KAP	.289**	.496**	.300**	1.000

**. Correlation is significant at the 0.01 level (2-tailed).

The above table shows the correlations between independent variables of our research data. Directions of relation among all variables are correlated positively for Knowledge, attitude and practice positively for overall score of KAP. The highest positive inter-relative variable i.e. attitude is observed as 49.6% to overall KAP and lowest is knowledge to overall KAP is observed as 28.9%. (Table 2 Chart 2).

Chart 3: Levene's Test for Homogeneity

Table 3: Homogeneity Test

Overall KAP score	Levene Statistic	p-value
Age	.046	.831
Gender	15.120	.000
Occupation	7.571	.006
Weight	1.826	.178
Height	.244	.622
BMI	1.521	.219
Marital	.156	.693

Above table shows that of population of all elements except gender for assessment of KAP of obesity have p-value is more than 0.05; hence homogeneity assumption of the variance is met; have a mean that spread of data within each combination of factors should be roughly the same. whereas population of gender group for assessment of KAP of obesity have p-value is less than 0.05; hence homogeneity assumption of the variance is not met which means our data sample are not homogenous and fit-for analysis. (Table 3 Chart 3).

DISCUSSION

The objective of this study is to determine the how and why rate of obesity is increasing in the people of Karachi dwellers. When compared to history, as the modernization is peaking, it's leading towards the sedentary life style and obesity. Growing rates of overweight have turned it into an important global health problem that affects individuals of all ages and teenagers. Moreover, truncal subcutaneous fat deposition throughout puberty and overall BMI are positively and independently linked to atherosclerosis in adulthood. Insulin resistance is linked to the core formation of fatty tissue, while peripheral distribution of body fat has less metabolic significance. The risk of coronary heart disease, cerebrovascular disease, and mortality from all causes increases twice and 1.5 times, respectively, when one has metabolic syndrome, which has a typical incidence of 31%.[1]

The increasing prevalence of obesity among Karachi dwellers is a pressing public health issue that requires immediate attention. Addressing this challenge involves a multifaceted approach, including public health initiatives, policy changes, community engagement, and healthcare interventions. Over the span of thirty years, the prevalence of obesity in Libya has exceeded twofold, and the proportion of overweight and obese adults continues to keep rising. Thus, the purpose of the research was to assess the prevalence of overweight and obesity among Libyan adults, both male and female. The research results

moreover revealed that roughly 75.3% of adult Libyans were overweight or obese, and that women were substantially more likely than men to be overweight or obese.[2]

The prevalence of obesity provides valuable insights and informs public health strategies, but it is essential to acknowledge its strengths and limitations. Addressing these limitations through improved methodologies, comprehensive data collection, and ethical practices can enhance the quality and impact of obesity research. Two-hundred and thirty-four respondents have examine for research consist with seven (07) age-brackets i.e., 114 respondents (48.7% of population) having age bracket of 20-25 years old, 24 respondents (10.3% of population) having age bracket of 26-30 years old, 24 respondents (10.3 of population) having age bracket of 31-35 years old, 15 respondents (6.4% of population) having age bracket of 36-40 years old, 17 respondents (7.3% of population) having age bracket of 41-45 years old, 39 respondents (16.7% of population) having age bracket of 46-50 years old and 01 respondents (0.4% of population) having age bracket of above 50 years old.

By taking proactive steps, Karachi can work towards reducing obesity rates and improving the overall health and well-being of its residents. Researching the increasing incidence of obesity has multiple goals, notably offering an extensive comprehension of the problem and informing effective prevention and therapy techniques. In general, women and elderly individuals are more probable to encounter it than men and younger age groups. Eliminating the necessity of food availability, there is presently a dearth of evidence addressing the causes of obesity. Nonetheless, research indicates that obesity 'runs in families,' despite genetics and environmental factors—particularly psycho-social ones—playing significant roles. An increased risk of numerous unfavorable social, emotional, and medical outcomes has been linked to obesity.[3]

The purpose of investigating obesity prevalence is to acquire an adequate understanding of the disease's scope, causes, and health consequences in order to inform initiatives pertaining to public health, promote public awareness, and encourage teamwork in the struggle versus this rapidly expanding health problem. Two-hundred and thirty-four respondents have examine for research consist with two (02) gender i.e., 143 respondents (61.1% of population) are female whereas 91 respondents (38.9% of population) are male, show the increase risk of obesity. According to ICMR-INDIAB study 2015, prevalence rate of obesity and central obesity are varies from 11.8% to 31.3% and 16.9%-36.3% respectively. In India, abdominal obesity is one of the major risk factors for cardiovascular disease (CVDs).[4]

LIMITATIONS

- Women are not willing to co-operate during data selection.
- Less area of Karachi has been covered in this study.
- The sample size is not satisfactory enough.

RECOMMENDATIONS

The greater consideration should be given to collect the data from stratified sampling including the multiple areas of Karachi rather than using the random sampling technique. Giving the equal amount of participation to male and female to find out the exact prevalence of obesity in gender.

CONCLUSION

The conclusion regarding the prevalence of obesity among urban dwellers in Karachi reveals a concerning trend. Studies consistently highlight a high prevalence of obesity within this population, reflecting broader lifestyle and environmental challenges. Sedentary behaviors, coupled with poor dietary choices influenced by urbanization, contribute significantly to this health issue. The implications are profound, as

obesity correlates strongly with increased risks of chronic diseases such as diabetes and cardiovascular ailments. Effective strategies are crucial, focusing on promoting physical activity, improving nutritional education, and enhancing urban planning to encourage healthier lifestyles. Addressing these factors requires targeted interventions and policy initiatives tailored to the specific needs of Karachi's urban residents, aimed at mitigating the rising tide of obesity and its associated health burdens.

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