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Anxiety disorders in older people

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Summary

This article reviews the research into anxiety disorders in adults aged 65 years and older that has been published over the past ten years. The topics covered include: the construct of anxiety and its disorders in this age group; epidemiology, including prevalence, incidence, course, outlook, and risk factors; assessment scales; co-morbidity and differential diagnosis (depression, dementia, physical illness); and management, both pharmacological and non-pharmacological. There has been a significant improvement in our understanding of these disorders in older adults over this period, but evidence to support their treatment and prevention is still quite sparse.

Key words: anxiety, generalized anxiety disorder, phobic disorder, panic disorder, epidemiology, treatment, aged, elderly.

Introduction

This article updates a previous review of this topic published in this journal in 2001.[1] Over the past decade there has been a gratifying increase in both the quantity and quality of published research into anxiety and its disorders in late life. However, there is still much that we do not know, even about the fundamentals, such as the nature of this anxiety and its relationship with other disorders, such as depression and dementia.

This article takes advantage of the many useful systematic reviews of the literature that have been carried out in recent years, summarizing their findings and updating where possible with the results of our own searches. The databases consulted were: Medline, PubMed and Google. The principal search terms were: *anxiety prevalence, neurotic disorder, anxiety review, risk anxiety, risk anxiety review, assessment anxiety, anxiety treatment review, anxiety systematic review, neurotic disorder systematic review, cost neurotic disorder, panic disorder, elderly anxiety, geriatric anxiety, anxiety dementia, assessment anxiety, anxiety management – review only.*

In this review, we have defined 'anxiety disorders' as the conditions classified by ICD-10 in sections F40 (phobic disorders) and F41 (panic disorder, generalized anxiety disorder, mixed anxiety and depressive disorder). In contrast to these, obsessive-compulsive disorder, the reactions to stress, and the somatoform and dissociative disorders in old age have received much less attention from researchers, and will not be addressed in detail here. Except where stated otherwise, the age group under review is adults aged 65 years and older.

Constructs of anxiety

There continues to be a creative tension between the categorical and dimensional approaches to anxiety. Despite the evidence showing that there are no clearly discernible boundaries between normality and abnormality, or between anxiety and depression,[2] the need for case definition means that instruments and diagnostic criteria are still essential tools for both clinicians and researchers. The way in which a given anxiety syndrome has been defined is therefore a key consideration when drawing inferences from any published research. Broad and inclusive definitions will identify more cases with a greater range of severity than will narrow ones. Restrictive criteria result in cases with higher disability and more adverse individual impact; they tend to be favoured by researchers because they are more reliable, and comparability between studies is easier. However, they only identify a small proportion of cases seen by clinical services, and underestimate the social impact and cost of the disorder.

The epidemiology of anxiety

The experience and expression of the psychological, cognitive and physical symptoms of anxiety

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vary across the life span, which can make its identification difficult in clinical and research settings. Emotional expression alters with ageing, with older adults experiencing less negative affect and exhibiting lower arousal than younger adults.[3] With regard to anxiety symptoms, fear and worry content changes over the life course, with older adults being more concerned about their health and their families, and less about work and finances, although this generalization may conceal important differences between the young-old and the old-old.[4] Overall, worry appears to be less common in late life, and is more strongly associated with mental disorder.[4] The focus of specific phobias may also differ with age, with older adults having higher rates of fear of lightning, heights and falling.[5,6] The attribution of physical symptoms to anxiety can also be problematic in elderly individuals, particularly if they have co-morbid physical illness,[7] or if they are more likely to express their distress somatically.[8] Older adults may regard their anxiety as normal and adaptive, given their circumstances, and clinicians may agree with them. Most of the diagnostic criteria and instruments that are used for defining and identifying anxiety disorders have been developed and validated in young populations, which may result in under-diagnosis in older adults.[8,9] There are several reasons to suppose that anxiety disorders might be less severe in late life, such as 'healthy survivor' cohort effects, reduced reactivity to stress, and better coping skills as a result of greater maturity and experience.[10] If so, then diagnostic severity thresholds defined for younger adults may not be appropriate for older adults. These issues have recently been reviewed as part of the development process for DSM-V.[11] The authors conclude that the available evidence does not support the inclusion of specific age-related manifestations or sub-types of anxiety disorder, with the caveat that this evidence has of course been obtained using diagnostic criteria developed for younger adults and so may not have included those older adults whose anxiety did not conform to these criteria. They argue for revisions to the age-specific features section of the DSM text, to help clinicians to identify anxiety in older adults, and to help in differentiating it from normal ageing, medical co-morbidity and dementia. The importance of 'subclinical' anxiety and co-morbid depression in this age group needs greater emphasis, and thought needs to be given to developing more age-appropriate assessment questions and symptom terminology.

Assessment scales

In a recent systematic review of anxiety assessment scales used with adults aged 65 years and older in the published literature, Therrien and Hunsley[12] identified a total of 91 instruments. Of these, they concluded that twelve were in common use, but in only three was there sufficient psychometric evidence to support their use in this age group: the Beck Anxiety Inventory (BAI[13]), the Penn State Worry Questionnaire (PSWQ[14]), and the Geriatric Mental Status Examination (GMSE[15]). In recent years, a few instruments to identify and measure anxiety have been validated or developed specifically for use with older adults. These include the ten-item Short Anxiety Screening Test (SAST) in medical in-patients and out-patients,[16] the four-item FEAR in older adults attending primary care,[17] the Worry Scale (WS),[18] and the RAID (rating anxiety in dementia) in patients with dementia.[19] Another recent development with promising psychometric properties is the self-report Geriatric Anxiety Inventory (GAI[20]); this appears to perform well in both cognitively intact and cognitively impaired subjects, and in community, home care, and residential care settings.[21,22] A short 4-item version of the GAI has also been validated, for use in epidemiological surveys and clinical screening.[23]

The prevalence, incidence, course and outlook of anxiety in old age

Bryant *et al.*[24] have reviewed studies of the prevalence of anxiety in older adults for the period 1980–2007. They performed a systematic database search for articles that reported data on anxiety disorders or symptoms in both community and clinical populations, in subjects aged 60 years and older. A total of 49 articles from a wide range of North American and European epidemiological studies met their criteria, but methodological differences meant that formal meta-analysis was not possible.

There was a wide variation in the prevalence estimates of anxiety and its disorders in these older adult community populations. A few studies reported the prevalence of anxiety symptoms, which ranged from 15% (two or more symptoms on the Hopkins Sympton Checklist (HSC)[25]) to 52.3%

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(one or more symptoms on Geriatric Mental State (GMS)[26]). So far as anxiety disorders were concerned, overall prevalence rates ranged from 1.2% (GMS-AGECAT[27]) to 14% (DSM-IV[28]). For specific disorders, the prevalence of phobic disorders ranged from 1.4% (GMS-AGECAT[27]) to 25.6% (Phobic Disorder Screen (PDS)[29]), with specific phobia being the most common phobic disorder, and social phobia the least common. The prevalence of generalized anxiety disorder (GAD) ranged from 1.3% (Composite International Diagnostic Interview (CIDI)[30]) to 7.1% (HSC[31]); GAD was the commonest anxiety disorder reported in these studies. Prevalence data on the less common anxiety disorders in old age are much more limited. The Longitudinal Aging Study in Amsterdam has reported 6-month prevalence rates of 0.9% for case-level post-traumatic stress disorder (PTSD) and 13.1% for sub-threshold PTSD in their sample.[32] Because of the episodic nature of panic attacks and panic disorder, they are difficult to capture reliably in cross-sectional surveys, so it is not surprising that the studies that have reported on this disorder have found very low rates (1% or less).

By comparison, the prevalence studies carried out in clinical settings, such as hospitals, nursing homes and primary care facilities are limited, but the results are again very variable, with anxiety symptoms ranging from 15% (geriatric hospital, GMS-AGECAT[33]) to 56% (general hospital, GMS-AGECAT[34]), and anxiety disorders from 1% (general hospital, GMS-AGECAT[34]) to 24% (primary care, CIDI-SF[35]).

More recent surveys continue to report prevalence rates for anxiety disorders in older adults within the range identified by Bryant *et al.*[24] The US National Co-morbidity Survey – Replication (NCS-R) found that the 12-month prevalence of DSM-IV anxiety disorder in a representative sample of those aged 55 years and older was 12.0%[36]; specific phobia was the commonest specific anxiety disorder identified (7.0%). The prevalence rate of anxiety disorder declined with increasing age in this sample. In the National Australian Survey of Mental Health and Well-Being,[37] the 12-month prevalence of DSM-IV GAD was 2.8%.

Some of the differences in the reported prevalence rates may reflect genuine differences between populations, but much is due to conceptual and methodological differences between the studies.[24] A key factor is variation in the level of severity that is used to define a case. Studies using GMS-AGECAT demonstrate this; typically, they report quite high rates for sub-cases but very low rates for cases, indicating that its threshold is high. Similarly, the prevalence of DSM-IV anxiety rises considerably if all of the sub-threshold manifestations of anxiety in assessments of older adults are considered.[38] Another important reason for the difference in prevalence between studies is the use of different diagnostic rules. In particular, if hierarchical rules are applied, so that cases of anxiety associated with other disorders such as depression and dementia are not counted (e.g. GMS-AGECAT, DIS-DSM-III), this will result in far fewer cases of anxiety disorder being identified. For example, in a study where different diagnostic criteria for phobic disorders were applied to the same population,[29] a hierarchical system (GMS-AGECAT) yielded a prevalence of 3.6%, as against 25.6% when a non-hierarchical system (PDS) was used. Hierarchical exclusion is particularly problematic in older adult populations, where there is extensive co-morbidity between depression and anxiety, particularly GAD.[39–41] Indeed, the extent of this co-morbidity has led some to question the utility of depression and GAD as distinct diagnoses, and propose instead a dimensional construct for these disorders.[42–44] The prevalence of Common Mental Disorder as defined by the Revised Clinical Interview Schedule (CIS-R) in the UK National Survey of Psychiatric Morbidity was 9% in males and 14% in females over the age of 65 years.[45]

These diagnostic problems mean that it is difficult to know to what extent the prevalence rates of anxiety disorders change with increasing age. Those epidemiological studies that have examined prevalence rates across the adult age range report rather different patterns. In the US Epidemiological Catchment Area (ECA) study, the prevalence of anxiety disorders generally declined with increasing age, although this difference was less pronounced for some categories, such as phobic disorder.[46] In the UK National Survey of Psychiatric Morbidity the prevalence of GAD peaked in the 50s and declined thereafter.[47] Across the 1993–2007 period covered by the three UK National Psychiatric Morbidity Surveys, there has been no meaningful or consistent variation of common mental disorder or symptoms of worry across cohorts.[48] Few studies report data on the very oldest age groups; there is a suggestion that

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anxiety rates may decline in extreme old age,[49,50] but not all surveys support this.[51] It is of course important to bear in mind that most of our information on this subject comes from cross-sectional studies, and must be interpreted with care. It may not simply be the case that our vulnerability to developing anxiety declines as we grow old; this pattern may be the result of an excess mortality associated with anxiety (healthy survivor effects), or of different age cohorts having different vulnerabilities to mental illness.[52]

There is little evidence available regarding the incidence rates of anxiety in older age groups. In studies that have looked retrospectively at age of onset, such as the ECA, most of the cases of GAD had their onset prior to the age of 65 years;[53] however, a more recent study of US adults aged 55 years and older found that only 33.7% of those with current GAD reported an onset prior to the age of 50.[54] In a secondary analysis of data from the Australian National Survey of Mental Health and Well-Being, Goncalves and Byrne[55] found that earlier age of onset of GAD (<26 years) was associated with childhood physical abuse and worse clinical outcomes, suggesting that this may be an indicator of increased vulnerability.

Prospective studies of the course and outcome of anxiety disorders in late life are sparse, but data from the Aging Study Amsterdam indicate that they continue to be chronic conditions, with 6-year remission rates of only 31%.[56] This may not be true of all anxiety disorders, however, as one recent study found that social phobia showed substantial improvement and recovery over 5-year follow-up in an older adult general population sample.[57] The association between depression and increased mortality risk in late life is well established, but that between anxiety and mortality is less clear. In one 10-year follow-up study of an older adult community sample, no excess mortality was found in association with either generalized anxiety or mixed anxiety-depression;[58] in another study population of adults of all ages (the Norwegian HUNT study), anxiety co-morbid with depression in fact reduced mortality risk compared with depression alone, and there was a U-shaped relationship between anxiety symptoms and mortality.[59] It may be that specific groups are at risk; in one study, anxiety symptoms were found to be an independent predictor of all-cause mortality in older adult black individuals, but not whites.[60]

Risk factors for anxiety in old age

The factors that affect the risk of developing an episode of anxiety may be classed as pre-morbid vulnerability factors, those that trigger the onset of a particular episode (destabilization), and those that determine the duration of the episode (restitution).[2] While exposure to specific risk factors changes across the lifespan, with some (e.g. disability) being more prevalent in old age, ageing *per se* does not appear to be a risk factor for anxiety,[51] and may in fact be protective.[61,62] The evidence relating to factors associated with anxiety and depression in old age has been reviewed by Vink *et al.*[63] They reviewed studies published between 1995 and 2005. Over this period, studies of risk factors for depression outnumbered those of anxiety. Once again, methodological differences between the studies precluded any formal meta-analysis. The various risk factors were classified as either: biological, psychological or social. The principal biological risk factors associated with anxiety disorders in cross-sectional studies were: number of chronic health problems, poor self-perceived health, and functional limitation.[64,65] Evidence from the few longitudinal studies was limited, with only poor self-perceived health and sensory deprivations emerging as predictors of anxiety symptoms.[32,66] The psychological risk factors for anxiety identified in both cross-sectional and longitudinal studies were: external locus of control and neuroticism, poor coping strategies, and psychopathology.[32,64,65] Not many of the included studies had examined social risk factors for anxiety in late life in any detail. Social demographic associations such as female gender and lower educational level are reported,[51,62,64] and the size and quality of social network has been identified in some studies.[32,51,67] In comparative studies examining both anxiety and depression, infrequent social contacts, childlessness, adverse life events and low income were associated with anxiety only, whereas small social network size and being unmarried were associated with depression. Regarding life events, depression seems to be associated more with losses and anxiety with threats and trauma. Overall, however, the risk profile for anxiety and depression and for symptoms and disorders appear very similar, supporting the dimensional rather than categorical construct of these conditions.[63]

There is little evidence on the extent to which prevalence rates of anxiety disorders differ in different racial and ethnic groups in old age. In

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the US, elderly Puerto Ricans may express more mixed anxiety-depression than elderly African-Americans.[68] In elderly African-Americans, PTSD is the anxiety disorder with the highest 12-month prevalence rate, in marked contrast to the results from studies of nationally representative samples.[69]

More recent studies of risk factors associated with late-life anxiety support the general conclusions of Vink *et al.*[63] In the cross-sectional National Australian Survey of Mental Health and Well-Being,[37] GAD was associated with functional limitations, psychiatric co-morbidity and increased medication intake.

Co-morbidity and differential diagnosis

Depression

As noted above, the symptoms of anxiety and depression are dimensional constructs that commonly occur together, particularly in the majority of less severely affected individuals seen in primary care settings; co-morbidity between these conditions at the case level is also common at all ages. There is extensive co-morbidity between GAD and depression in old age in cross-sectional surveys,[64] but evidence regarding the temporal nature of their relationship in this age group is limited. The findings of Lenz *et al.*[70] suggest that GAD precedes depression and persists as a chronic disorder while the co-morbid depression may remit and relapse over time. Co-morbidity is associated with greater GAD severity,[71] greater suicidal ideation,[72] and impaired response to treatment.[73] Co-morbidity also occurs between depression and other anxiety disorders in old age, notably panic disorder, agoraphobia, and social phobia.[74–76] Bipolar disorder is co-morbid with anxiety disorders at all ages, including late life.[77] As with younger adults, anxiety disorders in old age, particularly social phobia, also show significant co-morbidity with alcohol abuse and dependence.[78] Axis II personality disorders have also been found to be more prevalent in older adults with GAD.[79]

Cognitive impairment

Since both anxiety and cognitive impairment are relatively common in the older adult population, it is not surprising that they often occur together.[80] Over and above this chance association, however, there is evidence to suggest a causal relationship in a proportion of cases. For example, baseline anxiety symptoms or disorders have been shown to be predictive of cognitive decline in prospective follow-up studies.[81,82] Studies of US veterans have found that those with PTSD are more likely to develop dementia than those without.[83] At all ages, anxiety can interfere with effective cognitive functioning via poor concentration, autonomic arousal, sleep impairment and intrusive worries, and in some cases individuals present with concerns about cognitive impairment. Subjective forgetfulness is associated primarily with anxiety and depression,[84] so it is important that these conditions are screened for in patients referred to memory clinics for the assessment of mild cognitive impairments. It is also important (although difficult) to determine the sequence of events; anxiety that develops after individuals become aware of their cognitive decline may be a response to the decline and its implications.

In people with dementia, the epidemiological evidence suggests that there is an association with anxiety symptoms, but not anxiety disorders.[85,86] However, the reported prevalence of anxiety in this population ranges widely, reflecting differences in methodology, and difficulties in diagnosing anxiety in the presence of dementia.[11,87] It may be that anxiety can manifest in different ways as dementia progresses, for example as agitation,[88] which would lead to it being under-diagnosed in studies using the standard classifications. Rates of anxiety may be higher in vascular dementia than in Alzheimer's disease, but the evidence is limited.[87]

Physical illness

The co-morbidity of anxiety and physical illness raises important issues for detection and diagnosis. Physical ill-health and disability are relatively common in old age, so a degree of co-occurrence with common psychiatric disorders such as depression and anxiety would be expected by chance. However, the rates of co-morbidity observed between anxiety and certain medical conditions, such as cardiac and respiratory disorders, are such that there must be some causality; for example, studies report that about one-third of older cardiac patients and half of chronic obstructive pulmonary disease (COPD) patients also have an anxiety disorder.[89,90]

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Other physical disorders associated with anxiety symptoms and disorders in older patients include postural disturbance and vestibular disease,[91] Parkinson's disease,[92] and self-reported limitations of mobility.[93] The precise nature of this causal relationship is complex; for example, individuals may become anxious when they experience the symptoms of a physical illness, their anxiety symptoms may be interpreted as being physically caused, leading to further anxiety, and so on in a vicious circle. Alternatively, the symptoms of some physical disorders (or the side-effects of their treatments) may resemble the symptoms of anxiety. On the one hand, this state of affairs can lead to over-investigation and misdiagnosis of physical disorder in those who are primarily anxious; on the other, important symptoms of physical illness may be dismissed as being psychological in origin – a difficult dilemma for the clinician, and one that can only be addressed by careful and unprejudiced assessment of the individual case.[94]

Management

In January 2011, the UK National Institute for Health and Clinical Excellence (NICE) published its updated guideline to the management of GAD and panic disorder (with or without agoraphobia).[95] This evidence-based guide sets out a stepped-care model for the management of these conditions, with the least intrusive, most effective interventions being offered first. The presumption of this model is that all but the most severely ill and treatment-resistant patients will be managed in primary care. For GAD, Step 1 involves prompt identification and assessment of the patient and the disorder, with the provision of education about GAD and its treatment, advice about the use of over-the-counter medications and the lack of evidence to support them, and active monitoring of the patient's symptoms and functioning. If there is no improvement, patients proceed to Step 2, where they are offered low-intensity psychological interventions, such as individual non-facilitated self-help, individual guided self-help, or a psycho-educational group. If the patient fails to respond to these interventions, or has marked functional impairment, then they would be offered *one* of the treatments available at Step 3, which are *either* (1) a high-intensity psychological intervention such as cognitive-behavioural therapy (CBT – see below) or applied relaxation, *or* (2) drug treatment with a selective serotonin re-uptake inhibitor (SSRI), a serotonin-noradrenalin reuptake inhibitor (SNRI), and pregabalin as the first-, second- and third-line options (see below). If patients do not respond adequately to one of these psychological or pharmacological interventions, the alternative or a combination of the two should be offered before proceeding to Step 4, which would involve specialist assessment and treatment with complex combination treatment regimes, together with support from multi-agency teams, crisis services, day hospitals and specialist in-patient care. At this level, it is acknowledged that evidence of effectiveness for these interventions is often lacking and the risk of adverse effects is greater. Patients with very marked functional impairment or high risk of self-harm will probably also require management at this level.

The guide to the management of panic disorder (with or without associated agoraphobia) follows a similar stepped-care approach, commencing with recognition and assessment of the disorder where it presents, which may be in an emergency department rather than in primary care. Step 2 provides algorithms for management with one of three approaches: psychological treatment (CBT); drug treatment (first-line SSRI); or self-help (bibliotherapy, support groups, exercise). If one approach does not work, an alternative should be tried (Step 3), and if that fails, referral to specialist services offered (Steps 4 and 5).

As well as an approach to treatment, the stepped-care approach to anxiety and depression also has potential as a preventive strategy in older adults. In a pragmatic randomized trial of 170 community-dwelling individuals aged 75 years and older with sub-threshold symptoms of anxiety and depression, van't Veer-Tazelaar *et al.*[96] have demonstrated the efficacy of a stepped-care paradigm involving watchful waiting, CBT-based bibliotherapy and problem-solving treatment, and referral for medication, if required. This halved the 1-year incidence of anxiety disorder and depression, an effect that was sustained at 2-year follow-up.[97]

It should be noted that, while the NICE guidance is applicable to adults of all ages, the quality and quantity of the evidence supporting specific interventions is much less for older than for younger patients, and that derived from studies on younger patients may not be applicable.

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Non-pharmacological

Compared with the number of studies of CBT for common mental disorders in younger adults, the evidence base supporting its use in older adult patients is still small. In a recent Cochrane review of psychotherapeutic treatments for older depressed adults,[98] only nine studies were amenable to meta-analysis, and the conclusions were limited accordingly. In a systematic review of CBT for late-life anxiety disorders, Hendriks *et al.*[99] examined studies that compared CBT with a waiting-list control and an active control condition in patients aged 60 years and older. They also identified nine randomized controlled comparisons involving a total of 297 patients that met their inclusion criteria, and meta-analysis showed that CBT was significantly superior at controlling symptoms of anxiety, worry and depression than either a waiting-list or active control. In a more broadly based meta-analysis, Thorp *et al.*[100] reviewed 19 studies of behavioural treatments for anxiety symptoms in older adults, and concluded that overall these were more effective than active controls, and that the effect size was comparable to those seen for behavioural treatments in younger adults and for pharmacotherapy in older adults. Although direct comparison was difficult, their analysis suggested that CBT (alone or in combination with relaxation training) did not offer anything beyond relaxation training alone. In another review, Ayers *et al.*[101] looked at 17 studies that met their criteria for evidence-based treatment for anxiety disorders in older adults. They concluded that there was good evidence to support the use of CBT and relaxation training, and some evidence for supportive therapy and cognitive therapy. The patients in these studies were suffering from GAD or mixed anxiety and depression, and the authors note the need for studies in other conditions, such as phobic disorders and post-traumatic stress disorder.

More recent studies support the general conclusions of these reviews. In a randomized controlled trial (RCT) of CBT for GAD in older adults, Bradford *et al.*[102] found this to be superior to enhanced usual care, and that the level of early response at 1 month predicted the longer-term outcome at 1-year post-treatment follow-up. In a study comparing paroxetine and CBT in the treatment of panic disorder in 49 patients aged 60 and older, the effect of both approaches was similar, and superior to the waiting-list control.[103]

The setting in which treatment is provided may also be important. In a RCT of CBT for GAD in older adults in primary care, Stanley *et al.*[104] found that, compared with enhanced usual care, CBT was associated with improvements in worry, depression and general mental health, but not in the overall severity of the GAD.

When evaluating this evidence, it is important to bear in mind that to date, most studies have involved relatively small numbers of young-old, well-educated females, and it is not clear to what extent the results are generalizable to other groups within the older adult population.[105] Moreover, CBT in this age group appears to be associated with high attrition rates,[105] so retention strategies may be important to optimize the treatment effect. Long-term follow-up studies are few, so it remains unclear to what extent the effects of interventions such as CBT are sustained in this age group. One post-trial follow-up suggests that the treatment effect of CBT for anxiety disorders may not be as long-lasting as that of a course of pharmacotherapy with sertraline;[106] the factors predicting less good outcome with CBT in this study were poor perceived health and neuroticism.

The role of CBT in the management of anxiety associated with physical illness or disability, and cognitive impairment, is not as yet clear. In patients with anxiety associated with physical illness, it is not clear to what extent CBT has an effect superior to that of simply providing tailored health information.[107] With regard to cognitive impairment, baseline errors in the Mini-Mental State Examination (MMSE) orientation subscale appear to be associated with reduced response to CBT for GAD.[108] It may be that the goals and techniques of the treatment need to be modified in these patient groups. There have to date been no trials of CBT for anxiety symptoms and disorders specifically in the context of dementia, but a report of two case-studies suggest that a modified approach involving caregivers may be effective.[109] Research is also needed into the benefits of combined psychological and pharmacological interventions, compared with either on its own.[110]

Pharmacological

Psychotropic drugs continue to be the mainstay of the management of anxiety symptoms in older adult patients, despite the paucity of evidence

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of their effectiveness in this population. What evidence we do have suggests that antidepressant drugs are an effective treatment for GAD in late life, both in the presence and absence of co-morbid depression. In a comparative meta-analysis of behavioural and pharmacological interventions, Pinquart *et al.*[111] concluded that pharmacotherapy was associated with greater improvement, but that this difference disappeared if non-specific changes in the control groups were controlled for. In their systematic review, Goncalves and Byrne[110] found that the pooled treatment effects of pharmacological trials were similar to those of psychotherapeutic trials, with both superior to controls. An SSRI is nowadays the first treatment of choice;[95] one small trial in older adult patients with GAD has found citalopram to be anxiolytic,[112] and escitalopram has also been shown to be effective in studies that have included older subjects.[113] Mixed-age studies also support the use of paroxetine and trazodone,[114] and there is some evidence that the SNRI venlafaxine is effective in older patients.[115] According to a recent systematic review of trials in GAD in general adult samples,[116] fluoxetine was ranked first for response and remission, and sertraline for tolerability. In a sub-analysis of drugs licensed for this indication in the UK (duloxetine, escitalopram, fluoxetine, paroxetine, sertraline, pregabalin, tiagabine, lorazepam, venlafaxine), duloxetine ranked first for response, escitalopram for remission, and pregabalin for tolerability. There is no systematic evidence to support the use of antidepressants in other anxiety disorders in this age group, but extrapolation from studies in younger adults suggests that an SSRI would also be the drug of choice for the treatment of panic disorder.[117] Tricyclic antidepressants are effective against symptoms of anxiety, but, with the exception of lofepramine,[118] the use of these drugs is limited by the risks they pose to physically ill patients, and their toxicity in overdose. They are not supported by the NICE guideline, except as part of a specialist Step 4 intervention.

The problems associated with benzodiazepine use at all ages are well-known,[119] and their continued widespread use is presumably a testament to the lack of available alternatives. Despite these problems, however, there is still a place for these drugs in the management of transient, short-term anxiety symptoms in a crisis.[95] The current wisdom is that drugs with short half-lives and no active metabolites, such as oxazepam, are to be preferred, but there is increasing evidence that these may also be problematic. For example, short-acting benzodiazepines have been found to be associated with hip fracture, and with increased rates of disability in mobility and activities of daily living.[120,121] Is not clear why this should be; perhaps they are more likely to be prescribed to high-risk patients.

There is evidence that buspirone (an azapirone 5-HT_{1A} partial agonist) is a safe and effective anxiolytic in all age groups,[122] including older patients.[123,124] Unlike other anxiolytics and like antidepressants, it takes about 2 weeks to become effective, so would be indicated for the management of severe, chronic GAD rather than acute anxiety states. However, longer-term studies of its effectiveness are still needed.[122] It may be that non-pharmacological factors may be important determinants of response to buspirone in older adult in-patients; those with high levels of both physical co-morbidity and social contacts showed greater response than those who scored low on these factors.[125] Pregabalin is another novel compound that has been found to be safe and effective in the treatment of GAD, both in younger adults and in older out-patients with the disorder.[126] Like antidepressant drugs and buspirone, the onset of efficacy of pregabalin is at about 2 weeks after initiating treatment.

The use of typical antipsychotic drugs in the management of anxiety is not recommended, because of the risk of adverse side-effects. The role of atypical antipsychotics is less clear; recent systematic reviews of trials involving adults of all ages find some benefit associated with quetiapine in GAD.[127,128] In older patients, however, adverse events associated with use of atypical antipsychotics included increased risk of death, stroke, extrapyramidal symptoms and urinary tract infections.

Conclusions

The last decade has seen a significant improvement in our understanding of anxiety and its disorders in late life. Progress in the development and evaluation of treatment strategies has been less emphatic, and we are still more reliant than we ought to be on experience and evidence derived from younger populations. The next decade will

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bring continued worldwide demographic ageing in the context of severely constrained economic circumstances for many societies. The impact of these factors on the financial means and stability of older adults, and on the health and social services they rely upon is unlikely to be favourable, and may be reflected in increased rates of common mental disorder. It is important therefore that we do not lose sight of these widespread and treatable conditions in the difficult years that face us beyond 2012.

Conflicts of interest

J.L. has received recent/current support from Lundbeck and Novartis. R.S. has received recent/current support from Pfizer, Lundbeck, J&J and Roche.

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