

strategies to improve their vision is needed. The effectiveness of an optimised primary care based screening intervention that overcomes possible factors contributing to the observed lack of benefit in trials to date warrants assessment.

We thank Chris Bulpitt, Dee Jones, and Alistair Tulloch, co-investigators on the MRC trial of assessment and management of older people, and the nurses, GPs, the other staff and the patients in the participating practices: the MRC General Practice Research Framework Co-ordinating Centre (Madge Vickers, Jeannett Martin, and Nicky Fasey); the research team for the MRC trial of assessment and management of older people in the community; Elizabeth Breeze, Edmond Ng, Gill Price, Susan Stirling, Rakhi Kabiwala, and Janbibi Mazar at the London School of Hygiene and Tropical Medicine; Maria Nunes and Ruth Peters at Imperial College; Amina Latif and Elaine Stringer, University of Wales College of Medicine; the Trial Steering Committee (J Grimley Evans (chair), A Haines (previous chair), K Luker, C Brayne, M Vickers, M Drummond, L Davies, P Desai).

Contributors: See bmj.com

Funding: The nested trial of vision screening was funded by the MRC under the MRC and Department of Health joint initiative in primary healthcare research. The MRC trial of the assessment and management of older people in the community was separately funded by the United Kingdom Medical Research Council, the Department of Health and the Scottish Office. LS was supported by a three year research fellowship from the NHS Executive Research and Development Directorate (Thames Region), and is now funded by an MRC Clinical Scientist Fellowship.

Ethical approval: Ethical approval for all aspects of the study was obtained from relevant ethics committees both for the original trial and for the practices involved in the repeat vision assessment.

- 1 Wormald RP, Wright LA, Courtney P, Beaumont B, Haines AP. Visual problems in the elderly population and implications for services. *BMJ* 1992;304:1226-9.
- 2 Van der Pols JC, Bates CJ, McGraw PV, Thompson JR, Reacher M, Prentice A, et al. Visual acuity measurements in a national sample of British elderly people. *Br J Ophthalmol* 2000;84:165-70.
- 3 Evans JR, Fletcher AE, Wormald RP, Ng ES, Stirling S, Smeeth L, et al. Prevalence of visual impairment in people aged 75 years and above in

- Britain: results from the MRC trial of assessment and management of older people in the community. *Br J Ophthalmol* 2002;86:795-800.
- 4 Reidy A, Minassian DC, Vafidis G, Joseph J, Farrow S, Wu J, et al. Prevalence of serious eye disease and visual impairment in a north London population: population based, cross sectional study. *BMJ* 1998;316:1643-6.
 - 5 Scott IU, Schein OD, West S, Bandeen-Roche K, Enger C, Folstein MF. Functional status and quality of life measurement among ophthalmic patients. *Arch Ophthalmol* 1994;112:329-35.
 - 6 Carabellese C, Appollonio L, Rozzini R, Bianchetti A, Frisoni GB, Frattola L, et al. Sensory impairment and quality of life in a community elderly population. *J Am Geriatr Soc* 1993;41:401-7.
 - 7 Rovner BW, Zisselman PM, Shmueli-Dulitzki Y. Depression and disability in older people with impaired vision: a follow-up study. *J Am Geriatr Soc* 1996;44:181-4.
 - 8 Dargent-Molina P, Favier F, Grandjean H, Baudoin C, Schott AM, Hausherr E, et al. Fall-related factors and risk of hip fracture: the EPIDOS prospective study. *Lancet* 1996;348:145-9.
 - 9 Hitchings RA. Visual disability and the elderly. *BMJ* 1989;298:1126-7.
 - 10 Strahlman E, Ford D, Whelton P, Sommer A. Vision screening in a primary care setting. A missed opportunity? *Arch Intern Med* 1990;150:2159-64.
 - 11 Wang F, Ford D, Tielsch JM, Quigley HA, Whelton PK. Undetected eye disease in a primary care clinic population. *Arch Intern Med* 1994;154:1821-8.
 - 12 Wun YT, Lam CC, Shum WK. Impaired vision in the elderly: a preventable condition. *Fam Pract* 1997;14:289-92.
 - 13 Department of Health and the Welsh Office. *General practice in the National Health Service. A new contract*. London: DoH, 1989.
 - 14 Department of Health. *National service framework for older people*. London: DoH, 2001. www.doh.gov.uk/nsf/olderpeople/docs.htm (accessed 28 Sep 2003).
 - 15 Smeeth L. Assessing the likely effectiveness of screening older people for impaired vision in primary care. *Fam Pract* 1998;15(suppl 1):24-9.
 - 16 Smeeth L, Iliffe S. Community screening for visual impairment in the elderly. *Cochrane Database Syst Rev* 2003;(4):CD001054.
 - 17 Smeeth L, Fletcher AE, Stirling S, Nunes M, Breeze E, Ng E, et al. Randomised comparison of three methods of administering a screening questionnaire to elderly people: findings from the MRC trial of the assessment and management of older people in the community. *BMJ* 2001;323:1403-7.
 - 18 Fletcher AE, Jones DJ, Bulpitt CJ, Tulloch AJ. The MRC trial of assessment and management of older people in the community: objectives, design and interventions [ISRCTN23494848]. *BMC Health Services Research* 2002;2:21.
 - 19 McGraw P, Winn B. Glasgow acuity cards: a new test for the measurement of letter acuity in children. *Ophthalmic Physiol Opt* 1993;13:400-4.
 - 20 Loewenstein JI, Palmberg PF, Connett JE, Wentworth DN. Effectiveness of a pinhole method for visual acuity screening. *Arch Ophthalmol* 1985;103:222-4.
 - 21 Aminzadeh F. Adherence to recommendations of community-based comprehensive geriatric assessment programmes. *Age Ageing* 2000;29:401-7.
- (Accepted 5 August 2003)

DSM depression and anxiety criteria and severity of symptoms in primary care: cross sectional study

Donald E Nease Jr, James E Aikens

Experts continue to debate the links between categories based on the *Diagnostic and Statistical Manual of Mental Disorders*, third edition and later (DSM-III-R) and severe symptoms and impairment seen in primary care. Although dichotomous labels may be useful for denoting boundaries between taxa or categories, difficulties arise when continuous dimensions, such as symptoms of mental health, are represented as either present or absent.^{1 2} Screening and treatment based on fitting “round” dimensions into “square” categories may lead to undertreatment, overtreatment, or inappropriate treatment.

We examined how well the DSM classifications correspond to severity of symptoms. If categories based on the DSM accurately guide detection and treatment, then patients meeting criteria from the DSM for a

mood or anxiety disorder should have relatively severe symptoms, and patients who meet criteria of the DSM solely for a mood disorder, without a comorbid anxiety disorder, should experience their most severe symptoms within the domain of that disorder—that is, as mood symptoms—and vice versa.

Participants, methods, and results

We studied a previously described sample of 1333 participants presenting for non-urgent appointments at a practice for families based at a university in a medium sized city in southeast Texas (University of Texas Medical Branch, Galveston).³ All participants were given the primary care evaluation of mental disorders (PRIME-MD) structured psychiatric interview for DSM assessed

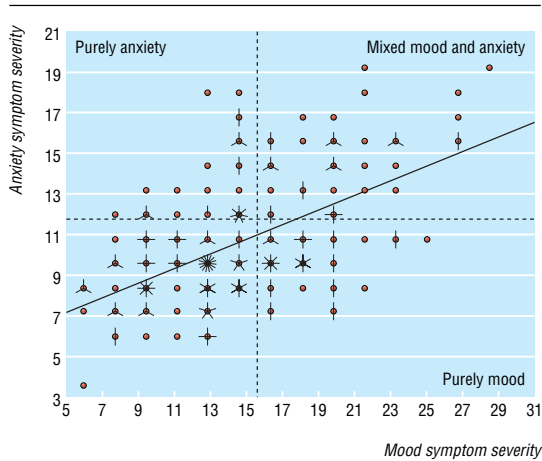
Correspondence to: D E Nease Jr dnease@umich.edu

continued over

BMJ 2003;327:1030-1



Figure A on bmj.com shows participants with pure anxiety; table A gives individual scales of mood and anxiety



Severity of symptoms for mood versus anxiety in 199 participants meeting criteria of the DSM for purely mood disorder; broken lines are at mean + SD; diagonal line is regression line; stems show additional cases

psychiatric diagnosis and self reported 15 items to assess severity of mood and anxiety symptoms independently of the PRIME-MD.⁴ Participants identified as having threshold mood or anxiety disorders could not also meet criteria for disorders specified as exclusionary by the DSM.

Previous analyses considered caseness based on the DSM against dimensions representing the presence or absence of mood and anxiety symptoms.^{1,2} Building on this, and to consider severity of symptoms independently of the number of symptoms, we used summed scores for the severity of mood and anxiety symptoms as our dimensional axes. We plotted the participants meeting criteria for mood disorder alone, anxiety disorder alone, or both disorders, with a regression line summarising the association between the severity of mood and severity of anxiety in each group. To assess agreement between categorical and severity classifications, we used a cut off one standard deviation beyond the mean, which is a reasonable boundary between mild and greater severity of symptoms.

Of 199 participants meeting criteria for mood disorder alone, 95 (48%) had mild symptoms. Among the 103 participants with comparatively severe symptoms, only 21 (39%) had mainly mood symptoms, 13% (26) had mainly anxiety, and 20% (39) had mixed symptoms (figure). The regression line ($R^2 = 0.30$, $P < 0.01$) between severity dimensions is steeper than we expected, indicating that severity of anxiety symptoms has a greater than predicted influence among participants meeting DSM criteria for "pure" depression. (See fig A on bmj.com for patients with pure anxiety disorders).

Comment

Mood and anxiety disorder classifications based on the DSM had strikingly weak associations with the severity of each syndrome's symptoms, in a large sample of patients in primary care. Categorical representations of important clinical phenomena can misrepresent dimensional quantities. Doctors in

primary care make dichotomous decisions to start treatment for depression (or not)—categories based on the DSM are logical and pragmatic. These decisions should be made, however, with as much valid data as is useful, without exceeding the obvious informational and time limitations of primary care. What is needed is a more careful balance between prudence and validity. We believe that the solution is to combine aspects of the categorical approach (based on the DSM) and the dimensional approach (based on severity of symptoms), to maximise the advantages and minimise the disadvantages of each approach alone.⁵

Contributors: DEN conceived the study with input from JEA. Both authors analysed and interpreted the data and wrote the paper. DEN did final edits with JEA's approval. DEN is guarantor.

Funding: National Institute on Alcohol Abuse and Alcoholism (AA09496), Bureau of Health Professions, Health Resources, and Services Administration (D32-PE16033 and D32-PE10158).

Competing interests: None declared.

- 1 Goldberg D. Plato versus Aristotle: categorical and dimensional models for common mental disorders. *Compr Psychiatry* 2000;41(2 suppl 1):8-13S.
- 2 Goldberg D. A dimensional model for common mental disorders. *Br J Psychiatry Suppl* 1996 Jun:44-9.
- 3 Volk RJ, Cantor SB, Steinbauer JR, Cass AR. Alcohol use disorders, consumption patterns, and health-related quality of life of primary care patients. *Alcohol Clin Exp Res* 1997;21:899-905.
- 4 Nease DE Jr, Volk RJ, Cass AR. Investigation of a severity-based classification of mood and anxiety symptoms in primary care patients. *J Am Board Fam Pract* 1999;12:21-31.
- 5 Nease DE Jr, Klinkman MA, Volk RJ. Improved detection of depression in primary care through severity detection. *J Fam Pract* 2002;51:1065-70. (Accepted 13 June 2003)

Endpiece

To die

The verb "to die" is one of the few that is only readily usable in the past and future tenses. We accept "he died last year," and we can easily accept, "we will all die someday." But the present tense, I die, you die, he dies—that should be cancelled right out of the language. And to have to use the verb in that tense not for a single moment but for weeks and months and then years—that is altogether intolerable. We tend to think, furthermore, that "to die" is a verb of the instant, like "to dive." It is a thing that takes almost no measurable time. One second you are on the board, looking at the water, and the next second you have left the board behind you and taken the plunge. So with many deaths—one second you are alive, and the next second you are dead. Science defines death in this way, and on your death certificate indicates a particular moment as the moment of death. But sometimes the verb "to die" is more like the verb "to age," and is a thing that happens by terrible and slow and imperceptible degrees. My mother was not given a chance to age in that manner, and was, by way of inadequate compensation, given an experience of death as gradual as a life span.

Andrew Solomon,
The Stone Boat, 1994

Brian Cornelson, medical doctor,
Toronto

Department of
Family Medicine,
University of
Michigan, 1018
Fuller Street, Ann
Arbor, MI
48109-0708, USA
Donald E Nease Jr
assistant professor
James E Aikens
assistant professor