

## Original Article

# Investigating Lifestyle Factors Affecting the Mental Health of the Elderly

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### Abstract

**Introduction:** The problems associated with social, psychological, behavioral and biological factors represent a significant burden on the mental health of the elderly.

**Aim:** The aim of this study is to investigate factors that affect the mental health of older people such as work status, physical activity, smoking habits, alcohol consumption, diet, the existence of chronic illness, and single residency.

**Methodology:** The sample consisted of 103 individuals with an average age 70.2 years (SD = 6.6) who participated in this face-to-face survey, of which 58 were women and 45 men. The research tools used were: the Symptom Checklist 90-R (SCL-90) scale and a detailed socio-demographic data sheet. SPSS v25 software was used for statistical analysis.

**Results:** Elderly pensioners report a higher level of psychopathology than older workers,  $r(103) = 0.293$  ( $p = 0.003$ ). Older people who consume alcohol report a higher level of psychopathology than older people who do not consume alcohol,  $r(103) = 0.418$  ( $p < 0.001$ ). Elderly people who do not follow a healthy diet report a higher level of psychopathology than older people on a healthy diet,  $r(103) = 0.634$  ( $p < 0.001$ ). Elderly people who live alone report a higher level of psychopathology monotherapy with respect to the elderly not living alone,  $r(103) = -0.53$  ( $p < 0.001$ ).

**Conclusions:** An improvement strategy in the area of the program for the promotion of the health of the elderly and health guidance from both the government and the non-government side would be of key benefit not just for these individuals but for society at large.

**Key words:** Mental health, older people, aging, psychopathology

### Introduction

Gerontology focuses on the concept of successful aging and on maintaining the active participation of older people in life activities and elaborates on the processes by

which people age, as well as the biological, psychological, socioeconomic parameters of aging, including the end stage of life, which can appear as early as the age of 60. (Holstein and Minkler, 2003).

It is estimated that by 2050, about one fifth of the global population will be aged 65 and over (Chang et al., 2017). However, one of the possible negative consequences of the rapid aging of the world population is the increase in the number of people with mental disorders, which could soon overwhelm mental health systems in all countries. About 15% of the elderly population suffer from some mental disorder. Between 2015 and 2050, the proportion of the world population of those over 60 years will almost double from 12% to 22% (WHO, 2022). It will be difficult for all countries, regardless of their respective income levels, to ensure the existence of health professionals for the treatment and care of the elderly with mental health disorders in parallel with the rate that this age group is growing.

Studies show that aging is a key factor in the increase of psychopathology including depression, anxiety, somatopoesis and obsessive-compulsive disorders (Harandi et al., 2020; Zis et al., 2017).

The problems associated with social, psychological, behavioral and biological factors represent a significant burden on the mental health of the elderly. The mental health of the elderly is an important issue that concerns society and the health sector. As people age, they may face various challenges that will affect their mental well-being. Compared to younger adults, the elderly are more likely to experience negative life situations, such as loss of socioeconomic status during retirement, grief from loss of a partner or relatives, isolation, and multiple pathological conditions. All of these adverse factors may contribute to and adversely affect their mental health.

As life expectancy is increasing globally, this requires an effort to improve living standards and health care services (Cesario et al., 2014). Yet, often, the mental health of the elderly is often neglected. The elderly with mental disorders may suffer from feelings of sadness and grief and this in turn has an impact on their quality of life (Kim et al., 2011). Similar disorders may also increase both morbidity and mortality in the elderly with pathological problems, which in turn may lead to frequent continuous use of health care services with a marked increase in overall financial costs.

Studies show that older men suffering from physical illness have experienced a greater decrease in their quality of life (Mantzoukas et al., 2021). Research also suggests that mental health disorders often lead to suicide (Mann 2002; Xie et al., 2010).

A study by Paralikas et al., (2021) shows that specific demographic as well as biopsychosocial factors affecting health, especially mental health are distributed differently between older men and women and, furthermore, between those living in urban and rural areas.

The aim of this study is to investigate factors that affect the mental health of older people such as working conditions, physical activity, smoking habits, alcohol consumption, diet, chronic illness, and residence status.

## **Methods**

**Sample:** The sample of this study consists of 103 elderly men and women residing in the wider community of Larissa region, Greece. This cross-sectional survey was carried out via the Symptom Checklist 90-R (SCL-90) and a socio-demographic data sheet to persons over 60 years of age, under full respect of ethical and deontological rules.

**Study inclusion criteria:** The criteria for inclusion were the participation of men and women over the age of 60 years who were deemed able to communicate in Greek, by understanding and answering precisely the questions of the questionnaire. In contrast, those diagnosed with psychiatric illnesses or other form of communication disorders were excluded, as were those who did not wish to participate in the research process or were unable to understand, because of a cognitive impairment, the importance of any given question. Due to the pandemic, participation of those living in health care facilities for the elderly were excluded.

**Sampling Method:** The method used to collect and record the data in this investigation is convenience sampling with only those who so wished to take part, doing so. Unfortunately, due to the strict measures taken in recent years to eliminate the pandemic, it was not possible to access health structures and nursing homes in order to receive and fill in questionnaires from elderly people who lived there. However, as the survey sample is not considered

representative of the general population per se, this pilot study does not allow for general conclusions to be drawn.

**Research Tools:** The data was collected using anonymous questionnaires which consisted of two parts: The first concerns sociodemographic data such as gender, level of education, employment status, physical activity, smoking habit, alcohol consumption, healthy diet, the existence of chronic illness and sole residency.

The second part was the SCL-90, developed by Derogatis (1992) which is concerned with the recording of existing psychopathology. It consists of 90 questions, which describe psychological, behavioral and physical complaints on the basis of 9 subscales. The latter include somatopoenesis, obsessive compulsion, interpersonal sensitivity, depression, aggression, phobic anxiety, paranoid ideation, psychoticism and various others (e.g. sleep disorders, food intake, etc.). The evaluation is carried out according to a five-step Likert scale (0-1-2-3-4). In addition to the derived index for each sub-scale, a further 3 overall indicators are obtained, which refer to the general symptom index, the total positive symptoms and the incidence of positive symptoms respectively. The adjustment of the scale to the Greek population showed a satisfactory criterion validity and convergent validity, as well as significant correlations of its subscales with related subscales of MMPI (Donia et al., 1991).

**Ethical Issues:** The study obtained ethical approval from Post Graduate Programme "Mental Health" University of Thessaly Ethics Committee and verbal informed consent from participants before the commencement of the study. The confidentiality of the information concerning the respondents was ensured and the anonymity of the respondents was ensured by coding the data that could only be accessed by the main researchers.

**Statistical analysis:** For checking the condition of regularity, the "Normal Q-Q plot" was used, where it appeared that in all cases the condition applied and, as a result, parametric statistical tests were used.

The effect size, i.e. the practical significance of the result, is calculated on the basis of the Cohen criteria. According to Cohen, in terms of correlation index, the effect size is low if its

value is less than 0.3, average if it is between 0.3-0.5 and large if it is greater than 0.5.

Continuous variables are presented as mean (M) and standard deviation (standard deviation, SD), discrete as frequency (N) and relative frequency (N%). The measurement of the reliability of scales used the internal coherence factor Cronbach's Alpha which examines the extent to which the questions constituting a scale measure the same concept. Values greater than or close to 0.7 are considered acceptable.

The Linear Correlation was used to study the relationship between two quantitative variables using the Pearson index, while the relationship between a continuous and a regular variable was studied using the Linear Correlation index Spearman. For the development of a prediction model, Multiple Linear Regression (multivariate linear regression) was applied, using the Enter method which is used in exploratory studies. For multilinear regression, b coefficients (coefficients' beta) and p values are presented.

The SPSS 25 software was used for the statistical analysis. The two-sided statistical significance level was set at 5%.

## Results

### Sample Descriptive Analysis

The survey included 103 people with an average age of 70.2 years (SD = 6.6), of whom 58 were women and 45 were men. 55.3% of the sample had only primary education, 23.3% had secondary education, and 21.4%, tertiary. 69.9% were retired, while the remaining 30.1% were still employed. When it comes to physical activity, 68% stated a low engagement, while 42.7% smoked and 40.8% consumed alcohol regularly. 64.1% claimed that they did not follow a healthy diet. Chronic disease was concomitant for 68% of the sample. Finally, 17% of the sample live alone. (Table 1)

Table 2 below presents the internal consistency analysis of the conceptual construct of the SCL-90 sub-scales as the value of Cronbach's  $\alpha$ . The findings indicate that the scale is valid and thus acceptable.

### Research Questions

A) How much is the level of psychopathology, in older people of the

community? The mean Symptom Checklist 90 (SCL-90) score was calculated as 0.8, a low level (Table 3).

B) Does the level of psychopathology in older people relate to gender, educational level, work status, physical activity, smoking habit, alcohol consumption, healthy diet, the existence of chronic illness and single residence?

Analysis of the correlation between the level of psychopathology, in elderly people, with the working situation, physical activity, smoking habit, alcohol consumption, healthy diet, chronic illness and single stay showed the following statistically significant correlations: (Table 4)

Elderly retirees show a higher level of psychopathology than older workers,  $r(103) = 0.293$  ( $p = 0.003$ ). The effect size, i.e., the practical importance of the effect, is considered a mean ( $r \sim 0.3$ ).

The elderly with poor physical activity report a higher level of psychopathology than the elderly with good physical activity,  $r(103) = 0.676$  ( $p < 0.001$ ). The effect size i.e. the

practical importance of the effect, is considered large ( $r > 0.5$ ). Moreover, older smokers report a higher level of psychopathology than older non-smokers,  $r(103) = 0.191$  ( $p = 0.05$ ). The effect size i.e. the practical significance of the effect, is considered small ( $r < 0.3$ ).

Older people who consume alcohol recorded a higher level of psychopathology than those who do not consume alcohol,  $r(103) = 0.418$  ( $p < 0.001$ ). The effect size, i.e. the practical meaning of the effect, is considered medium to large ( $r \sim 0.5$ ). The elderly who did not follow a healthy diet reported a higher level of psychopathology than those on a healthy diet,  $r(103) = 0.634$  ( $p < 0.001$ ). The effect size, i.e. the practical importance of the effect, is considered great ( $r > 0.5$ ). Elderly people living alone report a higher level of psychopathology than the ones living alone;  $r(103) = -0.53$  ( $p < 0.001$ ). The effect size is considered large ( $r > 0.5$ ). The elderly with at least one chronic disease record a higher level of psychopathology than the elderly with no chronic disease,  $r(103) = -0.520$  ( $p < 0.001$ ). The effect size is considered large ( $r > 0.5$ ).

**Table 1 Sample characteristics**

		N	N %
Gender	Woman	58	56.3%
	Man	45	43.7%
Educational level	Primary education	57	55.3%
	Secondary education	24	23.3%
	Tertiary education	22	21.4%
Employment status	Working	31	30.1%
	Pensioner	72	69.9%
Is your physical activity satisfactory?	No	33	32.0%
	Yes	70	68.0%
Do you smoke?	No	59	57.3%
	Yes	44	42.7%
Alcohol consumption	No	61	59.2%
	Yes	42	40.8%
Do you follow a healthy diet?	No	66	64.1%
	Yes	37	35.9%

Living alone?	No	86	83.5%
	Yes	17	16.5%
Chronic medical condition	No	33	32.0%
	Yes	70	68.0%

**Table 2. Analysis of the internal consistency of the SCL-90 scale.**

	<b>Cronbach's <math>\alpha</math></b>
<b>Psychopathology scale – Symptom Checklist 90 (SCL-90)</b>	0.961

**Table 3 Basic statistical indicators of the Psychopathology scale – Symptom Checklist 90 (SCL-90)**

	N	Mean	Standard Deviation
SCL-90	103	.8	.5

**Table 4 Analysis of the correlation of the level of psychopathology, in elderly people, with various factors**

		SCL-90
Gender	Pearson Correlation	-.188
	Sig. (2-tailed)	.058
	N	103
Educational Status	Spearman Correlation	-.172
	Sig. (2-tailed)	.083
	N	103
Employment Status	Pearson Correlation	.293
	Sig. (2-tailed)	.003
	N	103
Family Status	Pearson Correlation	.163
	Sig. (2-tailed)	.099
	N	103
Is your physical activity satisfactory?	Pearson Correlation	.676
	Sig. (2-tailed)	.000
	N	103
Do you smoke?	Pearson Correlation	.191
	Sig. (2-tailed)	.053

	N	103
Alcohol consumption	Pearson Correlation	.418
	Sig. (2-tailed)	.000
	N	103
Do you follow a healthy diet?	Pearson Correlation	.634
	Sig. (2-tailed)	.000
	N	103
Living alone?	Pearson Correlation	-.537
	Sig. (2-tailed)	.000
	N	103
Chronic medical condition	Pearson Correlation	-.520
	Sig. (2-tailed)	.000
	N	103

## Discussion

Before elaborating further on the results of this study and relating these to the ones of similar studies, we considered it important to note a) what this study does not answer, and b) what are its limitations.

From the outset we should state that the findings of this research concern the investigation of factors affecting the mental health of the elderly such as gender, educational level, working status, physical activity, smoking habit, alcohol consumption, healthy diet, the existence of chronic illness, and the only stay in the community of the region of Larissa in the specific spacetime.

From the conduct of the survey results, it was found that the psychopathology (SCL-90) score was 0.8 and was considered low, suggesting that the elderly in the study showed reduced symptoms of fear, anxiety and depression, showing a relatively good mental state.

Moreover, regarding the level of psychopathology, the findings of the study showed that elderly pensioners show higher answers on SCL-90, than older workers. Retirement is a multi-layered process without a separate beginning and end that can involve multiple changes or even not even happen to all the people who are aging. Although it has

been considered as the main “bridge” to move from adult life to old age and contributes to determining the conditions of old age, the removal of older people from the workforce can cause negative effects on their mental health. This is why retirement would be better to occur gradually through part-time work which is a means to help the person realize how he or she will be dealing with retirement, but at the same time it will allow them to feel productive for a significant period of time. Participation in voluntary activities can also help with adjustment (Stuart- Hamilton, 2011). In line with our results, studies are also suggesting that unemployment in older people can have a negative impact on their physical and mental health because, in these circumstances, they may feel isolated and away from their desired work status (Mandal & Roe, 2007; Minami et al., 2015).

The elderly with poor physical activity report a higher level of psychopathology than the ones with good physical activity,  $r(103) = 0.676$  ( $p < 0.001$ ). Good physical activity seems to be associated with low levels of psychopathology, i.e. reduced anxiety and depressive symptoms, as exercise has proven particularly essential to improve both physical and mental health of people. This result is also supported by studies which conclude that sport activities significantly reduces stress in

the elderly. (Khesali et al., 2018; Asiachi et al., 2017; Kazeminia et al., 2020),

In contrast, alcohol and smoking, which are harmful habits were associated with a higher level of psychopathology in the current study. Older people who take care of their health through good nutrition and avoidance of alcohol, smoking and chronic diseases seem to be able to maintain a relatively good social life. Other studies agree with our outcomes and conclude that unhealthy lifestyle behaviors in older people, such as smoking, alcohol and low level of physical activity are directly linked to poor mental health (Bhandari & Paswan, 2021).

Elderly people living alone have a higher level of psychopathology than elderly people not living alone;  $r(103) = -0.53$  ( $p < 0.001$ ). Interaction with relatives significantly improves their mood, which is not the case with elderly who live isolated and have lost contact with their social network due to psychological, physical and motor problems. The sense of loneliness typically arises in conjunction with depressive symptomatology in situations that negatively affect people's health, such as in the case of chronic diseases (Aylaz et al., 2012). More generally, emotional and social loneliness, whether related to the existence of social networks, or to the marital status of older people, has a clear impact on their mental well-being (Domènech-Abella et al., 2011). These views reinforce the results of our survey, as in the responses of participants it appeared that those living alone had a higher level of psychopathology compared to those living with their partner, children or other relatives.

Older people with at least one chronic disease record a higher level of psychopathology than the ones without one,  $r(103) = -0.520$  ( $p < 0.001$ ). This factor which has been shown to be fundamentally linked to a high score on the scale of psychopathology, has a negative effect on the psyche of older patients, as they often cause loss of independence, making them vulnerable both physically and mentally (Chapman et al., 2005). The findings of our study are also confirmed by other studies that stress that in addition to monitoring and treating chronic diseases in older people, it is also important to monitor and treat their

mental health status resulting from chronic diseases (Chen et al., 2017; Wang et al., 2016).

**Conclusions:** The results of this study show that factors such as working status, physical activity, smoking habits, alcohol consumption, diet, the existence of chronic illness, and living alone are associated with mental health disorders. Therefore, modifying lifestyle behaviors can lead to a higher quality of life for the elderly population. Moreover, healthy aging with good mental health will not only lead to a clear increase in their quality of life, but will also be important for increasing well-being in their family and society as a whole. Recognizing the actors involved can help us reduce the problems that societies will face in the future. In order to achieve this objective, the existing conditions, problems and needs must be assessed scientifically and professionally. An improvement strategy in the area of the program for the promotion of the health of the elderly and health guidance from both the government and the non-government side would be of key benefit not just for these individuals but for society at large.

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