



Prevalence and Risks Factors of Prehypertension in Africa: A Systematic Review

REVIEW

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ABSTRACT

Background: Hypertension is one of the major factors for high mortality of adults in Africa. However, complications occur at lower values than those previously classified as hypertension. Thus, prehypertension is considered as a new category of hypertension and a major risk factor for developing clinical hypertension relative to those with normotension, it has been linked with increased future risk of hypertension as well as cardiovascular diseases.

Objectives: The objective of this review was to determine prevalence of prehypertension and describe the associated factors of prehypertension in Africa during the past 10 years.

Methods: We did a systematic review using the databases PubMed/Medline, and search engine google scholar. We selected sources of publications and conducted an analysis of articles. Keywords in English were: prehypertension, high normal blood pressure, high blood pressure, elevated blood pressure, Africa. Keywords in french were: préhypertension artérielle, préhypertension, pression artérielle normale haute, pression artérielle normale, Afrique.

Mesh terms were: Prehypertension, Africa.

Results: Twenty-seven articles were selected. Prevalence of prehypertension ranged from 2.5% to 34% in children and adolescents. In adults, prevalence varied from 32.9% to 56.8%. Several factors were associated with prehypertension in Africa. These factors included: age; sex; lifestyle such as smoking, alcohol consumption, low physical activity, overweight and obesity. There were also cardiometabolic factors and few others factors which were associated with prehypertension.

Conclusion: This review allowed us to observe that the prevalence of prehypertension was variable according to age of the population and prehypertension is associated with several factors.

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- Overweight and obesity

Many surveys have shown that BMI was correlated with prehypertension [14, 16, 23, 26, 27, 37, 39].

Overweight and obesity [14, 16, 22, 26, 27, 37]; obesity and abdominal obesity [23, 39] were risk factors for prehypertension described by several authors.

- Cardiometabolic factors

Some studies have looked for a link between cardiometabolic factors with prehypertension [27, 34].

Nwatu et al. [27] have shown that impaired glucose tolerance were significant predictors of prehypertension. Ale et al. [34] measured the impact of prehypertension on some electrocardiographics and echographic factors. They noticed that compared with normotension, prehypertension was associated with higher left ventricular mass and higher left ventricular mass index.

- Other factors

Few other factors have been associated with prehypertension Muchanga et al. [28] found that menopause, the use of traditional medicine and haemoglobin levels were associated with prehypertension while Nuwaha [37] reported that being married was a risk factor for prehypertension.

DISCUSSION

In Africa, some authors have worked on prehypertension, however, to our knowledge, there is not yet a systematic review on this subject. Prevalences have been estimated on the basis of surveys carried out in some localities of the countries concerned. Thus, global or sufficiently representative figures for the prevalence of prehypertension in African countries must be evaluated.

This review allowed us to observe that the prevalence of prehypertension was relatively higher than that of hypertension in the different samples analyzed. This observation suggests that cardiovascular disease prevention policies must take into account prehypertensive populations in particular.

According to the association between socio-demographic characteristics and prehypertension, there was a trend towards a positive link with age and gender. This association was also noticed in other parts of the world [40–42]. The association between prehypertension and level of education was poorly documented in this review. However, studies reported that a low educational level in adults was positively associated with a prehypertension.

The association with prehypertension and lifestyle and obesity was well documented in over part of the world [42–44]. Regarding alcohol consumption, a systematic review noted that, in people who drank more than two drinks per day, a reduction in alcohol intake was associated with increased blood pressure reduction [45]. Lifestyle such as cigarette smoking increases blood pressure and is an exogenous risk factor for prehypertension and other cardiovascular diseases. This review concurs with recent studies' findings, which concluded that cigarette smoking damages the arterial wall and increases the blood pressure in adults, resulting in prehypertension. The negative effects of lack of physical activity, overweight and obesity on health and particularly on prehypertension is well documented. Health programmes and policies to promote physical activity and reduce overweight and obesity must be undertaken. This initiative will help to reduce not only prehypertension and cardiovascular diseases but also other non-communicable diseases associated with obesity such as cancers.

LIMITATIONS

We included only PubMed and google scholar in our search and our review was limited to articles published in English and french, which raises the possibility of omissions.

COMPETING INTERESTS

The authors have no competing interests to declare.

AUTHOR CONTRIBUTIONS

All authors had access to the data and a role in writing the manuscript.

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