

# Self-Reported Aging Anxiety in Greek Students, Health Care Professionals, and Community Residents: A Comparative Study

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**Purpose of the Study:** This study investigates the anxiety people feel about aging and the psychometric properties of the Anxiety about Aging Scale (AAS) in Greek samples. **Design and Methods:** The AAS was administered in 3 groups: 147 primary health care professionals, 74 Nursing and Social Work students, and 99 community residents. **Results and Implications:** A confirmatory factor analysis reproduced the 4 factors underlying the Greek-translated AAS, with acceptable reliabilities for the 3 samples. Multivariate analysis of variance showed that students expressed significantly more anxiety about aging (higher overall AAS score), more "Fear of old people," "Psychological concerns," and "Concerns about physical appearance," and less "Fear of losses," compared with professionals and community residents. Women reported the highest concerns about physical appearance compared with men. Students and professionals having experience with dementia showed lower and higher overall AAS scores, respectively, compared with those who had no such experience. The younger professionals without experience and the less educated ones with experience expressed higher overall anxiety about aging than the older professionals and the less educated both without experience. Our findings suggest the importance of implementing appropriate educational interventions and ongoing training tailored to

assuage students' and professionals' anxiety about their own aging and lessen their agist attitudes toward old people.

*Key Words:* Anxiety about aging, Primary health care professionals, Nursing and Social Work students, Anxiety about Aging Scale, Agism

Lasher and Faulkender (1993) have defined anxiety about aging as the concern and anticipation of adverse physical, mental, and personal losses during the aging process. They have suggested that it could mediate the association between attitudes and behaviors toward elders and adaptation to one's own aging process. A growing body of research has linked aging anxiety and agism (Allan & Johnson, 2009; Boswell, 2012a; Harris & Dollinger, 2003). Most definitions refer to agism as the discriminatory and stereotyping behavior against old people (Butler, 1969), whereas others have also included the alteration in feelings and beliefs (Levy & Banaji, 2002, p. 50 in Bugental & Hehman, 2007).

The primary purpose of this study was the investigation of aging anxiety, using the Anxiety about Aging Scale (AAS; Lasher & Faulkender, 1993), in three Greek samples: professionals working in primary care, students of Nursing

and Social Work Departments, and community residents. The effect of age, gender, and education was examined. We also explored whether experience with elders affected by a debilitating disease of old age influences aging anxiety. Greece is a Southern-European country with a rapidly aging population. Life expectancy at birth is currently 77.7 years for men and 82.1 for women (Eurostat, 2012). Pensioners are often not yet in need of care; they may be socially active, and many, until the beginning of the economic crisis in 2009, were financially independent.

Large increases in the population of older adults in western societies suggest the need for students and professionals of health and social care interested in and committed to work with elders. Abundant evidence also links students' interest in working with older adults with experience with aging (Eshbaugh, Gross, & Satrom, 2010) and their attitudes toward older people (Hughes et al., 2008; Koren et al., 2008). However, it has been found that age bias is present in medical (Hughes et al., 2008), nursing (Koren et al., 2008), and social work students (Council of Social Work Education [CSWE], 2001). Anderson and Wiscott (2003) found that, although there were no differences in aging anxiety between social work and nonsocial work students, overall 22.3% of the students expressed high personal aging anxiety. Health and social care professionals also adopt negative attitudes about aging and the elders. Wells, Foreman, Gething, and Petralia (2004) have found that nurses expressed higher anxiety about aging than other health professionals. Social workers' reluctance of seeking or accepting positions involving work with elders may be linked to age bias (CSWE, 2001).

Aging anxiety may stem from lack of factual knowledge about the process of aging (Doka, 1985). It has been shown that knowledge of aging is associated with aging anxiety (Cummings, Kropf, & DeWeaver, 2000; Harris & Dollinger, 2003). Both Boswell (2012b) and Allan and Johnson (2009) found a negative relationship between knowledge and aging anxiety.

Aging anxiety can also derive from lack of close interactions with older people in daily life (Ory et al., 2003) and could be alleviated with more intergenerational contacts. The intergroup contact hypothesis suggests that contact between groups under optimal conditions could effectively reduce intergroup prejudice (Allport, 1954). Yan, Silverstein, and Wilber (2011) found baby boomers having less contact with older adults to express

more aging anxiety. However, Bousfield and Hutchison (2010) suggested that qualitative contact (e.g., voluntary interactions, involving cooperation) affects positively young people's aging anxiety. Allan and Johnson (2009) have shown that students who had frequent contact and interactions with elders in the workplace expressed less aging anxiety than those who did not have interactions with elders, whereas those who cohabited with an elderly relative had higher aging anxiety than those who did not live with an elderly relative. They suggested that there might be qualitative differences in the type of contact with elders at home or in the workplace that influence aging anxiety.

Furthermore, agism and aging anxiety have been linked to cultural influences. It has been hypothesized that discrimination against older people might be more prevalent in western more individualistic societies than in collectivistic traditional ones because the latter place a strong emphasis on the interdependence of family members and hold values supporting and honoring the elderly people (Boggatz & Dassen, 2005). However, recent findings showed that the residents of a "traditional society" like South Korea experiencing a very rapid socioeconomic development have higher overall levels of aging anxiety compared with Americans (Yun & Lachman, 2006). Greece displays a mixture of collectivistic and individualistic features. In recent years, traditionally strong family values fade out as an outcome of social and economic changes. It is expected that older members may no longer be able to obtain sufficient care services or support from the family as in the past. For instance, intergenerational coresidence, a typical form of support for older people, declines and is expected to decline further (Karagiannaki, 2011).

Certain social and demographic variables have been associated with aging anxiety. Most researchers have shown that women are more concerned about loss of attractiveness accompanying aging (McConatha, Schnell, Volkwein, Riley, & Leach, 2003) and experience more anxiety about their own aging than do men (Abramson & Silverstein, 2006; Barrett & Robbins, 2008; Bugental & Hehman, 2007; Cummings et al., 2000; Harris & Dollinger, 2003; Lynch, 2000), whereas Lasher and Faulkender (1993) found the opposite result. Age differences have also been found in both attitudes toward the elderly people and aging anxiety. Studies find that young adults have more negative views and greater anxiety about their own aging than the

older ones (Lynch, 2000). Higher socioeconomic status, measured by education, profession, or income, has been associated with lower aging anxiety (Lynch, 2000; Yan et al., 2011), perhaps because resources provide the means to deal with many of the challenges of aging (Abramson & Silverstein, 2006).

In line with the previous findings, it was hypothesized that (1) the Greek translation of the AAS will have psychometric properties similar to those reported for the English version in terms of its latent structure and reliability and (2) sampling group, gender, age, educational level, and experience with dementia were expected to have an effect on the aging anxiety, as follows:

- Group differences in aging anxiety were expected, with community residents expressing more aging anxiety compared with students and professionals. The latter will have the lowest scores presumably because they should be more knowledgeable through formal education.
- Women are more likely to experience higher aging anxiety compared with men as they undergo a process of double devaluation, facing both agist and sexist stereotypes.
- Younger adults will have more aging anxiety compared with older participants.
- Those with less formal education will experience greater aging anxiety than those who are better educated.
- Those with experience of dementia patients may express more aging anxiety compared with those who have no such experience because their contact with impaired elderly people presumably reinforces the negative images of aging.

It must be stressed that most studies explore beliefs of aging and aging anxiety in separate populations (e.g., students or specific subgroups of health care professionals) and, to the best of our knowledge, none has compared professionals with students and/or laypersons. This research enriches the literature on aging anxiety as no study to date has examined this issue in Greece.

## Design and Methods

### Participants

Three samples were recruited: 147 (47 men and 100 women) health and social care professionals, 74 (11 men and 63 women) senior undergraduate students enrolled in the Health and Social Welfare

School of TEI of Crete, and 99 (49 men and 50 women) community residents. The health care professionals working in all primary health care centers (17) located in the four departments of Crete were initially approached ( $N = 180$ , approximately). Finally, 147 of them consented to participate (response rate >80%). They consisted mainly of physicians (40.8%), nurses (23.8%), midwives (9.5%), and social workers (8.8%). Their age ranged from 18 to 65 ( $Md$  age group = 36–40). The majority declared providing services to persons aged more than 51 (61.3%). The students' sample was recruited from the classes of the authors (response rate ~86%). Students were selected to be seniors so as to have already received the positive effects of formal education associated with aging issues. Their age ranged from 21 to 45 ( $Md$  age group = 21–25). Community residents were recruited using the snowball/chain-sampling technique, for which questionnaires were sent or handed out to authors' acquaintances (friends, family, and colleagues). They were employees in the private sector (33.3%) or had other nonscientific positions (57.6%), and their age ranged from 23 to 59 ( $M = 32.8$ ,  $SD = 7.5$ ). All participants were residents of the island of Crete though a percentage of them were not native Cretans (63.5% of the students and 23.2% of the community residents; we kept no records for the professionals). Participants' detailed sociodemographic characteristics are presented in Table 1.

### Measures and Procedure

**Aging Anxiety.**—Participants were given the AAS (Lasher & Faulkender, 1993), which measures the overall anxiety people feel about aging. After subsequent principal components analyses of the initially developed 84 items of the scale and item elimination of the various factor solutions, 20 items were retained, allocated in four subscales of five items each (Lasher & Faulkender, 1993): (1) fear of old people (i.e., discomfort and dissatisfaction derived from interactions with older adults), (2) psychological concerns about aging (i.e., concerns about psychological tasks or changes associated with aging), (3) anxiety about physical appearance (i.e., anxiety about changes in physical appearance), and (4) fear of losses associated with aging (i.e., anxiety about expected sources of loss in old age, such as independence). The responses are given on a 4-point Likert-type scale, ranging from 1 (strongly agree)

Table 1. Participants' Sociodemographic Characteristics

Characteristics	All (n = 320)	Professionals (n = 147)	Students (n = 74)	Community residents (n = 99)	$\chi^2$ (p)
Gender (%)					23.08 (.000)
Male	33.4	32.0	14.9	49.5	
Female	66.6	68.0	85.1	50.5	
Median age group	31–35	36–40	21–25	31–35	238.8 (.000)
Marital status (%)					
Not married	51.3	24.5	97.3	56.6	110.42 (.000)
Married	44.4	69.4	2.7	38.4	
Children (%)	34.4	54.4	2.7	28.3	60.72 (.000)
Educational level	University	Technical	University	High-school	75.01 (.000)
Family monthly income in Euros (%)					62.8 (.000)
<1,000	38.2	21.1		63.6	
1,000–1,500	43.5	49.0		35.4	
1,500–2,000	9.8	16.3		0.0	
>2,000	8.5	13.6		1.0	
Experience with dementia (%)	54.7	63.3	47.3	47.5	8.07 (.018)
Patients		100.0			
Relatives			62.8	43.9	
Friends			17.1	12.2	
Acquaintances			20.1	43.9	

to 4 (strongly disagree). Seven items are reverse scored. An overall anxiety score and four subscales' scores are produced. Higher scores indicated higher levels of aging anxiety. There is a lot of research related to AAS validation and factorial structure (Yu-Jing, 2012). The AAS has proved its efficacy as a diagnostic tool (Boswell, 2012a, 2012b) and its usefulness in intervention, such as education (Harris & Dollinger, 2003), and has also been used in cross-cultural studies (Bergman, Bodner, & Cohen-Fridel, 2013; Yun & Lachman, 2006). The AAS was translated into Greek by a bilingual English-speaking health professional; it was then backtranslated by an independent bilingual Greek professional, who had not seen the original version. The researchers compared both the English and the Greek versions and were able to reach a consensus view. Satisfactory internal reliability (scale: .82; subscales: from .69 to .78), face validity, and construct validity have been reported by Lasher and Faulkender (1993).

*Experience With Dementia or Alzheimer's Disease.*—Professionals were asked whether they had *professional* experience of dementia patients ("Have you treated any dementia patient?"), whereas students and community residents were asked whether they had *personal* experience of

a person with either Alzheimer's disease (AD) or dementia ("Did you ever have any personal experience with a person diagnosed with Alzheimer's disease or with other dementia within your family or social network?"). Students and community residents were additionally asked about their experience with AD patients as it has been shown that nonexperts may not be competent of skillful differential diagnosis (Kalaitzaki, Kateri, & Pattakou-Parasyri, 2012). Both questions about experience were combined into one variable labeled "experience with dementia."

## Results

### *Latent Factor of the AAS*

To test the first hypothesis, a confirmatory factor analysis (CFA), using Analysis of Moment Structures (AMOS 6) software, was conducted to confirm the four-factor model of the AAS. The  $\chi^2$ /degrees of freedom ratio (CMIN/DF) less than 3, the standardized root mean square residual between 0.5 and 0.10, goodness-of-fit index and the comparative fit index more than 0.90, and finally the root mean square error of approximation between 0.05 and 0.08 were considered a good fit. For the comparison of the nested models, the difference in  $\chi^2$  values ( $\Delta\chi^2$ ) between the two models was examined.



The original model of the four scales (Model I) did not have acceptable fit. Goodness-of-fit statistics related to a respecified model (Model II) revealed that the incorporation of the error covariance between the items 5 (*I fear it will be very hard for me to find contentment in old age*) and 17 (*I am afraid that there will be no meaning in life when I am old*) made a substantially large improvement to model fit ( $\Delta\chi^2_{(1)} = 60.326$ ,  $p < .0001$ ). Due to obvious content overlap between item 1 (*I enjoy being around old people*) and item 13 (*I feel very comfortable when I am around an old person*), the error covariance between these items was incorporated in the subsequent model (III), which resulted in a further statistically significant drop in all goodness-of-fit indices ( $\Delta\chi^2_{(1)} = 43.427$ ,  $p < .0001$ ). Model III was considered to represent the best fitting and the most parsimonious model to represent the data (Table 2).

### Reliability of the AAS

Cronbach's alpha assessed the subscales' reliability. Consistent with the first study hypothesis, the alpha coefficients for the overall scale were good (professionals: .86, students: .84, and community residents: .80). The subscales' alphas ranged from .57 (for the professionals in the "fear of losses" subscale) to .88 (for the students in the "fear of old people" subscale). Results will be interpreted with the caution for the "fear of losses" subscale with alphas less than .70 among the three samples.

### AAS Differences as a Function of Sampling Group, Gender, and Experience With Dementia

Because of the sample sizes, two separate sets of analyses were required to examine the second hypothesis. A three-way factorial multivariate analysis of variance (MANOVA), using the four AAS subscales as dependent variables and *group*

(1 = professionals, 2 = students, and 3 = community residents), *gender* (1 = male, 2 = female), and *experience with dementia* (1 = yes, 0 = no) as independent variables, was performed. Where significant multivariate effects were revealed, follow-up univariate analyses of variance (ANOVAs) were conducted using Bonferroni-corrected alpha levels (.05/4 = .0125). Likewise, a 3 (Group)  $\times$  2 (Gender)  $\times$  2 (Experience with dementia) ANOVA on the overall AAS score was performed. In both analyses, all possible interactions of the group with the other two independent variables were tested.

MANOVA revealed a significant multivariate effect of "Group" on the four AAS subscales (Wilks's  $\lambda = 0.434$ ,  $F_{(8,616)} = 39.92$ ,  $p = .000$ , partial  $\eta^2 = 0.341$ , and power = 1.000), and ANOVA revealed a significant effect of "Group" on the overall AAS score. In contrast to our expectations, students showed higher overall score compared with the other two groups. They also had the highest means in the subscales of "fear of old people," "psychological concerns," and "concerns about physical appearance" and the lowest mean in the "fear of losses" subscale compared with the professionals and community residents (Table 3).

A significant multivariate main effect of "Gender" on the four AAS subscales was also found (Hotelling's Trace = 0.066,  $F_{(4,308)} = 5.076$ ,  $p = .001$ , partial  $\eta^2 = 0.062$ , and power = .964). The univariate ANOVAs revealed a significant effect only on "physical appearance" ( $F_{(1)} = 12.634$ ,  $p = .000$ , partial  $\eta^2 = .039$ ), with women, consistent to our expectations, showing the highest mean score (2.50) compared with men (2.23). ANOVA revealed a significant "Group  $\times$  Experience" interaction effect on the total AAS score ( $F_{(2)} = 4.072$ ,  $p = .018$ , partial  $\eta^2 = .026$ ). Despite the expectations, students without experience with dementia showed the highest mean overall score (10.35) compared with those with experience (9.88), whereas consistent with our hypothesis, professionals and community residents without experience showed the lowest mean overall score

Table 2. Summary Goodness-of-Fit Statistics of the Four-Factor Model

	CMIN/DF	SRMR	GFI	CFI	RMSEA
Model I (original model)	3.385	0.099	0.866	0.862	0.086
Model II (err5 $\leftrightarrow$ err17)	3.020	0.079	0.874	0.884	0.080
Model III (err1 $\leftrightarrow$ err13)	2.821	0.064	0.890	0.907	0.072

Notes: CMIN/DF =  $\chi^2$ /degrees of freedom; SRMR = standardized root mean square residual; GFI = goodness-of-fit index; CFI = comparative fit index; and RMSEA = root mean square error of approximation.

Table 3. Differences Between the AAS Overall and Subscales' Scores as a Function of the Sampling Group

AAS subscales	Health-care professionals	Students	Community residents	<i>F</i> ( <i>p</i> )	Partial $\eta^2$	Observed power
	<i>M</i> (CI)	<i>M</i> (CI)	<i>M</i> (CI)			
Fear of old people	1.8 (1.7–1.9)	2.8 (2.7–3.0)	2.1 (2.0–2.2)	58.299 (.000)	.273	1.000
Psychological concerns	2.0 (2.0–2.1)	2.8 (2.7–3.0)	2.3 (2.2–2.4)	40.165 (.000)	.205	1.000
Physical appearance	2.1 (2.0–2.2)	2.8 (2.6–2.9)	2.2 (2.1–2.3)	20.901 (.000)	.118	1.000
Fear of losses	2.4 (2.3–2.4)	1.7 (1.5–1.8)	2.6 (2.5–2.7)	48.992 (.000)	.240	1.000
Total	8.4 (8.1–8.6)	10.1 (9.7–10.6)	9.1 (8.8–9.4)	24.494 (.000)	.136	1.000

Notes: CI = confidence interval; AAS = Anxiety about Aging Scale. Higher scores indicate higher anxiety (i.e., more fear of aging, more psychological concerns, more concerns about physical appearance, and more fear of losses).

(8.06 and 8.64, respectively) compared with those with experience (8.64 and 9.42, respectively) (Figure 1).

### AAS Differences as a Function of Age Groups, Educational Levels, and Experience With Dementia

At the second step, a three-way MANOVA for the four AAS subscales and a three-way ANOVA for the overall AAS score were conducted in the group of professionals and in the group of community residents with *age group* (1 = 18–30, 2 = 31–40, 3 = 41–50, 4 = 51 and over), *educational level* (1 = up to high school, 2 = University and over), and *experience with dementia* as independent variables. Bonferroni correction was also applied. All possible interactions of the independent variables were examined. The analyses could not be performed in the group of students because of small cell sizes.

In the group of professionals, a significant multivariate main effect of “Age” on the four AAS subscales was found (Wilks’s  $\lambda = 0.827$ ,  $F_{(12,336.3)} = 2.081$ ,  $p = .018$ , partial  $\eta^2 = 0.061$ , and power = .890). Univariate effect was significant only for the subscale “fear of old people”: as hypothesized, the older the professionals, the less fear of old people they expressed ( $F_{(3)} = 4.153$ ,  $p = .008$ , and partial  $\eta^2 = .087$ ). Pairwise comparisons showed significant differences between the age group of 31–40 years old (2.03) and more than 51 (1.45) ( $p = .016$ ).

A significant “Educational level  $\times$  Experience” interaction effect was found on the four subscales (Hotelling’s Trace = 0.087,  $F_{(4,27)} = 2.767$ ,  $p = .030$ , and partial  $\eta^2 = 0.080$ , power = .747) and on the overall score ( $F_{(1)} = 4.493$ ,  $p = .036$ , and partial  $\eta^2 = .033$ ). The univariate ANOVAs revealed a significant effect on the “psychological

concerns” ( $F_{(1)} = 7.233$ ,  $p = .008$ , and partial  $\eta^2 = .053$ ) and “concerns about physical appearance” ( $F_{(1)} = 6.984$ ,  $p = .009$ , and partial  $\eta^2 = .051$ ). As expected, professionals of low educational level (i.e., up to high school), who had experience with dementia, expressed higher scores on “psychological concerns” (2.42), “concerns about physical appearance” (2.81), and overall score (9.61), compared with professionals of low educational level, who had no experience with dementia (1.73, 2.10, and 7.83, respectively).

ANOVA also revealed a significant “Age groups  $\times$  Experience” interaction effect ( $F_{(3)} = 3.088$ ,  $p = .030$ , and partial  $\eta^2 = .067$ ) on the overall AAS score. Professionals aged 31–40 years without experience of dementia patients reported higher overall score (9.68) compared with those aged 41–50 years (7.25).

In the group of community residents, although a significant “Educational level  $\times$  Experience” interaction effect was found (Hotelling’s Trace = 0.132,  $F_{(4,84)} = 2.777$ ,  $p = .032$ , partial  $\eta^2 = 0.117$ , and power = .740), univariate ANOVAs failed to reach significance in any of the four subscales. No significant results for the overall AAS score were found.

### Discussion

The main goal of this study was to compare anxiety about aging among three groups: health care professionals, students, and community residents. The effect of gender, age, educational level, and experience with dementia on aging anxiety was also examined.

Consistent with the first study hypothesis, the Greek participants’ overall anxiety is measured by four factors. The CFA showed that the misspecified error covariances in the respecified models pertained to those pairs of items with highly overlapping content, suggesting that the number of AAS

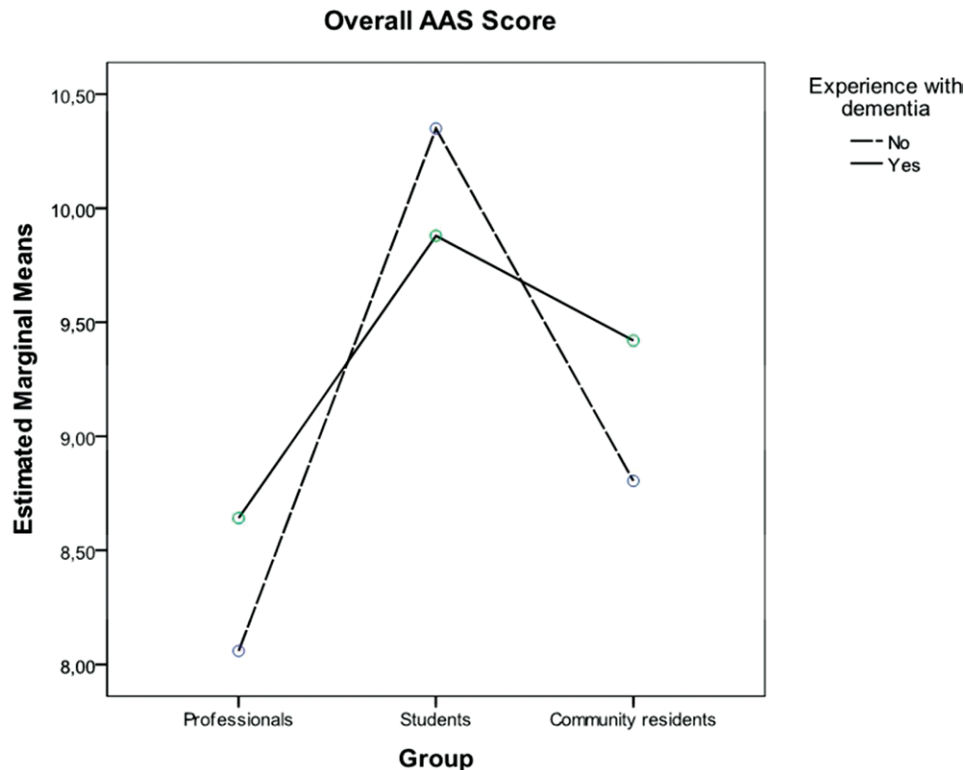


Figure 1. Mean scores as a function of the “Group × Experience” interaction in the overall Anxiety about Aging Scale score.

items may need to be reduced or that the overlapping items need to be revised. No such exercise was attempted in this study as the reliabilities were, in general, comparable to those reported by Lasher and Faulkender (1993). They also found reliability below .70 for the “fear of losses” subscale.

Although images of older people have been improved over the past years among the general population (Jönson, 2013), it was expected that community residents would display overall more aging anxiety compared with the other two groups because they have no relevant formal education with elderly people. Contrary to our hypothesis, students—and not community residents—had the highest overall score, and, as expected, professionals had the lowest score compared with the other groups. Students also expressed significantly more “fear of old people,” more “psychological concerns,” and more concerns about “physical appearance.”

It is not clear why students displayed higher aging anxiety compared with the other groups. However, explanations could be given both in terms of their young age and the fact that they are students. Although the students in our study were all graduates, one explanation may be that younger people have misconceptions and less accurate knowledge about the aging process (Doka, 1985), which has been shown to negatively influence aging

anxiety (Allan & Johnson, 2009; Boswell, 2012b; Cummings et al., 2000; Lynch, 2000; Yan et al., 2011). In a Greek study, graduate nursing students expressed more positive attitudes toward older people than first year students (Lambrinou, Sourtzi, Kalokerinou, & Lemonidou, 2009). The inverse relationship between knowledge of aging and aging anxiety implies that accurate knowledge about the elders may assuage fears about the future aging process. It can be assumed that, although the students in our study were all graduates, they may lack accurate knowledge about aging. In the curriculum of each of their departments (nursing and social work), there is only one module specifically focusing on the aging process. The need to incorporate geriatric training in medical and nurse educational programs has been documented in United States (Bardach & Rowles, 2012) and European countries too (Koren et al., 2008; Pulcini, Jelic, Gul, & Loke, 2010).

The age-stereotype literature suggests that for the younger persons the items measuring aging anxiety may reflect more a “fear” of the unknown rather than a state of being (i.e., old persons have experience of old age) (Lynch, 2000). Yan and colleagues (2011) suggest that anxiety is greater for the “unknown” or that events are perceived more frightening than they actually experienced. Students’ aging anxiety may also be explained

by the prevalence of societal standards regarding the qualities associated with youth (e.g., physical appearance), which are valued over the qualities associated with age (e.g., life experience of older people). The stereotype embodiment theory (Levy, 2009) proposes that exposure to cultural stereotypes leads gradually to their assimilation. In line with this theory, it is possible that younger people internalize ageist beliefs and stereotypes prevalent in society and the media, affecting negatively their views of aging (Kotter-Grühn & Hess, 2012).

Consistent with the study's hypothesis, a "Group  $\times$  Experience" interaction was partially supported. Although experience with dementia was expected to interact positively with aging anxiety, in the group of students the reverse interaction was found: those having personal experience with older people with dementia (e.g., relatives) reported lower overall aging anxiety compared with those who had no such experience. In line with this result, Kalaitzaki and colleagues (2012) have shown that personal experience with AD is associated with less intense emotional reactions toward an AD patient (e.g., anxiety, aggression, and rejection). It is unlikely that the students are carers of elders with dementia, and if they have personal contact with relatives with dementia this would be indirect and occasional. We do not, however, know the quality of their contact, and this should be examined in a future research. In the group of professionals and community residents, the expected interaction was found: those with experience with dementia patients demonstrated higher overall levels of aging anxiety compared with those who had no such experience. This could be due to the fact that professionals and community residents are disproportionately exposed to the negative images of the debilitating and dependent elderly people in their roles either as formal or as informal carers, respectively (Moorman and Macdonald, 2013).

An interesting finding is that students had the lowest score in the "fear of losses" subscale compared with professionals and community residents. Fear of losses involves concerns of no longer having intangible aspects of life (e.g., meaning, friendship, and self-sufficiency). For example, retirement and death of a spouse or close friends carry with them the loss of important aspects of one's existence, such as friendship and belongingness. Thus, people, prevailing in the groups of professionals and community residents, may fear that "losses" are likely to occur in the near future compared with the students who are younger and consider losses

a remote possibility. They may also prioritize what is important for them at present (such as fear of looking old or fear of finding contentment in life) and not what might happen in the future (e.g., health deterioration or death of friends).

With respect to gender, women scored significantly higher on the "physical appearance" subscale compared with men. This result supports our initial hypothesis and previous findings, showing that women tend to worry more than men about loss of attractiveness accompanying aging (Barrett & Robbins, 2008; Bugental & Hehman, 2007; Lynch, 2000; McConatha et al., 2003; Yun & Lachman, 2006). Our data also confirmed the effect of age only on the "fear of old people" subscale, with the older professionals expressing less fear. This finding corroborates those of other studies demonstrating that aging anxiety decreases with age (Lynch, 2000). A significant "Experience  $\times$  Education" interaction was found in the hypothesized direction: in professionals of lower educational level (i.e., up to high school) experience with persons with dementia increases overall aging anxiety and anxiety on two subscales (i.e., psychological concerns and physical appearance). It could be assumed that the less educated professionals are (e.g., midwives) the more difficulties they have in coping effectively with the stress deriving from the exposure to ill and dependent old people.

It might be speculated that the economic crisis in Greece will reinforce anxiety about aging. Studies have shown that financial concerns could associate with frailty over time (Dong, Chang, Wong, & Simon, 2012; Peek, Howrey, Ternent, Ray, & Ottenbacher, 2012). Within a context of social and financial insecurity, Greek people will have serious concerns about their health and their ability to access appropriate health care in old age. In line with the cumulative disadvantage theory (O'Rand, 1996), Dannefer (2003) has suggested that concerns about the ability to handle losses, support oneself financially, and access appropriate health care in old age may be particularly acute for those with few economic resources, causing them to anticipate a problematic old age.

The study has several limitations. First, generalization of results is not permitted because of the use of convenience samples and not probability ones. The "fear of losses" subscale had relatively weak internal reliability, and results should be cautiously interpreted. Future research should clarify certain qualitative aspects of experience with old people, not necessarily the impaired ones. Future research



should determine whether aging anxiety is prevalent in similar samples. More homogenous subsamples are also required. It should also be examined whether aging anxiety affects students' decision to work with the elderly people and professionals' quality of care.

Although it could be argued that students may outgrow aging anxiety effortlessly as they age and have more experience with elders, it is considered necessary to identify students' aging anxiety early enough. Education on gerontology issues has been shown efficient in increasing knowledge and reducing aging anxiety (Boswell, 2012b), and anxiety has been found to be the only mediational factor between knowledge and agism (Allan & Johnson, 2009). Knowledge of aging has also been linked with students' interest in working with older adults (Boswell, 2012b). Preventive actions targeting education could be suggested, such as (1) enhancement of the curriculum with gerontological content (Boswell, 2012b; Yan et al., 2011) and (2) increase of positive interactions with elders (Yan et al., 2011).

Community residents, the second group at risk, could benefit in their role as caregivers of a patient with dementia from educational and cognitive rehabilitation skills training for reducing the care-related strain and improving psychosocial well-being (Judge, Yarry, Looman, & Bass, 2013) or cognitive-behavioral treatment for improving mental health and dysfunctional thoughts about caregiving (Rodriguez-Sanchez et al., 2013). In sum, this study serves as a step in our understanding of aging anxiety in the cultural context of Greece enriching the literature on the subject. In general, it confirms the findings of other researchers. Furthermore, it provides insights for further research that might lead to more definitive conclusions leading to the implementation of policies and programs to deal with aging anxiety and agism in health and social care professionals and society.

#### Supplementary Material

Supplementary material can be found at: <http://gerontologist.oxfordjournals.org>.

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