

## Anxiety, Depression, and Fall-Related Psychological Concerns in Community-Dwelling Older People

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**Objectives:** *Establish the association between affect and fall-related psychological concerns (fear of falling, fall-related self-efficacy, balance confidence, and outcome expectancy).* **Methods:** *A total of 205 community-dwelling older people (mean age 81, SD 7.5 years) completed the Geriatric Depression Scale–15, Geriatric Anxiety Inventory, Modified Survey of Activities and Fear of Falling, Falls–Efficacy Scale– International, Activity-Specific Balance Confidence Scale, and the Consequences of Falling Scale.* **Results:** *Hierarchical regression models showed that anxiety was independently associated with all fall-related psychological concerns; depression was only associated with falls efficacy. Associations between fall-related psychological concerns and age, gender, accommodation, medications, self-rated physical health, falls history, mobility, and sensory aids are also discussed.* **Conclusion:** *This is the first study that investigates the association between affect and the four fall-related psychological concerns. Anxiety was a significant factor associated with all four, whereas depression was only associated with activity avoidance. Implications for healthcare providers are discussed.* (Am J Geriatr Psychiatry 2013; 21:1287–1291)

**Key Words:** Anxiety, depression, fear of falling, fall self-efficacy, older people

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Worrying about falling in a frail older person can be functional and promote safety. When this worry becomes disproportionate to physical capabilities, it can result in unnecessary activity avoidance, physical deconditioning, reduced quality of life and, paradoxically, an increased risk of falling.<sup>1</sup> Identifying the factors associated with worrying about falling and activity avoidance will be important to shape the ways we prevent and intervene with these difficulties. Previous studies have focused on physical and contextual elements, with a relative dearth of research investigating the psychological aspects. This requires attention as avoidance and worry are characteristic symptoms of depression and anxiety, common mental health problems in older people.

There is no “gold standard” definition or measure of Fall-Related Psychological Concerns (FrPCs), which is reflected in an evidence base plagued by inconsistent construct utilization and misuse of measures.<sup>2,3</sup> Three commonly researched constructs are Fear of Falling<sup>4</sup> (FoF), Fall-Related Self-efficacy<sup>5</sup> (FSe), and Balance-Confidence<sup>6</sup> (BC). More recently, a fourth construct, the feared Consequences of Falling<sup>7</sup> (CoF), has also been studied. Although associated, these constructs are relatively independent of one another. A detailed introduction to these four constructs is available elsewhere.<sup>2,3</sup>

Known risk factors of FrPCs are female gender, age, and degree of illness or disability.<sup>1</sup> In addition, affect can negatively impact the physical function of the body. Anxiety can alter the responsiveness and sensitivity of the balance system, whereas depression has been associated with poor gait.<sup>8</sup> Therefore, it is not surprising that anxiety and depression have been correlated with FoF.<sup>9,10</sup> However, to date, no studies have assessed the relationship between FSe, BC, and

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OE with anxiety and depression. This study addresses this gap and hypothesized that affect would be significantly associated with all four FrPCs. A stronger association was anticipated for depression.

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## METHODS

A total of 205 self-selected participants, recruited from day centers for older people in London (UK), independently completed self-report measures during July–August 2009. Participants were only excluded if they could not complete the measures in English. Questionnaire presentation was counter-balanced to nullify order effects. Background information was collected for age, gender, living circumstance, mobility and sensory aids, prescribed medications per day, self-rated physical health, and fall history in the past 12 months.

FoF measured the degree of fall-related avoidance behavior with the Modified Survey of Activities and Fear of Falling<sup>4</sup> (mSAFFE). Fall-related self-efficacy is confidence in ones ability to perform daily activities without falling, measured by the Falls Efficacy Scale–International<sup>5</sup> (FES-I). Balance confidence related to situation-specific abilities to maintain balance while performing common daily activities, measured by the Activity-Specific Balance Confidence Scale<sup>6</sup> (ABC). Fall-Related Outcome Expectancy captures beliefs about the anticipated consequences of sustaining a fall, measured by the CoF scale.<sup>7</sup> Anxiety was assessed with the Geriatric Anxiety Inventory (GAI) and depression with the Geriatric Depression Scale–15 (GDS-15).

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## RESULTS

The sample consisted of 135 women and 70 men (71% white British) with a mean age of 81 (SD: 7.5, range: 68–97) years. Half lived alone, 72% required an aid to walk, 89% wore glasses, 27% a hearing aid, 58% took four or more prescribed medications per day, 64% self-rated their physical health as “good/very good,” and 62% had fallen in the past 12 months. Mean GAI score was more than 8 (9.50, SD: 6.81, 52% above clinical cut-off) and the GDS was more than 5 (5.46, SD: 3.38, 43% above clinical cut-off). Hierarchical multiple regressions were conducted with FrPCs as the dependent variable and the predictor variables as follows:

step 1) age, gender, history of falls, living circumstances, walking assistance, glasses, hearing aids, medications, self-rated physical health and step 2) GDS and GAI. See [Table 1](#) for a summary of the regression models.

### Fear of Falling

The background variables explained a significant amount of variance in the mSAFFE scores ( $F_{[9, 195]} = 15.04, p < 0.001, R^2 = 0.41, \text{adjusted } R^2 = 0.38$ ). The affect predictor variables at step 2 contributed a significant increase in variance explained from 41% to 50%, adjusted  $R^2 = 0.47$ , a significant change ( $F_{[2, 193]} = 17.573, p < 0.001$ ). The GDS ( $t_{[193]} = 3.44, p < 0.05$ ) and GAI ( $t_{[193]} = 2.18, p < 0.01$ ) made significant unique contributions to explaining mSAFFE scores. On the basis of the magnitude of significant standardized b values, the use of a walking aid made the greatest significant contribution to the model ( $\beta = 0.52, t_{[193]} = 8.39, p < 0.001$ ), followed by GDS ( $\beta = 0.23$ ), GAI ( $\beta = 0.15$ ), and female gender ( $\beta = -0.12, t_{[193]} = -2.04, p < 0.05$ ).

### Fall-Related Self-efficacy

The background variables explained a significant amount of variance in FES-I scores ( $F_{[9, 195]} = 27.70, p < 0.001, R^2 = 0.56, \text{adjusted } R^2 = 0.54$ ). Affect predictor variables at step 2 contributed a significant increase in variance explained from 56% to 62%, adjusted  $R^2 = 0.60$ , a significant change ( $F_{[2, 193]} = 15.19, p < 0.001$ ). The GAI ( $t_{[193]} = 3.65, p < 0.001$ ) made a significant unique contribution to explaining FES-I scores, the GDS did not. On the basis of the magnitude of significant standardized b values, the use of a walking aid made the greatest significant contribution to the model ( $\beta = 0.65, t_{[193]} = 12.07, p < 0.001$ ), followed by GAI ( $\beta = 0.23$ ), four or more medications per day ( $\beta = -0.20, t_{[193]} = -3.57, p < 0.001$ ), self-rated physical health ( $\beta = -0.16, t_{[193]} = -2.85, p < 0.01$ ), hearing aids ( $\beta = 0.16, t_{[193]} = 3.34, p < 0.01$ ), and female gender ( $\beta = -0.14, t_{[193]} = -2.64, p < 0.01$ ).

### Balance Confidence

The background variables explained a significant amount of variance in the ABC scores ( $F_{[9, 195]} = 14.49, p < 0.001, R^2 = 0.40, \text{adjusted } R^2 = 0.37$ ). The affect predictor variables at step 2 contributed a significant increase in variance explained from 40% to 53%, adjusted  $R^2 = 0.50$ , a significant change ( $F_{[2, 193]} = 26.00$ ,

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