Published in final edited form as:

J Psychopathol Behav Assess. 2019 March ; 41(1): 53–59. doi:10.1007/s10862-018-9697-z.

Expression of Generalized Anxiety Disorder Across the Lifespan

Jeannette K. Correa, Timothy A. Brown

Boston University

Abstract

In generalized anxiety disorder (GAD), both the associated symptoms and worry content have been shown to vary as a function of age (Jeste et al., 2005; Portman et al., 2011). However, few studies have conducted analyses beyond mean comparisons and no studies have examined whether the observed differences in worry content and the associated symptoms are due to the lack of measurement invariance across age groups. The current study evaluated whether the measurement and expression of GAD in adults varied as a function of age, using a clinical sample of 375 participants and dimensional measures of GAD. The sample was divided into three age groups (OLDER = 60+, MID = 40–59, YOUNG = 20–39), matched by sex and GAD status. Two associated symptoms were found to exhibit differential item functioning, overall distress/interference as well as fatigue, with higher levels distress/interference and lower levels of fatigue found in the OLDER age group despite equivalent GAD severity levels across groups. When examining the content of reported worries, differential item functioning was found in four worry domains. Holding the latent dimension of worry severity constant: (a) the YOUNG age group was found to have higher reported rate of social worries, and (b) the OLDER age group was found to have higher levels of reported worries about community/world affairs and health of self. The OLDER age group also exhibited lower levels of worry about work and school. These results are discussed with regard to the assessment of GAD across the lifespan.

Keywords

Generalized Anxiety Disorder; Anxiety; Assessment; Differential Item Functioning; Age; GAD

Generalized anxiety disorder (GAD) consists of excessive and difficult to control worries that occur more days than not in multiple domains of daily life and last for a period of at least six months. These worries co-occur with a number of associated symptoms including sleep difficulties, irritability, difficulty concentrating, and somatic symptoms of muscle

Correspondence concerning this article should be addressed to Jeannette Correa, Center for Anxiety & Related Disorders, Department of Psychology, Boston University, 648 Beacon Street, 6th Floor, Boston, MA 02215-2013, phone: +1 617 353 9610, fax: +1 617 353 9609, lew@jean@bu.edu.

Conflict of Interest:

The authors declare that there is no conflict of interest.

Ethical approval:

All procedures performed in this study involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. This study received approval from the university's Institutional Review Board.

Informed consent:

Informed consent was obtained from all individual participants included in the study.

tension, restlessness, and fatigue (American Psychiatric Association, 2013). There has been some psychometric research on GAD criteria across the lifespan. Diefenbach et al. (2003) investigated clinical characteristics of persons aged 60–80 diagnosed with GAD and noted poor classification utilizing self-report measures among those deemed to have subthreshold GAD due to the lack of endorsement in the criteria of worry more days than not, difficulty controlling worry, and clinically significant distress and impairment. Lenze and Wetherell (2004) also reported difficulties diagnosing GAD across the lifespan, positing that some of these difficulties result from limitations in GAD diagnostic assessment tools (e.g., the use of different diagnostic tools across studies, inadequate tools to reliably diagnose elderly patients, and dichotomous, rather than dimensional, assessment of symptoms). Jeste et al. (2005) recommended that the criteria for anxiety disorders, in general, are in need of age-appropriate diagnostic criteria that would better capture interference from anxiety instead of interference from age-related limitations (e.g., physical fragility and reluctance to leave the house).

There has yet to be consistent evidence about how the content of worry varies across the lifespan. For example, adults 16–29 years old who participated in the National Survey of Mental Health and Well-Being were found more likely to worry about interpersonal relations, health, work, and miscellaneous topics, while adults over the age of 65 were found to worry more about the health of others (Goncalves & Byrne, 2013). In this study, it was determined that there was an overall decrease in worry content areas as individuals age. Additionally, Diefenbach, Stanley, and Beck (2001) found differences in worry content between older and younger adults consistent with age-related changes (e.g., older adults reporting increased worries about health). In a non-clinical sample, Hunt, Wisocki, and Yanko (2003) found that adults over the age of 64 worried more excessively about family, health, and world issues compared to their younger college-aged counterparts. Worry about finances varied with financial status, not age. Montorio et al. (2003) found that older individuals reported more worry about health and personal worries (e.g., maintenance of independence and autonomy). Finally, Lau, Edelstein, and Larkin (2001) found that older adults are less likely to endorse worry pertaining to physical symptoms.

Although the literature is sparse, research suggests that the associated symptoms of GAD may also vary across the lifespan. Miloyan and Pachana (2016) found that severity of fatigue and irritability resulted in greater impairment in a sample of those over 60 years old and concluded that individual symptoms of GAD can be differently associated with functional impairment within this age group. Heimberg, Turk, and Mennin (2004) noted that older individuals were more likely to endorse somatic symptoms of GAD (e.g., muscle tension), and noted that there is a lack of literature in those aged 75 and older that would allow for GAD to be evaluated in the context of age-related disorders. However, Beck, Stanley, and Zebb (1996) found no significant differences in self-reported GAD symptoms across the lifespan when comparing a sample of older adults aged 55–81 to younger samples collected by other researchers (e.g., Barlow et al., 1992; Borkovec et al., 1987).

Previous research suggests that there are age-related differences in worry domains and associated symptoms of GAD; however, this research has made the assumption that GAD criteria are measuring the same construct across the lifespan and that observed differences in

the features of GAD reflect true differences in the expression of the disorder as a function of age. Mean comparisons across groups are not meaningful without first determining if the measurement properties of the symptom measures are invariant across age groups. No studies have examined measurement invariance in worry domains across the lifespan and only two have examined invariance in the Diagnostic and Statistical Manual of Mental Disorders, fourth edition (*DSM-IV*) GAD symptoms. In the first study of GAD criteria invariance, older adults endorsed more fatigue and less irritability than younger adults holding underlying GAD severity constant, indicating measurement invariance (Kubarych, 2008). However, these results are limited by the non-clinical, all female sample.

In another non-clinical but nationally representative sample, Hobbs et al. (2014) evaluated age-related measurement invariance of GAD criteria and found evidence for differential item functioning in each age group comparison on each GAD criterion. However, it was determined that the effects were small and did not have an impact on whether or not GAD was assigned. These researchers concluded that the noninvariance found in the GAD criteria was not likely to result in an overall bias when interpreting clinical reports or epidemiological findings of GAD. This study was limited by the use of dichotomous measurement of symptoms, rather than dimensional ratings, resulting in a loss of information about the severity of these symptoms. To date, there has not been a study examining differential item functioning in GAD criteria and worry domains in a clinical sample. Thus, item-level invariance of GAD criteria across age groups in clinical samples has not yet been properly established. It is possible that noninvariance across groups has contributed to discrepant findings in prior literature. To conduct meaningful comparisons of GAD criteria and worry content across the lifespan, it is necessary to identify possible noninvariance at an item level.

The aim of this paper is to evaluate, in an exploratory manner, whether worry domains and associated symptoms of GAD are invariant across the adult lifespan in outpatients with anxiety and mood disorders. The features of GAD were assessed dimensionally, using clinical ratings obtained during a semi-structured diagnostic evaluation. It was hypothesized that mean differences noted in prior research would be found to be measurement artifacts due to lack of invariance in GAD criteria across age groups. For example, the mean differences in health worries observed across the lifespan may be noninvariant due to the difference in physical health status caused by the aging process.

Method

Participants

The sample consisted of 375 patients who presented to the Center for Anxiety and Related Disorders at Boston University, an outpatient clinic specializing in assessment and treatment of anxiety and mood disorders. Data were collected over a period from 1996–2007. The sample was divided into three age groups. The age groups were defined as those aged 60+ (OLDER), 40–59 (MID), 20–39 (YOUNG), and the groups were matched by sex and GAD status. The age range in the OLDER age group was 60–87. In total, there were 125 individuals per age group, within each group there were 36 females with a diagnosis of GAD, 17 males with a diagnosis of GAD, 36 males without a diagnosis of GAD, and 36

females without a diagnosis of GAD. The average age of the sample overall was 46.74 ($SD = 15.63$). The average ages within the OLDER, MID, and YOUNG age groups were 64.26 ($SD = 4.6$), 47.78 ($SD = 5.27$), and 28.19 ($SD = 5.53$). The sample was predominately Caucasian (89.3%, African-American = 4%, Asian = 5.1%, Latino/Hispanic = 1.3%, Other = 0.3%).

Diagnoses were established using the Anxiety Disorders Interview Schedule for *DSM-IV-TR*: Lifetime version (ADIS-IV-L; Di Nardo, Brown, & Barlow, 1994), a semi-structured interview designed to provide reliable diagnoses of the *DSM-IV-TR* anxiety, mood, somatoform, and substance use disorders, and to screen for the presence of other disorders such as psychotic disorders. The ADIS-IV-L provides dimensional assessment of diagnoses and their constituent features on a 0–8 scale; these diagnostic features are rated regardless of whether a *DSM-IV-TR* diagnosis is under consideration. The ADIS-IV-L is associated with good inter-rater agreement for current anxiety and mood disorders (Brown et al., 2001). It is administered by clinicians who are trained to a gold standard through a rigorous diagnostic matching process (Brown et al., 2001). The rates of frequent clinical diagnoses in the sample were: GAD (42.4%), social phobia (44.3%), major depressive disorder (30.7%), panic disorder (25.3%), obsessive-compulsive disorder (13.1%), and specific phobia (20.5%). Of note, GAD was diagnosed using the current *DSM-5* guideline that allows for the condition to be assigned during the course of a mood disorder (i.e., ignoring the diagnostic hierarchy rule that existed in *DSM-IV*). There were a total of 42 cases in which GAD was assigned only if the hierarchy rule was ignored (10 in the YOUNG group, 15 in the MID group, and 17 in the OLDER group).

Measures

ADIS-IV-L GAD worry excessiveness ratings.—Clinicians made severity ratings on a 0 (No worry/No tension) to 8 (Constantly worried/Extreme tension) scale on the excessiveness of worry in the following 8 domains: (1) minor matters; (2) work/school; (3) family; (4) finances; (5) social/interpersonal; (6) health (self); (7) health (significant others); (8) community/world affairs.

GAD criteria ratings.—Clinicians made severity ratings for each of the *DSM-IV* criteria for GAD on a 0 (None) to 8 (Very severe) scale. The ratings were: (1) excessive anxiety and worry occurring more days than not for at least 6 months; (2) difficulty controlling the worry; (3) restlessness, feeling keyed up on edge; (4) being easily fatigued; (5) difficulty concentrating or mind going blank; (6) irritability; (7) muscle tension; (8) sleep disturbance; (9) anxiety, worry or physical symptoms causing clinically significant distress or impairment.

Analytic Plan

MIMIC (multiple indicators, multiple indicator causes) models were used to evaluate for direct effects of age on the overall GAD factor as well as invariance at an item level. MIMIC modeling is a form of confirmatory factor analysis (CFA) that includes direct effects of a background variable (e.g., dummy coded age) on both a latent variable and its indicators. The selection of a MIMIC approach over a CFA multiple group solution was made because

the sample size requirements for MIMIC models are less restrictive (i.e., does not require a specification of separate measurement model in each subgroup). Additionally, MIMIC models are more parsimonious because fewer parameters are freely estimated than multiple-group CFA and, therefore, are easier to interpret than models that involve several groups (Brown, 2015).

Models were evaluated with Mplus 7.0 (Muthén & Muthén, 1998–2012). Separate CFA measurement and MIMIC models were created for GAD worry domains and GAD criteria ratings. There were no missing data in this sample. Model goodness of fit was evaluated using fit statistics including the root mean square error of approximation (RMSEA), the Tucker-Lewis index (TLI), the comparative fit index (CFI), and the standardized root mean square residual (SRMR) as defined by Hu and Bentler (1999). Good model fit was defined as follows: RMSEA values close to 0.06 or below (90% CI upper limit close to 0.06, nonsignificant CFI), CFI and TLI values close to .95 or above, and SRMR values close to .08 or below. Model acceptability was further evaluated by the presence/absence of localized areas of strains in the solutions (e.g., modification indices).

Results

Measurement Models

Worry domains model.—Prior to conducting the MIMIC model, a CFA for worry domains was examined to ascertain the fit and acceptability of a unidimensional solution. The initial measurement model for the excessiveness ratings for the 8 worry domains did not fit the data well, $\chi^2(20) = 71.83$, $p < .001$, SRMR = .06, RMSEA = 0.08 (90% CI = 0.06 to 0.10), TLI = 0.83, CFI = .88. Inspection of the modification indices suggested that model fit could be improved if correlated errors were estimated between the items for health of significant others and family, health of significant others and social/interpersonal, as well as finances and work/school. The modification indices were 28.35, 12.97, and 12.32, respectively. Due to the overlap in content of these worry domains (e.g., link between work and financial status), the model was respecified with correlated measurement error for these three pairs of items. The revised model fit the data well, $\chi^2(17) = 28.03$, $p = .045$, SRMR = .04, RMSEA = 0.04 (90% CI = 0.01 to 0.07), TLI = 0.96, CFI = .98. There were no additional areas of strain in the solution.

GAD ratings model.—The initial measurement model for the GAD criteria ratings did not fit the data well, $\chi^2(27) = 117.16$, $p < .001$, SRMR = .05, RMSEA = 0.09 (90% CI = 0.08 to 0.11), TLI = 0.93, CFI = .95. Inspection of the modification indices suggested that model fit could be improved if correlated errors were estimated between two sets of items, excessive anxiety and worry occurring more days than not for at least 6 months and difficulty controlling the worry, as well as difficulty concentrating and irritability. The corresponding modification indices were 27.26 and 25.20, respectively. The revised model provided an adequate fit to the data, $\chi^2(25) = 75.60$, $p < .001$, SRMR = .05, RMSEA = 0.07 (90% CI = 0.06 to 0.09), TLI = 0.96, CFI = .97.

MIMIC Models

The dummy coded age group variables were added to the final CFA measurement models as predictors of the GAD latent variables and its indicators. Due to the sample design of matched GAD status, there was not a significant direct effect of age on either the worry domain or GAD criteria factors. This indicates that the age groups did not differ on severity of excessive worry or GAD criteria.

Worry domains model.—The worry domains model is illustrated in Figure 1. Differential item functioning was found for four worry domains. In the work/school domain, the OLDER age group exhibited lower ratings than both the MID and YOUNG age groups when the latent variable of worry excessiveness was held constant (OLDER vs. YOUNG, $p < .001$; OLDER vs. MID, $p = .005$). In the social/interpersonal domain, the YOUNG group exhibited higher scores than the OLDER and MID groups at the same level of worry severity (YOUNG vs. MID, $p = .031$; YOUNG vs. OLDER, $p = .008$). In the community/world affairs domain, the OLDER group exhibited higher ratings at the same level of worry excessiveness than the MID age group (OLDER vs. MID, $p = .015$). Finally, within the health of self domain, holding the severity of worry excessiveness constant, the OLDER age group exhibited higher ratings than the YOUNG age group (OLDER vs. YOUNG, $p = .028$). Estimates and p -values are presented in Table 1 and Table 2. A significant result indicates that the symptom rating was noninvariant across age groups. For example, holding worry excessiveness constant, the OLDER age group had a mean .546 units higher than the young age group on the rating for worry about health of self.

GAD criteria model.—The GAD criteria model is presented in Figure 2. Two associated symptoms displayed noninvariance as a function of age: overall interference and distress and fatigue. At the same level of *DSM-IV* GAD severity, older individuals evidenced higher ratings of interference and distress than the YOUNG and MID age groups (OLDER vs. YOUNG, $p < .001$; OLDER vs. MID, $p = .004$). Fatigue scores also displayed differential item functioning as a function of age with the OLDER age group exhibiting lower ratings than the MID age group at the same level of underlying GAD severity (OLDER vs. MID, $p < .001$).

Discussion

Prior studies have obtained evidence of age group differences on various GAD features, but did not determine if measurement properties were the same across groups. The goal of the current study was to use a clinical sample to test measurement invariance of GAD symptoms and worry domains across young, middle-aged, and older adults. Differential item functioning was found across age groups in two GAD criteria and in the excessiveness ratings of four worry domains, although many of the significant differences found were in comparisons including the over 60 age group. These results confirm prior findings of noninvariance within GAD criteria (Hobbs et al., 2014; Kubarych et al., 2008) in a clinical sample.

Worry Domains

Holding overall levels of worry excessiveness constant, the severity of worry within certain content domains appears to be life stage dependent. Higher clinician ratings for excessive worry about social and interpersonal situations were observed in those aged 20–39, whereas lower ratings were observed for worry about work/school in those over 60. These findings are likely influenced by life stage differences including events like retirement and attending college.

As predicted, noninvariance was also found for the worry content area of personal health in those over the age of 60 (holding overall worry excessiveness constant) when comparing to those aged 20–39. This is likely reflective of the general increase in health problems found in those within this age range, again making this worry domain life stage dependent. The higher rate of endorsed health worries in this age group could be due to the general increase in prevalence of health-related difficulties that occur during the aging process. The worry about community and world affairs that was rated more severely among older adults may be reflective of a desire that friends and family will be left in a healthy community or a concern for the quality of life of loved ones. There were no significant findings relating to finances, family, or health of others.

GAD Criteria

Two of the *DSM* GAD criteria displayed differential item functioning across the lifespan, and the differential item functioning was exclusive to dyads including the group of those over 60. First, fatigue in those 60 or older was found to be rated lower by clinicians when compared to those 40–59 years old, despite the same level of GAD severity. Fatigue is the only somatic associated symptom that displayed differential item functioning, as muscle tension and restlessness were invariant. Differential item functioning was also found in the ratings of overall distress or impairment, and those over 60 had higher ratings when compared to both the MID and YOUNG age groups. Overall, these results indicate the necessity of accounting for the noninvariance found in GAD criteria in clinical samples in order to have meaningful comparisons across age groups moving forward.

Implications, Strengths, Limitations, and Future Directions

Because not all aspects of GAD may be invariant across the lifespan, it is possible that the literature has an inaccurate understanding of the expression of GAD though the use of faulty mean comparisons across groups. Any research examining predictive value or clinical correlates of GAD symptoms across the lifespan relies on accurate measurement of symptoms and assumes item invariance. A strength of this study was its inclusion of a sample assessed by clinicians with considerable experience diagnosing anxiety disorders. This study utilized ratings made by these skilled clinicians, rather than relying on self-report measures. This is a strength because patient self-reports can be fallible due to exaggeration or symptom endorsement by patients due to unrelated circumstances (i.e., lack of sleep, medical conditions, major life events) rather than resulting from GAD. Clinicians would be better able to recognize such exaggeration due to their ability to consider the context from which patients are reporting symptoms. Furthermore, the data were collected through a structured assessment, and all participants were from a clinical sample. This study compared

a wide range of ages, resulting in a comprehensive assessment of the differences seen in the expression of GAD across the adult lifespan. In addition, there was no exclusion based on comorbidity, resulting in a sample that is likely reflective of those diagnosed with GAD in other community outpatient settings.

Limitations of this study include having a finite number of participants over 60 years of age, which limited the overall sample size and the types of analyses that were able to be used. In addition, MIMIC modeling does not test for equality of factor loadings, which could provide a more detailed analysis of measurement invariance. It is important to note that item noninvariance can result from a number of sources. There is the possibility of rater bias (i.e., attributing reported symptoms to contexts unrelated to diagnoses) when assessing symptoms across age groups. For example, fatigue is symptom of GAD as well as the aging process and older adults were rated lower on this item than the other groups. It is possible that this finding results from assessors lowering their ratings when assessing those in the OLDER age group because they attribute reported fatigue as a symptom of aging rather than GAD. It is also unclear whether the noninvariance found in this sample had an impact on GAD diagnostic status, although Hobbs et al. (2014) found this was not the case within their sample. Future studies could use alternate methodology such as multiple group solutions in order to evaluate factor loadings of the GAD criteria and worry domains. Researchers should assess for the differential functioning of GAD criteria when conducting research across age groups and not assume that mean differences are representative of true differences in GAD expression. Although this study was limited to GAD, the lack of consistent measurement properties may be found in other disorders. Future studies should also continue to evaluate the measurement properties of disorder criteria across age and other demographic subgroups.

Funding:

This research was funded by a grant from the National Institute of Mental Health (R01 MH039096).

References

- American Psychiatric Association (2000). Diagnostic and statistical manual of mental disorders (4th ed., text rev.) Washington, DC: Author.
- American Psychiatric Association (2013). Diagnostic and statistical manual of mental disorders (5th ed.). Washington, DC: Author.
- Andrews G, Hobbs MJ, Borkovec TD, Beesdo K, Craske MG, Heimberg RG, Rapee RM, Ruscio AM, & Stanley MA (2010). Generalized anxiety disorder and options for *DSM-V*. *Depression and Anxiety*, 27, 134–147. [PubMed: 20058241]
- Barlow DH, Rapee RM, & Brown TA (1992). Behavioral treatment of generalized anxiety disorder. *Behavior Therapy*, 23, 551–570.
- Beck G, Stanley M, & Zebb B (1996). Characteristics of generalized anxiety disorder in older adults: A descriptive study. *Behaviour Research and Therapy*, 34, 225–234. [PubMed: 8881092]
- Borkovec TD, Mathews AM, Chambers A, Ebrahimi S, Lytle R & Nelson R (1987). The effects of relaxation training with cognitive or nondirective therapy and the role of relaxation-induced anxiety in the treatment of generalized anxiety. *Journal of Consulting and Clinical Psychology*, 55, 883–888. [PubMed: 3320121]
- Brown TA (2015). *Confirmatory factor analysis for applied research* (2nd ed.) New York: Guilford Press.

- Brown TA, Barlow DH, & Liebowitz MR (1994). The empirical basis of generalized anxiety disorder. *American Journal of Psychiatry*, 151, 1272–1280. [PubMed: 8067480]
- Brown TA, Di Nardo PA, Lehman CL, & Campbell LA (2001). Reliability of *DSM-IV* anxiety and mood disorders: Implications for the classification of emotional disorders. *Journal of Abnormal Psychology*, 3, 49–58.
- Diefenbach G (2001). Worry content reported by older adults with and without generalized anxiety disorder. *Aging and Mental Health*, 5, 269–274. [PubMed: 11575066]
- Diefenbach G, Hopko D, Feigon S, Stanley M, Novy D, Beck J, & Averill PM (2003). Minor GAD: Characteristics of subsyndromal GAD in older adults. *Behaviour Research and Therapy*, 41, 481–487. [PubMed: 12643969]
- Di Nardo PA, Brown TA, & Barlow DH (1994). *Anxiety Disorders Interview Schedule for DSM-IV: Lifetime Version (ADIS-IV-L)*. New York: Oxford University Press.
- Gonçalves DC, & Byrne GJ (2013). Who worries most?: Worry prevalence and patterns across the lifespan. *International Journal of Geriatric Psychiatry*, 28, 41–49. [PubMed: 22374912]
- Heimberg RG, Turk CL, & Mennin DS (2004). *Generalized anxiety disorder: Advances in research and practice*. New York: The Guilford Press.
- Hobbs M, Anderson T, Slade T, & Andrews G (2014). Relationship between measurement invariance and age-related differences in the prevalence of generalized anxiety disorder. *Journal of Affective Disorders*, 152, 306–312. [PubMed: 24148792]
- Hu L, & Bentler PM (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, 6, 1–55.
- Hunt S, Wisocki P, & Yanko J (2003). Worry and use of coping strategies among older and younger adults. *Journal of Anxiety Disorders*, 17, 547–560. [PubMed: 12941365]
- Jeste D, Blazer D, & First M (2005). Aging-related diagnostic variations: Need for diagnostic criteria appropriate for elderly psychiatric patients. *Biological Psychiatry*, 58, 265–271. [PubMed: 16102544]
- Kertz SJ, Bigda-Peyton JS, Rosmarin DH, & Björgvinsson T (2012). The importance of worry across diagnostic presentations: Prevalence, severity and associated symptoms in a partial hospital setting. *Journal of Anxiety Disorders*, 26, 126–133. [PubMed: 22078242]
- Kubarych TS, Aggen SH, Hettema JM, Kendler KS, & Neale MC (2008). Assessment of generalized anxiety disorder diagnostic criteria in the National Comorbidity Survey and Virginia Adult Twin Study of Psychiatric and Substance Use Disorders. *Psychological Assessment*, 20, 206–216. [PubMed: 18778157]
- Lau A, Edelstein B, & Larkin K (2001). Psychophysiological arousal in older adults: A critical review. *Clinical Psychology Review*, 21, 609–630. [PubMed: 11413869]
- Lenze EJ, & Wetherell J (2011). A lifespan view of anxiety disorders. *Dialogues in Clinical Neuroscience*, 13, 381–399. [PubMed: 22275845]
- Miloyan B, & Pachana N (2016). Clinical significance of individual GAD symptoms in later life. *Journal of Geriatric Psychiatry and Neurology*, 29, 92–98. [PubMed: 26377852]
- Montorio I, Nuevo R, Marquez M, Iza M, & Losada A (2003). Characterization of worry according to severity of anxiety in elderly in the community. *Aging and Mental Health*, 7, 334–341. [PubMed: 12959802]
- Muthén LK, & Muthén BO (1998–2012). *Mplus User's Guide 7.0*. Los Angeles, CA: Author.
- Newman M, Llera S, Erickson T, Przworski A, & Castonguay L (2013). Worry and generalized anxiety disorder: A review and theoretical synthesis of evidence on nature, etiology, mechanisms, and treatment. *Annual Review of Clinical Psychology*, 9, 275–97.
- Portman ME, Starcevic V, & Beck AT (2011). Challenges in assessment and diagnosis of generalized anxiety disorder. *Psychiatric Annals*, 41, 79–85.
- Wetherell JL, Thorp SR, Patterson TL, Golshan S, Jeste DV, & Gatz M (2004). Quality of life in geriatric generalized anxiety disorder: A preliminary investigation. *Journal of Psychiatric Research*, 38, 305–312. [PubMed: 15003436]

Figure 1.

Excessiveness of worry model. E1 = excessiveness rating for worries about minor matters, E2 = excessiveness rating for worries about work/school, E3 = excessiveness rating for worries about family, E4 = excessiveness rating for worries about finances, E5 = excessiveness rating for social and interpersonal worries, E6 = excessiveness rating for worry about personal health, E7= excessiveness rating for worry about health of significant others, E8= excessiveness rating for worry about community and world affairs, OLD= participants 60 years old and higher, MID= participants ages 40–59.

Figure 2.

GAD criteria model. R1 = rating for excessive anxiety and worry, occurring more days than not for at least 6 months, R2 = rating for difficulty controlling the worry, R3 = rating for restlessness; feeling keyed up on edge, R4 = rating for being easily fatigued, R5 = rating for difficulty concentrating or mind going blank, R6 = rating for irritability, R7 = rating for muscle tension, R8 = rating for sleep disturbance, R9 = rating for anxiety, worry or physical symptoms that cause clinically significant distress or impairment, OLD= participants 60 years old and higher, MID= participants ages 40– 59.

Table 1.

Item Level Analysis for Worry Content Areas

Items	Comparison groups	Estimate	S.E.	P-Value
Excessiveness				
Minor matters	Older-Young	0.064	0.260	.805
	Young-Mid	0.030	0.254	.905
	Older-Mid	0.034	0.252	.893
Work/school	Older-Young	-1.737	0.267	.001
	Young-Mid	-0.764	0.271	.005
	Older-Mid	-0.973	0.280	.001
Family	Older-Young	-0.108	0.230	.638
	Young-Mid	0.056	0.240	.817
	Older-Mid	-0.164	0.234	.484
Finances	Older-Young	0.277	0.263	.292
	Young-Mid	0.391	0.258	.130
	Older-Mid	-0.113	0.256	.658
Social/interpersonal	Older-Young	-0.682	0.259	.008
	Young-Mid	-0.554	0.256	.031
	Older-Mid	-0.128	0.256	.618
Health (self)	Older-Young	0.546	0.248	.028
	Young-Mid	0.368	0.259	.156
	Older-Mid	0.177	0.258	.491
Health significant others	Older-Young	0.108	0.210	.607
	Young-Mid	0.064	0.221	.771
	Older-Mid	0.044	0.209	.835
Community/world affairs	Older-Young	0.398	0.212	.101
	Young-Mid	-0.165	0.201	.411
	Older-Mid	0.513	0.212	.015

Note: Bolded values are statistically significant; Estimates shown are unstandardized.

Table 2.

Item Level Analysis for GAD Criteria

Items	Comparison groups	Estimate	S.E.	P-Value
GAD Criteria Ratings				
Excessive anxiety and worry, occurring more days than not for at least 6 months	Older-Young	−0.036	0.105	.734
	Young-Mid	−0.107	0.105	.210
	Older-Mid	0.072	0.107	.502
Difficulty controlling the worry	Older-Young	−0.166	0.105	.734
	Young-Mid	−0.107	0.105	.310
	Older-Mid	−0.182	0.112	.103
Restlessness; feeling keyed up on edge	Older-Young	−.0136	0.215	.527
	Young-Mid	−0.101	0.210	.630
	Older-Mid	−0.034	0.218	.874
Being easily fatigued	Older-Young	−.0436	0.247	.060
	Young-Mid	.0424	0.243	.080
	Older-Mid	−0.888	0.239	.001
Difficulty concentrating or mind going blank	Older-Young	−.0342	0.225	.129
	Young-Mid	−.0176	0.223	.429
	Older-Mid	−0.166	0.235	.480
Irritability	Older-Young	0.062	0.216	.775
	Young-Mid	0.099	0.207	.632
	Older-Mid	−0.037	0.219	.865
Muscle tension	Older-Young	−0.133	0.267	.620
	Young-Mid	0.175	0.257	.495
	Older-Mid	−0.308	0.236	.193
Sleep disturbance	Older-Young	−0.044	0.242	.857
	Young-Mid	0.083	0.248	.738
	Older-Mid	−0.126	0.250	.614
Anxiety, worry or physical symptoms that cause clinically significant distress or impairment	Older-Young	0.358	0.106	.001
	Young-Mid	0.031	0.111	.738
	Older-Mid	0.327	0.113	.004

Note: Bolded values are statistically significant; Estimates shown are unstandardized.