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REVIEW-ARTICLE

Psychological screening in cardiovascular care

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Approximately one in three patients with cardiovascular disease experience psychological distress, often with an associated poor prognosis. Early detection and intervention can improve patients' heart and mental health, yet minimal guidance on psychological screening is offered for clinicians working in cardiovascular care. This paper describes a pragmatic approach to conducting psychological screening during routine clinical care, including when and how to screen and what to do in the case of a positive screen. A psychological screening protocol is proposed to enable clinicians to assess and, where necessary, intervene or refer for further evaluation.

Keywords Cardiovascular care • Psychological screening • Screening protocol

Highlights

- Screening for common psychological conditions in patients with cardiovascular disease is recommended internationally, though minimal guidance is offered to clinicians not trained in mental health.
- Considerable evidence attests to a bi-directional relationship between heart and mind, with anxiety and depression being particularly prevalent and though screening is important, alone is insufficient to improve health outcomes.
- To address these gaps practical guidance on screening in routine cardiovascular care is offered, as well as simple steps to take in the case of positive screens.
- Psychological screening can be easily incorporated into routine clinical care, with early detection increasing the potential for improved heart and mental health.

Background

Psychological conditions occur frequently in individuals with cardiovascular disease (CVD) and are associated with poor prognosis. For example, global prevalence rates have been estimated at 31% for depression, 33% for anxiety, and 58% for stress in cardiac patients.[1] These comorbidities have been shown to negatively impact self-management,[2] treatment adherence,[3] health-related quality of life,[4,5] morbidity and mortality,[6–8] and to significantly increase health care costs.[9–11] These findings have led to screening for psychological conditions being included in guidelines for CVD prevention, management and rehabilitation worldwide.[12–16] Despite this, such screening in clinical practice remains suboptimal.[17–21]

With the burden of mental health increasing globally[22,23] and screening for such conditions in patients with CVD on the decline,[19] clinicians face a heightened need to prioritize treating the person as a whole, not just the physical disease. Numerous scientific data attest to the causal links between psychological functioning and CVD, as well as a bi-directional relationship.[5,24–28] For example, patients with heart disease have been shown to have a 1.79-fold increased risk of depression, and patients with depression have a 1.63-fold increased risk of heart disease independent of shared risk factors such as body mass index, lifestyle,

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socioeconomic status, serum lipids and statin use.[27] Importantly, mounting evidence shows that early recognition of behavioural health disorders can lower CVD risk,[13,28] prevent complications[7,20] and reduce healthcare costs.[9,11] However, whilst cardiovascular care may enable early identification of patients at high risk of mental health, many clinicians without formal training in mental health feel ill-equipped to undertake psychological screening.[5,18,29] In this paper we outline a practical approach for screening of the most prevalent mental health conditions, such as anxiety, depression and distress in the clinical setting for patients with CVD.

Key considerations for psychological screening

Rapid screening of mental health conditions has been identified as an efficient approach to understanding an individual's overall CVD risk profile, enabling early access to, and more personalized, treatment options, thus increasing potential for better patient health outcomes.[7,13,20] Despite the evidence, minimal guidance is offered to non-psychologically trained cardiovascular care clinicians on psychological screening, including which screening tools to use, when to screen, and how often to screen.[20,30] For psychological screening to be integrated into usual clinical practice with minimum interference and maximum benefit, consideration should be given to:

(1) When to screen.
(2) How to screen.
(3) What to do with a positive screen.

When to screen

To provide optimal cardiovascular care, early identification of mental health symptoms is recommended.[8,13–15,20] Thus, screening should ideally take place at the first clinical encounter, and at subsequent follow-up appointments, usually at 2–3 months post-cardiac event.[13] Unless indicated by the patient, screening should then be considered on a yearly basis, as for any other major risk factor for CVD.[13]

How to screen

Choice of screening tool

The primary consideration when choosing an appropriate screening tool is its suitability for administration in routine clinical practice.[31] Ideally, the screening tool should be user-friendly and brief. Awareness of health literacy is an important consideration,[32,33] and the screening tool should be easily understood and in plain, non-medical language. Also, due to time constraints, administration and scoring should take no more than a few minutes, and preferably be communicated/administered verbally.[31,34] Consideration should also be given to accessibility, e.g. does permission need to be gained for use? Is it copyrighted? Are there costs involved with administration or scoring? Can it be administered with minimal training? Lastly, and most importantly, the screening tool should have demonstrated sound psychometric properties pertaining to the target population.[31,35] In other words, has it been shown to be a reliable and valid instrument when used on patients with CVD? By addressing each of these considerations, the likelihood of psychological screening serving as a cost-effective measure to reduce risk and mitigate any further complications is increased.

Common screening tools

The Generalized Anxiety Disorder-2 item (GAD-2)[36] and the Patient Health Questionnaire-2 item (PHQ-2)[37,38] are screening tools for anxiety and depression deemed fit for purpose. Adhering to each of the above outlined considerations, the GAD-2 and the PHQ-2 are easily accessible, user-friendly, brief, and have been recommended for use in routine cardiovascular care.[13,39] Furthermore, anxiety and depression are two of the most prevalent psychological conditions in patients with CVD[1] and both the GAD-2 and the PHQ-2 have sound psychometric properties in CVD populations.[5,13,20,39] When used in conjunction, these four questions are well-validated and known as the PHQ-4 (*Table 1*).[40]

Table 1 PHQ-4: initial screen

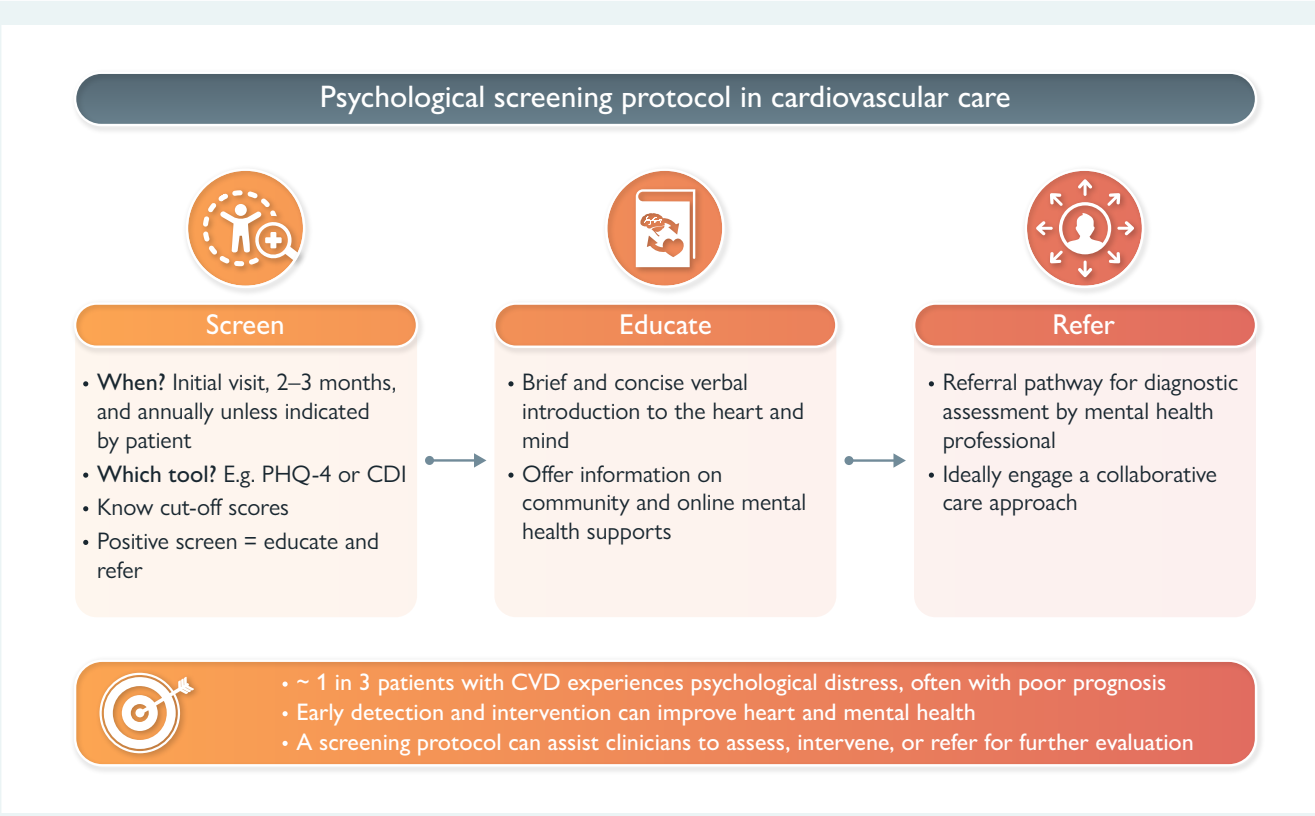
Over the last 2 weeks, how often have you been bothered by any of the following problems?	Not at all	Several days	More than half the days	Nearly every day
(GAD-2)				
1. Feeling nervous, anxious, or on edge	**0**	**1**	**2**	**3**
2. Not being able to stop or control worrying	**0**	**1**	**2**	**3**
(PHQ-2)				
3. Have you had little interest or pleasure in doing things?	**0**	**1**	**2**	**3**
4. Have you been feeling down, depressed or hopeless?	**0**	**1**	**2**	**3**

Nb. GAD-2, Generalized Anxiety Disorder-2 item[36]; PHQ-2, Patient Health Questionnaire-2 item[37].

For patients with CVD who screen positive using the GAD-2 (score ≥1)[39] or PHQ-2 (score ≥2),[41,42] recommended is a two-step procedure with follow-up using the 7-item GAD-7 and 9-item PHQ-9 respectively.[13,36,43] Both the GAD-7 and PHQ-9 take about 3 minutes to complete, can be easily incorporated into routine care, have shown reasonable sensitivity and specificity, and predict worse outcomes in patients with CVD.[36,44]

Other screening tools

In consideration of the high prevalence of co-existing psychological conditions in patients with CVD, e.g. a three-fold increased likelihood of CVD in patients with comorbid anxiety and depression,[45] alternative well-validated tools are available. The Hospital Anxiety and Depression Scale (HADS), for example, is a rapid self-report instrument specifically constructed for physically ill patients[46] that has been validated and used extensively with patients with CVD and is easy to administer and score.[47,48] The HADS measures symptoms of anxiety (HADS-A; 7 items) and depression (HADS-D; 7 items) with items rated on a 4-point (0–3) scale (cut-off scores >7 indicate possible; >10 indicate probable depression or anxiety). However, the HADS is subject to licensing fees.[46] Further acknowledging the complexity of distress commonly experienced post-cardiac event, a new tool has been developed, the Cardiac Distress Inventory (CDI).[49] This is a disease-specific clinical assessment tool that spans multiple psychosocial domains, thereby incorporating patients responses to physical, affective, cognitive, behavioural and social symptoms and experiences related to their cardiac event and recovery.[50] The short-form version—CDI-SF—consists of



Central illustration

12-items that provides a brief psychometrically sound screening measure of cardiac distress that can be used in both clinical and research settings (cut-off score >13 indicate need for referral) and is available free of charge.[51]

What to do with a positive screen

Regardless of the screening tool used, it is important to acknowledge that screening alone is not sufficient without appropriate referral or treatment.[5,13,20,52] Timely diagnosis combined with multidisciplinary management has the potential to enable not only early detection, but also to achieve optimal patient outcomes.[7,20,53] Additionally, screening can be used as the basis for more sensitive discussions during a clinical encounter, including signalling to patients the significance of treating the heart and mind together. These brief, targeted discussions can be highly effective in addressing issues such as the impact of mental health symptoms on adherence and physical function, and the importance of referral to mental health services. Of note, such discussions are often highly valued by patients.[5,20,54] Furthermore, it is important to have a follow-up plan for patients who screen positive, one that, where possible, involves multidisciplinary integrated care pathways for referral and assessment.

Psychological screening protocol

A psychological screening protocol that promotes patient education, early detection and referral can be highly effective.[31] The protocol should be simple and adaptable, dependent on linked mental health services and resources. In its most basic form, the screening protocol would comprise a psychological screen, patient education, and a referral pathway *central illustration*.

Psychological screen

In the first instance, as recommended in consensus statements and guidelines, a two-step screening procedure could be implemented administering the PHQ-2 and/or the GAD-2. Then for those who screen positive, this would be followed-up using the PHQ-9 and/or the GAD-7 to confirm the positive screen. Essential to the screen is to have clearly specified cut-off scores for each screening tool administered for the purpose of referral.

Patient education

A positive screen is an ideal way of introducing the patient to a holistic care approach; care that involves treating their heart as well as their mental health. However, it is also important to be mindful that caring for the patient with CVD involves management of multiple risk factors, not only psychological ones. Thus, in the clinical encounter, patient education should be concise and succinct, with the purpose of introducing the relationship that exists between heart and mind, i.e. engaging in brief discussions post-screening, and providing educational materials and links to community and online mental health resources and supports. Alternatively, the importance of psychological screening can be discussed prior to performing screening, which can also lead to increased patient acceptability.[33] Further, some patients may not be used to talking about their mental health; thus, fostering a collaborative and sensitive discussion with them is essential for creating an environment in which patients feel safe and their perspectives valued. Although brief, effective communication that increases patient awareness of maintaining good mental health can additionally foster patient-centeredness, enhance shared decision-making and increase patient satisfaction.[20,33,53,54]

Referral pathway

Though screening can provide an early indication of mental health symptoms, more testing is required to diagnose a specific psychological condition. Thus, following a positive psychological screen, the patient should then be referred to a clinician with mental health training, usually to a psychologist, for diagnostic assessment.[13,14,20,52,53] Ideally, an integrated multidisciplinary approach should be considered whereby the management of patients with psychological conditions is facilitated through collaborative care.[20,31] Referral pathways may already be in place, either to psychological services or community mental health services. If not, dependent on resource availability, it is advisable that such referral pathways are initiated. Appropriate referral and accurate diagnosis can provide critical insights into the mechanisms and strategies for targeted interventions. Robust data demonstrate the effectiveness of psychological interventions for improving mental health and reducing cardiovascular risk.[55,56]

Although psychological screening will take some time to conduct in busy cardiovascular care environments, if issues are identified and a protocol is in place, investment in such time spent is likely to yield benefits such as, treatment adherence, satisfaction, better quality of life and improved patient health outcomes.

Conclusion

Around one in three patients with CVD experience psychological distress. Cardiovascular healthcare professionals can play a crucial role in detecting such distress by conducting psychological screening during routine clinical encounters. A psychological screening protocol can aid the process and empower clinicians to assess and, where necessary, intervene or refer patients for further evaluation. Moreover, psychological screening can potentially improve therapeutic adherence and clinical outcomes.

Author contributions

C.F.S.: conceptualisation, writing—original draft preparation; All authors writing—reviewing and editing. C.F.S., D.R.T., A.C.J., and S.S.P.

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Data availability

There are no data available. This is a discussion paper using existing accessible sources and author perspectives.

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