General practitioners' use of different cardiovascular risk assessment strategies: a qualitative study

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Current guidelines for cardiovascular disease (CVD) prevention advocate the use of absolute risk (AR) assessment to guide the use of preventive medication, rather than treating blood pressure and cholesterol separately.[1] Numerous AR models have been developed, including the Framingham risk equation on which the Australian guidelines are based.[2-5] Age, sex, smoking, diabetes, systolic blood pressure and cholesterol ratio are used to estimate the risk of a cardiovascular event in the next 5 years. Preventive medication is recommended if AR is higher than 15%, or 10%–15% with other risk factors.[2,3]

Reviews suggest that the AR approach may improve the clinical management of CVD without harm to patients.[6,7] Basing treatment decisions on high AR rather than high individual risk factors may prevent overtreatment of patients with isolated risk factors but low to moderate overall risk, and undertreatment of patients with high overall risk.[8,9]

However, international[10-13] and Australian[14-18] research suggests that CVD risk management is not consistently based on AR. Possible barriers to general practitioners using AR assessment include lack of time, accessibility, knowledge and trust; conflicting guidelines; difficulty understanding and explaining AR; and focusing on individual risk factors that may not be included in AR models.[10-18] According to the "behaviour change wheel" framework, these factors may act as barriers to the use of AR assessment through three determinants of behaviour: opportunity (eg, access), capability (eg, knowledge) and motivation (eg, trust).[19]

Little is known about how and why GPs do use AR in CVD risk assessment, and the alternative strategies employed when AR is not the focus of assessment. We aimed to investigate GPs' views and experiences of CVD risk assessment to identify factors that influence the extent to which Australian AR assessment guidelines are used.

Abstract

Objectives: To identify factors that influence the extent to which general practitioners use absolute risk (AR) assessment in cardiovascular disease (CVD) risk assessment.

Design, setting and participants: Semi-structured interviews with 25 currently practising GPs from eight Divisions of General Practice in New South Wales, Australia, between October 2011 and May 2012. Data were analysed using framework analysis.

Results: The study identified five strategies that GPs use with patients in different situations, defined in terms of the extent to which AR was used and the reasons given for this: the AR-focused strategy, used when AR assessment was considered useful for the patient; the AR-adjusted strategy, used to account for additional risk factors such as family history; the clinical judgement strategy, used when GPs considered that their judgement took multiple risk factors into account as effectively as AR; the passive disregard strategy, used when GPs lacked sufficient time, access or experience to use AR; and the active disregard strategy, used when AR was considered to be inappropriate for the patient. The strategies were linked with different opportunity, capability and motivation barriers to the use of AR.

Conclusions: This study provides an in-depth insight into the factors that influence GPs' use of AR in CVD risk assessment. The results suggest that GPs use a range of strategies in different situations, so different approaches may be required to improve the use of AR guidelines in practice.

Methods

We used purposive sampling to recruit participants, aiming for maximum variation among a set of characteristics known to influence CVD risk management (Box 1).[20-22] Invitation letters were posted to all 3743 members of eight Divisions of General Practice in metropolitan New South Wales. Of 55 GPs who returned expression of interest forms, we allocated 25 to this study. GPs signed a consent form before participating in person (two participants) or via telephone (23 participants). They received $100 for their time. Preliminary analysis suggested saturation of key themes related to the range of CVD risk assessment strategies described by GPs, so no further recruitment was conducted.[23] Ethics approval was obtained through the Sydney Local Health District Human Research Ethics Committee.

A semi-structured interview schedule covering CVD risk assessment and management was developed (Appendix 1; online at mja.com.au), piloted with two GPs, and clarified. Interviews lasted between 22 and 55 minutes, and de-identified audio-recordings were transcribed verbatim. Between October 2011 and May 2012, interviews were conducted by two of us (CB, SM) who have qualifications in public health.

We used a framework analysis method[24] and summarised data within a matrix, with participants as rows and themes as columns. This allowed synthesised data to be examined within and across themes and participants to identify consistent patterns and relationships within the data. Three of us (CB, SM, JJ) developed the coding framework (matrix) by independently identifying themes within a subset of data using both deductive (researcher-driven) and inductive (response-based) methods. Themes were discussed to develop a preliminary coding scheme, which was discussed and reviewed with KM (experienced qualitative researcher) to achieve the final coding scheme. Rigour was addressed by: an iterative

1 General practitioner characteristics (n = 25)

Characteristic	Number
Sex	
Female	15
Age, years	
< 40	6
40–49	8
50–59	7
60+	4
Years of practice	
< 10	5
10–19	6
20–29	9
30+	5
GP role in practice	
Registrar/in training	1
Contractor/sessional/ retainer/salaried	14
Partner/principal	10
Medical record system	
Electronic only	23
Electronic and paper	1
Paper only	1
Number of GPs in practice	
1–5	10
6–10	13
11–15	2

process of constant comparison to code and analyse the data; double coding; discussing emerging themes (CB, SM, JJ, KM); documenting the analysis process; and discussing the analysis with all authors, including two academic GPs (JD, PG).[25] The study used a phenomenological methodology to understand GPs' experiences and perspectives on clinical practice, and the analysis represents the perspective of psychosocial health researchers, epidemiologists and academic GPs working in public health.[24]

Results

GPs' use of AR assessment varied widely, from closely following the guidelines to rejecting these in favour of other priorities for patient care. GPs often described a general preference regarding their use of AR tools (charts and calculators) in CVD risk assessment, but patient factors also influenced the use of AR. Five different assessment strategies were identified (see Box 2; and Appendix 2, online at mja.com.au). While some GPs appeared to have a general preference for using or not using AR, all GPs described using a range of strategies. Box 3 provides examples of how individual GPs with a general preference used different strategies in different situations.

Strategy 1 — AR focused: The AR-focused strategy involved using AR tools to assess risk, because it was seen as a more objective method than relying on clinical judgement. GPs described using this strategy because they viewed guidelines as important, trusted the AR model, and described AR tools as convenient, easy to use, objective, scientific, evidence-based and helpful regarding treatment decisions. AR tools based on different risk-prediction models were sometimes used if they were seen to be more comprehensive than the Framingham model.

> I'm comfortable to be guided by the experts rather than try and invent too much on what might be dodgy assumptions on my part. (*ID31, male, 30 years' experience*)

The AR-focused strategy was considered most helpful for particular patient situations: to justify the decision to treat or not treat the patient with medication, especially "borderline" patients with some risk factors but not enough to make them obviously at high risk; to motivate or "scare" resistant patients who are at moderate or high risk, particularly smokers and males; and to reassure concerned patients who are at low risk.

> When it's a grey kind of area it helps give me an idea whether I should be using drug therapy. (*ID37, female, 26 years' experience*)

AR assessment was considered more helpful for patients without additional risk factors like family history and obesity, as these factors are not included in AR tools but GPs considered them to have a strong influence on risk. It was also used more often when patients specifically requested a general health check, and for patients who wanted more evidence for the recommended management approach.

Strategy 2 — AR adjusted: This strategy was based on the perception that considering more risk factors would result in a more accurate risk assessment. GPs using AR tools would sometimes adjust the risk upwards if additional risk factors were present, particularly family history and being overweight, or adjust the risk downwards if the patient had a particularly healthy lifestyle. This adjustment was usually done subjectively, but some GPs described a quantitative adjustment to the AR percentage or risk level (eg, moderate to high).

> The calculator of course doesn't include certain factors ... if someone does do a lot of exercise I would ... think their risk is probably lower. (*ID16, male, 9 years' experience*)

> I can't say it's 8% on the risk calculator so therefore it's going to be 10%, I can't do that. But I will say it's greater than that. (*ID11, female, 27 years' experience*)

Strategy 3 — clinical judgement: The clinical judgement strategy was used when GPs considered that their clinical judgement took multiple risk factors into account as effectively as AR. This involved making a subjective assessment of the patient's overall risk based on a wide range of risk factors, including lifestyle.

> We actually know the patient quite well and their background and their habits now so it's easier for us to make an overall assessment. (*ID6, female, 19 years' experience*)

GPs used this strategy when they felt that AR tools would not take all the relevant risk factors into account. Some GPs attributed their ability to use clinical judgement to having more experience in practice.

> [AR assessment] doesn't take into account your family history, your weight, if you're active or not ... when you've been in this game for as many years as I have you like to get a big picture. (*ID22, male, 22 years' experience*)

The clinical judgement strategy was used more for patients with risk factors that were not explicitly included in Australian AR tools, such as family history of CVD or obesity. It was also used when the patient was considered to be obviously at low risk (no risk

2 General practitioner and patient factors related to the use of absolute cardiovascular risk assessment

Strategy	Description	Reasons for using strategy		Targets to improve GP use of AR*
		GP factors	Patient factors	
AR focused	AR used when considered useful and appropriate for patient	Follow guidelines in general; familiar with AR model and tools; trust AR as more objective	Borderline for medical treatment; no additional risk factors; request general health check; interested in evidence; high risk and need motivation; low risk and need reassurance	Capability: guidance on the use of Framingham versus alternative AR models
AR adjusted	AR adjusted up or down to account for additional risk factors	Follow guidelines in general; familiar with AR model and tools; trust AR as more objective	Additional risk factors not specified in AR tools (adjust upwards); very healthy lifestyle (adjust downwards)	Capability: uncertainty about how to account for risk factors perceived to be outside of the AR model
Clinical judgement	Clinical judgement considered as good or better than AR	Clinical judgement considered to take more risk factors into account; more experienced, so think they can use clinical judgement to assess risk	Obviously low risk; obviously high risk; additional risk factors not specified in AR tools	Motivation: perception that clinical judgement is as good or better than AR
Passive disregard	AR not used due to lack of time, access or experience	Not familiar with guidelines or AR tools; view time and access as barriers, and may acknowledge they should use AR more	Used to individual risk factor assessment; previous consultations focused on monitoring one isolated risk factor	Opportunity: external barriers to AR assessment. Capability: poor knowledge of AR model and tools. Motivation: focus on individual risk factors out of habit or routine
Active disregard	AR rejected when considered unhelpful or inappropriate for patient	See guidelines as flexible or limited; concerned about cost or overservicing; population-based approach not seen as relevant to individual patients; focused on patient's agenda; focused on lifestyle risk factors	Not interested in CVD risk; more important health problems than CVD risk; low risk but could improve lifestyle; low risk but highly anxious; unlikely to understand AR percentage	Opportunity: patient barriers to AR assessment. Motivation: belief that AR is not helpful for individual patients

AR = absolute risk. CVD = cardiovascular disease. * Categories based on Michie et al's "behaviour change wheel" framework, which outlines three determinants of behaviour: opportunity, capability and motivation (including both automatic and conscious processes, eg habits and goals).[19] ◆

factors) or obviously at high risk (multiple or strong risk factors).

Strategy 4 — passive disregard: The passive disregard strategy was used when there was insufficient time or access, or the GP had insufficient experience to use AR tools. This generally resulted in a focus on individual risk factors rather than overall CVD risk. GPs who described this strategy often acknowledged that they should be using AR more.

> I could just never find them [AR charts] when I needed them so … it's being able to put your finger on it when you need it and if it was available. I don't even know if it's available on our computer program. (*ID1, female, 16 years' experience*)

The passive disregard strategy was also used if the patient expected assessment based on individual risk factors, or their management had always been focused on one isolated risk factor. There was a perception that the AR concept was too complex or too confusing for some patients.

> A lot of patients don't have that idea of overall risk … they are very much blood pressure, cholesterol, they don't have the concept of putting it all together. (*ID45, male, 10 years' experience*)

Strategy 5 — active disregard: The active disregard strategy involved deciding not to assess AR when it was seen as limited, irrelevant or inappropriate for individual patients. GPs described using this strategy for a range of reasons: viewing guidelines as flexible or irrelevant to the individual patient, concern about overservicing asymptomatic patients with unnecessary and costly assessments, and being more focused on other priorities, such as lifestyle risk factors.

> I've not used the cardiovascular risk assessment terribly much lately because we find that really at the end of the day the whole thing is just weight reduction. (*ID36, male, 25 years' experience*)

Discussing AR was seen as unhelpful for particular types of patients: less literate patients who may not understand it; patients at low risk who were highly anxious and may perceive even a low percentage risk as worrying; and patients at low risk who had lifestyle risk factors and may be less motivated to change if shown they had a low AR.

> Often people come out with a really low risk and then they think they [can] continue with … their obesity and high blood pressure. (*ID29, female, 25 years' experience*)

This strategy was also used by GPs if the patient was seen to be uninterested in CVD risk, particularly if they had set another agenda for the consultation or were very resistant to discussing lifestyle. CVD risk was not generally discussed if the GP felt the patient had more important health problems.

Discussion

Our findings suggest that GPs use a range of strategies to assess overall CVD risk. While some GPs appeared to have a general preference for using or not using AR, all GPs described using different strategies in different situations.

The main facilitators for using AR assessment were trusting AR tools over clinical judgement, uncertainty about treating patients who were borderline high risk, and opportunities to motivate patients at high risk or reassure patients at low risk. GPs' descriptions of alternative strategies demonstrated a range of barriers to the use of AR assessment, based on the behaviour change wheel framework.[19] Opportunity barriers included limited consultation time, lack of accessible AR tools and patient resistance. The first two of these were often described by GPs using a passive-disregard assessment strategy, while patient resistance was a reason for using an active-disregard strategy. Capability barriers included uncertainty about additional factors not included in the AR model, and poor

knowledge of available guidelines and tools. Uncertainty about additional risk factors led GPs to use an AR-adjusted or clinical-judgement strategy. Poor knowledge of AR tools was related to using a passive-disregard strategy. Motivation barriers included a preference for clinical judgement of overall risk, routine use of individual risk factor assessment, and competing priorities (eg, other health issues, patient preferences), which were associated with clinical-judgement, passive-disregard and active-disregard strategies, respectively.

The opportunity and capability barriers described above are in line with previous research on the barriers to AR assessment, but they have not previously been linked to alternative assessment strategies used in clinical practice.[10,12,18] Motivational barriers have not been a major focus in previous research on ways to improve the use of AR guidelines in practice. However, our findings suggest that motivation helps explain the inconsistent use of AR guidelines by GPs.

Researchers have previously suggested improving the consultation process and developing more accessible AR tools, which would remove some opportunity and capability barriers.[10,16] The assessment strategies that we have identified suggest that an educational approach is also needed to remove capability and motivational barriers. Even when assessment was based on the recommended Framingham risk model, GPs appeared to need clarification on the role of additional risk factors, particularly family history and weight. These risk factors are included in Australian guidelines, but not as part of the AR assessment. By subjectively adjusting AR scores for these factors, GPs were reducing the predictive value of the assessment, and were treating untested risk factors (family history) in the same way as tested but non-significant predictors (body mass index) in the Framingham model.[4] This is consistent with previous research on the use of clinical decision rules in practice.[26] The inclusion of different risk factors in alternative AR models may reinforce this approach, even though they predict different outcomes and are not interchange-

3 General practitioners' use of different strategies

While some GPs appeared to have a general preference for using or not using absolute risk, all GPs described using a range of strategies.

Example 1: Generally uses absolute risk (ID16, male, 9 years' experience)

This GP was very supportive of the absolute risk model and generally used an absolute risk-focused strategy, but still described other strategies:

- "I actually do use the risk calculator to give them a percentage … I use the calculator for, as a bit of grounding for me but also as a way of motivating a patient" (absolute risk focused)
- "Let's say for a Pacific Islander, they're relatively big … I would probably assume that they're a higher risk than what the calculator would suggest" (absolute risk adjusted)
- "Obviously with the calculators it's basically data, so no there are certain biases in that particular population which may not entirely fit" (active disregard)

Example 2: Generally does not use absolute risk (ID6, female, 19 years' experience)

This GP was sceptical about the usefulness of absolute risk and generally used a clinical judgement strategy, but still described other strategies:

- "I just go by my judgement more than by the risk assessment … rather than giving it in percentile I usually go by low risk, high risk" (clinical judgement)
- "I honestly feel that rather than me saying you're at risk of 20% or 2% or 5%, when I say that yes you are at high risk they understand more than the percentile basis, that's my view" (active disregard)
- "I think the doctors who don't use paper-based things, they are quite used to [information technology], they are using [absolute risk], but for us like I am in the middle-aged group, still using paper work so it's a bit of an effort" (passive disregard)   ◆

able.[1,5] The belief that including more risk factors results in a better AR assessment was common among participants in our study, leading some to use clinical judgement rather than AR tools. However, they found it difficult to describe how they integrated multiple risk factors, and previous research has shown that clinical judgement of overall CVD risk is inaccurate.[15] This is an important issue because inaccurate risk assessment has consequences for both overtreatment and undertreatment.[8,9]

The range of assessment strategies described by our data could inform future research on improving the use of AR guidelines in primary care, and could be used to address motivational barriers to the use of AR guidelines. However, a focus on increasing AR assessment overall may not reflect the complexities of primary care — GPs may have good reasons for not following guidelines, including patient preferences.[27,28] GPs' concerns about competing priorities warrant further investigation into how guidelines can reconcile a patient-centred approach with prevention targets.

The strengths of our study include a heterogeneous sample, rigorous analysis process, and involvement of GPs throughout the research process. The

main limitations are that the participants may have been more or less supportive of using AR assessment than GPs in the wider community, and that self-report may differ from actual practice.

This study provides an in-depth insight into the factors that influence GPs' use of AR in the assessment of CVD risk. GPs described using a range of strategies in different situations. These were linked to opportunity, capability and motivation barriers to the use of AR assessment, which may require different approaches to improve the use of AR guidelines in practice.

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