A research on anxiety and depression of the elderly in the community

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ABSTRACT

Introduction: Aging is a normal process in the course of human life. It is not a disease, but a condition with many particularities. It is characterized by a decline in organic function and degeneration of the human body cells resulting in physical, biological, intellectual, mental and social downfall.

Aim: The aim of the research study was to measure anxiety and depression levels of the elderly in community structures.

Methods: The study was conducted in Primary Health Care Structures of Lamia Municipality of the region of Central Greece as well as in Structures of Athikies Municipality of the region of Peloponnese. For data collection, an anonymous self-compiling questionnaire was used.

Results: The 81.6% (n=102) of the participants had a >3 anxiety score, which states the presence of anxiety symptoms, while 18.4% (n=23) had a ≤3 anxiety score, which states the absence of anxiety symptoms. The depression for the 84.8% (n=106) of the sample was calculated as >3 in the depression score, which states the presence of depression symptoms, while 15.2% (n=19) of the participants had a ≤3 depression score, which states the absence of depression symptoms.

Conclusions: One can easily understand, from this study, that the elderly display high anxiety and depression levels. The female gender and living away from close family are positively related to the development of anxiety or depression in the elderly.

Key-words: Anxiety, community, elderly, health, loneliness, prevention

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HIGHLIGHTS/KEY POINTS

- **Aging is accompanied by changes in the physical and psycho-emotional state of the individuals.**
- **Depression in the elderly is related to loss of beloved persons and loneliness.**
- **Anxiety is related to physical and social factors and is manifested by withdrawal.**
- **The elderly need specialized care and have special needs. For this reason healthcar professionals should be appropriately trained.**

INTRODUCTION

Aging is a normal process in the course of human life. It is not a disease, but a condition with many particularities. It is characterized by a drop in organic function and degeneration of the human body cells resulting in physical, biological, intellectual, mental and social downfall (Leggett & Zarit 2014, Roupa et al 2010, Dahlin-Ivanoff et al 2010). Anxiety of the elderly constitutes a common phenomenon and a major cause in the onset of serious physical and mental diseases.

According to the American Psychiatric Association "anxiety is an unpleasant emotional state which is characterized by an intense negative emotion, physical tension symptoms and concern about the future" (American Psychiatric Association 2004). The clinical manifestation of anxiety in the elderly is defined as a condition of excessive feeling of fear, concern, terror, nervousness, irritability, inability to concentrate and to pay attention as well as sleep disorder. The feeling of pressure or "heaviness" in the chest or throat and that of pain in various body areas prove the embodied form of anxiety, which requests targeted treatment, palliative interventions and special care (American Psychiatric Association 2004, National Institute of Mental Health 2016).

The influence of anxiety on the sociability of the elderly is expressed with the form of withdrawal, not only from relatives but also from the individual's wider social environment (Kvaal et al 2001). The feeling of loneliness and the fear of separation or those of incurable diseases cause social marginalization and isolation of the elderly (American Psychiatry Association 2004, Legget & Zarit 2014, National Institute of Mental Health 2016).

The onset of anxiety disorders in the elderly is usually associated with the way and the quality of life during the adult period. However, the female gender, the partner's death, loneliness and psychosomatic downfall constitute some of the predisposing factors for the development of anxiety disorders in old age (Kunik 2005, Forlani et al 2014, National Institute of Mental Health 2016).

Depression in old age has a high impact affecting the elderly socially, biologically, physically and mentally. It can be expressed with physical symptoms such as pain, dizziness, constipation, weight loss, insomnia, with behavior changes such as isolation, denial of exit from home, alcohol use, persistent thoughts of death, difficulty in concentration and mild or severe dementia symptoms. The downfall of psycho-emotional, physical and social functions is interpreted by both health professionals and relatives as "poor health" and not as overt symptomatology of the disease (Kim et al 2009).

The epidemiological approach of depression in old age displays a constantly growing impact. According to the World Health Organization, 10%-20% of the elderly in the general population suffer from the disease, with females displaying a slight more prevalence. The aggravating factors for the development of depressive symptoms are usually associated with family factors such as partner's death or living away from close family core, with socio-economic conditions such as income reduction, incapacity to access health facilities as well as different cultural background (Barua et al 2011).

The impact of anxiety and depression on the health of the elderly appears to be determining. Major health problems such as arterial hypertension, heart failure, chronic occlusive pulmonary disease, tumors, dementia and psychotic disorders seem to be associated with the presence of anxiety and depression (Kunik et al 2005). The aim of the present study was to look into anxiety and depression levels of the elderly in community structures.

METHODS

Sample

A cross-sectional study was conducted, involving 125 elderly people aged >62 years old, a convenience sample. Ninety of the participants were attending

the Open Security Centers for the Elderly of Lamia Municipality of the region of Central Greece and 35 were attending the Open Security Center for the Elderly of Athikies Municipality of the region of Peloponnese. Data was collected from October to November 2015, after no.38401 written authorization of Lamia Municipality and no.29487 written authorization of Athikies Municipality.

Data collection

For data collection the Bedford & Foulds questionnaire was used, which records anxiety and depression with 14 questions. Questions 1, 3, 4, 7, 9, 11 and 13 of the questionnaire are studying anxiety, while questions 2, 5, 6, 8, 10, 12 and 14 are measuring depression. The anxiety and depression scores are calculated from the sum of the answers to the above mentioned questions. The anxiety score rate from 0 to 21, with higher rates stating more anxiety, while the depression score rate from 0 to 21, with higher rates stating greater depression. Anxiety and depression score higher than 3 stated the presence of anxiety and depression symptoms respectively, whereas less than 3 stated the absence of any symptoms. (Roupa et al 2009).

Statistical analysis

In order to investigate the existence of a relationship between two quantitative variables, with followed the normal distribution; Pearson's correlation coefficient was used. In order to investigate the existence of a relationship between one quantitative variable with normal distribution and one ordinal variable, Spearman's correlation coefficient was used. In case that more than two independent variables showed statistical significance on the level of 0.2 (p<0.2) in the bivariate analysis, multivariate linear regression was applied using the anxiety and depression scores as a dependent variable. In this case, the backward stepwise linear regression method was applied. With regard to the multivariate linear regression, the coefficients beta, the corresponding 95% confidence intervals and the p-values were displayed. The two-sided level of statistical significance was set equal to 0.05. For the statistical data analysis, the Statistical Package for Social Sciences (SPSS) 21 was used.

RESULTS

Regarding the demographic features of the sample it was found that the average age of the sample was 76.1 years old, with 54.4% males and 45.6% females. The 72.0% of the elderly lived permanently in an urban area, while 28% in a rural one. The 32.8% had not attended school, 48.8% had completed elementary school, 12.8% were secondary education graduates and 5.6% were highe/r education graduates. Regarding marital status, the 68.8% were married of the participants, while 31.2% were single or widowed. The 79.2% lived with a family member, while 20.8% lived alone. Regarding their social habits, the 13.6% of the elderly were smokers, 36% consumed alcohol and 11.2% received medications for mental health problems (Table 1).

In the anxiety questionnaire, Cronbach's alpha internal consistency coefficient was set at 0.73. The average anxiety score was 9(±5.2) with the median value being 9 (rating from 0 to 20). An anxiety score higher than 3 was found for 81.6% (n=102) of the sample, stating the presence of anxiety symptoms, whereas 18.4% (n=23) had a ≤3 anxiety score, which stated the absence of anxiety symptoms.

The bivariate analysis showed a statistical relationship (p=0.20) between the anxiety score and gender, marital status, accommodation and medications for mental health problems (Table 2). For this reason, multivariate linear regression was applied, which revealed that female participants, as well as those living home alone, had a higher anxiety score (Table 3).

In the depression questionnaire, Cronbach's alpha internal consistency coefficient was 0.72, showing acceptable reliability of the depression questionnaire. The average depression score was 8.9(±4.6) with median value of 9 (rating from 0 to 20). The 84.8% (n=106) of the sample had a >3 depression score (presence of depression symptoms), whereas 15.2% (n=19) had a ≤3 depression score (absence of depression symptoms). After the bivariate analysis, a statistical relationship was found (p=0.20) between the depression score and age, educational level, marital status, accommodation and medications for mental health problems (Table 4).

For this reason, multivariate linear regression was performed. According to the results of multivariate linear regression, unmarried or widowed participants had a higher depression score and therefore more depression than the married ones. The above variable explains the 10.5% of the variability of the depression score (Table 5).

DISCUSSION

Anxiety is an unpleasant, threatening, discomforting emotion significantly affecting human's physical and mental health. It resembles the emotion of fear; eventhough the phobic stimulus is absent. It is an emotional reaction of the body in order to be able to deal with the approaching dangers, adjust to and prevent "threatening" or unknown situations in order to maintain the psycho-emotional balance and well-being (American Psychiatry Association 2004, Dahlin-Ivanoff

et al. 2010, Roupa et al 2010, Leggett & Zarit 2014).

The results of this study indicate that a high proportion of the elderly (84.8%) develop depression symptomatology. Carefully examining the literature, it can be observed that the majority of the elderly develop anxiety symptoms or disorders (Kunik et al 2005). It is estimated that the generalized anxiety disorder develops in 14% of all the elderly, while about a quarter of Primary Health Care (PHC) services users, aged over 65 years old develop anxiety disorders (Roupa et al 2009).

Most anxiety disorders diagnosed in elderly population seem to start developing at the adult period and form a continuation of the anxiety-inducing and pressing situations that the old person experienced or probably experiences. The onset of the anxiety symptoms and disorders in individuals older than 85 years of age appears to be lower than the ones found in younger ages (Kunik 2005).

Comparing the results of this study with those of Roupa et al (2009) and Kang et al (2016), we observe that in all three studies the anxiety levels in the elderly were particularly high. However, in this study the anxiety levels appeared significantly higher than in the study of Kang et al (2016), and in that of Roupa et al (2009). This increase is probable due to the unfavorable financial situation experienced by Greek population in recent years or due to the lack of a psychosocial support network both for the elderly individuals and for their families.

From the inductive analysis of the results, a statistically significant correlation was found between gender and anxiety. Specifically, females had a higher anxiety score and therefore more anxiety than males.

The results of this study are consistent with the results of Roupa et al (2009) where more anxiety symptoms were observed in females, but are different from the study of Kvall et al (2001) where the greatest anxiety proportion developed in elderly males. Given that both the present study and that of Roupa et al (2009) were conducted in Greece, while that of Kvall et al (2001) in Norway, one can speculate that the difference of anxiety symptoms in relation to gender is probably due to social characteristics, such as different culture and the position of women in society.

Depression is a mental disease with severe psychosomatic and psychosocial implications. Depression in elderlies usually appears after acute or chronic mental and physical problems, and in individuals with problematic family background. It is a medically reversible condition which can be prevented, if spotted early.

In the present study, it was found that 84.8% of the sample developed depression symptomatology. Literature review revealed that depression in the elderly ranged in exceptionally high proportions. A similar study of Roupa et al (2009) reported that 24.7% of the elderly develop symptoms or clinical manifestation of the disease. According to the US Center for Disease Control and Prevention about 1% to 5% of the community's elderly ails from depression, while the percentage increases for the elderly hospitalized patients to 11.5% and to 13.5% for those who live in home healthcare. The difference of the depression impact is probably due to the different social conditions and the way of life of the elderly (Center for Disease Control and Prevention 2015).

An important factor which significantly affects depression in the elderly is loneliness. Loneliness is a negative and multilateral emotion. It is a unique, complex and painful experience with direct consequences on the individual's spiritual and social life affecting at the same time the physical and psycho-emotional condition (WRVS 2012, Tiwari 2013, Schachter et al 2014).

From this study, it was found that the unmarried or the widowed had a higher depression score and therefore more depression than the married ones. As it occurs from the bibliography, the factors that boost depression besides the feeling of loneliness are living away from close family core, loss of a partner or a loved one, reduced mobility, limited income and the development of serious health problems.

Loneliness is presented as a threatening condition for the health of the elderly, as it can result in the development of high morbidity and mortality indicators, which in turn affect both health services users and the health system of each country (Victor 2005, Tiwari 2013, Christiansen et al 2016). A research by Steptoe et al (2013) reported that loneliness and social isolation were positively associated with increased mortality in the elderly. A study by Dahlberg and McKee (2014) reported that 7.7% of the elderly developed severe or very severe loneliness, while 38.3% moderate. In addition it was found that social and sentimental loneliness ranged at 19.3% of the study population (Dahlberg & McKee 2014).

CONCLUSIONS

In conclusion, from the present study was found that the elderly develop high anxiety and depression levels. The female gender and living away from family indicated a statistically significant association with the development of both anxiety and depression.

More and better welfare facilities at community level, development and better staffing of a modern and unified Primary Healthcare System, as well as geriatric specialized healthcare professionals can effectively

contribute to the prevention, treatment and rehabilitation of senior citizens with depression and anxiety. Limiting the incidence of anxiety and depression in the elderly population is the primary short-term goal and the prevention of the problem has to be the ultimate goal.

CONTRIBUTION OF THE AUTHORS

SM and MR helped to collect the data. PS and ES helped in data analysis. ZP contributed to write the text while AV had the general supervisor.

REFERENCES

American Psychiatric Association (2004). Diagnostic and statistical manual of mental disorders: Available at http://www.psychiatryonline.com/DSMPDF/dsm-iv.pdf (accessed 15.12.16).

Barua A., Ghosh M.K., Kar N. & Basilio M.A. (2011). Prevalence of depressive disorders in elderly. *Annual Saudi Medicine* 31: 620-624.

Center for Disease Control and Prevention (2015). Available at https://www.cdc.gov/aging/mentalhealth/depression.htm (accessed 15.12.16).

Christiansen J., Larsen F.B. & Lasgaard M. (2016). Do stress, health behavior, and sleep mediate the association between loneliness and adverse health conditions among older people? *Social Science Medicine* 152: 80-86.

Dahlin-Ivanoff S., Hedström G., Edberg A., Wilhelmson K., Eklund K., Duner A., Ziden L., Welmer A. & Landahl S. (2010). Elderly persons in the risk zone. Design of a multidimensional, health-promoting, randomised three-armed controlled trial for "prefrail" people of 80+ years living at home. *BMC Geriatrics* 10: 27-32.

Dahlberg L. & McKee K.J. (2014). Correlates of social and emotional loneliness in older people: evidence from an English community study. *Aging Mental Health* 18: 504–514.

Forlani M., Morri M., Belvederi Murri M., Bernabei V., Moretti F., Attili T., Biondini A., De

Ronchi D. & Atti A.R. (2014). Anxiety Symptoms in 74+ Community-Dwelling Elderly: Associations with Physical Morbidity, Depression and Alcohol Consumption. *Plos One* 9: 5-10.

Kang H.J., Bae K.Y., Kim S.W., Shin I.S., Yoon J.S. & Kim J.M. (2016). Anxiety symptoms in Korean elderly individuals: a two-year longitudinal community study. *International Psychogeriatry* 28: 423-433.

Kim J.I., Choe M.A. & Chae Y.R. (2009). Prevalence and predictors of geriatric depression in community- Dwelling Elderly. *Asian Nursing Research* 3: 121-129.

Kunik M.E., Roundy K., Veazey C., Souchek J., Richardson P., Wray N.P. & Stanley M.A. (2005). Surprisingly High Prevalence of Anxiety and Depression in Chronic Breathing Disorders. *CHEST* 127: 1205–1211.

Kvaal K., Macijauskiene J., Engedal K. & Laake K. (2001). High prevalence of anxiety symptoms in hospitalized geriatric patients. *International Journal of Geriatric Psychiatry* 16: 690–693.

Leggett A. & Zarit S.H. (2014). Prevention of Mental Disorder in Older Adults: Recent Innovations and Future Directions. *Generation*s 8: 45-52.

National Institute of Mental Health. (2016. Anxiety disorders: Available at *http://www.nimh.nih.gov/health/topics/anxiety-disorders/index.shtml* (accessed 15.12.16).

Roupa Z., Nikas M., Gerasimou E., Zafeiri V., Giasyrani L., Kazitori E. & Sotiropoulou P. (2010). The use of technology by the elderly. *Health Science Journal* 4: 118-126.

Roupa Z., Tatsiou I., Tsiklitara A., Koulouri A., Nikas M., Mpiskini I., & Sotiropoulou P. (2009). Anxiety and depression among elderly in the community. Interscientific *Health Care* 1: 61-66.

Schachter J., Kächele H. & Schachter J.S,. (2014). *Psychotherapeutic/psychoanalytic* treatment of the elderly. *Psychodynamic Psychiatry* 42: 51-63.

Steptoe A., Shankar A., Demakakos R. & Wardle J. (2013). Social isolation, loneliness, and all-cause mortality in older men and women. *Proceedings of National Academy of Science USA 110*: 5797–5801.

Tiwari S.C. (2013). Loneliness: A disease? *Indian Journal of Psychiatry* 55: 320–322.

Victor C.R., Scambler S.J., Bowling A. & Bond J. (2005). The prevalence of, and risk factors for, loneliness in later life: a survey of older people in Great Britain. *Ageing and Society* 25: 357-375.

WRVS. (2012). Loneliness amongst older people and the impact of family connection. Available at http://www.royalvoluntaryservice.org.uk/Uploads/Documents/How_we_help/loneliness-amongst-older-people-and-the-impact-of-family-connections.pdf (accessed 15.12.16)

TABLE 1

Demographic characteristics

	ν	$\bar{x}$	SD
Gender			
Males	68 (54.4)		
Females	57 (45.6)		
Age		76.1	7.8
Permanent residence area			
Rural	35 (28.0)		
Urban	90 (72.0)		
Educational level			
No school	41 (32.8)		
Elementary school graduates	61 (48.8)		
Secondary education graduates	16 (12.8)		
Higher education graduates	7 (5.6)		
Marital status			
Unmarried	3 (2.4)		
Married	86 (68.8)		
Widowed	36 (28.8)		
Accommodation with			
Husband or Wife	39 (31.2)		
Children	9 (7.2)		
Children and grandchildren	8 (6.4)		
Nobody	26 (20.8)		
Husband or Wife and children	24 (19.2)		
Husband or Wife, children and grandchildren	19 (15.2)		
Smokers			
No	108 (86.4)		
Yes	17 (13.6)		
Cigarettes per day		11.3	4.6
Alcohol intake			
No	80 (64.0)		
Yes	45 (36.0)		
Glasses of alcohol per day		2.3	1.1
Psychiatric medication intake			
No	111 (88.8)		
Yes	14 (11.2)		

TABLE 2

Associations between demographic features and anxiety score.

Feature	Anxiety score		Correlation coefficient	p-rate
	$\bar{x}$	SD		
Gender				**0.016[a]**
Males	8.0	4.4		
Females	10.3	5.9		
Age				0.4[b]
Permanent residence area			-0.08[β]	0.5α
Rural	9.5	5.2		
Urban	8.8	5.3		
Educational level			-0.11[γ]	
Marital status				
Unmarried/widowed	10.9	5.0		0.23[d]
Married	8.2	5.1		**0.006[a]**
Accommodation				
Alone	11.4	4.7		
With husband or wife/children/grandchildren	8.4	5.2		0.008[a]
Smokers				
No	8.8	5.0		0.3[a]
Yes	10.2	6.6		
Alcohol intake				
No	8.8	5.5		0.5[a]
Yes	9.5	4.7		
Psychiatric medication intake				**0.004[a]**
No	8.5	5.1		
Yes	12.8	4.8		

a t check, b Pearson's correlation coefficient, d Spearman's correlation coefficient

TABLE 3

Multivariate linear regression using the anxiety score as a dependent variable.

	b coefficient	95% confidence interval for b	p-rate
Females in relation to males	1.9	0.1 to 3.7	**0.038**
Elderly people living alone in relation to elderly people living with husband or wife/children/grandchildren	2.3	0.1 to 4.6	**0.039**

TABLE 4

Associations between demographic features and depression score.

Feature	Depression score		Correlation coefficient	p-rate
	$\bar{x}$	SD		
Gender				0.3[α]
Males	8.5	3.6		
Females	9.4	5.5		
Age			0.13[β]	0.16[β]
Permanent residence area				0.4[α]
Rural	8.4	4.6		
Urban	9.2	4.5		
Educational level			-0.24[γ]	0.007[γ]
Marital status				<0.001[α]
Unmarried/widowed	11.2	4.3		
Married	7.9	4.3		
Accommodation				0.005[α]
Alone	11.2	4.2		
With husband or wife/children/grandchildren	8.4	4.5		
Smokers				0.6[α]
No	9.0	4.5		
Yes	8.5	4.7		
Alcohol intake				0.8[α]
No	9.1	4.9		
Yes	8.8	3.8		
Psychiatric medication intake				0.06[α]
No	8.7	4.4		
Yes	11.1	5.0		

a t check, b Pearson's correlation coefficient, d Spearman's correlation coefficient

TABLE 4

Multivariate linear regression using the depression score as a dependent variable.

	b coefficient	95% confidence interval for b	p-rate
Unmarried/widowed in relation to married ones	3.3	1.6 to 4.9	<0.001