# 4 Screening for Psychosocial Distress and Psychiatric Disorders in Medicine: From Concepts to Evidence

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**Abstract**

A key element of supportive care is the reliable assessment and measurement of psychological health. This includes detection of frank psychiatric disorders as well as broader psychological symptoms and generalized distress. Many organizations have made recommendations for assessment of psychiatric disorders and psychological distress, but despite the potential benefits, uptake of screening has been slow, and evidence that patient outcomes improve is mixed. New evidence supports multidomain-/algorithm-based screening as well on screening online and in new smartphone apps. Psychosocial assessment can be pragmatically divided into screening, clinical assessment (case finding) and severity measurement. Screening is designed to quickly ascertain which individuals in a large population need further assessment and where necessary additional care. The target of screening may be mood disorders, anxiety, distress, cognitive decline, unmet needs or any combination (multidomain approach). For patients with complex needs, a multidimensional approach may be preferable, and a multidimensional tool can be valuable as it can serve as a roadmap to a more effective way of addressing patient concerns in a timely way with appropriate referral to the right professional. Yet some forms of screening can be an additional burden to patients and clinicians unless conducted at home, online or in the waiting room. Screening for distress and/or psychological assessment should not be considered a one-off exercise but part of routine high quality of care that involves all healthcare professionals.

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## 4.1 Introduction

In the last 10 years, there has been raised awareness of the importance of mental health in both primary care and secondary (hospital) care. A large body of evidence suggests that the quality of mental healthcare is lower than expected in these settings [1]. Further specific mental health mood and anxiety disorders adversely influence mortality following myocardial infarction [2], heart disease [3], COPD [4], stroke [5] and haemodialysis [6, 7]. The same observation applies for severe mental illnesses such as schizophrenia, bipolar disorder and dementia [8, 9]. Ultimately these deficits in care contribute to a large mortality gap of approximately 5–10 years for patients with mild-to-moderate mental illness and 10–20 years for patients' severe mental illness [8, 10]. However, it is not only mortality that is a concern. Comorbid mental health problems have a greater effect on quality of life than physical comorbidities [11]. Distress itself is associated with reduced health-related quality of life and poor satisfaction with medical care [12]. Comorbid anxiety results in greater disability and lower quality of life after controlling for confounding variables [13]. Given these concerns several organizations have promoted the concept of parity of esteem, namely, valuing mental health as much as physical health. Several recent guidelines outline how to reduce these inequalities in diagnosis, treatment, follow-up and attitudes [14–16].

Perhaps the first step in reducing inequalities in mental health in medical settings is appropriate diagnosis and screening. There is no doubt that there is significant under-diagnosis of every mental health condition studied in primary and secondary care [17]. Further psychiatric illnesses are more often overlooked when they occur in patients with pre-existing physical comorbidity. Over half of all cases of depression in the general hospital setting go unrecognized by physicians and nursing staff, and there are similar problems with detection in primary care [18, 19]. This may be in part because clinicians have little training in this area, have low awareness of mental illness and in these settings do not have the time to use assessment tools preferring instead to rely upon their own clinical judgement [20]. As a result emotional issues are often not emphasized during clinical consultations [21, 22]. To address this, many organizations have recommended screening for depression, delirium or dementia (or mental illness as a whole) in primary care and in hospital settings.

## 4.2 Concepts of Diagnosis, Case Finding and Screening

Clinical diagnosis is a process, whereby a clinician or trained researcher establishes the most likely condition based on the evidence available. That evidence may simply be symptoms in the history or signs elicited in the medical examination, or it may be psychometric scores from assessment scales. To date no reliable biomedical tests have contributed significantly to clinical psychiatric diagnosis outside of dementia and cognitive impairment. Once symptoms, signs and/or test results have been elicited there must be pattern recognition ideally against standardized criteria achieved by either clinical judgement or computer matching/artificial intelligence. The ideal is

to correctly identify all cases as well as correctly identifying all non-cases. Sensitivity is the proportion of true positives out of all with the condition (cases), and specificity is the proportion of true negatives out of all those without the condition (non-cases). Although these are the most popular metrics, both sensitivity and specificity are abstract concepts for clinicians and are really only useful when they approach 100%. A more useful metric is the ability to identify true positives (cases) as a proportion of all positive screening attempts which is known as the *positive predictive value* (PPV). PPV is essentially a measure of case-finding ability. The ability to spot (true) non-cases as a proportion of all negative test results is the *negative predictive value* (NPV) and is a measure of screening acumen (see Box 4.1). In an epidemiological sense, *screening studies* are those where a test is applied to those at low or modest risk of a condition or in a population where the prevalence is low. The aim in most screening studies is to initially exclude a large number of clear non-cases. In this application, a first-stage screener may not have perfect PPV, but it should have high NPV because those ruled-out are unlikely to receive a second examination and false negatives should be avoided. Conversely *case-finding studies* are usually applied in high-prevalence settings such as hospitalized care where a final confirmation is needed of caseness and false positives should be avoided.

**Box 4.1 Pragmatic Definitions of Case-Identification**

**Screening**
*The application of a diagnostic test or clinical assessment in order to optimally rule-out those without the disorder with minimal false negatives (missed cases).*

*Screening is often performed as a broad population strategy as a first step.*

**Case-Finding**
*The application of a diagnostic test or clinical assessment in order to optimally identify those with the disorder with minimal false positives.*

*Case finding is often performed in a selected population at high risk the condition.*

Recently newer metrics have attempted to improve upon sensitivity and specificity when evaluating screening and diagnostic studies. Sensitivity and specificity are essentially measures of occurrence. Contrastingly, PPV and NPV are measures of discrimination. Clinically relevant rule in accuracy would be product of the PPV and sensitivity. This is called the positive clinical utility index (CUI+ = sensitivity × PPV) [23]. Similarly clinically relevant rule out accuracy would be product of the NPV and specificity. This is called the negative clinical utility index (CUI− = specificity × NPV). The utility index can be considered a measure of the clinical value of a diagnostic test (see www.clinicalutility.co.uk for further information).

## 4.3 Implementation of Screening

There are three major types of studies. Psychometric studies examine various characteristics of the instrument such as reliability and consistency. Diagnostic validity studies examine accuracy against a known standard. Implementation studies examine how well does screening work in practice [24]. This might involve examination of the uptake of the tool, acceptability of the tool, change in referral patterns, influence on patient care and ultimately effect of patient well-being. Phases in the development and testing of a screening tool have been reported [25]. Once a screening tool has been developed and tested for potential accuracy against an accepted "gold standard", it can be evaluated in a clinical setting. This is the implementation phase. The implementation can be non-comparative or observational. For example, the effect of screening on quality of care (process measures) or patient-reported outcomes can be monitored using current or historical data. Observational studies will reveal how well screening is working, but will not reveal how much better screening is over usual care. For this, interventional screening studies are required. These can be randomized or non-randomized. In the randomized study, two equal groups of clinicians, or in the case of cluster randomization two centres, are randomized to have either access to screening or no access to screening. A variant on this design is to randomize two groups to have either access to results of screening or screening, but no feedback of the results of screening. In effect it is feedback of results that are randomized not screening. Theoretically this may help distinguish which effects are related to application of the screener and which are related to the receipt of screening results.

The aim of screening is fundamentally to facilitate effective and efficient treatment by focussing on people who would most benefit from a proven intervention. However, to justify the time and effort required, screening must be more worthwhile than not screening (treatment-as-usual). Usually this is assessed using patient-reported outcome measures (PROMs) but may also include clinician behaviour (e.g. number of accurate diagnoses recorded, doctor-patient communication, referrals made to specialist services and psychosocial help given by clinicians). These quality of care markers, sometimes called process measures can influence PROMs. For example, Carlson et al. [26] found that the best predictor of decreased anxiety and depression was receipt of referral to psychosocial services. If screening studies show benefits in quality of care or clinician behaviour but not patient well-being, then this suggests that there are significant barriers to care downstream of the screening process. An important measure in all studies is acceptability of the screening programme to patients and clinicians. This can be measured by satisfaction scores or by proxy measures such as uptake and participation. Thought needs to be given to the location of the screen, the method of application (e.g. pencil and paper or computer or touch tablet) and the timing and number of applications. Screening may be conducted systematically on every qualifying patient or targeted on the basis of clinician decision. Systematic screening (i.e. screen everyone within a service) has the advantage of not missing

low-risk individuals who might nevertheless be in need of help but is more resource intensive.

## 4.4 Screening for Depression

Depression comorbidity has been extensively studied in virtually all medical areas and in primary care. Depression is seen in approximately 15% of primary care patients, and about half of those who consult their general practitioner are incorrectly diagnosed [27]. The same error rate is seen in hospital settings for those who do not receive a specialist assessment by a mental health professional [28]. Prevalence rates vary according to the tool used, duration after diagnosis and background risk factors. As a rule of thumb depressive symptoms are more common than mild-moderate clinical depression which is more common in turn than severe clinical depression. The most commonly applied criteria are those for major depression set out in *Diagnostic and Statistical Manual of Mental Disorders, 5th Edition* (DSM5) [29] which requires five of nine qualifying symptoms, together with a minimum duration of 2 weeks and clinical significance defined by concomitant distress or impaired daily function. Other forms of depression include minor depression, dysthymia and adjustment disorder with predominant depression. Depression is very often comorbid with other mental health conditions as well as a wide range of medical conditions (multi-morbidity). Rates of depression are threefold higher for patients with two or more medical conditions compared with those with no comorbidity [30]. Rates of depression are broadly similar in well-designed studies conducted in patients with stroke, multiple sclerosis, Parkinson's disease, epilepsy, diabetes, myocardial infarction, heart failure, cancer, rheumatological disease and lung disease [31]. About 50% of patients have symptoms of depression and 20% have major depression early after a medical diagnosis a prevalence rate which is approximately 50% higher than rate seen in the general population [32]. In longitudinal studies persistent depression increases the risk of later dementia, diabetes, heart disease and cancer [33]. Compared to hospitalized inpatients without depression, those discharged with depressive symptoms are more likely to be readmitted (20.4% vs 13.7%) and more likely to die within 30 days (2.8% vs 1.5%) [34]. Depression also increases the risk of adverse outcomes (mortality and morbidity) among those who already have established medical conditions [35, 36]. This may be because depression influences receipt of medical care, quality of medical care and participation in medical treatment [37–39].

Over the last decade, numerous depression screening studies and depression screening guidelines have been published. The UK National Institute for Health and Care Excellence (NICE) [40, 41] states:

> *Be alert to possible depression (particularly in people with a past history of depression, possible somatic symptoms of depression or a chronic physical health problem with associated functional impairment) and consider asking people who may have depression two questions, specifically: During the last month, have you often been bothered by feeling down, depressed or hopeless? During the last month, have you often been bothered by having little interest or pleasure in doing things?*

In 2016 the US Preventive Services Task Force (USPSTF) updated its recommendation on the screening of depression in the general adult population (aged 18 years or older including pregnant women and postpartum women) as follows [42].

> *The USPSTF concludes with at least moderate certainty that there is a moderate net benefit to screening for depression in adults, including older adults, who receive care in clinical practices that have adequate systems in place to ensure accurate diagnosis, effective treatment, and appropriate follow-up after screening.*

It is important to note that routine screening is not always successful and is not without risks of false positives and false negatives and, in addition, requires adequate follow-up with good-quality evidence-based treatments. Where treatments are not given, screening alone is unlikely to be beneficial, and this has been strongly asserted by several groups [43]. Further the evidence from randomized controlled trials that screening improves quality of care is currently modest. There is a small but statistically significant evidence base in primary care and in cancer care but with an absence of evidence in other settings. This has led the Canadian Task Force on Preventive Health Care (CTFPHC) to downgrade its original 2005 recommendation to "not routinely screen adults with no apparent symptoms of depression" but nevertheless "that clinicians be alert to the clinical symptoms of depression, especially in individuals with characteristics that may increase their risk for depression" [44].

Regarding choice of individual tools, numerous tools have been developed, tested and validated with item counts varying from 1 to 90 items or more [45]. Most are self-report, but there are also brief structured verbal questions and computerized questionnaires [46]. USPSTF suggests screening with the Patient Health Questionnaire (PHQ), the Hospital Anxiety and Depression Scales (HADS) in adults, the Geriatric Depression Scale (GDS) in older adults and the Edinburgh Postnatal Depression Scale (EPDS) in postpartum and pregnant women [42]. No scale is perfect, and each should be judged on accuracy, reliability and acceptability [47]. Scales are more likely to be successful in screening (ruling out) than case finding when assessing a low prevalence condition such as depression. For example, recent reviews found that the HADS could not be recommended as a case-finding (diagnostic) instrument but it may be suitable as an initial screening tool, length permitting [48, 49]. Other tools including the Beck Depression Inventory (BDI) [50], the Edinburgh Postnatal Depression Scale (EPDS) [51] and the Centers for Epidemiological Studies-Depression Scale (CES-D) tend to be too lengthy for non-specialists [52, 53]. Currently the most popular strategy is to use the Patient Health questionnaire (PHQ-2 and PHQ-9) [54]. Best estimates of sensitivity and specificity were 81.3% and 85.3% (95% CI 81.0–89.1) and 89.3% and 75.9% for the PHQ-9-linear and PHQ-2, respectively [54]. For case finding (confirming a diagnosis) no self-report tool is entirely satisfactory, but for screening (ruling out non-cases) almost any validated tool can be used with the exception of a single verbal item which is inaccurate [55, 56]. That said, an increasingly favoured strategy is to routinely screen with a short one- or two-item questionnaire (e.g. PHQ-2) and then apply a longer scale in screen positive patients (e.g. PHQ9).

## 4.5 Screening for Anxiety Disorders

Anxiety and related disorders are the most prevalent mental disorders in the general population, and there is a strong bidirectional association with general medical conditions [57]. Anxiety disorders include several subtypes including generalized anxiety disorder (GAD), panic disorder, phobias, obsessive compulsive disorder and post-traumatic stress disorder. PTSD, for example, is seen in about 10–20% patients after coronary heart disease or cancer and influences quality of life outcomes, adherence to treatments and likelihood of readmission [58]. About 20% of primary care patients have one or more anxiety disorders, and recognition may be as low as 24%. Further 5 year treatment uptake may be as low as 60% even after diagnosis [59, 60].

Anxiety is the most common patient-reported emotional complication of most medical disorders including cardiovascular disease, most neurological conditions and cancer [17, 61]. Conversely the most common medical comorbidities in hospital patients with anxiety appear to be hypertension, asthma, cataract and ischaemic heart disease [62]. If one controls for physical comorbidities (i.e. number of physical conditions), anxiety disorder remains significantly associated with gastrointestinal conditions and chronic pain [63]. Self-reported anxiety is typically found in more than 40% of patients in the early stages of treatment, but unlike depression anxiety is usually more persistent with time especially in cancer survivors [64]. Anxiety is underestimated by clinicians, and it is under-represented by semi-structured interviews [17]. Anxiety and depression are frequently comorbid, and both are independently associated with poorer QoL [65].

Clinicians rarely use formal instruments when assessing anxiety but typically rely on verbal and nonverbal cues [66]. Recognition of anxiety appears to be significantly worse than recognition of depression. Simple clinically relevant screening tools are likely to improve recognition rates. A single verbal item ("How anxious have you felt this week?") and single-item Anxiety Thermometer (from www.emotionthermometers.com) offer a rapid screen for anxiety that can be quickly adopted into routine care but may lack specificity [67, 68]. A number of brief generic self-report questionnaires have been studied in several medical settings and in primary care. These include the anxiety subscale of the HADS, the STAI, the Beck Anxiety Inventory, the Pen State Worry Questionnaire and the GAD7. Several organizations have authored anxiety screening guidelines and many recommend the GAD7 which has a modest evidence base but importantly does not accurately follow DSM5 algorithm for GAD [69]. Our group proposed a new questionnaire GAD-DSM which is compliant. Regarding anxiety screening NICE states [70]:

> *Be alert to possible anxiety disorders (particularly in people with a past history of an anxiety disorder, possible somatic symptoms of an anxiety disorder or in those who have experienced a recent traumatic event). Consider asking the person about their feelings of anxiety and their ability to stop or control worry, using the 2-item Generalized Anxiety Disorder scale (GAD-2). If the person scores less than three on the GAD-2 scale, but you are still concerned they may have an anxiety disorder, ask the following: 'Do you find yourself avoiding places or activities and does this cause you problems?'. If the person answers 'yes' to this question consider an anxiety disorder and follow the recommendations for assessment (see section 1.3.2).*

Unfortunately the criteria for GAD may be too restrictive for medical settings, as they require "excessive anxiety" for at least 6 months. In addition there is low agreement between ICD10 and DSM-IV criteria for GAD [71]. Further, screening standards for non-GAD anxiety disorders remains a problem. For example, NICE states regarding panic disorder "there is insufficient evidence on which to recommend a well-validated, self-reporting screening instrument to use in the diagnostic process, and so consultation skills should be relied upon to elicit all necessary information" [72].

## 4.6 Screening for Distress

Emotional distress is common to most mental health conditions and therefore may represent a valid screening target in itself. In addition "distress" is a patient-friendly term which is usually easily understood in most cultures. A definition of distress is "the experience of significant emotional upset arising from any physical or psychiatric condition" [73, 74]. Distress is not a specific category in DSM5 nor ICD10 (International Classification of Diseases, 10th Edition) but rather a qualifying clinical significance criteria. Accumulating evidence suggests that the presence of distress is associated with reduced health-related quality of life [75], poor satisfaction with medical care [76] and possibly reduced survival [77]. Unfortunately, interventions for distress and related emotional disorders have failed to show any benefit on survival as a whole implying distress is linked with mortality through confounding factors [78, 79]. In 1998 the NCCN released a one-item, visual-analogue scale (VAS) known as the Distress Thermometer (DT) [80, 81]. This is a simple one-item visual-analogue thermometer with good sensitivity and modest specificity [82, 83]. NICE recognizes distress as an important symptoms and states:

> *For people with significant language or communication difficulties, for example people with sensory impairments or a learning disability, consider using the DT and/or asking a family member or carer about the person's symptoms to identify a possible common mental health disorder. If a significant level of distress is identified, offer further assessment or seek the advice of a specialist.*

Despite the popularity of the DT, more sophisticated distress measures are available, and several have been widely studied in primary care including the General Health Questionnaire (GHQ). Indeed several promising variants of the thermometer format have been developed [84, 85]. Recently, Mitchell et al. developed a five-item Emotion Thermometer designed to measure multidomain emotional complications with better accuracy and yet no appreciably drop in acceptability compared with the original DT [68].

## 4.7 Screening for Bipolar Disorder and Severe Mental Illness

Screening for bipolar disorder is a relatively new area that has long been overlooked in hospital settings and in primary care. However detection is not always

straightforward because patients with bipolar disorder may have infrequent or very brief manic/hypomanic symptoms and patients may not recall past manic symptoms at all [86]. Several screening tests and self-completed questionnaires have been developed to facilitate the early detection of bipolar disorder including the Mood Disorders Questionnaire (MDQ) and the Bipolar Spectrum Disorders Scale [87]. The MDQ is a single-page screener for a lifetime history of manic or hypomanic symptoms using 13 yes/no items [88]. In a review of studies with mixed unipolar and bipolar patients, the MDQ was found to have modest accuracy (sensitivity 76% and specificity 81%), but sensitivity was only 37%, and specificity was 88% when undiagnosed patients were considered [89]. Given a concern over high false-positive rates, several authors propose that screening for bipolar is confined to those with current depression, focussing on the longitudinal history of bipolar disorder [90]. Indeed screening for bipolar disorder is not a common practice outside of specialist settings, and guidelines are rare. In the UK, NICE states [91]:

*Do not use questionnaires in primary care to identify bipolar disorder in adults.*

## 4.8 Screening for Dementia

Dementia is an increasing problem in society due to increasing longevity. In the UK recent national campaigns have called attention to dementia and encouraged early help seeking [92, 93]. Sixty to seventy percent of all people with dementia are not formally diagnosed [94]. Around 6–10% of inpatients in general hospital have dementia roughly 10 times the rate in the community [95, 96]. Typically only one in three hospital cases of dementia were previously known before admission, therefore many incident cases come to light in hospital.

The needs of patients with dementia are often overlooked, and such patients are also susceptible to environmental change and may find it difficult to communicate their needs in busy environments. General hospitals are not a good environment to manage dementia. GPs (primary care physicians) are usually the first source of contact for individuals and their families worried about their memory [97]. GPs often competently manage patients with cognitive impairment without referral to hospital specialists [98]. Yet clinicians are understandably hesitant about using the term "dementia" prematurely and are generally cautious about disclosing this diagnosis [99, 100]. This concern over false-positive errors might reduce rates of inappropriate treatment but, equally, might favour omission or delay in making a correct diagnosis. Studies show that documentation of dementia is often poor [101], and the typical time taken to reach a diagnosis of dementia or Alzheimer's disease after first symptoms are noted by patient or family ranges from 10 months in Germany to 32 months in the UK [96, 102]. Dementia is a feared diagnosis, and people under investigation should be asked if they wish to know the diagnosis, and with whom this should be shared. Several surveys suggest that GPs may not be confident in making a diagnosis of dementia and are often unsure about which tests or tools to use [103, 104]. Only a quarter use standardized criteria such as those provided by DSM-IV, ICD10 and DSM5 [105, 106]. Most non-specialists rely on their clinical

judgement, occasionally enriched with a basic cognitive screening tool such as the Mini-Mental State Examination (MMSE) [107, 108]. Official criteria for dementia require prolonged impairment in short- and long-term memory, deficits in other areas of cognition and functional impairment, but not all criteria agree precisely [109]. Ngo (2014) summarized current clinical guidelines for dementia [110]. From 12 recent guidelines, 8 addressed cognitive testing, and there was agreement that a cognitive assessment should be performed using a validated, standardized tool. However the specific tools recommended are not very accurate in cases of mild dementia. Short cognitive tests include the MMSE, abbreviated mental test score (AMTS), and six-item cognitive impairment test (6CIT) and GPCOG. The Montreal Cognitive Assessment (MOCA), Addenbrooke's Cognitive Assessment-Revised (ACE-R) and CAMCOG are probably more appropriate in cases of early dementia; indeed six guidelines recommended performing neuropsychological testing as an adjunct to the standard tools. Self-assessment tools such as TYM (Test Your Memory) often performed online are currently under development. Extensive in-depth cognitive testing can be conducted by trained staff such as neuropsychologists, neuropsychiatrists or occupational therapists. Diagnosis is part of a process including history taking, cognitive and mental state examination, physical examination and biomedical investigations. NICE states that primary healthcare staff should consider referring people who show signs of mild cognitive impairment (MCI) for assessment by memory assessment services to aid early identification of dementia [111]. NICE also states [112]:

> *1.4.1.3 Clinical cognitive assessment in those with suspected dementia should include examination of attention and concentration, orientation, short and long-term memory, praxis, language and executive function. As part of this assessment, formal cognitive testing should be undertaken using a standardised instrument. The Mini Mental State Examination (MMSE) has been frequently used for this purpose, but a number of alternatives are now available, such as the 6-item Cognitive Impairment Test (6-CIT), the General Practitioner Assessment of Cognition (GPCOG) and the 7-Minute Screen. Those interpreting the scores of such tests should take full account of other factors known to affect performance, including educational level, skills, prior level of functioning and attainment, language, and any sensory impairments, psychiatric illness or physical/neurological problems.*

## 4.9 Screening for Delirium

Delirium is an important cognitive disorder with the hallmark of disturbed attention and/or awareness which normally develops rapidly. Delirium is very common in general medical settings with rates of between 15 and 20% of older medical patients and 25–70% after high-risk post-operative surgery, in palliative care units and in critical care, depending on the patient population and assessment methods [113]. However, delirium is frequently overlooked or misdiagnosed due to fluctuating symptoms and signs, overlap with dementia and due to infrequent use of routine cognitive screening [114, 115]. Delirium and dementia differ in their course and cognitive items attention and vigilance [116]. Delirium is costly, causing functional

impairment, increased falls, increased healthcare costs, prolonged hospitalization with an increased risk of placement in long-term care at discharge and increased risk of mortality [117]. It worsens pre-existing dementia and increases the risk for future dementia [118]. Delirium also causes significant psychological distress for patients, families and healthcare providers [119].

Detection rates for mental health conditions among older patients are typically very low. For example, one study found that delirium was missed in up to two-thirds of cases [120]. Even when problems are identified, the treatment provided by clinical staff in acute hospitals is sometimes suboptimal despite availability of effective pharmacological and non-pharmacological treatments [121]. Many of the complications of delirium could be prevented with better risk assessment and early prophylactic treatment according to some studies [122].

Many screening tools have been developed and validated for delirium. One review of 31 studies describing 21 delirium screening tools across a broad range of inpatient settings [123]. However there is a lack of evidence that screening implementation positively influencing patient outcomes. Nevertheless some organizations have recommend screening all patients or screening of specific patients considered at risk for delirium. The British Geriatrics Society guidelines include a recommendation to identify all patients over 65 years with cognitive impairment on admission [124]. Risk factors for delirium include dementia, recent surgery, untreated biochemical change, old age and visual and hearing impairment. Serial assessments are sometimes recommended but are not often conducted in practice. The Australian clinical practice guideline on management of delirium recommends establishment of a structured process for screening and diagnosis of delirium in all healthcare settings [125]. Clinical practice guidelines from the American College of Critical Care Medicine of the Society of Critical Care Medicine recommend routine assessment for the presence of delirium, including ICU patients [126]. The NICE guideline on diagnosis, prevention and management of delirium recommends assessment of risk factors for delirium in all patients when they first present as follows:

> *If indicators of delirium are identified, carry out a clinical assessment based on the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) criteria or short Confusion Assessment Method (short CAM) to confirm the diagnosis. In critical care or in the recovery room after surgery, CAM-ICU should be used. A healthcare professional who is trained and competent in the diagnosis of delirium should carry out the assessment. If there is difficulty distinguishing between the diagnoses of delirium, dementia or delirium superimposed on dementia, treat for delirium first* [127, 128].

The Confusion Assessment Method is the most commonly employed custom tool to identify delirium [123, 129], but others include Delirium Rating Scale and Memorial Delirium Assessment Scale. However, the MMSE is also very widely used despite numerous limitations [130, 131]. All scales show significant limitations in accuracy and can be challenging to use in patients with very severe symptoms.

## 4.10 Screening for Alcohol Problems

Alcohol problems are a significant public health problem [132, 133]. Alcohol consumption has been estimated to cause about 4–5% of all deaths and all disability [134]. Alcohol problems include alcohol use disorder (AUD), alcohol dependence and acute intoxication. Alcohol use disorders include a spectrum of excessive drinking often described using the terms alcohol abuse (DSM-IV), hazardous drinking (WHO) or harmful drinking (ICD10). In the general population, hazardous drinking is seen in 30–40% [135] and alcohol dependence in 10% [136]. In primary care and hospital settings, approximately 7–30% have an AUD [137] and approximately 4–10% have alcohol dependence [138]. In spite of these concerns, it seems that only a minority of patients with alcohol problems are detected and treated. Studies conducted in the USA, Australia, the UK and Finland indicate that clinicians frequently do not screen for AUD and fail to address the problem in at least one-third to one-half of cases even when the diagnosis is known. About a third of individuals with alcohol problems are detected by their general practitioner (GP), and screening for alcohol problems is not a routine in primary care [139–141] or in specialist settings. In most cases diagnosis is made by clinical judgement without the use of scales, blood tests or reference to diagnostic criteria [139, 140]. Similarly, only about a third of clinicians use alcohol screening questions and 15% cite use of biochemical markers [142, 143]. Patient surveys suggest that only 30–40% receive any enquiry about their alcohol habits [144–146] and a small percentage of those with alcohol problems report receiving advice to cut-down [147]. Screening followed by brief alcohol intervention results in significant reductions in consumption after discharge from hospital [148].

Many factors have been cited as barriers to appropriate and prompt recognition. These include clinician confidence as to what constitutes alcohol misuse [149], inadequate training [150], contractual incentives [151], lack of time [152], fear of labelling due to the stigma associated with substance abuse [153] and a belief that patients will not honestly disclose their drinking practices [154, 155].

In response to these concerns, the Institute of Medicine, the National Institute on Alcohol Abuse and Alcoholism (NIAAA), the American Medical Association and the American Society of Addiction Medicine have all recommended that clinicians *routinely* ask patients about alcohol use [156–158]. However the Scottish Intercollegiate Guidelines Network advocates clinical assessment with judicious use of questionnaires only where there is suspicion of alcohol problems [159]. The NIAAA and the US Preventive Services Task Force (USPSTF) recommend population screening to identify problem drinking, that is, clinicians should ask all attendees whether they drink and assess the specific quantity, frequency and pattern of consumption, but they do not recommend a specific tool [160]. The NIAAA also recommended targeted screening in that all patients who drink alcohol should be screened with the CAGE questions [161]. To date, variations of the AUDIT (Alcohol Use Disorder Identification Test), CAGE and MAST (Michigan Alcohol Screening Test) have been the most common questionnaires for alcohol problems, but these tools are difficult to use in a primary care practice [141, 157].

## 4.11 Mixed Psychiatric Multidomain Screening

Screening for several psychiatric disorders at one time is potentially efficient but difficult to achieve in practice. Probably the best method is an algorithm starting with simple broad questions proceeding to more in-depth questions depending on response. A number of multidomain tools have been developed which encompass several biopsychosocial domains. For example, in cancer settings the Edmonton Symptom Assessment System (ESAS) has been extensively used and it includes six physical symptoms (pain, tiredness, nausea, depression, anxiety, drowsiness, appetite, well-being, shortness of breath) and three psychosocial symptoms (well-being, depression, anxiety). The tool has been applied to nearly a million cancer patients in Canadian cancer hospitals [162]. Mitchell and colleagues proposed a multidomain extension to the distress thermometer called the Emotion thermometers (see www.emotion thermometers.com) incorporating distress, depression, anxiety and anger. Preliminary validation in early- and late-stage cancers and also in cardiology and neurology settings suggests the ET improves upon the accuracy of the DT [163]. Other multidomain tools such as the 27-item My Mood Monitor (M-3) have been developed and tested in mental health and primary care settings [164]. Houston et al. (2011) developed a 17-item instrument for differential diagnosis of GAD, MDE, past/present mania and ADHD [165]. The Health of the Nation Outcome Scale (HoNOS) is a 12-item scale and was developed by the Royal College of Psychiatrists' measuring behaviour, impairment, symptoms and social functioning (Wing et al., 1996) [166]. HoNOS has been widely used in the NHS mostly in mental health trusts and fairly extensively field tested [167]. Another commonly used scale is the Clinical Outcomes in Routine Evaluation (CORE) [168] which is a widely used patient self-report measure across service settings particularly those delivering psychological treatments.

## 4.12 Conclusion: Judging the Effectiveness of Screening for Psychiatric Disorders

Screening is fundamentally designed to improve patient outcomes, but positive benefits are not invariable [169–171]. Large-scale studies comparing care before and after screening (sequential cohort) or in groups randomized to screening are not common. There is much interest in what determines whether screening leads to an effective psychological assessment. Evidence suggests screening can benefit communication and clinician referral patterns, but it has a weaker effect on the ability of clinicians to correctly identify cases. When mandated as clinical routine, screening can be widely disseminated, and therefore acceptability to both clinicians and patients is key. Acceptability can be enhanced by using a brief tool (possibly an algorithm or multidimensional design), with simple scoring, ideally one that generates meaningful results and one that does not duplicate work. Staff who are involved in tool development and dissemination tend to be more invested in the screening programme itself. To be effective screening must be allied with appropriate follow-up and effective treatment. Screening should be used in combination with good

quality of care because good-quality screening cannot compensate for poor-quality care in other areas. An alternative to systematic screening is targeted screening of preselected high-risk groups, such as those with troubling physical complication or those people whose family members ask for help.

Following on from screening, a key question is what happens to patients who screen positive and those who screen negative. Generally, an evidence-based management plan is important to ensure that clinicians act systematically on screening results. It also helps ensure that the healthcare system has appropriate resources for handling distress. Thorough clinical assessment and competent management should follow a positive screen [172]. Clinicians should be able to override screening protocols using their expert judgement if needed. Future studies will clarify the optimal methods that bring added value to clinical practice. They will also clarify the best mode of delivery (e.g. computerized, paper, verbal). Future studies should use representative samples, offer staff training and track uptake of subsequent interventions. New trials addressing some of these methodological issues are currently underway. Successful screening tools could be incorporated into screening programmes that also contain elements for measuring unmet needs, desire for help, clinical responses and longitudinal outcomes. Screening which is accurate, acceptable and has proven added value will have more likelihood of being seen as an integral part of essential clinical care.

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