

Supplementary dimensional assessment in anxiety disorders

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Abstract

Anxiety disorders, as defined in the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV)*, comprise a relatively heterogeneous group of clinical conditions that range from specific phobias to obsessive compulsive disorder (OCD) and post-traumatic stress disorder (PTSD). The grouping under one heading refers to the fact that these seemingly heterogeneous disorders share a number of common psychopathological features and also share at least some common principles in treatment. Among the shared elements are broadly defined prototypical anxiety reactions, panic attacks, anticipatory anxiety, avoidance behaviour, a predominantly early onset, and relatively high persistence rates over time. Many of the shared diagnostic features of anxiety disorders are by their nature dimensional, and hundreds of psychometric scales have been developed to measure these diagnostic constructs across anxiety disorder and for specific diagnostic classes. This paper explores different types of dimensional approaches used in the literature and discusses how an integrated categorical/dimensional strategy might enhance the usefulness of the DSM-V. We suggest the use of cross-cutting dimensional ratings that might ultimately lead to an improved classification model. We also suggest that a staging approach to illness, based upon supplementary dimensional rating could provide useful information for clinical and research purposes. Copyright © 2007 John Wiley & Sons, Ltd.

Key words: anxiety disorders, dimensional assessment, DSM-V, illness staging

The publication of the *Diagnostic and Statistical Manual of Mental Disorders, Third Edition (DSM-III)* in 1980 (APA, 1980) marked the advent of a new era of conceptualizing phobic and anxiety disorders, previously assigned to a broader category of 'neuroses' that included anxiety, phobic and obsessive compulsive neurosis. The revised diagnostic system grouped conditions sharing several common features of symptomatic anxiety into an anxiety disorders section, separate from depression and somatoform disorders. Within the anxiety disorders, explicit criteria are provided for individual diagnostic categories. The DSM-IV (APA, 1994) classification includes panic disorder with and without agoraphobia, agoraphobia without panic disorder, social phobia, specific phobia, obsessive-compulsive disorder

(OCD), post-traumatic stress disorder (PTSD), acute stress disorder, and generalized anxiety disorder (GAD) within an overall section of anxiety disorders, though these conditions have many phenotypic differences. Noteworthy changes include (a) replacing anxiety neurosis with panic disorder and GAD, (b) partitioning phobic neuroses into agoraphobia, social phobia, and various types of specific phobia, and (c) including a new category of PTSD, and later acute stress disorder. Further, adult anxiety disorder criteria were slightly modified to allow their application in childhood, suggesting developmental continuity of these conditions. Notably though, separation anxiety disorder remained within the section of childhood disorders with its extension into adulthood left ambiguous.

DSM-III introduced an atheoretical descriptive approach that employed well-specified diagnostic criteria and clearly defined algorithms. This greatly improved reliability and effective communication among mental health professionals. These changes facilitated development of improved diagnostic assessment instruments (e.g. Structured Clinical Interview for DSM: First et al., 2004; Spitzer et al., 1992; Composite International Diagnostic Interview: WHO, 1990) and were instrumental in the development and testing of efficacious treatments. Nonetheless the new system also met considerable criticism.

Some challenged the justification for criteria used to define diagnostic thresholds and category boundaries, as well as decisions about core psychopathological components (Angst et al., 1997; Goldberg, 1996). Others questioned the validity of the partitions among anxiety disorders and between anxiety and other disorders (Krueger, 1999), arguing that the DSM approach leads to a good deal of artificial comorbidity. Still others questioned the appropriateness of the anxiety classification for children (Hudziak et al., article in this issue), as well as the elderly (Knäuper, 1999). Designers of DSM-III, DSM-III-R and DSM-IV were aware of many of these problems. In the introduction to each edition, the committee noted that categorical criteria and thresholds were provisional and in need of empirical confirmation, validation and/or modification (APA, 1980, 1987, 1994, 2000).

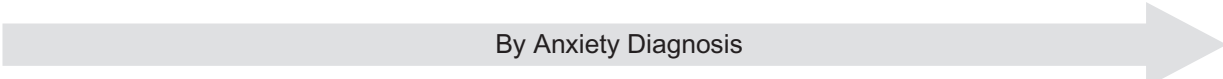
In this paper we will describe some of the ways dimensional approaches have been used in anxiety disorders, make a suggestion about the best way to integrate categorical and dimensional approaches, and provide suggestions for future research directions that could assist in developing the most appropriate dimensional strategies. It is important to bear in mind that there are different dimensional approaches in the anxiety literature, depending on the clinical or research objective of the investigator. For example, the term dimensional is used to refer to the use of continuous rather than categorical diagnostic criteria, to dimensional severity within a diagnostic category, to dimensions derived from higher order factor analytic approaches, to cross-cutting psychopathological dimensions, like panic attacks, and to dimensions of developmental continuity. These different approaches to dimensional assessment reflect the many different purposes of diagnostic criteria.

A comprehensive review of all types of dimensional assessment in anxiety is beyond the scope of this paper. Instead, we provide a selective review of the literature, focusing on three generic approaches to dimensional assessment: (a) continuous assessment of core diagnostic features of individual anxiety disorders, (b) dimensional assessment of facets of anxiety common to different DSM disorders, and other 'cross-cutting' approaches, and (c) hybrid approaches, such as spectrum and higher order factor analytic approaches. Figure 1 depicts these concepts and highlights disorder-specific and cross-cutting assessment domains. We conclude by discussing how an integrated model, that retains the current categorical system, and includes cross-cutting dimensional assessments might be a productive direction in DSM-V anxiety disorders and by suggesting research directions that might inform decisions about whether and how to implement such a plan.


Continuous assessment linked to specific DSM-IV disorders

Dimensional measures within diagnostic categories have a long and rich tradition in clinical, basic, and applied anxiety disorders research across the lifespan. Behavioural psychotherapists and pharmacotherapists, regularly employ dimensional assessment to evaluate treatment results. As a result of decades of research, psychometrically sound dimensional assessment instruments are available for virtually any psychopathological domain relevant to anxiety disorders. There are instruments to assess any number of characteristics (e.g., cognitive-affective symptoms, avoidance behaviour etc.), including quantity, frequency, intensity, and/or severity. Many of these scales were developed for the purpose of planning and/or evaluating cognitive behavioural therapy (CBT) treatments.

Some instruments used to rate psychopathology relevant to a specific diagnosis focus on a single symptom or functional domain, while others address several domains. Examples of unidimensional scales used to assess individuals with agoraphobia and/or panic disorder are the Mobility Inventory (MI: Chambless et al., 1985) and the Agoraphobic Cognitions Questionnaire (ACQ: Chambless et al., 1984). The MI rates the quantity and frequency of avoidance of different agoraphobic situations whereas the ACQ assesses cognitive bias thought to be associated with physical symptoms of panic disorder. Similarly, the Fear of Negative

By Anxiety Diagnosis 

DSM-IV anxiety diagnoses	Specific and shared evaluation domains* according to diagnostic criteria						
	Diagnosis-specific features	Anxiety reaction/panic	anticipatory anxiety	Avoidance behavior	Impairment, disability	Distress/neg. affect	Duration, persistence
Panic disorder. w/o Agoraphobia							
Panic disorder with Agoraphobia							
Agoraphobia w/o history of panic							
GAD							
Specific phobias							
Social phobia							
OCD							
PTSD							
Acute stress disorder							
<i>Separation anxiety disorder</i>							

Across diagnoses by domain 

* Each domain can be rated continuously by severity, frequency, etc. Other possible domains may include etiological factors (neurobiological, developmental, etc.)

Figure 1. Diagnosis-specific and cross-cutting assessment domains of anxiety disorders.

Evaluation Scale (FNE: Watson and Friend, 1969) rates intensity of cognitive symptoms thought to underlie social phobia. The Liebowitz Social Anxiety Scale (LSAS: Liebowitz, 1987) rates fear and avoidance of social interaction and performance situations. Targeted, unidimensional scales have their place in clinical and research studies. They can be used to identify treatment mediators and/or moderators, to explore putative psychopathological processes within and across disorders, and to characterize residual symptoms. Scales such as these are often used by behaviour therapists to guide and monitor treatment.

There are hundreds of unidimensional scales that can be used to supplement diagnostic assessments, and that can be useful for measuring change, estimating improvement or exploring the processes of change. Most assess current but not lifetime symptoms. Importantly, few are useful in all clinical situations. Rather,

their utility depends upon the clinical characteristics of the patient, the method of intervention, and specific goals of the individual treatment plan.

Multi-dimensional scales that rate the severity of criterion symptoms of different DSM-IV disorders have also been developed. The prototype for this kind of scale is the Yale–Brown Obsessive Compulsive Scale (Y–BOCS: Goodman et al., 1989). The Y–BOCS was designed to assess the severity of various facets (i.e. duration, resultant interference, associated distress, self-initiated resistance against symptoms, and degree of control over the symptoms) on a 0 to 4 scale, of obsessions and compulsions, rated separately. The scale includes a checklist of over 50 common OCD symptoms that is used as a reference for the symptom ratings. This convention helps both the patient and interviewer to understand the nature of the symptom profile before rating symptom-related distress and interference.

Among a large group of studies of this instrument, factor analysis of the Y-BOCS yielded a two-factor structure, consisting of disturbance and severity (Amir et al., 1997). The Y-BOCS was designed to reflect treatment change, and has become the gold standard for treatment studies of OCD as well as a model for the development of comparable measures for other disorders. The Panic Disorder Severity Scale (PDSS: Shear et al., 2001a) and Generalized Anxiety Disorder Severity Scale (GADSS: Shear et al., 2006) are other examples of this type of scale. The PDSS begins by defining panic attacks, and rates the frequency and distress caused by panic and limited symptom episodes, severity of anticipatory anxiety, degree of sensation avoidance and agoraphobic avoidance, and degree of work/social impairment. The GADSS catalogues types of work and assesses symptom distress and impairment in GAD. These scales are convenient ways of obtaining a severity measure for use in treatment outcome. Importantly, these scales have not been developed by systematic psychometric methods, but rather comprise a format for standard evaluation of the severity of DSM-IV criterion symptoms. In this, they resemble the DSM criteria themselves. Thus, while helpful for clinical purposes, and useful in epidemiological and other types of research studies, these scales do not provide criterion validation for diagnostic categories.

A different approach to dimensional assessment can be used to explore the validity of DSM diagnostic categories. Interestingly, although committees that developed DSM-III to DSM-IV called for systematic research into boundaries and thresholds, little systematic study has been undertaken to examine criteria validity, algorithm thresholds, or distinctiveness of symptoms across disorders. The possible exception is GAD. Studies of this disorder illustrate how research could be undertaken to test current categorical DSM criteria, develop dimensional variants, and suggest improved definitions for core symptoms, duration criteria and associated features.

Excessiveness versus non-excessiveness of worry in GAD
DSM-IV criteria for GAD require that worrying is excessive, but available research suggests that GAD is not very different with or without excessive worry (Ruscio et al., 2005). There appears to be no difference in sociodemographic characteristics or family aggregation between GAD with and without excessive worry. Instead, degree of excessiveness appears to define a

severity gradient, and GAD with persistent excessive worry is a more severe variant that begins earlier in life, has a more chronic course, and is associated with greater symptom severity and psychiatric comorbidity than GAD without excessive worry.

GAD duration/persistence criteria

In DSM-III, GAD diagnosis required symptoms lasting at least 1 month. The duration was changed to 6 months in the DSM-III-R and DSM-IV in an attempt to reduce the high rate of comorbidity found with the shorter duration. Systematic research into different durations revealed that the persistence criterion is poorly supported by research: Epidemiologic data indicate that GAD does occur in episodes with variable duration (Beesdo, 2006; Grant et al., 2005), and that GAD cases with a maximum episode duration of 1 to 5 months do not differ greatly from those with episodes of 6 months or longer in terms of onset, persistence, impairment, comorbidity, parental GAD, or sociodemographic correlates (Kessler et al., 2005).

GAD associated symptoms

DSM-IV diagnostic criteria require three out of six associated symptoms to be present, in addition to worry, in order to diagnose GAD. However, a requirement for two rather than three of these symptoms has little effect on prevalence (Ruscio et al., 2006). Among adolescence and young adults with GAD, four to five out of the six symptoms are reported on average; with each symptom endorsed by at least 50% of the cases (Beesdo, 2006). It is likely that the greater the number of GAD symptoms (beyond the one required by diagnosis) the greater the severity and impairment. A dimensional measure of GAD, such as the GADSS, could test this expectation. Discussions for DSM-V will need to take into consideration these findings for GAD and other anxiety disorders.

Generic dimensional and other cross-cutting approaches

A different approach to dimensional assessment crosses current diagnostic boundaries by rating symptoms common to multiple anxiety disorders. This approach highlights the fact that shared symptoms form the basis for grouping anxiety disorders into a single section of DSM-IV. Shared symptom domains are illustrated in Figure 1. In addition to providing an efficient method of assessment across anxiety disorders, this approach

also provides a way of measuring severity of co-occurring anxiety symptomatology in other, non-anxiety disorder, such as mood or psychotic disorders or substance abuse. For example, co-occurring anxiety symptoms have been found to be frequent and associated with different patterns of illness among depressed outpatients (Fava et al., 2006).

The best known examples of these scales are the Hamilton Anxiety Rating Scale (HARS: Hamilton, 1959) and the Hospital Anxiety and Depression Scale (HADS: Zigmond and Snaith, 1983). However there are numerous other cross-cutting symptom scales. The Brief Psychiatric Rating Scale (BPRS: Overall and Gorman, 1962) is a clinician-administered interview that assesses a broad range of symptoms including items on anxiety. Examples of self-report questionnaires include the State-Trait Anxiety Inventory (STAI: Spielberger et al., 1970) and the Anxiety Sensitivity Index (ASI: Reiss et al., 1986). The STAI measures non-specific state and trait levels of anxiety. Respondents indicate how much each statement reflects how they feel right now, at this moment (state version), or how they generally feel (trait version) on four-point scales. The ASI measures the degree to which one believes anxiety and its symptoms will cause negative psychological, physiological, and social consequences. Interestingly, the ASI was originally conceptualized as a way of assessing the core fear in panic disorder, but has since been associated with all anxiety disorders. The revised ASI (ASI-R: Taylor and Cox, 1998) was derived to more thoroughly measure the construct of anxiety sensitivity. The value of these broad instruments as classificatory tools remains under investigated.

A recent development in dimensional assessment focuses on underlying constructs operating across different anxiety disorders. One such scale is based on the idea that for each anxiety disorder there is a pathological concern about threat, and that symptoms can be conceptualized as lying on a threat-imminence continuum (Craske, 1999, 2003). Informed by ethological research (Fanselow et al., 1988), the developers of this concept hypothesize that anxiety symptoms are not constant, but rather vary as a function of proximity to stimuli perceived as dangerous, with proximity evaluated across space, time, and intensity. The resulting responses range from anxious worry about a possible future threat to fear when facing a clear threat, and panic when confronted with immediate danger. These

responses serve different functions. On the distal end, worry about an uncertain threat serves to orient and plan for possible response. Some investigators claim that worry is an element of all anxiety disorders (Barlow, 2002). On the other end of the continuum, panic generated in the immediate presence of a significant danger is associated with a fight/flight or freezing response. So conceived, the threat imminence continuum provides a framework from which the presence of symptoms across different anxiety disorders can be understood. Studies showing that panic and worry occur among individuals who do not develop diagnosable anxiety disorders are consistent with the idea of a threat imminence continuum. Conversely, this same observation raises the important question of why some individuals develop anxiety disorders while others with similar experiences do not.

Avoidance is common to all anxiety disorders. Excessive use of escape and avoidance as a response to threat may be a part of the answer to the question of why people develop DSM-IV anxiety disorders. Avoidance behaviours contribute importantly to functional impairment, and can interfere with learning about the accuracy of perceived threat stimuli (e.g. Eifert and Forsyth, 2005). It is important to note that avoidance occurs across both external and internal domains (e.g. avoidance of situations, activities, feelings, thoughts, memories), all of which serve the function of reducing exposure to a perceived threat. Avoidance limits encounters with potentially threatening experiences at the expense of restricting the potential for satisfying activities. Overuse of avoidance limits the development of coping strategies for everyday life problems, and interferes with emotional processing and correction of over-estimation of threat. It is likely that a marked tendency for avoidance is an important mechanism for the onset and maintenance of pathological anxiety. Importantly, by its nature, individuals often fail to report their avoidance behaviours spontaneously or with simple questions. The central role of avoidance across anxiety disorders and the need for detailed questioning make this an excellent candidate for dimensional assessment.

Panic attacks also occur across anxiety and other psychiatric disorders (Goodwin et al., 2004; Reed and Wittchen, 1998). The DSM-IV provides a definition of panic outside of any specific disorder, calling attention to the fact that panic can occur in association with any anxiety disorder and with other mental disorders. The

decision to indicate that panic is cross-cutting has proved to be important as there is now strong evidence that the occurrence of panic is a reliable maker for a range of clinically important problems including higher illness severity, more suicidality and lower treatment responsiveness (Bittner et al., 2004; Goodwin and Roy-Byrne, 2006; Goodwin and Hamilton, 2001; Wittchen et al., 2003). Placement of panic as a symptom defined separately and seen across disorders, provides a beginning for inclusion of other cross-cutting anxiety symptoms.

The criteria of impairment or distress are elements of every DSM anxiety disorder. As with other DSM diagnoses, impairment and distress are not clearly defined in the manual. Numerous dimensional assessments of these criteria exist, however. For example, in pharmacotherapy studies impairment is frequently measured with the Sheehan Disability Scale (SDS; Sheehan, 2000). Psychotherapy studies utilize the Work and Social Adjustment Scale (Mundt et al., 2002). These scales assess the patient's degree of disability via items evaluating impairment in work/school, social life/leisure activities, and family life/home responsibilities. Multiple other scales of this sort also exist, ranging from generic disability scales such as the World Health Organization Disability Assessment Schedule (WHODAS; WHO, 2000) to full-blown interview approaches such as the Groningen Social Disability Schedule (GSDS; Wiersma et al., 1990; Wiersma et al., 1988). The performance of these scales among patients with anxiety disorders is currently untested.

Hybrid approaches: spectrum approach and higher order categories

There is an additional group of diverse and conceptually heterogeneous 'hybrid' dimensional approaches that propose alternative or reorganized classifications of disorders using various methods. Included among these are (1) higher order factors and (2) spectrum approaches.

Higher order approaches

The first of these hybrid conceptualizations entails a reorganization of DSM in which mood and anxiety disorders are grouped together. Symptom overlap and high levels of comorbidity among the anxiety disorders and between anxiety and other disorders has stimulated research investigating the factor structure underlying these disorders in an effort to elucidate core

psychopathological processes of phenotypic psychopathology. The tripartite model by Clark and colleagues (Clark et al., 1994a; Clark and Watson, 1991; Clark et al., 1994b; Watson et al., 1995) postulates a three component structure for anxiety and depressive syndromes: 'general affective distress' or negative affect as unspecific component, 'anhedonia' or the lack of positive affect as specific for depression, and 'physiological hyperarousal' or somatic tension as specific for anxiety. A similar but hierarchical conceptualization was proposed by Barlow and colleagues (Barlow, 1988, 1991; Barlow and Di Nardo, 1991; Zinbarg and Barlow, 1996). They suggest a higher order factor of 'negative affect', that is common to both anxiety and depressive disorders. On a lower level, each anxiety disorder incorporates a specific factor. Based on a series of factor-analytic investigations, Krueger and others proposed a higher order, 'internalizing disorder' factor with two subfactors 'anxious-misery' (containing depressive disorders and GAD) and 'fear' (containing phobias and panic disorders) (Krueger, 1999; Krueger et al., 1998; Vollebergh et al., 2001).

These different subtypes have some empirical support, however with considerable methodological and statistical constraints (Wittchen et al., 1999). The analyses are based on a priori categorical decisions usually from diagnostic interviews. Threshold issues, developmental stage, and age have received little attention. Further, only a limited number of DSM disorders were used for analyses ignoring major diagnostic categories as PTSD, OCD, or subtypes of phobias. Among methodological factors, subject homogeneity and varying statistical approaches must be viewed critically. Overall, clinical utility of this set of dimensional proposals is quite limited. However, others (Watson, 2005; Widiger, 2005; Widiger and Clark, 2000; Widiger and Samuel, 2005) call for a radical revision of the DSM. We believe it is unwise and premature to draw strong conclusions and directions for diagnostic nomenclature from methodologically variable statistical studies. Doing so would create considerable confusion regarding the interpretation of a large body of intervention literature that clearly identifies efficacious treatments for existing categories. Moreover, data supports both cross-cutting and specific domains of symptoms for mood and anxiety disorder. It is possible to develop cross-cutting higher order dimensional ratings relevant to mood and anxiety disorders without changing either the definition of DSM-IV disorders or the organization

of the diagnostic manual. Implementation of this approach could be very useful for both clinicians and researchers.

Spectrum approaches

A second and very different hybrid approach posits that a spectrum of symptoms or syndromes emerge in different patterns from a core central pathology. Several spectrum approaches exist (e.g. Akiskal, 2003; Hollander, 2005; Lara et al., 2006), but that by Cassano and colleagues (see later) arguably represents the approach with the most empirical support. This group examines dimensional symptoms, behavioural traits, and response orientations associated with DSM-IV categorical disorders and defines a spectrum of criterion symptoms and non-criterion clinical features that emanate from each DSM-IV category.

The spectrum approach of Cassano and colleagues has developed and validated multiple assessment instruments for the anxiety disorders (e.g. Cassano et al., 1997; Frank et al., 1998). These instruments have been found to provide important information about a range of symptoms not currently included in DSM-IV that occur in association with specific DSM-IV disorders but can also comprise clinically meaningful comorbidity in other conditions. The Structured Clinical Interview for Panic-Agoraphobic Spectrum (SCI-PAS: Cassano et al., 1999) is one example of the spectrum approach to assessment. This instrument provides a lifetime appraisal of eight domains of clinical features: (1) separation sensitivity, (2) panic-like symptoms, (3) stress sensitivity, (4) medication and substance sensitivity, (5) anxious expectation, (6) agoraphobia, (7) illness phobia and hypochondriasis, and (8) reassurance orientation. The SCI-PAS has been shown to be a useful measure of a group of symptoms that are more likely to be present among patients with panic disorder than among other psychiatric patients and normal controls (Shear et al., 2001b). Further, studies conducted in the US and Italy show similar spectrum profiles in Italian and American patients and controls (Frank et al., 2005). Moreover, studies have shown that the presence of panic spectrum comorbidity, in the absence of DSM-IV panic disorder, is an important predictor of outcome among patients with major depression (Frank et al., 2002b) and bipolar disorder (Frank et al., 2002a). Spectrum instruments could be used in genetic and neurobiological studies (e.g. Martini et al., 2004). The

occurrence of clinically significant spectrum symptoms in the absence of DSM-IV disorders may provide a view of psychopathology that would otherwise be missed (e.g. Manfredini et al., 2005). These findings support the idea that this hybrid categorical-dimensional model has the potential to be clinically useful and contribute to a better understanding of symptom domains that cross current diagnostic categories.

Future research needs and conclusion

In summary, our selected review of dimensional assessment approaches in anxiety disorders illustrates how symptom domains described by DSM-IV anxiety disorders can be measured with continuous measures. Dimensional approaches can be disorder-focused, cross-cutting or hybrid models. In fact, dimensional measures of all three types have been widely used in anxiety disorder research for decades. Recent authors advocate for their routine use in clinical practice as a tool for measurement-based care (Trivedi et al., 2006). It is clear that dimensional assessment can enrich our understanding of anxiety in a variety of ways, and that the best approach would be dictated by the question or concern being addressed. Examples of different purposes of diagnostic assessment include determining whether an individual has sufficient distress and/or impairment to profit from treatment, monitoring the progress of treatment, doing genetic, neurobiological, developmental and other mechanisms studies, determining developmental course of different disorders, examining the epidemiological distribution of different conditions and their severity in the community, exploring rates and significance of co-occurrence of disorders to determine effects on course or treatment outcome, and collecting data that will help discover new subtype distinctions or diagnostic boundary distinctions.

Given the varied needs associated with different kinds of studies and clinical activities, we strongly believe that the field needs to continue to utilize the categorical approaches best suited to specific objectives. However, as we consider revisions to the DSM-IV, we must revisit the question to what degree supplementary dimensional approaches should be incorporated. Given the extensive information now available for anxiety disorders, selectively reviewed in this paper, we assert that it is time to seriously consider the addition of dimensional assessment in the DSM-V. Keeping in

mind that diagnosis is used for many purposes, we believe that the most useful approach would be to add cross-cutting anxiety assessments to the existing categorical system. This strategy has a precedent in the placement of panic attacks in the DSM-IV.

There are a panoply of dimensional measures of anxiety-related constructs, with literally thousands of validated scales available to assess different domains of anxiety symptoms. The question of which ones should be considered standard and potentially included in DSM-V is a daunting one. Data collected by researchers differ depending upon the orientation (i.e. psychology versus psychiatry) and goals of a given investigator's research program and those of each specific project. The analytic strategy chosen for a particular study or group of studies is based on specific assumptions. Assumptions differ across projects and these differences lead to different types of conclusions independent of the phenomenon of interest (e.g. cluster analysis, latent class analyses and factor analysis are specifically designed to detect subgroups of like items, people, etc.). Most importantly, many of these differences are based on different purposes of symptom assessment across studies, research centres and disciplines. Therefore, the dimensional approach we advocate is based on our view of the main purpose of the diagnostic manual. We reiterate that we do not mean to suggest that this is the best approach for all purposes.

There is growing agreement that there are both shared and discrete symptoms among anxiety disorders and between mood and anxiety disorders (Fergusson et al., 2006; Gregory et al., 2007). More research is needed to clarify which are shared and which are symptoms specific to each condition, and how these should be best represented in a diagnostic system. We suggest that DSM include both rows and columns outlined in Figure 1. In particular, we advocate the inclusion of anticipatory anxiety, phobic symptoms and anxiety-related impairment and distress along with panic attacks as cross-cutting symptoms. This approach could be useful in a number of ways. We discuss two of them here.

First, there is a need to define and measure the core symptom domains shared by all anxiety disorders in the same way and consistently. This approach has already proved highly useful with panic symptoms, both across anxiety disorders and within other DSM-IV disorders. There is growing evidence for the importance of avoidance in the onset and maintenance of clinically signifi-

cant anxiety. Moreover, according to the threat imminence model, avoidance may be fuelled by anticipatory anxiety and worry. Measuring these constructs across disorders could provide important insights into these various facets of anxiety and might also provide better information for genetic studies, developmental studies, epidemiology and treatment studies. Cross-cutting measures could also be useful to clinicians who are interested in deciding who to treat and in monitoring the effects of their treatment.

Secondly, an integrated model including current DSM-IV disorders as well as cross-cutting dimensional measures could be used as a device for illness staging (see Figure 2). Such staging might entail a developmental perspective and/or an illness course characterization.

Since Donald Klein's (1981) groundbreaking work on panic staging, there has been considerable interest in this type of developmental approach. Lack of standardized assessment of cross-cutting constructs such as avoidance, has impeded the validation of such progression, yet there is indirect support for this model from prospective-longitudinal studies. Evidence from these studies further indicates that the occurrence of panic attacks is a sensitive marker for emerging severe psychopathology across disorders. The Early Developmental Stages of Psychopathology (EDSP) study found that over 90% of subjects with a panic attack go on to eventually develop a full-blown DSM-IV anxiety, affective, or other mental disorder (Goodwin et al., 2004; Reed and Wittchen, 1998). This suggests that panic attacks although a core feature of panic disorder, might be severity marker across diagnoses. We need to know if this is also the case for other facets of anxiety.

Staging approaches have a long tradition in internal medicine, and have been found to be clinically useful. For example, staging is used in diabetes mellitus and its micro- and macro-vascular complications (Haffner, 2006). We believe a staging approach could also be fruitfully developed and used in clinical work with individuals with mental disorders. Such an approach might be helpful in defining illness course and treatment needs. For example an individual with stage I symptoms might be someone for whom psychoeducation and watchful waiting would be appropriate. For stage II a monotherapy might be appropriate, while for stage III (or IV) combined treatment might be indicated.

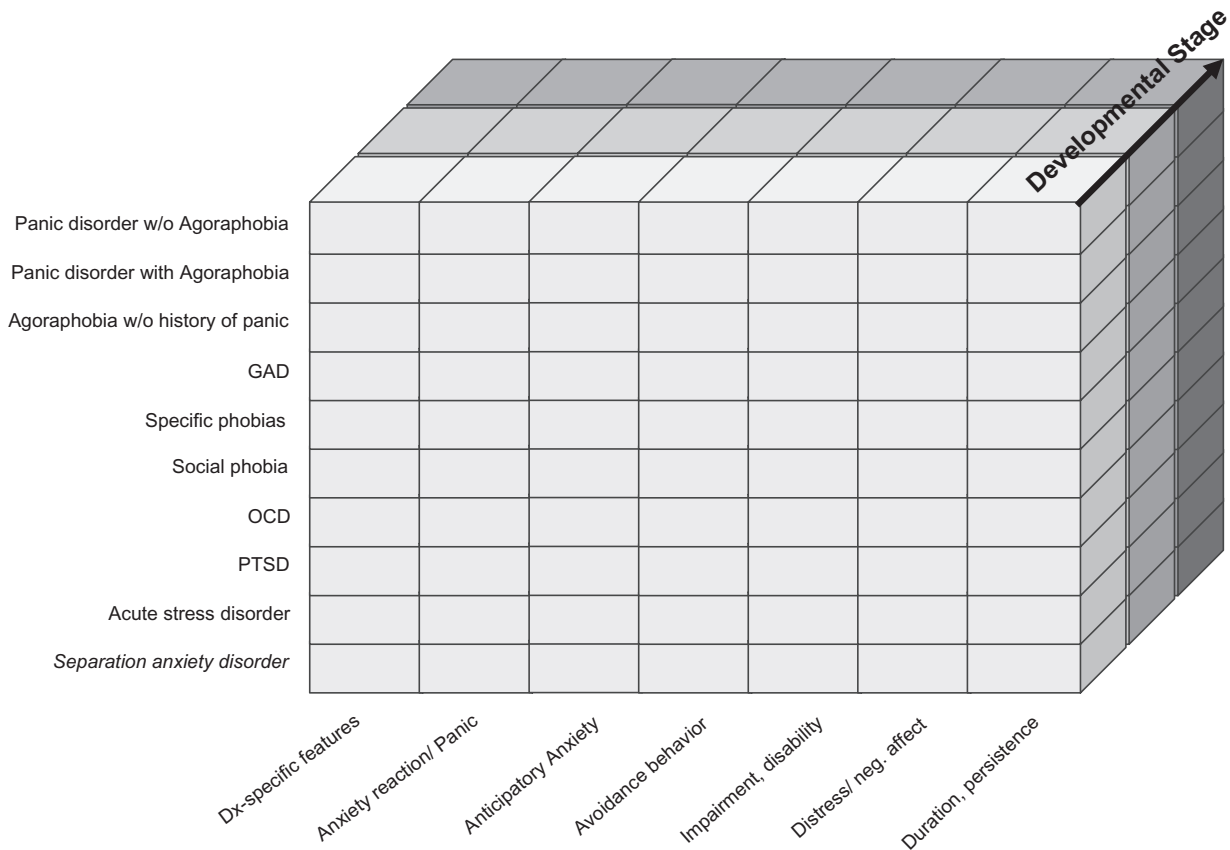


Figure 2. Diagnostic domains by development stage.

Figures 2 and 3 illustrate different ways such a model might be applicable across anxiety disorders and over the lifespan. For example, a recent study identified a developmental pathway in which specific phobias in childhood appear to be precursors for more severe complications in adulthood (Emmelkamp and Wittchen, in press).

To conclude, we believe that replacing categorical diagnostic criteria with dimensional assessment would not serve the field well at this point in time. The current DSM structure for anxiety disorder should be preserved since it supplies simple reliable rules for categorical assignments required for clinical and research purposes. This system provides the link to a very large body of

important and useful empirical data. However extending the idea of cross-cutting symptoms among the different anxiety disorders and across the wider diagnostic groups, could also be helpful in learning more about which symptoms are shared and which are diagnostically different. It may be useful to incorporate several of the established dimensional assessments as a supplement to existing diagnostic procedures. Additionally, from a developmental perspective and in terms of treatment planning we suggest adoption of a developmental staging method as such an assessment may help clinicians and researchers as they strive to understand, plan treatments and evaluate outcome.

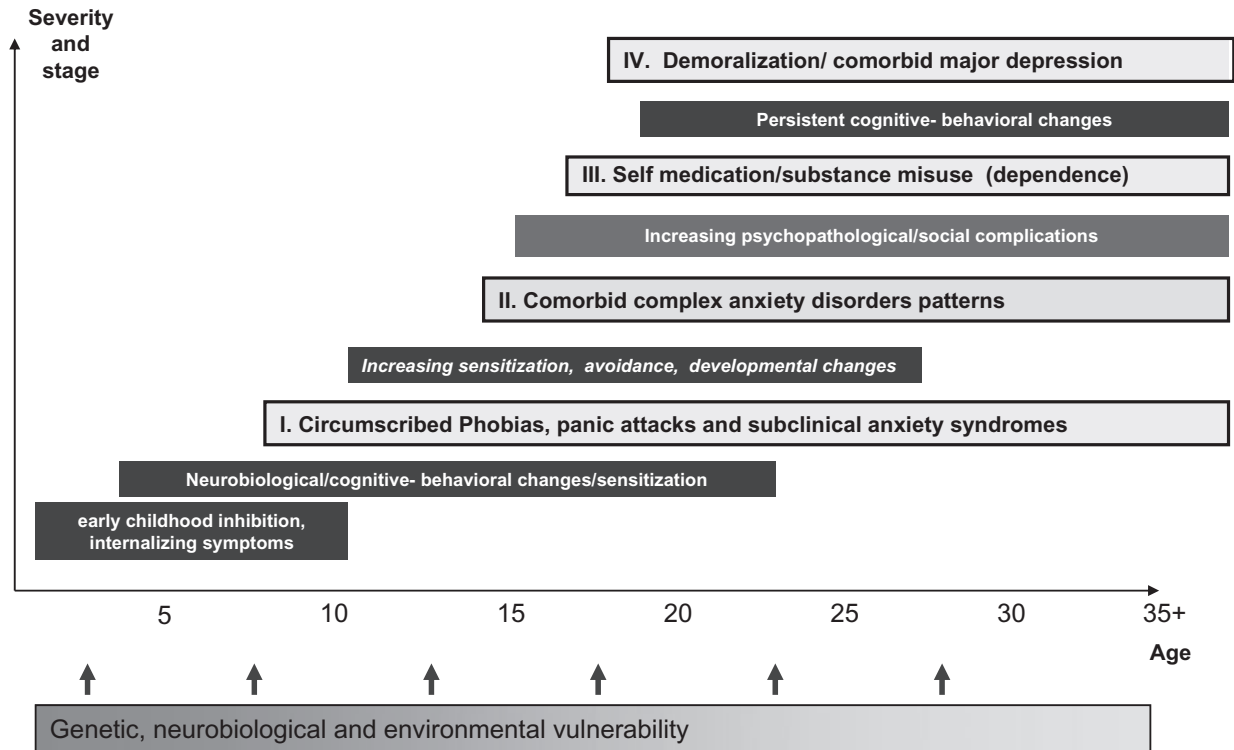


Figure 3. Possible developmental stages (I–IV) and pathways and putative mechanisms.

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