

Double trouble for couch potatoes

High blood pressure in a rural population in South Africa

Africa is faced with an increasing burden of hypertension, but a paucity of population-based evidence hinders effective preventive and control strategies for hypertension, write **SETH MKHONTO, MUSA MABASO AND DEMETRE LABADARIOUS**.

Until recently, high blood pressure was thought to be rare in Africa. But an increasing body of literature reports that hypertension is now common in both rural and urban African populations, due mainly to physical inactivity and body weight.

In spite of this, there is limited epidemiological data useful for effective implementation of existing preventive and control strategies in most countries, including South Africa. This is partly because of a lack of reliable, large-scale, population-based surveys on high blood pressure on the continent.

Recently, a demographic health surveillance survey that also measured physical activity and anthropometric (human body measurements) parameters was initiated in the Dikgale village of Limpopo Province in South Africa. It measured physical activity and studied body measurements among the rural population.

The aim of this study was to investigate the association between body weight, physical activity and hypertension, using the Dikgale Health Demographic Surveillance System (DHDSS).

WHAT WAS DONE?

The study included 300 participants recruit-

ed from households in the DHDSS. Trained fieldworkers recorded standard anthropometric measurements, such as body mass index (BMI), waist circumference (WC), hip circumference, and waist to hip ratio (WHR), physical activity (average steps per day), blood pressure (systolic blood pressure or SBP, and diastolic blood pressure or DBP) and hypertension (SBP ≥ 140 and DBP ≥ 90 mmHg).

FINDINGS

The analysis included 319 women and 81 men between 14 and 81 years of age. Study participants differed significantly in body weight as measured by anthropometric parameters, with women having an absolute body weight higher than that of men, and conversely, men were more physically active than women.

SYSTOLIC AND DIASTOLIC BLOOD PRESSURE

The study found that SBP and DBP increased significantly with age, especially in the age group 41 to 60 and in those 61 years and older in both women and men (Figure 1).

Increased SBP and DBP was related to an increase in BMI, which is an indirect measure of body fatness or obesity (Figure 2).

Another indicator is hip circumference, which measures abdominal obesity, which was associated with an increase in diastolic blood pressure only in women.

This is probably because in most women fat is distributed around the hips and in men around the waist.

Although there was an indication that SBP and DBP declined with increasing physical activity in both women and men, no clear pattern could be established (Figure 3).

HYPERTENSION

The risk of developing hypertension also increased with age, especially in women, and it was higher in older women (61 years and older) compared to young adults. An increase in body mass index, waist circumference and waist-hip ratio was associated with an increased risk of hypertension in women, but not in men, probably due to physical activity which appeared to reduce the risk of hypertension. This may be because physical activity reduces blood pressure by improving lipid metabolism and decreases body weight.

WHAT CAN BE DEDUCED?

The study showed that overweight and inactive older people are more at risk of hypertension, especially women. A review of data on obesity in South Africa found that shifts in dietary intake to higher fat consumption combined with lower physical activity contributed to a higher prevalence of obesity among women.

It is therefore possible that modernisation of rural villages, such as Dikgale, has greatly reduced physical activity at home, with a consequent increase in obesity and hypertension, especially in women.

Future studies should also consider hypertension in relation to other lifestyle behavioural risk factors, such as smoking, alcohol and dietary habits. ◀◀

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Figure 1: SBP and DBP by age and gender

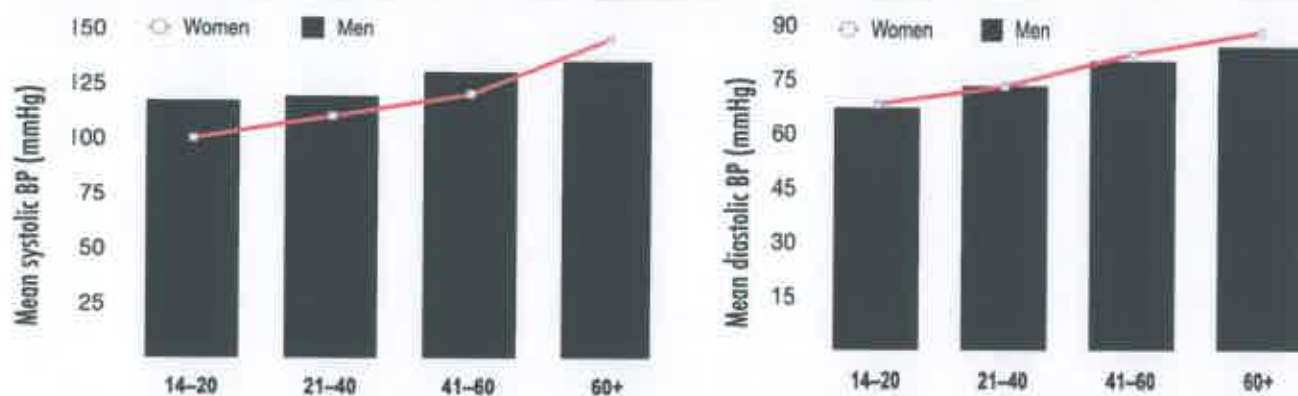
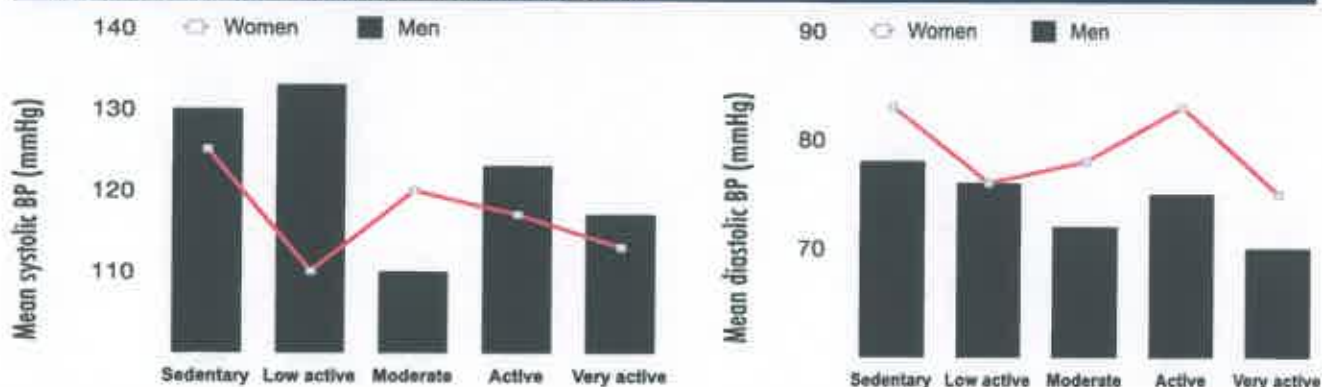


Figure 2: SBP and DBP in relation to BMI by gender



Figure 3: SBP and DBP in relation to physical activity by gender





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