

## Original Article

# Life Satisfaction, Financial Misery and Nutritional Level among the Elderly in Greece, after the Exit from the post Memorandum Supervision

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## Abstract

**Background:** The global financial system crisis, which began in 2008 in the USA and spread to almost all countries, was particularly intense in our country. The health of vulnerable groups has significantly deteriorated, as long-standing structural problems and inequalities were exacerbated by the economic crisis. Despite the formal end of the economic crisis, there are indications that the impact of the crisis remains strong.

**Aims and objectives:** It was to detect the effects of the economic crisis on the dietary habits of the Greek population in the Larissa region (Central Greece), as well as to identify coping strategies under the new economic conditions. Furthermore, it aimed to determine the degree of financial hardship and the level of life satisfaction among the elderly.

**Methods:** This was a prospective observational study extending over three time periods: 2018-2019, 2020-2021, and 2022-2023. Self-reported questionnaires were used: a) Dietary questionnaire, b) Life Satisfaction Index (LSI-20), c) The Financial Ability Scale (FAS), d) Basic demographic characteristic Questionnaire

**Results:** The study comprised 224 women and 76 men (74.7% and 25.3%, respectively). The majority of the participants were married (192 individuals, 64.0%), single 6 individuals (2.0%), while 83 individuals were widowed (27.6%). The percentage of individuals reporting "poor" dietary levels climbed from 2% before the crisis up to 25.7% after the crisis during the 2018-2019 period, then it decreased to 4.3% and 3.7% during the 2020-2021 and 2022-2023 periods, respectively. The percentage reporting "very good" dietary levels significantly decreased from 29.3% to 6% during the 2018-2019 period and then stabilized at significantly lower levels at 12.3%, with statistically significant differences ( $p < 0.001$ ). The life satisfaction index decreased from a value of  $4.27 \pm 0.54$  during the 2018-2019 period to a value of  $3.68 \pm 0.67$  during the 2022-2023 period, ( $F = 229.911$ ,  $p < 0.001$ ). During the same period, the financial misery index gradually decreased from a value of  $3.10 \pm 0.73$  during the 2018-2019 period to a value of  $2.96 \pm 0.76$  during the 2020-2021 period, and finally to a value of  $2.85 \pm 0.76$  during the 2022-2023 period, a statistically significant difference ( $F = 50.510$ ,  $p < 0.001$ ). The economic situation improved more in villages compared with urban areas ( $F = 297.000$ ,  $P = 0.031$ ). Life satisfaction (mean value) significantly decreased in urban areas compared with villages, ( $F = 75.101$ ,  $p < 0.001$ ).

**Conclusion:** The stagnation of income at low levels and the inability to purchase special and/or quality food products, according to the needs of the elderly and their comorbidities (high-nutritional protein sources and special dietary products), is accompanied by an increase in the financial misery index and a further decline in life satisfaction, which seems to significantly worsen over the years.

**Key words:** Financial crisis, austerity, nutrition, elderly, life satisfaction

## Introduction

During the past 15 years, Greece has been undergoing one of the most serious crises in its history. Since September 2019, when capital controls were fully lifted, the country has formally exited the post-memorandum supervision. Nevertheless, the crisis has left a deep imprint on households, recovery is very slow, while international geopolitical crises combined with chronic and difficult-to-solve structural weaknesses of the Greek market and economy have triggered a wave of lasting inflation that has further harmed already exhausted households. Economists argue that it was the most severe economic crisis since the Great Depression of the 1930s (Panagiotakos & Foscolou, 2019). Compared to other countries, Greece has been more severely affected by this crisis. In order to cope with its consequences and avoid a disorderly bankruptcy, Greece signed a Memorandum of Economic and Financial Policies in exchange for a loan of 110 billion euros (Simou & Koutsogeorgou, 2014). The Memorandum included strict austerity measures that have since adversely affected various segments of society, while the shift to structural changes has undermined any developmental momentum. Austerity policies have contributed to increasing inequalities in the use of health services during the economic downturn and the imprint of the economic recession is particularly visible in the health sector (Economou et al., 2016, Recio, et al., 2022). Greece has been severely affected by the economic crisis and is an example that shows that the quality of healthcare and patient outcomes can be influenced by the economic crisis. (Kaitelidou et al., 2014, Laliotis, 2016; Kotsiou et al., 2018; Karamatskou, & Nikitidis, 2021). Converging evidence a deterioration of self-rated health, a rise in suicide rates and an increase in the prevalence of major depression (Stylianidis & Souliotis, 2019). Despite the formal exit from the memorandum oversight, rising inflation combined with the structural weaknesses of the social state raises questions about the quality of life of the elderly, and as expected, the lower social strata are affected more.

The aim of the research was to detect the initial effects of the economic crisis on the dietary habits of the elderly Greek population

in Central Greece, and also to identify ways to adapt to the new economic conditions. Additionally, it aimed to determine the degree of financial hardship and the level of life satisfaction among the elderly.

## Materials and Methods

**Population and Sample of the Study:** The population of the research consisted of elderly individuals who are members of the “KAPI” (Open Care Center for the elderly) of the Municipality of Larissa, which means individuals over 60 years old from all neighborhoods of the Municipality. Initially, 366 individuals (convenience sample) agreed to participate in the study. A total of 300 individuals' data were processed, which formed the final sample. This was a prospective observational study that extended over three time periods: 2018-2019, 2020-2021, and 2022-2023.

**Research Tools:** Self-reported questionnaires were used:

- a) Questionnaire on basic demographic characteristics and dietary level,
- b) **Life Satisfaction Index (LSI-20)** first created by Neugarten, Havighurst, & Tobin (1961)-translated and weighted in Greek by Malikiosi-Loizos, & Anderson (1994). Cronbach's alpha coefficient in the present study was equal to 0.72, slightly lower than the one (0.78) reported by Malikiosi-Loizos & Anderson (1994).
- c) **The Financial Ability Scale (FAS)** first created by Koutsimpou et al., (2019). It includes 12 items and assesses the respondents' ability to financially meet 12 daily needs. These requirements include the ability to meet basic needs such as diet, purchasing medicines, paying bills, etc., as well as additional needs such as using a home helper, saving, and the ability to travel or financially assist children, etc. It is rated on a Likert scale from 1 (no ability at all) to 5 (very good ability). The scale exhibited a high internal reliability-Cronbach's alpha coefficient = 0.91. Koutsimpou et al., (2019) had reported a Cronbach's alpha coefficient equal to 0.96.).

**Statistical Analysis:** The statistical software for social sciences IBM-SPSS 25 was used. The statistical tests selected were the  $\chi^2$  test, the repeated measures ANOVA test, and correlation analysis between two variables

(Pearson). The level of statistical significance was set at 0.05.

**Ethical issues:** The research was conducted based on the principles of Helsinki for human research. Approval from the relevant service (Welfare Directorate of the Municipality of Larissa, protocol number 772) was a prerequisite for conducting the study, as well as the written consent of the participants.

## Results

The study comprised 224 women and 76 men (74.7% and 25.3%, respectively). The majority were married (192 individuals, 64.0%), single 6 individuals (2.0%), while 83 individuals were widowed (27.6%) (Table 1).

After the onset of the crisis, percentage of individuals belonging to the income category of up to 699 euros reached 41% compared with 16% before the crisis, while a slight increase was observed in the category of 700-1399 euros (from 48.7% to 50%). However, a significant decrease was noted in the higher income categories (from 26.7% to 8% for the 1400-2000 euro category and from 8.7% to 1.0% for the incomes above 2000 euros).

Since then, stabilization or a decline is noted almost in all categories, particularly in the category of up to 699 euros (34.7% in 2024). This means that after the crisis, there was a significant reduction in what were considered high incomes and a significant shift towards lower incomes, which has remained, showing only slight improvement in low incomes. In summary, there has been impoverishment of the so-called middle class among the elderly, which continues to this day (Table 2).

The percentage reporting "poor" dietary levels skyrocketed from 2% before the crisis to 25.7% after the crisis during the 2018-2019

period, then it decreased to 4.3% and 3.7% during the 2020-2021 and 2022-2023 periods, respectively. The percentage reporting "very good" dietary levels significantly decreased from 29.3% to 6% during the 2018-2019 period to stabilize later at significantly lower levels at 12.3%, with statistically significant differences ( $p < 0.001$ ) (Table 3).

The life satisfaction index decreased from a value of  $4.27 \pm 0.54$  during the 2018-2019 period to a value of  $3.68 \pm 0.67$  during the 2022-2023 period, a statistically significant difference ( $f = 229.911$ ,  $p < 0.001$ ) (Fig.1). During the same period, the financial misery index gradually decreased from a value of  $3.10 \pm 0.73$  during the 2018-2019 period to a value of  $2.96 \pm 0.76$  during the 2020-2021 period, and finally to a value of  $2.85 \pm 0.76$  during the 2022-2023 period, a statistically significant difference ( $F = 50.510$ ,  $p < 0.001$ ) (Fig 2). The economic situation improved more in villages compared with the town: the mean value of the financial misery index decreased from 3.16 in urban areas to 2.93 at the end of the study (7% decrease), while in rural areas it decreased from 3.04 to 2.77, approximately a 10% drop, with a statistically significant difference ( $F = 297.000$ ,  $p = 0.031$ ) (Fig.3). Life satisfaction significantly decreased in the city compared to villages, from 4.32 to 3.48 (a drop of 19.4%), while in villages, it decreased from 4.21 to 3.94, a decrease of 6.4%. The differences were statistically significant:  $F = 75.101$ ,  $p < 0.001$  (Fig.4).

The financial misery and life satisfaction indices were significantly correlated only during the 2020-2021 period:  $r = -0.156$ ,  $p = 0.007$ , meaning that worse economic conditions (higher index value) were associated with lower life satisfaction.

**Table 1. Demographic characteristics of the sample**

GENDER	N	%
Women	224	74.7
Men	76	25.3
Family status		

Unmarried	6	2.0
Married	192	64.0
Divorced	19	6.3
Widowed	83	27.6
<b>Place of residence</b>		
Village	130	43.3
Town	170	56.7

**Table 2. Monthly income distribution before and after economic crisis**

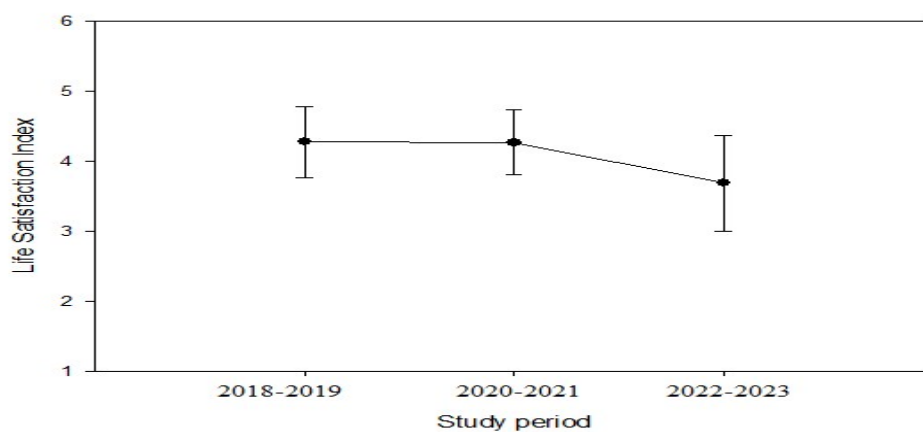
	<b>(2018-2019)*</b>		<b>(2020-2021)</b>		<b>(2022-2023)**</b>	
	<b>Before crisis</b>	<b>After crisis onset (2018-2019)</b>	<b>Before crisis</b>	<b>After crisis (2020-2021)</b>	<b>Before crisis</b>	<b>After crisis (2022-2023)</b>
	<b>N (%)</b>	<b>N %</b>	<b>N %</b>	<b>N %</b>	<b>N %</b>	<b>N %</b>
Up to 699	48 (16.0)	123 (41.0)	48 (16.0)	104 (34.7)	48 (16.0)	104 (34.7)
700-1399	146 (48.7)	150 (50.0)	146 (48.7)	159 (53.0)	146 (48.7)	158 (52.7)
1400-2000	80 (26.7)	24 (8.0)	79 (26.3)	33 (11.0)	79 (26.3)	34 (11.3)
Over 2000	26 (8.7)	3 (1.0)	27 (9.0)	4 (1.3)	27 (9.0)	4 (1.3)
*Distribution Differences over study periods after crisis, $\chi^2=4.676$ , $p=0.586$						
**Differences before and after crisis: , $\chi^2=353.838$ , $p<0.001$						

**Table 3. Nutritional level before and after economic crisis**

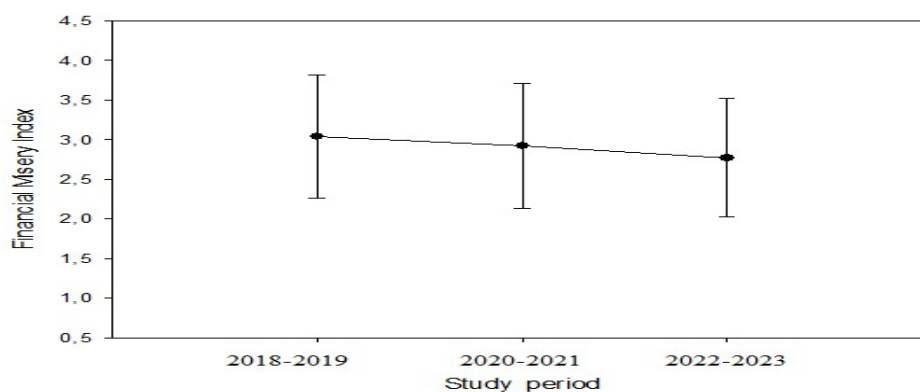
	<b>(2018-2019)*</b>		<b>(2020-2021)</b>		<b>(2022-2023)**</b>	
	<b>Before crisis</b>	<b>onset (2018-2019)</b>	<b>Before crisis</b>	<b>After crisis (2020-2021)</b>	<b>Before crisis</b>	<b>After crisis (2022-2023)</b>
	<b>N (%)</b>	<b>N %</b>	<b>N %</b>	<b>N %</b>	<b>N %</b>	<b>N %</b>
Poor	6	77	8	13	8	11

	<b>(2.0)</b>	<b>(25.7)</b>	(2.7)	(4.3)	(2.7)	(3.7)
Moderate	52 (17.3)	141 (47.0)	51 (17.0)	82 (27.3)	51 (17.0)	83 (27.7)
<b>Good</b>	<b>154</b> <b>(51.3)</b>	<b>64</b> <b>(21.3)</b>	155 (51.7)	168 (56.0)	155 (51.7)	169 (56.3)
<b>Very Good</b>	<b>88</b> <b>(29.3)</b>	<b>18</b> <b>(6.0)</b>	86 (28.7)	37 (12.3)	86 (28.7)	37 (12.3)
* Distribution Differences over study periods after crisis, $\chi^2=168.412$ , $p<0.001$ ** Differences before and after crisis: , $\chi^2=168.412$ , $p<0.001$						

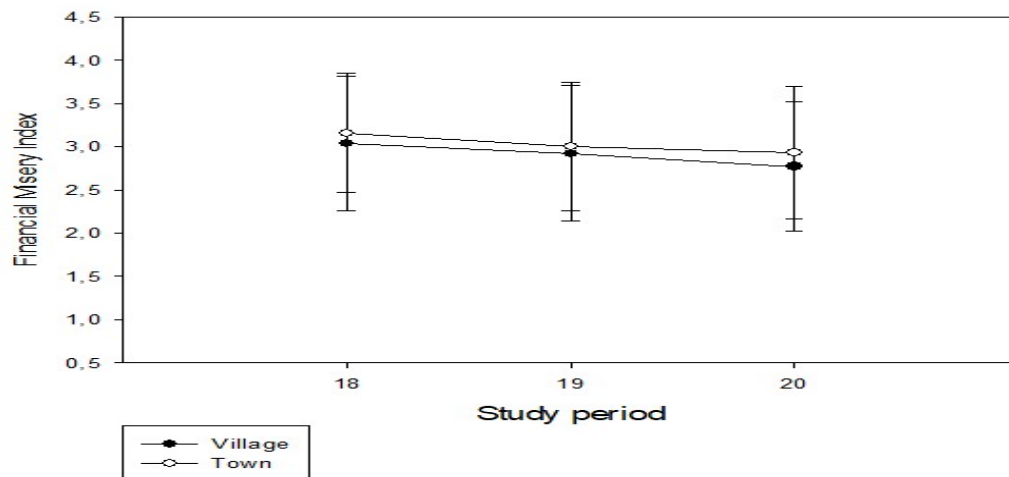
**Fig 1. Life satisfaction index change after economic crisis (total sample)**



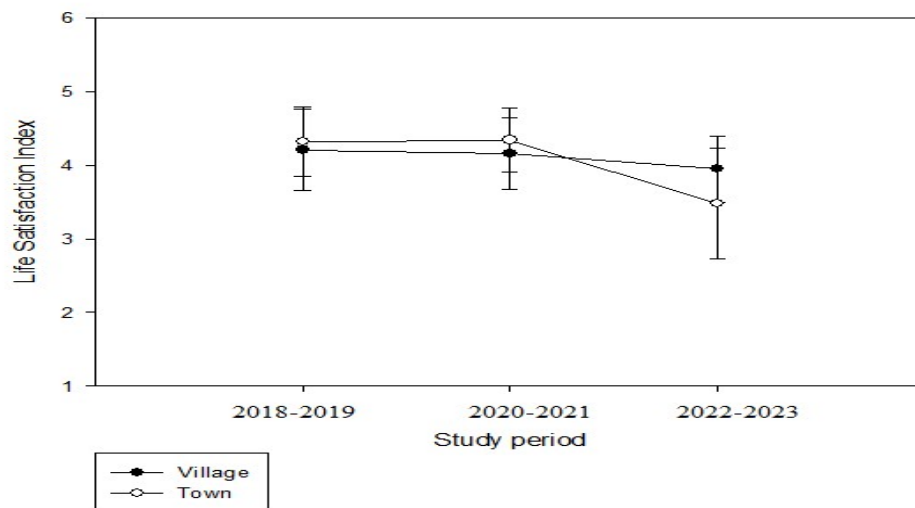
**Fig. 2. Financial misery index change after economic crisis (total sample)**



**Fig. 3. Comparative presentation of financial misery index after economic crisis in rural and urban areas.**



**Fig 4. Comparative presentation of life satisfaction index after economic crisis in rural and urban areas.**





## **Discussion**

This study highlights the strong imprint of the economic crisis on the nutrition of the elderly, even after the formal end of the economic crisis. The stagnation of income at low levels and the inability to purchase special and/or quality food products, according to the needs of the elderly and their comorbidities (high-nutritional protein sources and special dietary products), is accompanied by an increase in the financial misery index and a further decline in life satisfaction, which seems to significantly worsen over the years. The balance in the lives of the elderly has become very fragile, so that a stressor (medical expenses, death of a partner) can further significantly worsen their physical and mental health with destructive consequences. Although the situation has significantly improved compared to the first years after the onset of the crisis, a significant portion of the population has now fallen into poverty, leading to the impoverishment of the so-called middle class. Incomes, amid rampant inflation, remain low on average, while significant declines are noted in the higher income categories, as well as in the quality of nutrition, with "very good" dietary levels enjoyed by now less than 15% of the elderly, a percentage that corresponds to about half of what it was before the crisis. Our findings align with national expenditures on food, as noted by the Greek Statistical Authority (ELSTAT), during the period 2009-2015. They also agree with the findings of previous study by Vlontzos & Duquenne (2013) who found that most households have modified their dietary habits, reducing the quantities they consume and/or seeking cheaper purchases. Only 15% of households do not appear to be affected by the crisis and the austerity policy. Their results showed that low-income households in urban areas, where the majority of the population lives, are deeply affected by the crisis.

Recession is having adverse consequences for older people's quality of life in terms of economic, mental and social well-being (Fenge et al., 2012). Negative changes in social protection and care arrangements, which occurred after the economic crisis, are associated with low life satisfaction among the elderly citizens. Poverty policy measures,

due to the economic crisis of 2008, have altered social conditions and negatively affected the life satisfaction of elderly citizens. In countries with rudimentary health and welfare benefit structures, elderly citizens could not cope with austerity measures. Clearly, poverty has a negative impact on all age groups, and the lack of regular income, the death of a partner, rising medical expenses, and poor retirement planning are just some of the reasons behind this. It is important to note that austerity can impact the lives of the elderly, such as limiting access to food, healthcare, the ability to pay energy bills, and access to transportation (Huang et al., 2020, Fatzil et al., 2021).

According to the Greek statistical authority, adult unemployment increased from 6.6% in May 2008 to 16.6% in May 2011 and youth unemployment increased from 18.6% to 40.1% (Kentikelenis et al., 2011). Individuals and families suffering from income and job losses, living in a degraded social situation caused by strict austerity measures and restrictive health policies, are exposed to the risk of depression and/or suicide (Madianos et al., 2014). As expected, the quality of life (Mechili et al., 2015) and mental health in Greece due to unemployment has seriously deteriorated.

It has also been suggested that individuals in the elderly age group tend to report relatively high economic capacity, even at very low income levels. Therefore, the correlation between income and financial ability in advanced age is typically moderate. Hence, researchers can generally conclude that the relationship between objective and subjective economic well-being diminishes with age progression. Additionally, there is consensus that the high economic capacity of the elderly is effectively strategic, such as upgrading goals and adjusting aspirations to the given situation (Huang et al., 2020).

In the analysis of the International Longevity Center - UK (2014), strong links were observed between people's economic status and their happiness. Of the ten countries reporting the highest economic satisfaction levels among those aged over 50, eight are also among the ten most "happy" countries. Conversely, of the ten countries with the lowest reported levels of economic capacity

among those aged over 50, seven are also among the ten most "unhappy" countries (Fatzil et al., 2021).

The differences found in life satisfaction and financial hardship between rural areas (villages) and cities can be attributed to the ability to cultivate and harvest food in villages, as well as the future economic prospects of cities when (albeit anemic) development began. In this light, one could interpret the lower rate and slight improvement in the financial hardship index in villages with the progress of years, as a tolerable nutritional balance gradually emerges. In contrast, in cities, despite the expectations for development alongside maintaining initially higher life satisfaction levels compared to villages, a significant decline occurs during the 2022-2023 period, likely due to declining long-term prospects and rising food prices. Other factors that shape the social climate and are not examined in this study, such as alienation, particularly after the COVID-19 pandemic, crime, and others, may also play a role.

**Limitations:** The sample of the study came from a specific area of Greece, limiting the generalization of findings to the entire population; however, due to the universal sample of KAPI and the large size of the elderly sample, its representativeness could be considered high, especially for urban environments. Furthermore, the trained researcher was ready to provide clarifications for any misunderstandings related to completing the questionnaire, which increased the validity of the responses. However, food diaries or 24-hour dietary recalls were not used. Some misclassifications may exist, especially regarding the classification of adherence to the dietary routine. It should also be noted that some results could be biased because part of the sample comes from rural areas, and these individuals could cultivate and harvest their own food and not purchase from supermarkets, making direct comparison between the rural and urban population precarious. Finally, the impact of the COVID-19 pandemic, which had a significant effect on economic activity, has not been addressed.

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