

The correlation between death anxiety and anxiety in elderly with chronic obstructive pulmonary disease

Nal B.^{A-F}, Aydın Avcı I.^{A-F*}, Ayyıldız M.^{A,D,E,F}

Ondokuz Mayıs University, Health Sciences Institute, Home Care Nursing Department, Turkey

A - Conception and study design, B - Data collection, C –Data analysis, D - Writing the paper, E – Review article, F - Approval of the final version of the article

ABSTRACT

Purpose: This study aims to determine the correlation between death anxiety and anxiety in elderly patients with chronic obstructive pulmonary disease.

Materials and methods: This study has been conducted on the individuals with chronic obstructive pulmonary disease (COPD) who were over 65 years. They received outpatient and inpatient treatment at a hospital. 171 elderly persons that were determined via power analysis were included in the research. Data was collected using a survey form, Death Anxiety Scale, State Anxiety Scale, and Trait anxiety scale. We used the following test statistics: *t*-test, ANOVA and Kruskal-Wallis Variance Analysis, and Pearson Correlation Test analysis.

Results: 66.1 percent (113) of the participants are

male and 33.9%(58) female; mean age is 72±6.83. The mean death anxiety score of the participants is 9.04±4.02. The mean State Anxiety score of elderly individuals with chronic obstructive pulmonary disease is 44.8±1.29; the trait anxiety mean score is 48.85±1.13. In those chronic obstructive pulmonary disease patients, we found a significant ($p<0.001$) correlation between state and trait anxiety, and that the latter two are high in cases where death anxiety is high.

Conclusion: We found that death anxiety and anxiety are high in patients with COPD.

Keywords: Elderly patients, chronic obstructive pulmonary disease, Death Anxiety, Anxiety, State Anxiety, Trait Anxiety.

DOI: 10.5604/01.3001.0009.5111

***Corresponding author:**

Ilknur Sydin Avcı
Ondokuz Mayıs University Samsun School of Health
Samsun Turkey, 55240
Tel.: +905052031286; Fax: +903624576020
e-mail: ilknursezera@hotmail.com

Received: 08.04.2016

Accepted: 17.05.2016

Progress in Health Sciences

Vol. 6(1) 2016 pp 63-69

© Medical University of Białystok, Poland

INTRODUCTION

According to the World Health Organization (WHO) old age is the period following the 65th year. Another matter that has come along with the 20th century is the “aging of populations”. Developments in medicine, science and technology are the main factors in this phenomenon. Accordingly, the increasing life expectancy that results from developments in health care contributes to an annual increase of the elderly population [1]. In Turkey, the ratio of 65+ year olds to the total population was 7.4% in 2014 [2].

Chronic and degenerative diseases are more common in old age than other life periods. One of these is the Chronic Obstructive Pulmonary Disease (COPD), a progressive and irremediable disease that obstructs the airflow. The most common symptoms of COPD dyspnea and shortness of breath appear as much due to organic as psychogenic causes. Affective disorders, adjustment disorders, anxiety disorders, paranoid reactions, panic, anxiety and depression are psychiatric disorders common in patients with COPD. Anxiety is a pathological condition that manifests somatic symptoms linked to the hyperactivity of the autoimmune and neurotic system of the individual. The anxiety felt by the individual is state anxiety and a subjective fear. The liability of the individual to the experience of anxiety is defined as generalized anxiety [3]. The fear of death that bears upon all types of fear is one of the fundamental causes of human fears. Research shows that death related anxieties are based on two important causes. The first is that psychological factors such as depression and anxiety level increase death anxiety. The second is the view that the neurotic feat of death stems from the unconscious, adolescent and birth traumas [4].

Various scholars tried to explain death anxiety in different ways. According to Jung, “a fear of life” underlies death anxiety. Death anxiety has generally been studied in relation to variables such as age, sex, socioeconomic level, religious belief, occupation and health problems [5]. In patients with COPD hypoxia, hypercapnia, hyperventilation and respiratory insufficiency directly affect brain functions generating cognitive and memory disorders, and causing many symptoms ranging from anxiety, fear and confusion to delirium [6,7]. The severe difficulty in breathing that occur in individuals with COPD is generally accompanied with anxiety and taking into account the high mortality rate of COPD, all of these trigger the death anxiety [7]. It has been reported that the anxiety level in individuals with a medical disease is %10-30 and that the frequency of lifetime anxiety in individuals with a chronic medical disease is higher than the normal population (%12 vs. %18) [8]. An evaluation of death anxiety and anxiety in

cases of COPD is important to enhance the spiritual wellness and the quality of life. It has been reported that the prevalence of the Generalized Anxiety Disorder that accompanies COPD is %10-33 [9,10].

In light of this information, this study aims to evaluate the death anxiety and anxiety state relations in elderly patients with COPD. It is projected that the data thus obtained will guide health professionals who take care of elderly individuals with COPD and allow the drawing of a treatment and care plan that takes into account organic as well as psychogenic symptoms. It will also hopefully affect the implementation process of treatment and care. Furthermore, the current study aims to contribute to the production of future work on death anxiety and anxiety.

MATERIALS AND METHODS

This study has been conducted between October 2014-February 2015 individuals with COPD who are over 65 and receive outpatient and inpatient treatment at a hospital in Kastamonu, Turkey. According to WHO and researchers, old age consists of three stages. Young old age comprises 65-74 years, Middle old age comprises 75-84 years and advanced old age comprises 85 years and more [11]. The sample size is determined as a minimum of 151 patients analysis (power %85, alpha 0.05, prevalence %20). The study has been completed with 171 elderly persons who agreed to participate.

Data collection has been done using a survey form, death anxiety scale, state and trait anxiety scale. A survey form included descriptive variables, features deal with their disease, and home care status.

Templer Death Anxiety Scale (DAS)

DAS is a self-reporting scale with a total of 15 articles that aims to determine the level of death anxiety. This scale was a self-reporting scale. The questions are answered as right or wrong. Right answers get 1 point and wrong answers are not included. The score interval is between 0-15 and as points go up in this interval, death anxiety is considered to increase. The mean point of 7 and above signifies higher death anxiety [12]. In this study, the Cronbach Alpha was found to be 0.84.

State-Trait Anxiety Inventory (STAI-I and STAI-II)

This is a self-reporting scale with two separate scales (state and trait) each containing 20 items. State anxiety is the subjective fear that one feels because of a stressful situation. State Anxiety Scale (STAI-I) measures how one feels in a specific time and condition whereas the Trait Anxiety Scale (STAI-II) measures how one feels independently of the situation and condition. This scale was a self

reporting scale. Le Compte and Öner have translated this scale to Turkish and validated its reliability [13]. In this study, the Cronbach alpha value for STAI-I was found to be 0.86 and for STAI-II, 0.90.

The research began following the approval of Ondokuz Mayıs University Faculty of Medicine Ethics board (no: 1225). The data obtained were analyzed in SPSS for Windows 16.0 and *t*-test, ANOVA, Pearson Correlation Test analysis for parametric distribution and Kruskal-Wallis Variance Analysis for non-parametric distribution were conducted in the evaluation. The level of statistical significance was set at $p < 0.05$.

RESULTS

Of the participants: 66% were male; 33.9% female; mean age 72 ± 6.83 (min-max=65-99); 61.4% had primary school graduate; 17.5% illiterate; 7.6% high school graduate or higher; 7.6% literate with no schooling and 5.8% middle-school graduate; 82.5% were married; 8.8% widowed; 8.8 single%; 48.5% live with a spouse; 19.3% live with a spouse and children; 14.6% live alone; 9.4% live with their children; 8.2% lives with extended

family; 75.4% have medium income; 19.9% have a low income and 4.7% have a high income.

Duration of disease: Those with COPD for less than a year 4.1%; from 1 to 10 years 70.7%; 11 to 20 years 20.4% and over 21 years 4.8%. 93.6% of the patients used medication for COPD at home. The mean death anxiety score of the participants is 9.04 ± 4.02 .

This study found out that the stage of old age affects death anxiety and that the latter is high in middle old age ($p < 0.05$). Further, sex affects death anxiety and women with COPD have higher DAS score than men ($p < 0.01$). Home care status also affects death anxiety and those elderly with COPD who need care but do not receive it have higher mean DAS scores than those who receive home care and those who do not need it ($p < 0.001$). Income status equally affects death anxiety and those with low incomes have high mean DAS scores ($p < 0.05$). Those who feel an anxiety about COPD have higher DAS scores, which suggest that an anxiety about the disease affects death anxiety ($p < 0.001$). Equally, the research shows that the duration of disease affects death anxiety ($p < 0.05$) (Table 1).

Table 1. Comparison of Death Anxiety Scale (DAS) scores with socio-demographic and clinical results

	DAS	ss	t	F	KW	P
Age (Stage of Old Age)					6.937	0.031
Young Old Age	8.54	± 3.93				
Middle Old Age	10.47	± 3.45				
Advanced Old Age	8.92	± 5.49				
Sex			2.882			0.004
Female	10.25	± 3.66				
Male	8.42	± 4.07				
Education				2.231		0.068
Illiterate	10.10	± 3.67				
Only literate	10.23	± 3.72				
Primary School	8.96	± 4.04				
Middle School	6.20	± 3.93				
High School or More	8.30	± 4.17				
Marital Status				1.603		0.204
Married	8.79	± 3.93				
Single	10.33	± 4.33				
Widowed	10.13	± 4.38				
Home Care Status				8.259		0.000
Caretaker	9.14	± 3.85				
Needed but none	11.09	± 3.99				
Not needed	6.40	± 3.73				
Income Status				4.226		0.016
Low	10.73	± 3.70				
Medium	8.69	± 3.95				
High	7.50	± 4.84				

The mean State Anxiety score of elderly individuals with COPD is 44.8 ± 1.29 ; the trait anxiety mean score is 48.85 ± 1.13 . This study

found out that age affects state anxiety and that those in middle old age have higher state anxiety ($p < 0.001$). Those who are single or widowed tend

to have higher state anxiety ($p < 0.05$). In terms of home care, those who need care but do not receive it have higher state anxiety than the two other cases ($p < 0.05$). Those with low income have higher state anxiety than the two other cases ($p < 0.01$). Those who feel an anxiety about COPD have higher state anxiety than those who don't ($p < 0.001$) (Table 2).

The results suggest a weak positive correlation between DAS and SAS and a positive moderate correlation between DAS and TAS ($p < 0.001$, Table 3).

This study found out that trait anxiety is higher in middle old age than other stages ($p < 0.05$). Those who need care at home but do not receive it have higher trait anxiety than the two other cases ($p < 0.001$). Those with low income have higher trait anxiety than the two other cases ($p < 0.01$). Those who feel an anxiety about COPD have higher trait anxiety than those who don't ($p < 0.001$) (Table 4).

Table 2. Comparison of State Anxiety Scale (SAS) scores with socio-demographic and clinical results

	SAS	ss	t	F	KW	P
Age (Stage of Old Age)				8.358		0.000
Young Old Age (65-74 years)	41.68	±11.40				
Middle Old Age (75-84 years)	50.80	±14.26				
Advanced Old Age (85+)	43.76	±14.41				
Sex			-0.951			0.343
Female	42.77	±12.87				
Male	44.76	±12.94				
Education				0.470		0.758
Illiterate	44.83	±11.79				
Only literate	44.76	±15.06				
Primary School	44.16	±13.35				
Middle School	38.80	±13.34				
High School or More	45.15	±9.71				
Marital Status				3.692		0.027
Married	42.87	±12.60				
Single	49.33	±11.89				
Widowed	50.26	±14.45				
Home Care Status				4.397		0.014
Caretaker	44.14	±12.74				
Needed but none	49.59	±12.90				
Not needed	38.27	±11.93				
Income Status				6.729	11.250	0.004
Low	51.56	±16.16				
Medium	42.18	±11.08				
High	42.62	±15.62				
Anxiety about disease			5.909			0.000
Yes	48.15	±12.24				
No	37.11	±10.95				
Duration of disease				0.643		0.588
Less than 1 year	39.14	±10.02				
1-10 years	43.90	±12.56				
11-20 years	46.02	±12.98				
21 years and more	42.62	±19.79				

Table 3. The Correlation amongst Death Anxiety Scale, State Anxiety Scale and Trait anxiety scale

	r	DAS
		P
SAS	0.461	0.000
TAS	0.544	0.000

Table 4. Comparison of Trait anxiety scale (TAS) scores with socio-demographic and clinical results

	TAS	ss	t	F	KW	p
Age (Stage of Old Age)				4.414		0.014
Young Old Age (65-74 years)	47.51	±11.17				
Middle Old Age (75-84 years)	53.26	±10.04				
Advanced Old Age (85+)	46.61	±13.61				
Sex			1.115			0.266
Female	50.20	±11.35				
Male	48.16	±11.29				
Education				0.807		0.522
Illiterate	50.76	±10.68				
Only literate	52.30	±12.89				
Primary School	48.28	±11.63				
Middle School	45.50	±9.98				
High School or More	48.23	±9.60				
Marital Status				2.086		0.127
Married	48.04	±11.12				
Single	52.86	±11.29				
Widowed	52.46	±12.44				
Home Care Status				12.405		0.000
Caretaker	48.11	±10.50				
Needed but none	58.59	±11.66				
Not needed	43.40	±10.33				
Income Status				7.676		0.001
Low	55.41	±10.84				
Medium	47.27	±10.92				
High	46.50	±10.79				
Anxiety about disease			6.278			0.000
Yes	52.61	±9.95				
No	42.42	±10.69				
Duration of disease					3.811	0.283
Less than 1 year	43.57	±12.03				
1-10 years	48.24	±10.47				
11-20 years	52.31	±12.52				
21 years and more	47.62	±15.92				

DISCUSSION

This study has found that the mean DAS score of elderly individuals with COPD is 9,04±4.02 and that %75.52 experience death anxiety. In a study about death anxiety among the elderly, Üstüner Top et al. [14] have established the mean DAS score as 9.01±2.85. In a similar study, Öztürk et al. [15] have calculated the mean DAS score as 7.7±3.8. Based on these, it can be suggested that advanced age and chronic disease trigger death anxiety in elderly individuals.

In the studies, Erdoğan and Özkan, Madnavat and Kachhawa, Wink and Scott argue that death anxiety increases with age [4,16,17]. Kirkpatrick and Navarette show that because people over 74 confront death more, death anxiety is higher among them than other young adults [18]. Whereas some studies conclude that death anxiety increases with age, others found that young people

have more death anxiety. In their work on the elderly Örsal et al. [19] argue that death anxiety decreases with age. Also, Niemeyer et al., Öztürk et al., and Vatan and Gençöz argue that the age does not affect death anxiety [15,20,21]. The variation of these conclusions suggests that death anxiety is dependent on many factors and that age alone is not sufficient to produce anxiety.

This study found that sex affects death anxiety and women experience a higher degree of it than men (p<0.01) (Table 1). In their work in India Madnavat and Kachhawa show that women experience a higher degree of death anxiety than men [16]. This may be so because women express their feelings more easily than men and talk more easily about their fears of death.

This study found that income level affects death anxiety and that people with low income experience a higher degree of anxiety (p<0.05) (Table 1). Üstüner Top et al. show that there is a meaningful correlation between income level and

death anxiety but contrary to the present study, they argue that individuals with higher income have higher death anxiety [14]. Accordingly, the fear of not being able to lead a healthy life, not being able to afford medical expenses may have increased death anxiety in sick and elderly individuals.

This study has found that sick and elderly individuals who need care at home have higher mean death anxiety scores, which affects death anxiety ($p < 0.001$) (Table 1). Lack of necessary care may well have exacerbated death anxiety in the sick and elderly. Feeling anxious about the course of disease, treatment, cost and access to health care may have exacerbated death anxiety.

This study found that the duration of disease affects death anxiety and that the longer the disease, individuals with COPD experience higher death anxiety ($p < 0.05$) (Table 1). Living with the disease for an extended period of time may have caused exhaustion. This in turn may trigger death anxiety.

This study found that the stage of old age affects both state and trait anxiety, that those sick and elderly who are middle old age have higher mean state and trait anxiety scores ($p < 0.05$) (Table 2; Table 3). However, in advanced old age, mean state and trait anxiety scores decrease. In their work on individuals with COPD, Afşar et al. report high anxiety levels in individuals who are 60 or older [22]. In their work in a thoracic diseases department, Bahar et al. found that the age factor does not affect anxiety [23]. State and trait anxiety may have increased due to age related emotional and physiological changes and in advanced old age, the individual may well have adapted to the situation thereby reducing state and trait anxiety.

This study found that marital status affects anxiety. Old individuals with COPD who are widowed have higher mean state anxiety scores than married and single ones ($p < 0.05$) (Table 3). In their work on individuals with COPD, Mehel Tutuk and Şahin Altun report that individuals who are separated or lost a spouse have higher anxiety [24]. This suggests that the loss of a life partner triggers state anxiety in old and widowed individuals with COPD.

A further finding is that those sick and elderly in need of home care have a higher mean state and trait anxiety scores and this affects state and trait anxiety ($p < 0.01$) (Table 2; Table 3). The general decline brought about by old age and disease, the neediness and need for home care may have triggered state and trait anxiety among the elderly.

Furthermore, anxiety about the disease affects state and trait anxiety and those who are anxious about the disease have higher state and trait anxiety ($p < 0.001$) (Table 2; Table 3). As illness would have limited social and everyday activities, this may well have triggered state and trait anxiety.

This study found that in elderly patients with COPD, increasing state and trait anxiety triggered an increase in death anxiety ($p = 0.000$; $r = 0.544$) (Table 4). In their work on patients with dyspnea Kayhan et al. found a highly meaningful correlation between the SAS and TAS scores [25]. This shows that death anxiety affects state and trait anxiety and individuals with COPD who experience state and trait anxiety have higher death anxiety. Accordingly those sick and elderly individuals who feel momentarily and permanently anxious about everything in their everyday lives, who find it hard to express their fears may well have high state and trait anxiety.

Limitations of the study. This research was made on small group. Similar researches were need to made with large group. This results for death anxiety and anxiety included some parameters. Other effective parameters were examined with different researches.

CONCLUSIONS

This study concludes that patients have high scores of death, state and trait anxiety scores. Further, it shows that home care, sex, anxiety about disease and duration of disease affect death anxiety and anxiety.

It can be suggested that the home care needs of patients need to be determined. Accordingly, the anxiety and death anxiety levels of patients would have to be determined during hospitalization and home care so that appropriate psychological support and help can be offered. Studies on chronic diseases similar to COPD can be conducted to determine the patients' death anxiety and anxiety levels.

Funding

There is no any founding resources.

Conflicts of Interest

None declared.

REFERENCES

1. Gökçe Kutsal Y. The Aging World. *Türk Fiz Tıp Rehab Derg.* 2006; 2 (Special Appendix A:A6-A11). (Turkish)
2. Turkish Statistical Institute. *Elderly Statistics 2014.* Turkish Statistical Institute, Printing Division, Ankara 2015, pp 28.
3. Anar C, Tatar D, Özkan M. Frequency of Anxiety Depression in COPD Cases Who Received Long-Term Oxygen Treatment. *Izmir Pulmonary Diseases Hospital Journal.* 2012; 26(2):83-9.

4. Erdoğan YM, Özkan M. The Meaning of Death for Individuals of Different Faiths and the Correlation Between Psychic Symptoms and Socioeconomic Variables. *İnönü University Faculty of Medicine Journal* 2007;14(3):171-9.
5. Tanhan F, Arı F. The Meaning of Death for University Students and the Level of Death Anxiety From the Viewpoint of the Subject They Study. *Yüzüncü Yıl University, Faculty of Medicine Journal*. 2006;(3-2):34-43.
6. Özol D, Özel H, Arsakay G. Evaluating the anxiety score in Chronic Obstructive Pulmonary Disease. *Türkiye Klinikleri Archiv Lung*. 2005; 6 (1):10-3.
7. Strang S, Ekberg-Jansson A, Henoeh I. Experience of anxiety among patients with severe COPD: A qualitative, in-depth interview study. *Palliat Support Care*. 2014 Dec; 12(6):465-72.
8. Özmen M, Önen B. Psychiatric Disorders in Chronic Obstructive Pulmonary Disease. Umut, S. Erdiñ E. (Editors) *From Diagnosis to Treatment in Chronic Obstructive Pulmonary Disease*. Galenos Publishers. İstanbul. 2008; 333-45.
9. Hill K, Geist R, Goldstein RS, Lacasse Y. Anxiety and depression in end-stage COPD. *Eur Respir J*. 2008 Mar;31(3):667-77.
10. Hynninen KM, Breivte MH, Wiborg AB, Pallesen S, Nordhus IH. Psychological characteristics of patients with chronic obstructive pulmonary disease: a review. *J Psychosom Res*. 2005; Dec;59(6):429-43.
11. Tümerdem Y. Real Age. *Turkish Journal of Geriatrics*. 2006; (3):195-196.
12. Akça F, Köse Aİ. The Adaptation of Death Anxiety Scale. A Study on Validity and Reliability. *J Clin Psych*. 2008;11:7-16.
13. Lecompte A, Öner N. A Study on the Adaptation and Standardization of State-Trait Anxiety Inventory in Turkish. IX. National Psychiatric and Neurological Sciences Congress. 1975:457-62. (Turkish)
14. Üstüner Top F, Saraç A, Yaşar G. The Determination of Depression Level, Death Anxiety and Everyday Functions in Individuals Living in a Nursing Home. *Clin Psych*. 2010; 13:14-22.
15. Öztürk Z, Karakuş G, Tamam L. Death Anxiety in Elderly Individuals. *Anatolian Psychiatr J*. 2011;12:37-43.
16. Madnawat AVS, Kachhawa PS. Age, gender, and living circumstances: discriminating older adults on Death Anxiety. *Death Stud*. 2007 Sep; 31(8):761-9.
17. Wink P, Scott J. Does religiousness buffer against the fear of death and dying in late adulthood? Results from a longitudinal study. *The J Geron Series B: Psychological Sciences and Social Sciences*. 2005; 60(4):P207-P14.
18. Kirkpatrick LA, Navarette CD. Reports of my death anxiety have been greatlyA critique of terror management theory from an evolutionary perspective. *Psych Inq*. 2006;17(4):288-98.
19. Örsal Ö, Yenilmez Ç, Çelik N, Işıklı B. The Correlation Between Death Anxiety and Social Support in Elderly Living in a Nursing Home. *Turk J Geriatr*. 2012;15(3):332-8.
20. Neimeyer Robert A, Joachim W, Richard PM. Psychological research on death attitudes: An overview and evaluation. *Death Stud*. 2004 May;28(4):309-40.
21. Vatan S, Gençöz T. Characteristics Related to the Depressive Grievances, Despair Levels and Death Anxiety in Elderly Living in a Nursing Home. *Crisis J*. 2006;15(2):49-61.
22. Afşar BB, Yalçınsoy M, Yakar Hİ, Bilgin S, Akkaya E. An Evaluation of Individuals with Chronic Obstructive Pulmonary Disease from the Viewpoint of Disability, Anxiety and Depression. *Cumhuriyet Med J*. 2012;(34):260-7.
23. Bahar A, Savaş HA, Parlar S. Determination of the Anxiety and Depression Levels of Patients in a Chest Diseases Department. *Anatolian Psych J*. 2009;47(1):9-15.
24. Mehel Tutuk SP, Şahin Altun Ö. Determination of the Anxiety and Depression Levels of Patients who Frequently Apply to the Hospital with complaints of COPD. *Cont Med Edu J*. 2014;23(6):216-24.
25. Kayhan S, Akpınar A, Murat N. Analysis of Depression and Anxiety Levels of Patients with Dyspnea. *J Clin Anal Med*. 2013;4(4):281-5.