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THE CASE OF GREECE

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Abstract

Are the healthier wealthier or the wealthier healthier? Three main questions are the focal points of this book: First, how does individual socio-economic and/or occupational status affect the physical and mental health and sense of well-being of older individuals of working age? Second, how does individual socio-economic and/or occupational status affect the ability of older workers to participate in the labour market? And third, how might policy initiatives be developed to enhance the effectiveness of welfare services for the older workforce? The present study provides a critical assessment of the relevant research that is conducted in Greece, with emphasis on the older workforce, in order to provide policy guidelines for future research. The chapter is organized as follows: Section 2 analyses the indicators and the methodological considerations encountered by researchers, Sections 3, 4 and 5 present and discuss the national institutional schemes that operate in Greece, Section 6 analyses the basic findings of applied research in Greece, and Section 7 concludes.

1. Introduction

International studies provide consistent evidence that socio-economic status (SES) effects do exist and contribute significantly on the observed health inequalities of the populations.¹ Furthermore, SES inequalities in health constitute an area of great importance to policy makers due to both the ageing of the population and the stronger effects that are observed among the older workforce members. The older workforce typically involves individuals aged from 40-50 years up to their retirement age, which is usually at 65 years of age. Since individual SES and health status are interrelated, the issue of the distributional character of public policy arises in order to protect individuals that are greatly affected by the negative consequences of low SES and low health, such as the older workforce.

The demographic ageing of the Greek population is attributed to the increasing life expectancy combined with decreasing changes in fertility rates. Such changes in population structure imply that the share of older people is growing while the share of individuals in working age groups (namely, 15–64 years) is decreasing. Actually, Greece has begun to exhibit negative rates of population growth, supporting the views arguing that in a few years Greece will be mostly populated by older people (Eurostat, 2004). The ageing of the population is expected to cause economic and social changes in a number of areas, including healthcare systems.

Table 1 (p. 2) exhibits the proportions of six age groups in the native workforce and in the total population being in working ages, respectively. The data were drawn from the Greek Employment Observatory and reveal that individuals aged 45-64 years occupied the biggest share in the working age population and the second largest share among the native workforce in the years 1992 and 2002 (in Chletsos, 2003).

The present study provides a critical assessment of the relevant research that is conducted in Greece, with emphasis on the older workforce, in order to provide policy guidelines for future research. The chapter is organized as follows: Section 2 analyses the indicators and the methodological considerations encountered by researchers, Sections 3, 4 and 5 present and discuss the national institutional schemes that operate in Greece,

¹ Bartley *et al.*, 1997; Wamala *et al.*, 1997; Theodossiou, 1998; Lynch *et al.*, 2000; Duncan *et al.*, 2002.

Section 6 analyses the basic findings of applied research in Greece, and Section 7 concludes.

Table 1. Greek workforce and population at working ages by age groups for the years 1992 and 2002.

Age Groups	1992		2002	
	Percentage in the workforce (%)	Population at working ages 15-64 (%)	Percentage in the workforce (%)	Population at working ages 15-64 (%)
15-19	3.3	8.9	1.6	6.7
20-24	10.1	8.0	9.0	7.5
25-29	11.8	7.6	13.0	7.6
30-44	37.7	24.1	39.9	23.8
45-64	34.1	32.1	34.1	29.7
65+	3.0	19.2	2.4	24.7

Source: Chletsos (2003).

2. General Methodology

2.1 Health Status Indicators

Health status is a qualitative concept with multiple dimensions, thus it is quite hard to approximate it in an accurate way. A historical, more lay definition of overall health is the: “absence of disease or infirmity”,² whereas a more detailed definition describes health status as “the ability of all people within the community to reach full mental, spiritual and physical potential by living in safety with vigour and purpose; meeting personal needs; meeting community responsibilities; adapting to change; and having trusting and caring relationships”.³ Finally, occupational health is related to “... the science of designing, implementing and evaluating comprehensive health and safety programs that maintain and enhance employee health, improve safety and increase productivity in the workplace”.⁴

Mortality indicators are frequently encountered in the Greek literature due to the relative availability of data.⁵ Age-standardised mortality ratios of specific geographic regions and by causes of death have been extensively utilised in the literature. Such

² Federal Occupational Health, US.

³ Community Health Endowment of Lincoln, US.

⁴ Federal Occupational Health, US.

⁵ Kyriopoulos *et al.*, 1983; Le Grand, 1987; Petridou *et al.*, 1994; Tsimpos *et al.*, 1990.

causes of death are fatalities from leukaemia, pestilent diseases, neoplasms, diabetes melihus, ischaemic heart diseases, accidents and injuries (Tsimpos *et al.*, 1990), and suicide rates that are believed to be affected by individual SES (Zacharakis *et al.*, 1998). Kogevinas *et al.* (1992) utilised the Potential Years of Life Lost (PYLL) index, as an indicator of premature mortality in order to investigate the social cost from specific causes of death. The number of PYLL was approximated as the number of years lost when the individual dies before the age of 70 years.

In addition, studies investigate the relative importance of SES on various dimensions of physical health, namely SAHS,⁶ the duration of gestation, blood lipid data, the risk of school injuries, the use of glasses, the history of past accidents, the severity of injuries, the experience of chronic diseases, and hospital admissions.⁷ Other studies utilised work-related health conditions, namely circulatory diseases, musculoskeletal problems, neoplasia, injuries and poisoning.⁸ Alamanos *et al.* (1986) assessed the incidence and the severity of work-related accidents, indicated by fractures, burns, amputations, concussions and other injuries.

The Psychologists' society in US defines mental health state as "the successful performance of mental function, resulting in productive activities, fulfilling relationships with other people, and the ability to adapt to change and to cope with adversity; from early childhood until late life, mental health is the springboard of thinking and communication skills, learning, emotional growth, resilience, and self esteem".⁹ Depressive symptoms, suicidal behavior, stress, the use of psychoactive medication, and mental hospital discharge rates have been extensively applied in the literature.¹⁰ Mental health state in relation to specific job features, for example job-related tension and stress and job satisfaction were also examined by researchers (Lascari *et al.*, 2000; Xidea-Kikemeni and Aloumanis, forthcoming).

Health-related habits, namely nutrition and health enhancing activities are known confounders on the SES-health relationship. The individual lifestyle factors that are met in Greek research are smoking, alcohol consumption, weight, and the body mass index

⁶ Mergoupis, 2001; Kyriopoulos *et al.*, 2003.

⁷ Kouri *et al.*, 1995; Petridou *et al.*, 1995, 1996, 200; Lascari *et al.*, 2000.

⁸ Kagialaris *et al.*, forthcoming; Xidea-Kikemeni *et al.*, forthcoming

⁹ National Association of School Psychologists. www.nasponline.org.

¹⁰ Madianos and Stefanis, 1992; Petridou *et al.*, 1996; Madianos *et al.*, 1999; Lascari *et al.*, 2000.

(Madianos and Stefanis, 1992; Kouri *et al.*, 1995; Petridou *et al.*, 1995, 1996; Mergoupis, 2001; Xidea-Kikemeni and Aloumanis, forthcoming). Petridou *et al.* (1997) constructed an indicator of “risky behavior” based on individual tendency towards risky activities such as the use of seat belt, smoking, drinking and driving, etc.

2.2 SES Indicators

Tountas (2000) distinguishes between three main SES inequalities that have an effect on individual health:

- *Individual SES*, which is defined by individual position in the production process.
- *The material resources* owned, which are related to individual SES.
- *The social and ethical values*, that affect health-related behaviours and attitudes.

Income level is a known determinant of health status. However, only two studies in the authors’ knowledge controlled for individual and household income in their analyses (Mergoupis, 2001; Kyriopoulos *et al.*, 2003). On the other hand, economic position is more often documented in the Greek literature by the ownership of a car and the affordability of respondents regarding their health-investment choices, such as choosing a private medical facility, the freedom in the choice of the attending physician or the existence of insurance for primary or secondary health care (Petridou *et al.*, 1994; Kyriopoulos *et al.*, 2003).

In the country level, indicators such as expenditures on public and private medical care are utilised in the literature (Le Grand, 1987). Other studies have also utilised regional socio-economic development indicators, namely per capita national income, per cent of industrial employment, and per capita consumption of foods.¹¹ Madianos *et al.* (1999) constructed an index of regional economic development based on the population growth, the local infrastructure (network of roads, health care delivery, etc.), the economic well being (electric power consumption, availability of telephone, etc.), and the economic productivity of each region of Greece.

On the contrary, occupational status has long ago drawn the interest of researchers in Greece as a factor contributing in the observed health inequalities. Occupational class,

¹¹ Kyriopoulos *et al.*, 1983; Tsimpos *et al.*, 1990.

approximated by own or paternal occupation, is widely used in applied research.¹² Occupational class can affect individual health through many pathways. For example, workers in construction services exhibit a higher incidence of musculoskeletal problems in comparison to employees in other professions, such as clerical (Tountas, 1999). In addition, work-related features, namely the duration of work experience, the shortage of staff in the workplace, job demands and working tasks undertaken, hours of work, and work-load are also introduced in the literature as health determinants (Xidea-Kikemeni and Aloumanis, forthcoming).

Education defines not only earnings from work but it also affects personal health-related attitudes and lifestyles in a beneficiary way. The educational level of the respondent¹³ and the paternal and maternal educational level¹⁴ are utilised in applied research. In general, they are approximated by completed years of schooling. School grade is also used as a proxy of school performance in younger age samples.¹⁵

Demographic indicators, namely age, gender, family situation and marital status, birth ranking, residence and housing conditions, and urbanisation in the area of residence, are frequently utilised in studies in order to control for confounding effects.¹⁶ Housing safety conditions were investigated in the study of Petridou *et al.* (1996) based on the existence of specific safety standards in the house such as electric safety switches, stair handler, and adequate lightning in passages.

2.3 Methodological Shortcomings

The complex interrelation between SES and health status has been long ago recognized in applied research. The endogeneity issue, namely the bi-directional direction in the relation of interest complicates the issue of establishing a causal effect of SES upon individual health. Furthermore, the existence of mediating and confounding factors that intervene in the SES-health relationship cause various identification problems. Selection bias is frequently observed in survey-based data as well, since high, systematic non-

¹² Madianos and Stefanis, 1992; Petridou *et al.*, 1994; Laskari *et al.*, 2000; Mergoupis, 2001.

¹³ Petridou *et al.*, 1996; Kyriopoulos *et al.*, 2003; Xidea-Kikemeni *et al.*, forthcoming.

¹⁴ Petridou *et al.*, 1994; Petridou *et al.*, 1995; Kouri *et al.*, 1995; Petridou *et al.*, 1997; Mergoupis, 2001.

¹⁵ Kouri *et al.*, 1995; Petridou *et al.*, 1997.

¹⁶ Madianos and Stefanis, 1992; Kouri *et al.*, 1995; Petridou *et al.*, 1995, 1996, 1997; Zacharakis *et al.*, 1998; Madianos *et al.*, 1999; Laskari *et al.*, 2000; Mergoupis, 2001; Kyriopoulos *et al.*, 2003; Xidea-Kikemeni *et al.*, forthcoming.

response rates are recorded for indicators such as household income (Mergoupis, 2001). These methodological shortcomings require the adoption of advanced econometrical tools. However, these issues have not been addressed by the Greek literature, with the exception of Mergoupis (2001) who addressed the selection issue in his study.

2.3.1 Estimation Techniques

The Greek literature utilises mainly simple statistical and econometric methods in order to assess the SES determinants of individual health state. Descriptive and statistical tools are applied in the majority of relevant studies, such as parametric and non-parametric test statistics, factor analysis, analysis of variance and Pearson product moment correlations.¹⁷ Yet, some studies attempted to identify causal effects with the use of regression analyses, namely linear regression¹⁸ and hazard modelling techniques¹⁹ in case of continuous health approximations; and logistic or probit regression analyses in case of categorical and hierarchical health variables.²⁰

2.3.2 Liability of Indicators

In general, health status indicators can be subdivided in objective and subjective measurements. The former entails approximations that are based on external, objective criteria, such as mortality or disease diagnosis. Subjective health measurements are based on individual self-perceptions of health, such as self-assessed health status (SAHS).

Redwood (2003) argues that SAHS differs in comparison to objective measurements of health, since it can be either overestimated or underestimated by the respondents based on their personal characteristics (Kyriopoulos *et al.*, 2003). Indeed, studies indicate that self-reported health status scores “...are rather weak sources of information of an individual’s health status. The weaknesses relate to the subjective nature of these questions and their available responses” (Mergoupis, 2001, p. 3).

¹⁷ Tsimpos *et al.*, 1990; Madianos and Stefanis, 1992; Petridou *et al.*, 1997; Madianos *et al.*, 1999; Laskari *et al.*, 2000; Kyriopoulos *et al.*, 2003; Xidea-Kikemeni *et al.*, forthcoming.

¹⁸ Kyriopoulos *et al.*, 1983; Le Grand, 1987; Madianos and Stefanis, 1992; Petridou *et al.*, 1995, 1996, 2000; Zacharakis *et al.*, 1998; Madianos *et al.*, 1999.

¹⁹ Petridou *et al.*, 1994.

²⁰ Kouri *et al.*, 1995; Petridou *et al.*, 1995; Mergoupis, 2001.

In specific, older and younger age groups tend to underestimate their health status (Kyriopoulos *et al.*, 2003). Bias in SAHS scores may arise due to gender differentials as well (Redwood, 2003), since women relate bad health to the presence of painful symptoms and to the absence of mental health problems, whereas men relate it with the absence of certain physical abilities (Kyriopoulos *et al.*, 2003).

Table 2 exhibits SAHS levels of individuals older than 65 years in European countries for the year 1997 (the data are in percentages and non-standardised). The data indicate that women have the tendency to underestimate their health status, since they systematically report lower levels of health status in comparison to men. Furthermore, the health status of the Greek population appears to be in a better position than that of more economically prosperous countries, such as France.

Table 2. SAHS scores of individuals aged over 65 years in Europe for the year 1997.

Country	"Very Good/Good"	
	Women	Men
European Union (average)	29.0	34.5
United Kingdom	54.4	57.5
Ireland	53.5	62.3
Denmark	43.4	53.7
France	27.1	31.6
Spain	26.4	36.9
Greece	23.1	37.8
Italy	20.3	26.7
Germany	17.2	19.3
Portugal	5.1	12.8

Source: Redwood (2003).

2.3.3 Questionnaires

Greek research is greatly hampered by the limited availability of relevant data. Thus, the majority of relevant studies either use public statistics and contact regional level

analysis or they construct questionnaires in order to collect data on a micro-level analysis.²¹ However, researchers point out there are several limitations in the use of questionnaire-based surveys. In particular, self-responses need to be treated with caution, since sometimes the respondents do not fully understand the meaning of the questions (Kyriopoulos *et al.*, 2003).

2.3.4 Greek Datasets

Public sources of relevant data are quite limited in Greece. Researchers usually draw data from official public databases, such as the National Statistical Service of Greece, which contains data on health care provision and regional economic indicators published in the annual Statistical Yearbook of Greece (Tountas *et al.*, 2002), included in the Censuses and the Central Health Register (Madianos *et al.*, 1999), whereas data on fatalities are included in the Vital Statistics Bureau (Kyriopoulos *et al.*, 1983; Zacharakis *et al.*, 1998; Tsimpos *et al.*, 1990). Data on the mental health care delivery system structural components (e.g. number of psychiatric beds and rehabilitation places, etc.) and the geographical distribution of the medical personnel can be drawn from the Monitoring and Evaluation of Mental Health Services Unit which is part of the Athens University Mental Health Research Institute and from local Medical Associations in Greece.

International organisations, such as the World Health Organisation and the World Bank provide databases with relevant health information, for example healthy life expectancy and mortality rates and on national economic indicators for several countries (Le Grand, 1987; Kogevinas *et al.*, 1992). The OECD also provides a wide range of data available to the public regarding SES, health status and health expenditures for many countries (Kyriopoulos *et al.*, 1983; Tsimpos *et al.*, 1990). Mergoupis (2001) drew his dataset from the Eurobarometer 43 survey which is a micro-level survey conducted in various E.U. countries and covers several aspects of individual SES and health characteristics.

²¹ Kagialaris *et al.*, forthcoming; Kouri *et al.*, 1995; Lascari *et al.*, 2000; Petridou *et al.*, 1994, 1995, 1996, 1997; Xidea-Kikemeni *et al.*, forthcoming.

3. Health care and Social Insurance in Greece

3.1 Health care system in Greece

Recent research has shown that there are certain requirements that health services must fulfill in order to satisfy the needs and demands of the insured in Greece (Kyriopoulos *et al.*, 2003):

- a. Dignity: the protection of human rights.
- b. Autonomy: information about their health condition and the alternative cure methods.
- c. Prompt attention: the supply of timely care in situations of emergency.
- d. Confidentiality.
- e. Communication: the reaction of the personnel towards the insured.
- f. Choice of the provider: the possibility of choosing health centre.
- g. Social support (regarding hospital care).
- h. Environment.

Nowadays, the basic characteristics of Greek health services are: availability (24 hours per day and 365 days per year) (Ifantopoulos, 1988), accessibility (time accessibility and place accessibility), acceptability, affordability, accountability (Katsouyannopoulos, 1994). The contemporary health care system in Greece can be separated into three main categories of health care: 1. Primary health care (non-hospitalised treatment), 2. Secondary health care (hospital treatment), 3. Tertiary health care (university treatment).

3.1.1. Primary health care

Primary health care in Greece was first established in 1938, when the Social Security Institution, the major public insurance provider, started operating. At first, primary health care covered the urban population. In 1953 a legislative decree set the basis for regional health services. However, the organisation of the primary health care system for the agricultural population was only completed in 1961. The bases of contemporary primary health care, and the requirements for the provision of primary health services, were set by the Congress of International Organisation of Health that took place at Alma-Ata in September 1978 (Ifantopoulos, 1988). Finally, in 1983 legislation established functional

and organisational connections between the three levels of the health services (Ifantopoulos, 1988).

At present primary health care in Greece is provided by various social funds and insurance institutions, without any link to the secondary and tertiary health services. More specifically, it is provided by (Theodorou *et al.*, 1994):

- Doctors who operate their own surgery.
- Doctors belonging to the multi-surgeries owned by the insurance funds.
- Agricultural clinics, provide basic health care to the agricultural population.
- Health centres, provide health services to the regions.
- Outpatients' departments, provide general and specialised primary health care.

3.1.2. Secondary health care

This term refers to the provision of health services to patients that are hospitalised. The conditions in the secondary health care system changed radically in the second half of the 20th century, when Greece followed trends in other European countries (Theodorou *et al.*, 1994). Nowadays, the hospital services are provided in Greece by three main institutions (Ifantopoulos, 1988):

- a. Public hospitals
- b. Independent charities
- c. Private clinics that operate as independent economic units.

Funding for public hospitals come mainly from the state budget, but also from the various public insurance funds. Another financial source since 1993 is co-payment by patients. Private insurance companies pay the same expenses as the social insurance funds, for their insurees who are hospitalised in public facilities. Other financial sources are inheritances, donations and profits from the hospitals' property (Theodorou *et al.*, 1994).

3.1.3. Tertiary health care

Tertiary health care is similar to the Secondary health care and therefore sometimes they are considered as one. In particular, the tertiary health care includes the health services provided by university hospitals and university clinics (Theodorou *et al.*, 1994).

In 1982, there were 17 hospitals, which had university clinics, in Greece. Those hospitals were spread in the big Greek cities: Athens (9), Thessaloniki (5), Patras (1), Ioannina (1) and Alexandroupolis (1). In 1982, the university hospitals had a capacity of 4,430 beds, although the Greek government is planning to increase the number of university hospitals and therefore the number of beds (Ifantopoulos, 1988).

3.2 Social Insurance in Greece

Since the end of the 19th century and mainly during the 20th century, the institution of social insurance developed its current form. The Greek system of social insurance aims to protect the salaried, and other, occupational categories (such as the self-employed). The financial support of this system comes from the contributions of the employers and the employees, and also from governmental subsidies (Provopoulos, 1987). The current social insurance system covers the following risks (Solomos *et al.*, 1991):

- Old age, disablement and death
- Sickness and motherhood
- Industrial accident and occupational sickness
- Unemployment
- Family members' illness

Social insurance also covers the risk of unemployment by providing benefits to the long-term unemployed. More particularly, the unemployed are under the care of the Greek Manpower Employment Organisation (Greek initials: O.A.E.Δ.), which is in turn under the direction of the Ministry of Labour and Social Affairs. OAED takes action in the following sectors (MANPOWER):

- *Vocational Guidance.*
- *Technical - Vocational Training*
- *Promotion of Employment*
- *Supply of Social Security provisions* (Unemployment Benefits as well as conscription, supplementary maternity allowances, allowance due to insolvency of the employer, etc).

The legal framework consists of several Laws regulating the details concerning each Benefit or Allowance. Beneficiaries of Social Security provisions against risk of

Unemployment are people who - irrelevant to their state of origin - are salaried workers (with fixed term contracts or non fixed term contracts), receiving Social Security provisions from a relevant body (for example the Social Security Institution). Specifically, an unemployed person is entitled to Unemployment Benefit in case his/her work contract has expired or in case he/she was dismissed. Beneficiaries of O.A.E.D. are given the opportunity to transfer the right of receiving Regular Unemployment Benefit in any Member State of E.U. in the case that they fulfill all requirements.

- *Vocational Training and Employment Programmes* concerning Groups of Population Facing or Endangered with Social Exclusion (ex-drug addicts, handicapped persons, or released prisoners)

The Law 2868/1922 imposes obligatory insurance for salary-earners of various fields or businesses, and equal contributions from employers and employees. There is also the establishment of the so-called organisations of supplementary insurance (Provopoulos, 1987). The goal of the supplementary insurance is to provide the insured with additional benefits. The financial sources of this insurance organisation come from the contributions of employees and employers.

3.3 Social Security Institution (S.S.I.)

The establishment of the Social Security Institution (Greek initials: I.K.A.) in the late 1930s marks the beginning of the Greek social insurance system (Soulis, 1999). In 1982, it covered the 40.5% of the population and was considered to be the major insurance organisation. I.K.A. is mainly financed by the contributions of the employers and the employees, but also by state subsidies. The amount of the contributions is a standard percentage of the insured's income and it is dependent on the type of employment and work, and the level of their income (Ifantopoulos, 1988). I.K.A. covers all the formally employed, provided that they are not insured at another fund of main insurance, the members of their family, as well as foreign workers and visitors (Soulis, 1999). The employee must be insured from the first day of their work. For the long-term unemployed, insurance is compulsory (Management of I.K.A., 2002). The allowances that I.K.A. provides include: pension, medical treatment, pharmaceutical treatment, hospitalisation, sick pay, allowance for accidents etc. There are certain requirements in

order to get an allowance from I.K.A., whether monetary (the sick pay, or the pay provided in circumstances of industrial accident), or in kind (the use of the three levels of the health care system, and health goods) (Soulis, 1999).

The main problems that the health services of I.K.A. confront are (Theodorou *et al.*, 1994):

1. Long waiting lists for a doctor's appointment, only available during morning hours.
2. Excessive demand and consumption of health services.
3. The quality of health services is insufficient.
4. Lack of trust towards the diagnoses of I.K.A. doctors
5. No connection between GPs and specialised doctors within IKA's primary health care system.

3.4 Private insurance in Greece

Private health service has a supplementary role to social health insurance (Soulis, 1999). In Greece, private health insurance was established in the 1980s due to the perceived performance inadequacies of social insurance. Between 1980-1999, there were approximately 50 private insurance companies, from which around a fifth were exclusively health insurance companies (Liaropoulos, 1993). Private insurance provides monetary and in kind allowances, similar to those of social insurance. The health services that the private company provides depend on the type of the contract (Soulis, 1999). One of the major problems of the insurance companies that operate in a competitive environment is the so-called "adverse selection", private insurance companies prefer to provide their services to particular groups of the population who are not at excessive risk (Kyriopoulos and Niakas, 1994). Research from 1989 shows a gradual increase in the number of people insured in private insurance companies (Liaropoulos, 1993).

4. Retirement System of Greece

4.1 Social Security Institution's Pensions

The Social Insurance system of Greece covers also the retirement of the insured. From the first day of work the employees are obliged to start paying into their pension insurance fund, which, together with employers' contributions, provide the funds for IKA

pensions (Management of I.K.A., 2002). I.K.A. grants three different types of pension: old age pension, disablement pension and widow's, or survivor's, pension (Lanaras, 1994). Persons eligible for pensions are all those who have been working and have paid their contributions to I.K.A. The retired with a low pension are also financially supported with a supplementary allowance. This allowance is called "Social Solidarity of Retired" (Management of I.K.A., 2002).

4.1.1. Old age Pension

In order for the insured at I.K.A. to get old age pension, they must fulfill the following basic two requirements:

- Certain age limit
- Minimum number of working days varying according to the category in which every insured belongs to.

There is also the old age pension for special circumstances. This type of old age pension allows full old age pension even for persons below the lower age limit. This type of pension refers mainly to totally blind people and mothers with adolescent children (Lanaras, 1994). The long-term unemployed insured with I.K.A. needing up to 5 years to qualify for their full pension have the option to continue their pension insurance, with the contributions for the paid by OAED. The level of the pension is calculated by taking as basis the salary of the insured on their last day of work. This type of insurance for retirement is suspended if the insured becomes employed (Circular of I.K.A., 2001).

4.1.2. Disablement Pension

The insured that are eligible to receive disablement pension are those who have a disability due to sickness or industrial accident, or to an accident outwith the working environment.

The disability is categorised in three levels:

Heavy – 80% of disability

Usual – 67% of disability

Partial – 50% of disability

4.1.3. Widow's or Survivor's Pension

Widow's or Survivor's Pension is paid in cases when the insured passes away. Under this circumstance the protected members of his/her family are eligible to receive a pension, with the only requirement that the insured has worked for a minimum number of days. In case of death due to industrial accident or occupational sickness, the pension is received regardless of the number of the working days of the insured (Lanaras, 1994).

5. Hygiene and Safety at work

The first attempts of organising regulations for the protection of workers during their work appear in 1836. The general framework follows the guidelines of the European Union for the hygiene and safety at work (Sarafopoulos, 1986). The dominant terms regarding the safety at work are: industrial accident, occupational sickness, and psychological effects (Demarogonas *et al.*, 1987).

5.1 Measures

Greek law started to implement measures for the hygiene and safety at work much earlier than 1920 (R.D.-25.8.1920). After the complete membership of Greece in the European Union (E.U.) some laws had to be transformed in accordance with the guidelines of the E.U. regarding the hygiene and safety at work (Decree15.7.96). According to the law, employers are obliged not only to supply the employees with self-protection equipment, but also to provide training on matters of safety at work, and criminal penalties and fines can be imposed on employer-offenders (Law 2224, 1994) (YPERG). The employees in business (with more that 50 people) have the right to form a committee of hygiene and safety at work, responsible for the control of the working conditions and the measures for the improvement of the working environment. The committee will check whether the measures are kept, and point out the risks for certain workplaces, while recommending alternative solutions (Law 1568/1985). Such a business is obliged to use the services of a Security Technician (responsible for the control of the safety of the working conditions, the advising for the planning and the organisation of safe and healthy working conditions and the general improvement of the workplace) and

a Work Doctor (responsible for advising the employer and the employees regarding the measures taken to ensure the physical and psychological health of the employees) (Law 1568/1985). In situations where the employees need to use special self-protection equipment, the business must provide them to the employees. The employers have to check whether the workers apply the necessary measures for their safety and hygiene and employees are responsible for putting into practice these regulations (Theodoratos and Karakissidis, 1997).

6. Empirical Findings

The existing field of research in Greece is still in an early stage. Research is conducted mainly by scientists in medical and epidemiological fields and much more work has to be done before one can reach to valid conclusions. Greek studies can be divided in two broad categories; *individual-level studies* that focus on the SES determinants of health, and *macro-levels studies* dealing with the observed SES inequalities in health at the national level or in different geographic regions of Greece.

6.1 Mortality and SES

Researchers assessed the effects of individual SES on mortality risk and provide consistent evidence that it is higher among lower SES groups. In particular, it is found that socially and economically disadvantaged children have higher fatality rates from childhood leukaemia in comparison to the remainder (Petridou *et al.*, 1994). Other studies indicate that a large proportion of premature mortality is due to preventable causes of death, highlighting the necessity for the adoption of healthier lifestyles (Kogevinas *et al.*, 1992). Furthermore, Kogevinas *et al.* (1992) detected gender differentials on mortality patterns and argued that women have more years of life expectancy than men, independently of age.

Many researchers assessed the effects of regional socio-economic inequalities in the health of the population.²² All cause and cause-specific mortality rates are positively related to regional indicators of industrial employment and per capita consumption of

²² Kyriopoulos *et al.*, 1983; Tsimpos *et al.*, 1990; Kogevinas *et al.*, 1992; Madianos and Stefanis, 1992; Zacharakis *et al.*, 1998; Madianos *et al.*, 1999; Kyriopoulos *et al.*, 2003.

food and negatively related to per capita income (Kyriopoulos *et al.*, 1983; Tsimpos *et al.*, 1990). A characteristic example is the fact that Thrace exhibited the highest mortality levels among the remained Greek regions, whereas Ionian Islands and Crete the lowest. However, average mortality in Greece occupied one of the lowest positions among E.U. countries (Tsimpos *et al.*, 1990). Moreover, while trends of mortality levels in each region were downward sloping in 1996, this decrease was slower for regions of low SES (in Tountas, 2000). Le Grand (1987) confirmed the positive relationship between income inequality and mean mortality in across-country comparison study with Greece exhibiting high inequality independently of the inequality measure applied.²³

Studies dealing with the effects of occupational class on mortality concentrate mostly on work-related fatalities. About 4,000 people loose their lives due to working accidents in the E.U. countries (Eurostat, 1997). Higher mortality rates due to work-related accidents are observed mainly in manual jobs, such as working in mines, quarries, in construction and agricultural sectors, and in the transportations sector (in Tountas, 2000). In a recent survey, 57% of the fatal work-related accidents took place in sector of construction services and other manual, technical services (Centre for Occupational Health and Safety, 2002).

6.2 Physical Health and SES

The SES determinants of physical health are a major issue investigated in various studies and researchers detect SES gradients in the health of both children and adults. In specific, studies argue that the risk of school injuries is positively related to both the low parental education and the low school performance (Petridou *et al.*, 1994; Kouri *et al.*, 1995). Furthermore, maternal occupational class is a significant determinant since children of women in non-professional occupations exhibit a higher risk of school injuries in comparison to the remainder (Petridou *et al.*, 1995). In relation to the above, adolescents from low and middle income urban families are found to exhibit substantially

²³ The countries included in the analysis are: Australia, Austria, Belgium, Bulgaria, Canada, Czechoslovakia, Denmark, Eire, England and Wales, France, FRG, GDR, Greece, Hungary, Iceland, Italy, Japan, Luxembourg, Netherlands, N. Ireland, Norway, New Zealand, Poland, Portugal, Romania, Scotland, Spain, Sweden, Switzerland, U.S.A., Yugoslavia.

higher values of blood lipid levels (and consequently, increased risk of coronary heart disease) compared to children from high income urban families (Petridou *et al.*, 1995).

The SES effects on health are evident in adult ages as well. Greek studies provide consistent evidence that SAHS is positively affected by higher levels of income, education, and primary health care coverage (Mergoupis, 2001; Kyriopoulos *et al.*, 2003). Housing conditions and lifestyle factors, such as smoking and alcohol drinking, are also found to affect the risk of injury among a sample of elderly individuals (Petridou *et al.*, 1996).

Various Greek studies investigated the effect of occupational status on health inequalities. The relationship between unemployment and morbidity rates is well established through the higher incidence of high-risk behaviours and unhealthy habits (Tountas, 1999). In addition, Mergoupis (2001) argues that a strong, negative “manual work” effect operates on long-term health status compared to non-manual occupations. Furthermore, occupational injuries exhibit the greatest severity among all kind of injuries (Petridou *et al.*, 2000).

Work-related features were also found to affect health state. Job tenure, physically demanding working tasks, workload, job demands and shortage of staff in the job can affect negatively the incidence of physical health problems (namely, diseases of the circulatory system, musculoskeletal problems, neoplasia, injuries and poisoning) (Kagialaris *et al.*, forthcoming; Xidea-Kikemeni *et al.*, forthcoming).

Age and gender effects are also consistently supported by the literature. In particular, health state worsens as age increases independently of how health is approximated (Petridou *et al.*, 2000; Mergoupis, 2001; Kyriopoulos *et al.*, 2003). Work-related accidents and health impairments also increase with age (Alamanos *et al.*, 1986; Xidea-Kikemeni *et al.*, forthcoming). However it is found that the incidence and the severity of work-related accidents decreases after the age threshold of 60 years. Alamanos *et al.* (1986) conclude that the observed underemployment rates and legal retirement age threshold for employees over 60 years contribute to this finding. Similarly, other studies indicate an age threshold of 55 years before which health score are lower among employees (Lascari *et al.*, 2000).

The evidence on gender differentials is less clear cut. Some studies fail to provide evidence (Kyriopoulos *et al.*, 2003). On the contrary, other studies argue that women appear to have deteriorated overall health status compared to men (Lascari *et al.*, 2000; Mergoupis, 2001).

6.3 Mental Health and SES

The European Agency for Safety and Health at Work (2000) points out that stress constitutes a dominant hazard among health professionals. Studies provide findings that Greek employees suffer from higher levels of stress in comparison to employees in the remaining E.U. countries. Women and younger age groups appear to be more exposed to stress in comparison to the remainder. Furthermore, long-run exposure to stress factors can lead to serious physical health problems, such as cardiovascular diseases (Tountas and Alamanos, 1999). Madianos and Stefanis (1992) provided evidence that females, older individuals, individuals either divorced or widowed, Athenian residents, currently unemployed and individuals of lower SES exhibit a higher risk of depression. A positive association is detected between age, job tenure and mental health problems (Xidea-Kikemeni *et al.*, forthcoming) whereas tension and stress symptoms are negatively related to job satisfaction, workload and beneficiary working environment features (Xidea-Kikemeni and Aloumanis, forthcoming). In addition, women appear more stressful in comparison to their male counterparts (Lascari *et al.*, 2000).

6.4 Mediating Pathways in the SES-Health Relationship

Establishing causal effects from SES upon health status is hampered by the appearance of confounders that operate on the relationship of interest. Such factors are mental health symptoms and lifestyle risk factors.

The literature argues that mental health problems are not solely affected by individual SES characteristics but they impose a direct burden on physical health as well. For example, work-related characteristics (such as the work environment, work place relations, work-related accidents and diseases and stress at work) can influence the health of the working population by generating physical, biological, psychological and social

risk factors (Tountas, 1999). Thus, the various dimensions of individual health status interrelate and invalidate the findings on the relationships of interest.

Indeed, the evidence suggests that certain social and psychological factors (such as stress) can affect the appearance of serious psychosomatic disorders, such as cardiovascular diseases. Still, more evidence is needed in order to establish a causal effect running from mental health on physical health symptoms (Economou, 1997). Other studies argue that stress mediates the relationship between societal factors and morbidity and even mortality. In specific, Zoutzoglou-Kottarides (1984) argues that certain conditions of social environment have both a direct and an indirect impact on the cause and the course of cancer, with indirect pathways emerging through individual prior exposure to stress.

Health-related behaviours and lifestyle factors also act as confounders on the SES-health relationship. For example, risky behaviours are inversely affected by individual SES. Furthermore, risky behaviour scores are higher for males and they increase sharply with age (Petridou *et al.*, 1997). In addition, lifestyle choices, such as smoking, affect negatively the duration of gestation (Petridou *et al.*, 1996) and suicidal behavior as well (Zacharakis *et al.*, 1998).

6.5 Health Status and Health Care Provision in Greece

The Greek health care system is suffering from “deficit of specialised staff, maldistribution of personnel, absence of decentralisation policies, inadequate training, and rigid practices of personnel promotion” (Polyzos and Yfantopoulos, 2000, p. 639) resulting in low productivity (Tountas *et al.*, 2002) and hence, may result to poor health outcomes of the population, such as hospitalisation rates (Madianos *et al.*, 1999). Actually, Tsimpos *et al.* (1990) argued that cause-specific mortality could be “...avoidable through medical intervention and health service organization” (p. 73).

Yfantopoulos (1984, 1986) concentrated on the Greek model of economic and health development and concludes that Greece seems to exhibit a time lag in its responses to the worldwide economic developments. In addition, the strong inequality that is observed in Greece manifests the necessity for the adoption of egalitarian redistributive policies. Indeed, only 5% of the population enjoys about 60% of health expenditures (Tountas *et*

al., 2002). Furthermore, social benefits (e.g. sickness and health care, disability, old age, survivors, unemployment) in Greece are below the E.U. average level with the exception of social benefits for old age (Eurostat, 2000).

Studies indicate that health care supply can facilitate the improvement of population health state. Madianos *et al.* (1999) provide evidence that regions of low socio-economic development exhibit an inadequate psychiatric care provision. In detail, economically disadvantaged areas (for example in Macedonia and Thessaly) are characterised from higher mental hospital utilisation rates. Indeed, Madianos and Economou (1999) argue that community-based mental health services provide an alternative efficient solution to inpatient care, especially since cultural barriers in Greece motivate individuals to avoid hospitalisation for mental problems.

7. Conclusions

A number of studies in Greece reveal significant SES gradients on the health of the population at different stages of the lifecycle. Low SES approximated by low education, unemployment state, low income, and certain job characteristics hampers individual health, independently of how health is approximated. Regional analysis indicates that areas of low socio-economic development are characterised by poor health outcomes and uneven health care services distribution. Age differentials are quite evident with health status decreasing as age increases. In addition, females appear to report lower levels of overall health and increased stress but they enjoy higher life expectancy in comparison to male respondents. Still, insufficient evidence is provided regarding the confounding mechanisms (such as lifestyle and mental health factors) operating in the SES-health relationship. Importantly, the endogeneity issue is not confronted by Greek studies. Greek studies provide evidence that SES inequalities in health can be traced back to childhood and adolescent years, implying the existence of a dynamic relationship between SES and health.

Summarising, the health care system in Greece is divided into primary, secondary and tertiary health care. The secondary and tertiary levels deliver hospital services while the primary level provides clinic-based services. The Social Security Institution is the main social insurance provider in Greece. The Institution's services include monetary and non-

monetary allowances to the employed and unemployed under certain circumstances. The retirement system consists of three main types of pension: old age, disablement and widow's. Concerning hygiene and safety at work, there is an obligatory legal framework applying to both the employees and employers, in accordance to E.U. regulations in order to prevent and reduce the number of industrial accidents. Studies indicate that the disadvantages characterising the Greek health care system further contribute in the observed SES inequalities in health.

Although research in Greece started focusing on SES inequalities in health, the available evidence is not enough and further research is needed in order to disentangle the complex mechanisms that contribute to health inequalities (Economou and Nikolaou, 2005).

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