

Application of Framingham risk estimates to ethnic minorities in United Kingdom and implications for primary prevention of heart disease in general practice: cross sectional population based study.

Full reference and link to full text of paper

Cappuccio FP, Oakeshott P, Strazzullo P, Kerry SM. Application of Framingham risk estimates to ethnic minorities in United Kingdom and implications for primary prevention of heart disease in general practice: cross sectional population based study. *BMJ*. 2002;**325**(7375):1271.

<https://www.bmj.com/content/325/7375/1271.1>

Summary

The Framingham heart study is a long-term, ongoing cohort study on residents of the city of Framingham, Massachusetts in the USA, running since 1948. It started with 5,209 adult participants and has followed some of the families of these participants into the third generation. The study has provided a large body of evidence on cardiovascular risk factors and was used to create a method for estimating the risk of heart disease. However, the Framingham cohort were mainly white and middle class, meaning that for other ethnic and socio-economic groups these estimates are likely to be inaccurate. The assumption used at the time was that 10-year risk of combined cardiovascular disease (CVD) could be found by multiplying up the 10-year risk of coronary heart disease (CHD) so that a risk of CHD 15% is equal to a risk of CVD of 20%.

This study is a cross sectional study which it looks at a specific population at one time-point. This study design is often used to investigate the prevalence of a condition in a particular population but in this study, they applied the Framingham risk estimates to different ethnic groups to investigate whether the 10-risk estimation of CVD from CHD was appropriate for all ethnic groups.

A total of 1386 participants with no history of CVD (475 white, 447 south Asian, 464 of African origin) were recruited from nine general practices in Wandsworth, South London. Patients with a number of known conditions including diabetes, renal impairment and peripheral vascular disease were then excluded, leaving 1069 participants for a subgroup analysis. The age and sex adjusted 10 years risk estimates for CHD and CVD were found to be significantly different in the different groups of participants. The probability of accurately estimating a risk of CVD of $\geq 20\%$ using a CHD risk of $\geq 15\%$ was 91% in white people but only 81% in the other ethnic groups. The authors suggest that lower CHD risk thresholds should be used when making decisions about treatment of hypertension in patients of south Asian or African origin.

Impact

This paper won the RCGP (and Boots the chemist) Research Paper of the year award 2002. This method of estimating the risk of CVD has been superseded by the QRISK scores which are now embedded into many general practice computing systems. These do take ethnicity into account.

Thinking points

1. The Framingham heart study is a key example of a long term cohort study and has made a significant contribution to knowledge of risk factors for cardiovascular disease. It is worth reading about!
2. This paper shows that ethnic origin can be an important factor in risk of disease. It reminds us of the importance of including people from different backgrounds in research; if they are not included, the research findings apply less well to them.