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Older Adults Are Less Accurate Than Younger Adults at Identifying Symptoms of Anxiety and Depression

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Abstract

The present study examined age differences in the discrimination between anxiety and depressive symptoms in a community sample of 374 adults, ages 18–93. Older adults were less accurate and more likely than younger adults to label symptoms as neither anxiety nor depression. Both older and younger adults were more accurate in their classification of depressive than anxiety symptoms. These findings suggest that additional efforts are needed to educate the general public, particularly older adults, about anxiety and its symptoms.

Keywords

Mental health literacy; Mental health knowledge; Symptom recognition

Introduction

Increasing public awareness of common mental health problems like anxiety and depression among older adults is important. Studies to date using case vignettes to investigate awareness of psychiatric disorders have found that fewer than half of respondents are able to recognize depression or identify it as a mental health problem (Goldney et al., 2001; Jorm et al., 1997; Jorm et al., 2000; Lauber et al., 2003). Only one study to our knowledge has examined community perceptions of anxiety (Edwards et al., 2007) and found evidence that compared to depression, anxiety is regarded as less serious but more amenable to treatment.

Despite the prevalence of mental health problems among the elderly, detection and treatment rates remain low. Several studies of age differences in knowledge about depression have found that older adults are less likely than younger adults to recognize depression (Fisher & Goldney, 2003; Hasin & Link, 1988; Highet et al., 2002; Yoder et al., 1990). Anxiety disorders are more common than depression in older adults, with prevalence estimates as high as 14% (Bryant, Jackson, & Ames, 2007). Anxiety is associated with adverse health outcomes and functional impairment (De Beurs et al., 1999; Wetherell et al., 2004). Furthermore, older adults with anxiety disorders may be less likely than older adults with depression to identify themselves as having a mental health problem (Gum et al., in press).

No studies to date have explored the extent to which older adults can discriminate between symptoms of anxiety and depression. Research providing new information on what is currently known about the features of anxiety and depression could inform future public health campaigns to improve mental health literacy (Jorm et al., 2006; Paykel et al., 1998).

The present investigation tested the following hypotheses in a large, mixed-age sample of community residents: 1) Older adults will be less accurate in their classification of anxiety and depressive symptoms than younger adults; and 2) both older and younger adults will be less accurate in their classification of anxiety symptoms than of depressive symptoms.

Methods

Procedure and Subjects

Participants in the study were 374 individuals recruited from a mailing list purchased from a market research firm. Because the mailing list was compiled largely from telephone book listings, and many families are listed under the name of a male head of household, the mailing list contained a disproportionate number of males. All participants completed questionnaires by mail as part of a study of anxiety, health, and related psychological concepts. Informed consent was obtained and documented on signed forms for all participants.

Participants were mostly male (65.1%) and had a mean age of 56.8 years ($SD = 18.8$) and mean of 15.1 (3.4) years of education. Almost 40% (149) were 65 years old or older. Most (83.1%) were Caucasian, with 3.8% African American, 5.4% Latino, 0.5% Native American, and 2.2% listing ethnicity as "Other." Most (58.0%) were married, with 18.9% never married, 12.4% divorced, and 10.8% widowed; 42.6% were working full time, 9.7% working part time, 38.6% retired, 2.7% homemaker, 2.7% student, and 3.8% disabled or unemployed. With respect to annual household income, 5.1% reported income less than \$15,000, 16.4% \$15–30,000, 23.8% \$30–50,000, 23.2% \$50–75,000, 13.9% \$75–100,000, and 17.6% over \$100,000.

Measures

In order to test their knowledge about anxiety and depression, participants were asked to classify a list of symptoms as anxiety only, depression only, both anxiety and depression, or neither anxiety nor depression. Symptoms were selected from the Diagnostic and Statistical Manual of Mental Disorders, 4th edition, Text Revision (DSM-IV-TR; American Psychiatric Association, 2000) categories of Generalized Anxiety Disorder, Panic Disorder, and Specific Phobia to represent the concept of anxiety. Symptoms from these disorders were chosen for their prevalence in epidemiological research (Kessler et al., 2005). Depressive symptoms were taken from the DSM-IV-TR category of Major Depressive Episode. Three symptoms, fatigue or lack of energy, insomnia, and trouble concentrating, were included as symptoms of both anxiety (specifically, Generalized Anxiety Disorder) and depression. Two symptoms from the DSM-IV-TR category of Schizophrenia, delusions and hallucinations, were chosen to represent a concept distinct from anxiety or depression. The questionnaire was written to clarify that participants were being asked about their opinions rather than their own symptoms.

Statistical Analyses

Data were analyzed using SPSS release 17.0 and STATA release 9.2. Data were analyzed using logistic regression. Age was entered as a categorical variable (younger than 65 years vs. 65 years and older) in the logistic regression models to predict correct responses for each item, after controlling for gender, ethnicity (Caucasian vs. other), education (entered as a continuous variable representing number of years of education), and income (entered as a continuous variable on a scale of 1 to 6, with 1 representing annual income less than \$15,000 and 6

representing income greater than \$100,000; other income categories are described under “Procedure and Subjects” above).

The results from the logistic regressions are expressed as an adjusted odds ratio statistic, which represents the likelihood of responding correctly to an item for individuals over age 65 relative to younger adults after controlling for covariates (e.g., an odds ratio of 1.25 would indicate that older people are on average 25% more likely to correctly classify a given item than are younger people). The 95% confidence interval identifies the range in which the estimated odds ratio parameter falls within a 5% margin of type I error; intervals that include 1.00 for a particular item indicate that older and younger adults do not differ significantly in their ability to correctly classify that item.

In order to determine which symptoms were most likely to be categorized as anxiety or depression in each age group, we performed four principal component factor analyses with varimax rotation and Kaiser normalization. To facilitate interpretation of the results, responses were converted into dichotomous variables before analysis, and two factors were retained in each analysis (anxiety vs. not anxiety; depression vs. not depression). Past studies have used this method with dichotomous data and found similar factor structures to those computed using the tetrachoric correlation coefficient matrix (Liang, 1984; Liang & Bollen, 1983).

Results

Univariate regression results indicated that the strongest predictor of the number of symptoms correctly classified was age, $r = -.391$, $p < .001$, with older participants classifying fewer symptoms correctly than younger participants. Other significant predictors were higher levels of education, $r = .232$, $p < .001$, and higher income, $r = .163$, $p = .002$.

Logistic regression results predicting correct responses by older adults relative to younger adults, after controlling for covariates, are presented in Table 1. Restlessness and palpitations were the only symptoms classified correctly as anxiety symptoms by a majority of older adults; sadness and worthlessness were the only symptoms classified correctly as depressive symptoms by most older adults. Older adults were significantly less likely than younger adults to classify 14 of the 20 symptoms correctly. On only one symptom, delusions, were they more accurate than younger adults. Overall, they endorsed a mean of 7.4 ($SD = 3.7$) correct responses vs. 10.4 ($SD = 4.1$) for the younger adults, $t(370) = 7.00$, $p < .001$. On average, older adults classified more symptoms as neither anxiety nor depression than younger adults did, 6.2 ($SD = 5.6$) vs. 2.9 ($SD = 4.1$), $t(370) = -6.58$, $p < .001$. By contrast, younger adults classified more symptoms as both anxiety and depression than did older adults, 7.0 ($SD = 4.4$) vs. 5.6 ($SD = 4.4$), $t(370) = 2.97$, $p = .003$.

Overall, individuals in the sample correctly classified a mean of 49.5% of the depressive symptoms and 44.2% of the anxiety symptoms; using a paired t -test, this difference was statistically significant, $t(370) = 5.26$, $p < .001$. A t -test comparing the difference between correct classification of depression and anxiety symptoms in older and younger adults was not significant, indicating that older and younger adults were comparable in their ability to classify depressive symptoms more accurately than anxiety symptoms.

Factor analysis results are presented in Table 2. Both older and younger adults classified palpitations, shortness of breath, and restlessness as symptoms with particularly high loadings on the anxiety factor. Other symptoms categorized as anxiety by both groups included muscle tension, chest pain, and excessive fear. Younger but not older adults classified dizziness and worry as anxiety symptoms; older but not younger adults classified irritability and insomnia as anxiety symptoms. Both groups classified sadness, worthlessness, psychomotor retardation, anhedonia, fatigue, and suicidal ideation as depressive symptoms, with particularly high

loadings for sadness (both groups), worthlessness (younger adults), and suicidality (older adults). Older adults also classified loss of appetite and delusions as depressive symptoms. Trouble concentrating and hallucinations did not load on either factor in either group; the former was typically classified as a symptom of both depression and anxiety, and the latter was typically classified as neither depression nor anxiety.

Discussion

We found support for our hypotheses regarding the discrimination between anxiety and depressive symptoms. Age was the strongest predictor of the number of symptoms of anxiety and depression correctly classified, with older adults less accurate, on average, than younger adults. Age was a stronger predictor than education or income. Additionally, both younger and older participants classified a higher proportion of depressive than anxiety symptoms correctly.

Although somatic concerns may be particularly salient for older adults due to the higher prevalence of medical illness in the elderly, the results for age cannot be entirely explained by older adults misclassifying somatic symptoms. Older respondents were significantly less likely than younger ones to classify the emotional symptoms of sadness, worthlessness/guilt, worry, and fear correctly yet were as likely as younger adults to correctly classify the somatic symptoms of restlessness and loss of appetite. Overall, older adults classified more symptoms overall as neither anxiety nor depression. This suggests that older adults might be less able to identify, and therefore seek appropriate treatment for, common psychiatric symptoms than are younger adults.

Both older and younger adults were more accurate in their classification of depressive symptoms than of anxiety symptoms. Depression has been the focus of a number of media campaigns (e.g., Jorm et al., 2005; Paykel et al., 1998); by contrast, anxiety has been mostly overlooked. Given the high prevalence and serious consequences of anxiety symptoms (Kessler et al., 2005), informing the public about anxiety would seem to be a public health priority.

Edwards and colleagues (2007) likewise found significant differences in community perceptions of anxiety and depression. Specifically, anxiety disorders were seen as of shorter duration, less personally controllable, yet more treatable than depression. These findings suggest that individuals might be amenable to receiving treatment for anxiety if they were better able to identify its symptoms. Data from the present study suggest that symptoms most commonly categorized as anxiety are palpitations, restlessness, and shortness of breath. Public information campaigns may benefit from highlighting those symptoms.

The present study has several limitations. This was a convenience sample recruited from a mailing list compiled primarily from the telephone white pages. The resulting sample was more male, Caucasian, and well-educated than would be representative of the San Diego community. However, if anything, these factors could be expected to increase knowledge about anxiety and depression. Thus, results from this study may represent an upper bound on estimates of mental health literacy in a West Coast, urban community.

We used a symptom list to study knowledge about anxiety and depression, which is a more abstract method than the more typical case vignette format. This may have put older adults, with lower levels of abstract reasoning ability on average (Viskontas et al., 2004), at a disadvantage. This method, however, does offer the advantage of providing data on which symptoms are considered prototypical of anxiety and depression. Moreover, checklists, unlike vignettes, do not require interpretation of what information respondents are targeting in making their judgments, and a large variety of symptoms can be efficiently sampled.

Our methodology did not allow us to obtain information on what respondents believed symptoms classified as “neither anxiety nor depression” actually were. Future investigations would benefit from investigation of this topic. The study also did not examine opinions about appropriate sources of treatment, another area in which additional research is needed.

Unequal numbers of symptoms were included in the four categories, which may have biased the results with respect to the comparison between depression and anxiety, although these comparisons were performed controlling for the number of symptoms in each category. Furthermore, some symptoms may cross diagnostic categories (e.g., hallucinations and delusions can be symptoms of psychotic depression; flashbacks associated with posttraumatic stress disorder can also be considered examples of hallucinations).

The chief strength of this study is that it is one of the first investigations to assess community knowledge about anxiety, the most common mental health problem and often a precursor to other psychiatric disorders such as depression or substance abuse (Kessler et al., 2005). This is also the first study to offer comparative information on which specific symptoms are identified as symptoms of anxiety versus depression. The sample included community residents with a wide range of ages.

Studies on the topic of mental health literacy address one of the foremost barriers to care for mental disorders: lack of awareness. Inability to correctly label symptoms as signs of psychiatric illness may interfere with accurate communication with health care providers (Jorm, 2000). Detection and treatment of mental health problems are facilitated when patients are able to identify their symptoms as reflecting a psychiatric disorder, particularly in primary care settings where most individuals with mental health problems present for treatment (Kessler et al., 1999).

Conclusion

In a study examining the ability of community-dwelling individuals to discriminate symptoms of anxiety and depression, older adults were less accurate than younger adults and symptoms of depression were more likely to be correctly classified than those of anxiety. The chief clinical implication of this investigation is that additional efforts are needed to educate the public, especially older adults, about anxiety disorders. Increasing awareness may increase detection and treatment of these common, disabling, costly, yet treatable conditions.

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Table 1

Accuracy of identification of symptoms of anxiety and depression by adults at least 65 years old ($n = 149$), relative to younger adults ($n = 225$), after adjusting for gender, ethnicity, education, and income.

	% Correct	Adjusted OR	95% CI
Anxiety Symptoms			
Feeling restless, keyed up, or on edge	57.9%	0.65	0.41, 1.03
Palpitations or pounding or racing heart	51.7%	0.32	0.20, 0.52
Chest pain or discomfort	36.6%	0.42	0.27, 0.66
Shortness of breath or feeling smothered	35.0%	0.29	0.18, 0.46
Muscle tension	33.1%	0.43	0.27, 0.68
Excessive or unreasonable fear	29.8%	0.57	0.36, 0.90
Irritability	20.7%	1.07	0.63, 1.83
Excessive and hard to control worry	17.8%	0.47	0.28, 0.80
Feeling dizzy, faint, unsteady, or lightheaded	16.0%	0.41	0.24, 0.70
Depressive Symptoms			
Feeling sad, empty, or tearful	58.7%	0.51	0.32, 0.82
Feeling worthless or guilty	55.0%	0.58	0.37, 0.91
Loss of interest or pleasure in activities	45.8%	0.77	0.50, 1.20
Thoughts of death or suicide	42.4%	0.50	0.32, 0.79
Moving more slowly than usual	33.8%	0.33	0.21, 0.52
Decreased appetite or weight loss	21.0%	0.87	0.52, 1.48
Symptoms of Both Anxiety and Depression			
Trouble concentrating	49.0%	0.39	0.24, 0.61
Insomnia or restless sleep	41.0%	0.35	0.22, 0.56
Fatigue or lack of energy	29.9%	0.84	0.52, 1.36
Symptoms of Neither Anxiety Nor Depression			
Hallucinations	51.4%	0.56	0.36, 0.88
Delusions	43.0%	1.60	1.00, 2.56

Note. OR = Odds ratio; CI = Confidence interval.

Table 2

Item loadings for anxiety and depression factors by age group.

Item	Anxiety		Depression	
	Younger	Older	Younger	Older
Palpitations	.798	.737		
Shortness of breath	.713	.618		
Restlessness	.639	.693		
Muscle tension	.621	.572		
Chest pain	.586	.438		
Excessive fear	.526	.418		
Dizziness	.458			
Excessive worry	.444			
Irritability		.641		
Insomnia		.491		
Sadness			.757	.771
Worthlessness			.747	.637
Moving slowly			.679	.523
Anhedonia			.674	.694
Fatigue			.647	.611
Suicidal thoughts			.629	.734
Loss of appetite				.533
Delusions				.525