Application of decision analytic modelling to cardiovascular disease prevention in sub-Saharan Africa

James Odhiambo Oguta, Penny Breeze, Elvis Wambiya, Peter Kibe, Catherine Akoth, Peter Otieno, Peter J Dodd

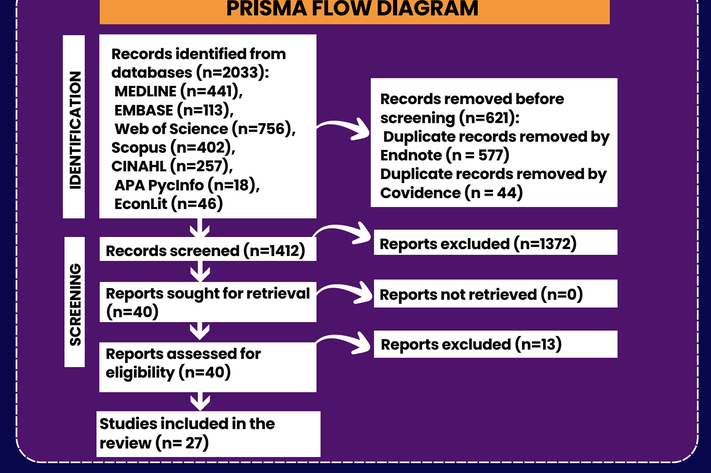
EE78

BACKGROUND

- Cardiovascular diseases (CVDs) are the leading causes of death and disability globally, and in all WHO regions.
- The burden is higher in low- and middle-income countries (LMICs) including SSA
- Decision analytic modelling is a powerful tool for evaluating impact of interventions to inform priority settinG
- This study examinedthe application of decision analytic modelling to cardiovascular disease (CVD) prevention in sub-Saharan Africa (SSA).

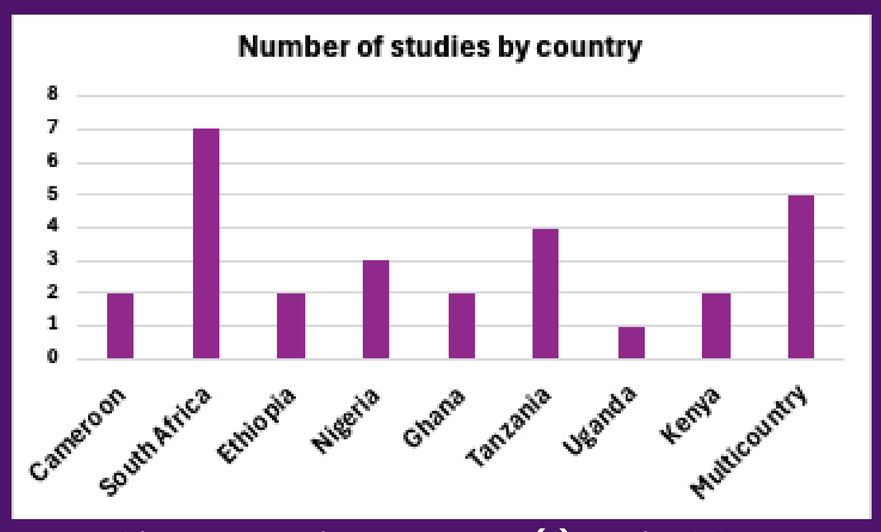
METHODs

- Literature search performed in seven databases
- Article screening done by two reviewers with the aid of Covidence
- Data extracted using excel and narrative synthesis performed
- Philips checklist used for quality assessment



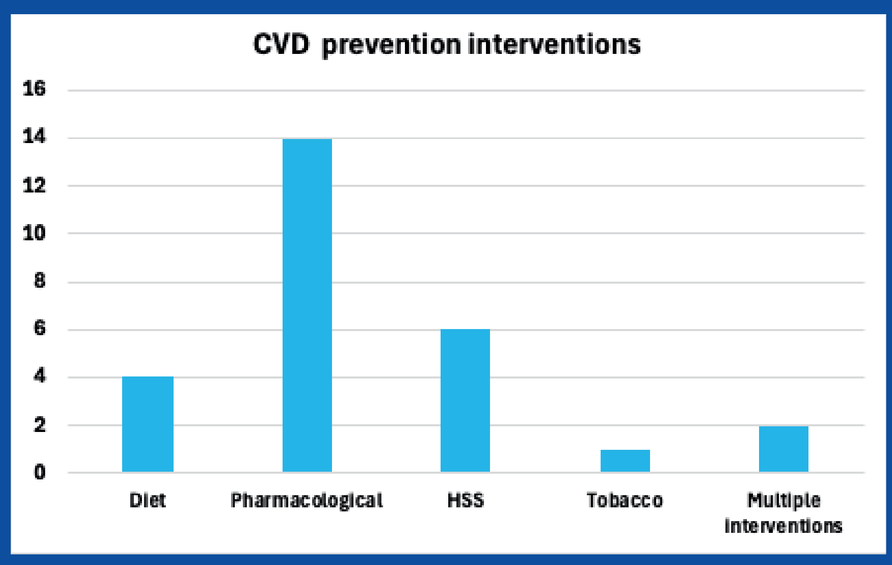
RESULTS

Number of Studies



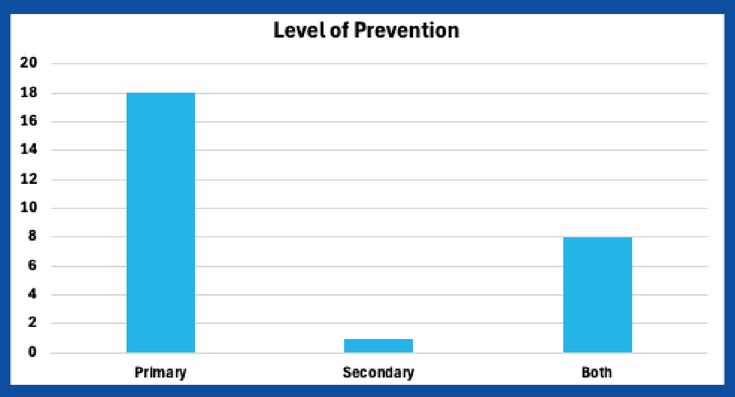
South Africa had the highest number (7) studies followed by Tanzania with four studies while Nigeria had 3.

Type of Intervention



Pharmacological interventions (mainly antihypertensives and statins) were the most evaluated either as single or combined interventions

Level Of Prevention Intervention



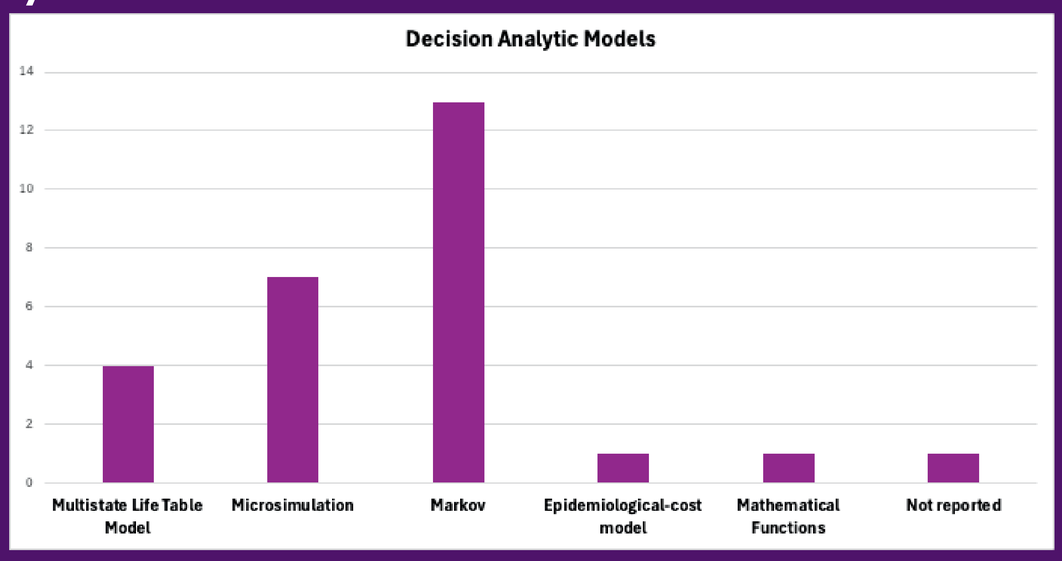
Majority of the studies evaluated interventions for primary CVD prevention

CVD Outcome Covered

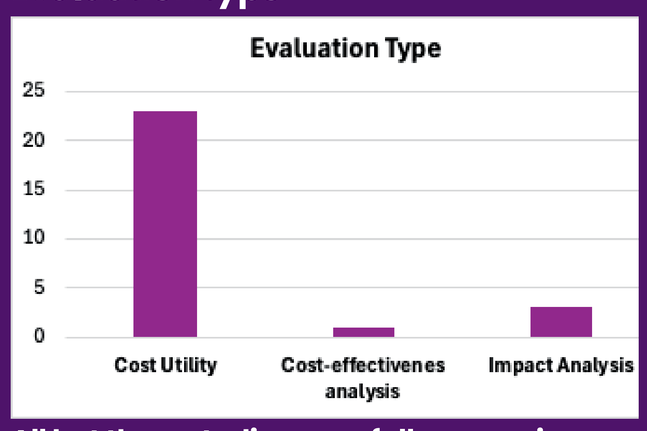
Ischemic/coronary heart disease and/or stroke were the most common cardiovascular disease outcomes

Decision Analytic Models

Thirteen studies were Markov models whereas seven were microsimulatio n models.

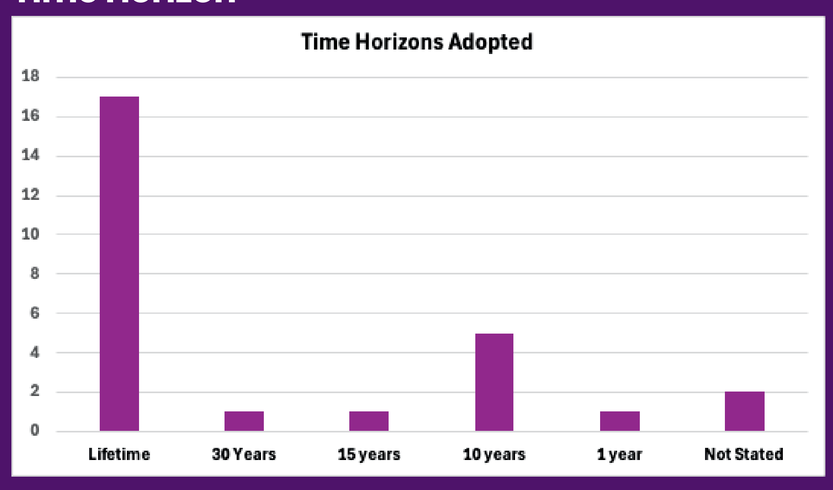


Evaluation type



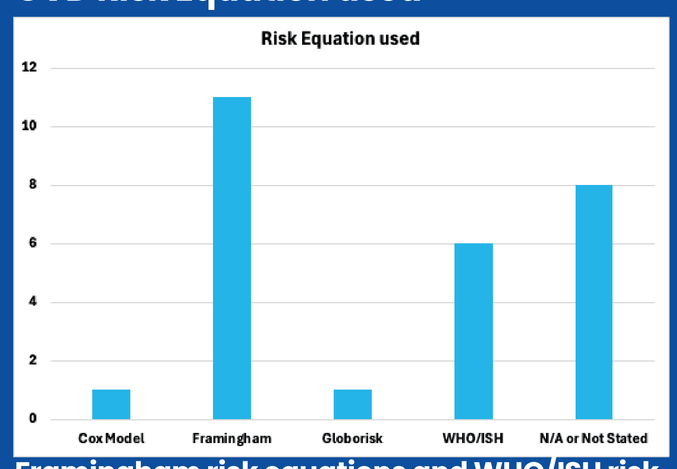
All but three studies were full economic evaluations involving the comparison of costs and health outcomes of which the majority were cost utility analyses.

Time Horizon



Lifetime horizon was adopted by 17 studies while eight studies adopted 10-30 year horizons.

CVD Risk Equation used



Framingham risk equations and WHO/ISH risk prediction charts were the most common approaches.

SCAN ME !

CONCLUSION

The review finds paucity of studies modelling the impact of interventions targeting primordial prevention and those aimed at improving access to CVD prevention. There is a need to conduct equity-informative economic evaluation of CVD prevention interventions to inform the design of universal health coverage interventions in SSA.