Int J Epidemiol Health Sci 2023;4: e61
doi: http//doi.org/10.51757/IJEHS.4.2023.706400

Original article

# Hypertension and Obesity Prevalence Among Young and Elderly Community Members in Mvita Sub-county, Mombasa County, Kenya

Abubakar Abdallah Kheir

Department of Environmental and Occupational Health, School of Public Health and Applied Human Sciences, Kenyatta University, Nairobi, Kenya.

***. Corresponding author:** Abubakar Abdallah Kheir, Department of Environmental and Occupational Health, School of Public Health and Applied Human Sciences, Kenyatta University, Nairobi, Kenya. Phone: +254734669973. Email: abbakaralkheiry@gmail.com.

**Cite this article:** Kheir, A.A. Hypertension and obesity prevalence among young and elderly community Members in Mvita Sub-county, Mombasa County, Kenya. Int J Epidemiol Health Sci 2023;4: e61. Doi: 10.51757/IJEHS.4.2023.706400.

## Abstract

**Background:** The study sought to better understand the severity and causes of hypertension and obesity in Mvita Sub County, Mombasa County, with the overarching goal of determining the impact knowledge/awareness had on developing either or both illnesses.

**Methods:** The research was carried out in all five wards of Mvita Sub County in 2019: Majengo, Tononoka, Old Town, Tudor, and Shimanzi. Furthermore, the study included 110 respondents who were chosen using probability stratified selection and included both young and elderly people of both genders. The findings were then descriptively examined using mean and percentages.

**Results:** Increased knowledge/awareness reduced the likelihood of contracting either or both conditions, whereas drug abuse, poor nutrition, and poverty were the leading causes of hypertension/obesity in Mvita Sub County. Stakeholders' insignificant roles, a lack of local farming/agricultural practices, poor parental involvement, poor public health practices, and a lack of school involvement in health programs were all factors.

**Conclusion:** Inaction in the face of the highlighted findings could lead to a spike in obesity and hypertension. As a result, immediate public health intervention is required. This intervention should involve raising health awareness among Mvita Sub County residents through media channels like local radio stations, assisting the county government in combating drug abuse (especially tobacco and khat), and enhancing nutritional services like relying on local farming and closely monitoring patients' nutritional needs.

**Keywords:** Health awareness, Non-communicable diseases, Mombasa, Hypertension, Morbidity

## Introduction

Noncommunicable diseases (NCDs) are chronic diseases caused by unhealthy behaviors and not transmitted through infection. NCDs are estimated to kill 41 million people each year, accounting for 71% of all deaths worldwide (1). Furthermore, 15 million of those who die are between the ages of 30 and 69, accounting for 85% of all premature deaths (2).

It is estimated that 26% of the global population (972 million) has hypertension, with 65% living in developing countries, and the prevalence is expected to rise to 29% by 2025, particularly in low- and middle-income countries. This is still a huge burden in public health (3). Kenya, like other developing countries, suffers from other infectious diseases and malnutrition, making the spread of NCDs such as hypertension and obesity a double burden, particularly in urban areas (4). This has sparked global concern because it is a challenge to experience

  

malnutrition and obesity within the same nation, community, and even households (5).

The prevalence of hypertension and obesity among the young and elderly is a major public health concern that is spreading at an alarming rate, with World Health Organization (WHO) estimating that two-thirds of hypertension cases are felt disproportionately in low- and middle-income countries (6), with hypertension accounting for more than 50% of inpatient admissions and 40% of hospital deaths in Kenya (7).

Previous studies have also shown an increase in the prevalence of hypertension and obesity globally, Sub Saharan Africa (SSA) (8), Kenya, and specifically Mombasa County, resulting in both direct and indirect societal impacts from ailments, causing devastating effects to the body such as kidney diseases and other Cardiovascular Diseases (CVDs), as well as economic decline (9).

NCDs have been linked to a lack of knowledge/awareness, poor nutrition, and physical inactivity (10). According to the National Stepwise survey for noncommunicable diseases, one in every four Kenyans has hypertension, and more than half of the Kenyan population has never had their blood pressure measured (7). According to the report, 90% of those undergoing treatment have not achieved disease control. This is a clear indicator of the effect of knowledge on disease acquisition; thus, adequate information and awareness may compel one to adopt a healthy lifestyle through proper medication and adherence to good health practices (11).

According to former Mombasa County Director of Health (Dr. Shem Patta) (12), nearly half of Mombasa residents are obese, putting them at risk of developing CVDs and diabetes. This has also been apprehended in research (130), where lack of knowledge on hypertension/obesity was a major predictor in acquiring these diseases in Mombasa County.

Globally obese people outnumber underweight people, introducing the concept of prevalence (14). While hypertension and obesity are becoming more common, there are preventable interventions and measures available to reduce the morbidity and mortality rates associated with these diseases that have been approved by policies and guidelines in organizations such as WHO, national and county governments, and so on (15). As a result, this study required a critical understanding of the causes of hypertension and obesity in Mvita Sub County, as well as the role of knowledge/awareness in preventing the aforementioned NCDs.

**Materials and methods**

A cross-sectional study design was used in this study. The probability stratified sampling method was found to be useful in detecting associations between various phenomena, such as the relationship between knowledge and hypertension/obesity. Individuals were chosen from all wards in Mvita Sub County due to the sub county's high prevalence of obesity (16) and hypertension. Data was gathered in age and gender strata.

Previous studies had not specifically distinguished the main cause of disease prevalence, the roles of relevant stakeholders in combating the diseases, the relationship between hypertension and the elderly and obesity and the necessary solutions to be implemented to reduce morbidity cases due to NCDs; thus, the need for critical study was facilitated. Following the interviews, field editing, and data cleaning were performed to ensure legibility and provide meaning to the data.

This study aimed to determine the causes and effects of hypertension/obesity across ages, as well as other demographic factors. The sampling was significant because the causes and effects of the hypothesis were derived for detail analysis, implying that the results analyzed could be applied to other similar scenarios. This design also demonstrated that the causes of hypertension/obesity eventually led to the effects of hypertension/obesity.

**Results**

According to table 1, 74 (67.3%) of respondents knew about hypertension/obesity, while 42 (38.2%) knew nothing about the diseases. The age group of 15-20 years had the lowest rate of disease, while the age group of 63-68 years had the highest rate of either hypertension or obesity.

In the sample population, 46.9% of obesity patients were attributed to poor nutrition, i.e. not eating a sufficient balanced diet plus consuming large amounts of calories, while 45.9% of hypertension cases were attributed to a lack of knowledge about the diseases and preventive measures (figure 1). Furthermore, 27.4% of obese patients in the sample population were drug users, while 28.6% of hypertension patients were also drug users, for a total of 56% of patients in the total sample population who had either disease because of drug use. Physical inactivity was also attributed to 31.4% of hypertensive patients, which is slightly higher than drug abuse, and 39.2% of obese patients, which was the second contributing factor to obesity among sample respondents.

Figure 2 depicts the information source. While 24.32% of respondents obtained information from media outlets such as radio stations, newspapers, and

internet media handles such as YouTube, 6.76% obtained information from community members, and 20.27% obtained information from Public Health Officers (PHOs) or other health facilities.

Figure 3 shows that hypertension affects the elderly the most (76.92%) and the young the least (55.17%). While hypertension affected 23.08% of the young in the sample population, obesity affected 44.83% of the elderly, indicating that obesity may increase with age as well.

Table 2 depicts the distribution of these two diseases among young and elderly people of various ages. In terms of percentage, the young and elderly differ; 76.92% of participants with hypertension were 41-68 years old, 55.17% of obese participants were 15-40 years old, and 69.23% of people with both hypertension and obesity were 41-68 years old.

Almost half of respondents (48.18%) had no knowledge of a balanced diet, and 61.82% had knowledge of drug use (Table 3). In terms of awareness, 53.64% of respondents believed that hypertension and obesity were not serious health issues.

**Discussion**

About half of the respondents (49.1%) were found to have at least completed primary school, putting them in a good position to comprehend and provide logical responses in the questionnaire. While many respondents (67.27%) were aware of these conditions, 46.36% believed that hypertension and/or obesity have no serious health consequences. This was due to many of respondents having a limited understanding and knowledge of the effects of hypertension/obesity on an individual's health. This could also be attributed to a lack of basic information from health-related institutions, as well as a lack of tertiary knowledge in some of the respondents, given that many had only completed primary school. It was clear that education/awareness lowers the risk of contracting diseases such as hypertension/obesity. The study found that only (5.41%) of people aged 63 to 68 had knowledge of hypertension/obesity, resulting in many elderly people being diagnosed with hypertension due to a lack of knowledge/awareness.

Many participants (51.82%) had little knowledge of a nutritious balanced diet, which was reflected in their children's obesity.

The most intriguing aspect of the study was the prevalence of obese patients aged 15-40 years (55.17%). However, a previous study (17) found a significant difference. As a result, there was a high number of hypertensive patients aged 41-68 years (76.92%); additionally, 5 participants agreed that they were at one point exposed to drug abuse and had no prior information regarding remedies present to prevent hypertension such as physical activity; this was reflected on the large number (76.92%) of the elderly being exposed to hypertension as compared to obesity.

The study results corroborated previous findings that the young are more likely to become obese than the elderly, and the elderly are more likely to be hypertensive than the young (17). The research study in Mvita Sub County revealed that the young were constantly consuming fat-rich foods; this was evident because there were evening meal points selling high-calorie foods such as *Viazikarai*, *Shawarma*, *Mshikaki*, *Bhajia*, and so on, to which children flocked. According to the research findings, both primary and secondary stakeholders played minor roles, resulting in an increase in hypertension/obesity among the study sample population.

Figure 2 shows a pie chart depicting the roles of various stakeholders in combating hypertension in Mvita Sub County, with (6.76%) of respondents admitting to obtaining information from community members, indicating a low level of knowledge among community members, as highlighted in the general objective findings. Learning institutions provided information about hypertension/obesity to 8.11% of respondents, which is relatively low given that learning institutions must serve as information hubs for the young.

It was also discovered that 24.32% of sample respondents obtained hypertension information from media outlets such as radio stations, television, and YouTube, indicating the need for further dissemination of relevant health campaigns and sensitizations.

According to the study, 20.27% of respondents obtained information from health facilities and health professionals, which is arguably one of the best channels for obtaining hypertension/obesity information. County governments (16.22%), households/parents (9.46%), and the agricultural industry (14.86%) were also involved in reducing hypertension/obesity. According to studies on stakeholder analysis and inclusions (18, 19), government inclusion in policies and recommendations has a positive impact on reducing the rate of NCD spread.

**Table 1.** Distribution of awareness and disease contraction among the study sample participants by age

| Age (year) | Having Knowledge (%) | Having no disease (%) |
|---|---|---|
| 15-20 | 12 (16.22) | 4 (9.52) |
| 21-26 | 5 (6.76) | 5 (11.9) |
| 27-32 | 9 (12.16) | 1 (2.38) |
| 33-38 | 9 (12.16) | 2 (4.76) |
| 39-44 | 9 (12.16) | 3 (7.14) |
| 45-50 | 11 (14.86) | 3 (7.14) |
| 51-56 | 9 (12.16) | 4 (9.52) |
| 57-62 | 6 (8.11) | 10 (23.81) |
| 63-68 | 4 (5.41) | 10 (23.81) |
| **Total** | 74 (100) | 42 (100) |

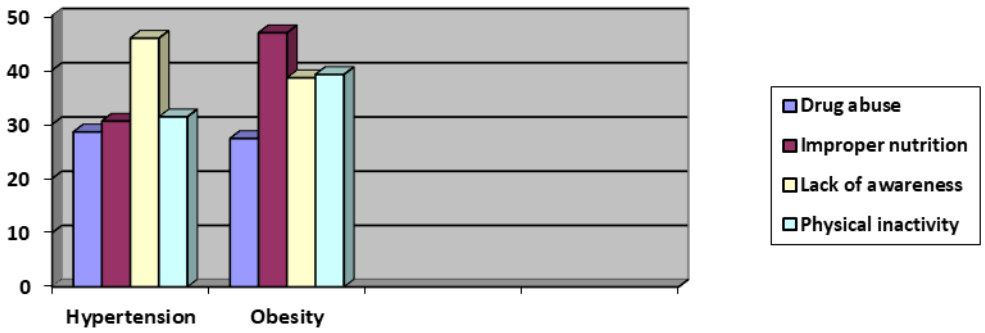


**Figure 1.** Relationship between cause for contracting diseases (hypertension and obesity) and level of severity

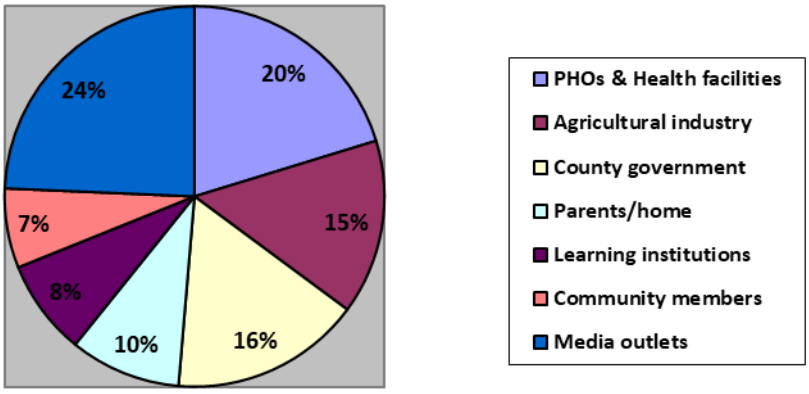


**Figure 2.** Source of Information for respondents

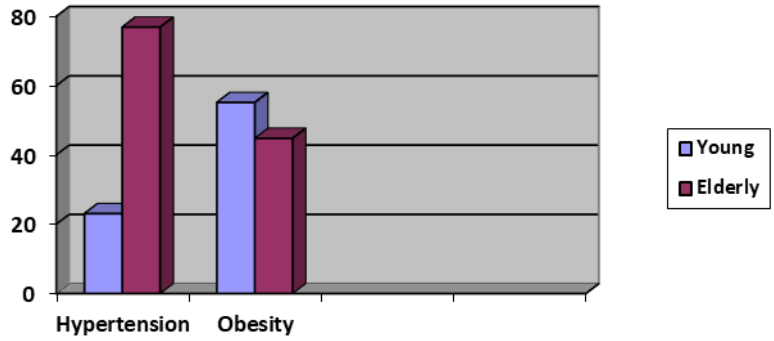


**Figure 3.** Relationship between hypertension among the elderly and obesity among the young

**Table 2.** Disease distribution across ages among the study participants

| Variable | Age (year) | Frequency (%) |
|---|---|---|
| Hypertension diagnosed | 15-40 | 6 (23.08) |
| | 41-68 | 20 (76.92) |
| Obesity<br>Diagnosed | 15-40<br>41-68 | 16 (55.17)<br>13 (44.83) |
| Diagnosed both | 15-40<br>41-68 | 4 (30.77)<br>9 (69.23) |

**Table 3.** Risks associated with spread of hypertension/obesity among the study sample population in Mvita Sub County

| Variable | | Frequency | Percentage |
|---|---|---|---|
| Do you know what a balanced diet is | Yes<br>No | 57<br>53 | 51.82<br>48.18 |
| Do you use drugs? (Tobacco, khat etc.) | Yes<br>No | 68<br>42 | 61.82<br>38.18 |
| Do you think these conditions are serious complications? | Yes<br>No | 51<br>59 | 46.36<br>53.64 |
| Do you know hypertension/obesity? | Yes<br>No | 74<br>36 | 67.27<br>32.73 |

## Conclusion

According to the findings of the study, knowledge/awareness of the diseases plays an important role in lowering the chances of becoming hypertensive or obese, necessitating the development of educational policies and advocacy campaigns in the Mvita subcounty. It also demonstrated the role and significance of various stakeholders in reducing hypertension/obesity cases within Mvita Sub County.
The study also discovered that there is a minor link between having hypertension and being obese at the same time, as (88.18%) of the sample respondents did not have both.
The study also found that the rate of obesity (26.36%) was higher than the rate of hypertension (23.64%) in the study's sample population.

**Conflicts of interest:** The author declares no competing interests whatsoever.

**Acknowledgement:** The authors would like to thank Kenyatta University's Department of Environmental Health and Dr. Purity Nguhiu for their assistance.

## References

1. WHO. Noncommunicable diseases. 2022.. Available from: https://www.who.int/health-topics/noncommunicable-diseases#tab=tab_1.
2.WHO. Noncommunicable diseases: Mortality. 2022. Available from: https://www.who.int/data/gho/data/themes/topics/topic-details/GHO/ncd-mortality.
3. Ma., C., Zhou, W., Huang, C., Huang, S. A cross-sectional survey of self-rated health and its determinants in patients with hypertension. Applied Nurs Res 2015;28(4):347-351.
4. Bybjerg, I.C. Double burden of noncommunicable and infectious diseases in developing countries. Science 2012; 337(6101):1499-1501.
5. Fongar, A., Gödecke, T., Qaim, M. Various forms of double burden of malnutrition problems exist in rural Kenya. BMC Public Health 2019;19:1543.
6. WHO. Hypertension. 2023. Available from: https://www.who.int/news-room/fact-sheets/detail/hypertension.
7. WHO. Kenya Stepwise survey for non communicable diseases risk factors. 2015. Available from: https://www.knbs.or.ke/kenya-stepwise-survey-for-non-communicable-diseases-risk-factors-2015-report/.
8. Opie, L.H., Seedat, Y.K. Hypertension in sub-Saharan African populations. Circulation 2005;112(23):3562-8.
9. PRB. Global Burden of NCDs. 2012. Available from: https://www.prb.org/resources/global-burden-of-noncommunicable-diseases/.
10. Sharma, S., Matheson, A., Lambrick, D., Faulkner, J., Lounsbury, D.W., Vaidya, A., et al. Dietary practices, physical activity and social determinants of noncommunicable diseases in Nepal. PLoS One 2023; 18(2):e0281355.
11. Gamage, A.U., Jayawardana, P.L. Knowledge of noncommunicable diseases and practices related to healthy lifestyles among adolescents, in state schools ofa selected educational division in Sri Lanka. BMC Public Health 2017;18(1):64.
12. NATION. Little pleasures drive many to early grave. 2018. Available from: https://nation.africa/kenya/news/little-pleasures-drive-many-to-early-grave--15998.
13. Ndungi, F.N., Tuitoek, P., Aboud, A. Dietary ptactices, habits and physical activity levels of the Swahili community, Kenya in relation to obesity and chronic diseases of lifestyle. Afr J Food Sci 2018;12(11):323-335.
14.WHO. Obesity and overweight. 2021. Available from: https://www.who.int/news-room/fact-sheets/detail/obesity-and-overweight.
15. Budreviciute, A., Damiati, S., Sabir, D.K., Onder, K., Schuller-Goetzburg, P., Plakys, G., et al. Management and Prevention Strategies for NCDs and their risk factors. Front Public Health 2020;8:574111.
16. Baraka. F.M. Eat less Ugali to avoid obesity, Mombasa residents advised. 2017. Available from: https://barakafm.org/2017/04/13/eat-less-carbs-to-avoid-obesity-mombasa-residents-advised/.
17. Pikilidou, M.I., Scuteri, A., Morrell, C., Lakatta, E.G. The burden of obesity on blood pressure is reduced in older persons: the SardiNIA study. Obes 2013;21(1):E10-13.
18. Kumanyika, S.K., Obarzanek, E., Stettler, N., Bell, R., Field, A.E., Fortmann, S.P. et al. The Need for Comprehensive Promotion of Healthful Eating, Physical Activity and Energy Balance: A scientific statement from American Heart Association Council on Epidemiology and Prevention, Interdisciplinary Committee for Prevention. Circulation 2008;118(4):428-464.
19. Swinburn, B., Gill, T., Kumanyika, S. Obesity Prevention: A proposed framework for translating evidence into action. Obes Rev 2005;6(1):23-33.