



SEACO POLICY BRIEF 005

Alternatives to HBA1c for Population Monitoring of Glycaemic Control in Diabetics

South East Asia Community Observatory
(SEACO):
Research for a Healthy Community

This research based evidence brief highlights potential policy options

Who is this Policy Brief for?

Policy makers and other stakeholders who are interested to address the problem based on research evidence

Why was it prepared?

To inform stakeholders about health policies and interventions by summarizing the best available research based evidence about the problem

What is Research Based Evidence Brief for Policy?

Research Based Evidence Brief for Policy is generated from the studies implemented by SEACO, an ISO accredited health and demographic surveillance site which acts as a research platform for health related research

Full Publication

The research based evidence is described in detail in the SEACO publication

Reidpath DD, Jahan NK, Mohan D, Allotey P. A single community-based blood glucose reading as a viable alternative for estimating HbA1c and poor glycaemic control in people with known diabetes living in the community. Glob Health Action 2016, 9: 31691. doi: 10.3402/gha.v9.31691

<https://www.tandfonline.com/doi/full/10.3402/gha.v9.31691>

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The Problem:

Poor glycaemic control in people with known diabetes increases the risk of all-cause mortality and morbidity, including complications from cardiovascular disease, kidney disease and eye disease. Routine testing for glycaemic control is important in relation to diabetes mellitus but it is too expensive for community surveillance. A glycated haemoglobin (HbA1c) test is effective to monitor glycaemic control as it estimates the average blood glucose levels over a period of 2-3 months prior to testing; but it is 70 times more expensive than an equivalent blood glucose test in an upper-middle income country like Malaysia.

Due to this factor, in the national health survey, blood glucose at a single point in time is measured instead of an HbA1c test, even in people with diagnosed diabetes. The question is whether a single fasting blood glucose measure could be used as a proxy for HbA1c especially in community surveillance to identify poor glycaemic control.

Evidence to Support Policy Options:

SEACO researchers used the data from US National Health and Nutrition Examination Surveys (NHANES), which recorded measures of both fasting blood glucose and HbA1c while conducting population-based studies of glycaemic control among a random sample of people with known diabetes. They analysed the data to examine the relationship between a single fasting measure of blood glucose and HbA1c in a non-clinical population of people with known diabetes.

The study found that there is a significant relationship between HbA1c and single point fasting blood glucose measure. All cases which were predicted to have poor glycaemic control based on blood glucose measurement did actually have poor glycaemic control based on HbA1c. There were no false positive cases.

Recommendation:

A single fasting blood glucose measure is an appropriate alternative for population level surveillance of glycaemic control to the management of diabetes. The study findings provide an important policy insight into the adequacy of diabetes care policies that are being implemented.