SOCIAL PARTICIPATION AND DEPRESSION AMONG
ELDERLY PEOPLE IN GREECE

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The researcher had two objectives: first, explore how social involvement changes by age among Greek elderly, and second, examine the relationship between social involvement and depression by age among study participants, controlled for education, marital status, and gender. The researcher used data from the 2004 Survey of Health, Aging, and Retirement in Europe (SHARE) database subjecting a sample of 2,898 elderly aged 50 or older to analysis in terms of the study questions. Approximately 43% of the participants \(n = 1,244\) were males and 57% were females \(n = 1,654\).

Study results showed Greek elderly participated more in religious activities and less in non-religious activities with increasing age. The study results showed the level of education did not have an effect on the level of religious or non-religious participation. Marital status could influence Greeks’ tendency to participate in religious activities, however, it did not have an effect on non-religious participation. Women are more likely to participate in religious activities than the men. The gender of the participants did not have an effect on non-religious participation. Older Greek elderly were more likely to be depressed than the younger elderly. Participation in religious activities was not shown to relate to decreasing the risk of depressive symptoms; while participation in non-religious activities increased it. Further elaboration showed that caring for family increased the risk of depressive symptoms. Participation in other non-religious activities did not show significant relationships to depressive symptoms.

The study findings imply those caring for others are in need of social and mental health support services; and the quality of available social activities need significant improvement.
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By

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CHAPTER 1
INTRODUCTION

Purpose of Study

Aging is a normal process of life. Often including physical or mental impairment, old age still should be enjoyable and experienced with dignity, love and care, respect, communication, relationships, and a social life. Elderly people should enjoy life with their family and friends and have free time to attend their choice of social activities.

On the other hand, aging is understood to bring emotional challenges, as elderly people may experience various mental and physical impairments. As they age, people have to adjust to giving up some control when confronted with losses, sensory impairments, fears, grief, sadness over physical and mental deterioration and dependency, or regrets over past events. Elderly people may additionally experience loneliness and social isolation; poverty; feelings of rejection; the struggle to find meaning in life; and feelings of uselessness, hopelessness, and despair. Therefore, older adults frequently need to cope with depression. Late life depression has been identified as one of the most common mental health problems affecting elderly people. It is estimated that by the year 2020 depression will become the second most prevalent health condition worldwide, resulting in disabilities, premature mortality, and suicides (WHO, 2010). Depression can be accompanied by various physical conditions and multiple social factors may cause the deterioration of the elderly’s psychological condition.

A decline in social involvement and receiving support may be the most noticeable factor in the worsening psychological life and well-being of the elderly. Unlike other social factors like loss of family and friends, job, social status, and poverty; the elderly’s degree of social involvement can be improved. Meeting and communicating with other people; visiting social
clubs, various sports events, and educational activities; and attending church, etc., may provide purpose and meaning in their life. Maintaining a strong connection to the community may give the elderly a sense of safety and confidence and help them to remain physically and psychologically active and stable. Therefore, social support and involvement can greatly contribute to the elderly’s ability to deal with loneliness and depression.

As rapidly aging populations are expected worldwide, Greece is no exception. The elderly’s well-being in this growing population is of great concern for policy makers and social and mental health support services (Administration on Aging, 2001). Unfortunately, there is limited research examining social involvement in later life and its impact on Greek elderly’s feelings of depression. Therefore this researcher aimed to investigate the common assumption that involvement in life declines with increasing age; and with this decline depression increases. Finally, age, education levels, marital status, and gender affect the relationship between social participation and depression in old age.

The recent debt crisis in Greece uncovered a pension paradox – the fact that regardless of government’s high spending on the system, many elderly live in poverty (Kolivakis, 2015). According to the creditors, the pension system is still too large compared with what the country can afford. According to the latest Eurostat statistics from 2012, Greece spent 17.5% of its economic amount produced on pension payments and that is more than any other European country. After years of reforms still many Greeks can retire at the age of 50 and the average age of retirement is 61.9. One reason for this paradox is the fact that over a fifth of Greece’s population is retired and that number is rising (Kolivakis, 2015). Only two countries in Europe have a higher percentage of retired people. Nevertheless, pensions continue to be one of the main problems between creditors and the Greek government. The political and economic situation of
the country may lead to a problem in the future status of the elderly; placing them in the middle of a financial and social crisis where it is uncertain how it will affect Greek elderly’s social and mental health well-being (Kolivakis, 2015).

Statement of the Problem

This author focused on the Greek elderly population due to several factors. There is considerable research on the social participation of elderly people in Europe; however the research on Greek elderly is rather undeveloped. Therefore, this researcher aimed to contribute in examining the social participation of the elderly people in Greece and how that has an effect on their health.

The interest of the author is based on the uniqueness of Greek traditions, culture, and inter-generational relationships. In most European countries, the majority of the elderly now live alone or with a spouse. In contrast, a large portion of the Greek elderly co-reside with their adult children and this custom has implications for their social and economic well-being. The family in Greece has traditionally been viewed as a significant source of familial support for elderly people, providing them with financial and social support, companionship, and personal care. Even with the recent trend of some elderly people preferring to live in an independent household, the close inter-generational relationships continue to be a tradition and it is very common for most members of the extended family to live nearby. Furthermore, a specific aspect of the Greek culture is the deep respect that people feel toward the older generation, honoring their wisdom and knowledge. It is considered socially unacceptable for the family to neglect or ignore their elderly members. Therefore, in their old age people continue to be a part of family celebrations, raising children, making decisions, etc.
Additionally, the interest of the author is based on the fact that, compared to other countries in Europe, Greece remains underdeveloped in regard to public social services for the elderly. The author’s choice of theme is also defined by the fact that she is familiar with some aspects of the Greek culture, being originally from a country bordering Greece on the north, Bulgaria.

Promoting social participation of the older population (e.g., membership in volunteer associations) is often seen as a promising strategy for healthy aging in Europe. While the academic literature indicates that the link between social participation and health is well established, some statistical evidence suggests a strong positive relationship may exist for older people. One reason could be that elderly people have more time to take part in social activities. Using the Survey of Health, Ageing & Retirement in Europe (SHARE) data for respondents aged 50 and over, this author tested these hypotheses by evaluating the contribution of social participation to decreasing the risk of depressive symptoms among the elderly, controlling for education, marital status, and gender. Higher rates of social participation could improve mental health and reduce the risk of depression within the Greek elderly. The findings of this study could help the author to suggest healthy aging policies based on social participation that may be beneficial for decreasing the risk of depression among the aged population in Greece. The author used a cross-section of individual-level data from the first wave of the Survey on Health, Aging and Retirement in Europe (SHARE).

The research data included several social participation variables: participating in religious activities; attending training/educational courses; doing volunteer or charity work; participating in sports, social, or other clubs; participating in a political or community organization; and caring/providing help to family. I controlled for age, education, marital status, and gender.
Background of the Survey of Health, Ageing, and Retirement in Europe (SHARE)

The current researcher explored the statistical evidence that suggests a positive relationship between the social participation of elderly people in Greece and their tendency for depression. The study was conducted using a cross-section of individual-level data from the first wave of the Survey on Health, Aging and Retirement in Europe (SHARE).

The research data included several social participation variables: participating in religious activities; attending training/educational courses; doing volunteer or charity work; participating in sports, social or other clubs; participating in a political or community organization; and caring/providing help to family. I controlled for age, education, marital status, and gender.

SHARE has been developed on the basis of previous successful experiments which are the Health and Retirement Survey (HRS) in the United States, and the English Longitudinal Survey of Aging (ELSA). SHARE is a bi-annual longitudinal survey with the aim to perform international assessments and analysis of economic and social problems associated with aging.

The data were collected using a computer-assisted personal interviewing (CAPI) program, supplemented by a self-completed paper-and-pencil questionnaire.

The Survey of Health, Ageing and Retirement in Europe (SHARE) is a multidisciplinary and cross-national panel database of micro data on health, socio-economic status and family networks of more than 45,000 people aged 50 or over. SHARE has become a leader of the European Research Area and in 2008 was selected as one of the projects to be implemented in the European Strategy Forum on Research Infrastructures (ESFRI). Eleven European countries have contributed data to the 2004 SHARE baseline study.
Related Studies and Projects

Similarity studies following the SHARE model are, for example, The Irish Longitudinal Study on Ageing (TILDA), The Longitudinal Aging Study in India (LASI), The Japanese Study of Aging and Retirement (JSTAR), SHARE Israel, The Korean Longitudinal Study of Aging (KLoSA), Chinese Health and Retirement Survey (CHARLS), Mexican Health and Aging Study (MHAS), Health and Retirement Study (HRS) in USA, English Longitudinal Study of Ageing (ELSA) in United Kingdom, and Study on Global Ageing and Adult Health by World Health Organization in China, Ghana, India, Mexico, Russian Federation, and South Africa.
CHAPTER 2
LITERATURE REVIEW

The following literature review will explore the available published research on social participation and depression among elderly people in Greece and other countries. The author will use a thematic approach in order to organize the evaluation of the sources. The themes of the review will reflect the general information on Greece, its culture and policies; the previous publications related with the subjects of social participation and depression among the elderly; the literature on the same matter among the elderly abroad; and related research based on data from SHARE.

Specifics of Greece

Greece is a country in Southern Europe (Advameg, Inc., 2015). The country is bordered by Albania, the former Yugoslavian Republic of Macedonia, Bulgaria, Turkey, and the Aegean, Ionian, and Cretan seas. It is a parliamentary republic. The most specific characteristics of Greece are a Mediterranean climate; an ancient historical and cultural heritage; the coast line; and food, music, and tourism. Greece has been considered in the past a developed country with an advanced, high-income economy and very high standards of living. By the end of 2009, as a result of severe government spending and regularly and deliberately misrepresenting the country’s official economic statistics, the Greek economy faced its most severe crisis with one of the highest deficits in the world. In May 2010 the other Euro-zone countries granted a rescue package which involved giving Greece a €110 billion loan. Greece was required to bring its deficit under control. In 2011 it became obvious that the bail-out would be unsatisfactory and a second bail-out of €130 billion was agreed to in 2012. The economy in Greece continues to be unstable.
According to the Hellenic Statistical Authority (Hellenic Republic, 2011), Greece’s total population in 2011 was 10,787,690. As statistics from 1971, 1981, and 2001 show, the Greek population has been aging the past several decades. In 2001, 16.71% of the population was 65 years old and older. Almost two-thirds of the Greek people live in urban areas. Greece’s largest metropolitan centers are those of Athens (4 million people) and Thessaloniki (1 million people).

The Greek healthcare system is universal and is ranked as one of the best in the world, according to the World Health Organization (2000) - 14th in the overall assessment and 11th at quality of service, comparing to countries such as the UK (18th) and Germany (25th). Life expectancy in Greece is 80.3 years and is among the highest in the world.

The Greek Constitution recognizes the Orthodox faith as the prevalent faith of the country, while assuring freedom of religious belief for all (Clogg, 2014). Close to 98% of the people in Greece are Orthodox Christians, just over 1% are Muslims, and there are a small numbers of Jews, Seventh Day Adventists, Roman Catholics, and members of Protestant denominations. (Clogg, 2014).

Rural areas consist of single-family homes; while urban areas contain up to 10 story tall apartment buildings (Advameg, Inc. (2015). Home ownership is much more widespread than renting. Families purchase homes only after saving the needed funds, instead of using credit. Hospitality is both a pleasure and a responsibility. Greek people believe that it is their obligation to always offer refreshments and food to guests. Coffee-houses have functioned in the past as daily gathering places for men of all ages; women have now started gathering at coffee places too.

Farming, fishing, exports, and crafts were the historical bases of the Greek economy (Worldmark Encyclopedia of Nations, 2007). Families provided most of their own subsistence
needs, producing everything they needed – food, clothes, furniture, tools, tobacco, etc. Social status in Greece results from wealth, education, and occupation; social responsibility and respect of proper behavior and public etiquette.

Greece has a nationalized health care system and a state-directed system of disability and pension payments (Worldmark Encyclopedia of Nations, 2007). There are over 650 different pension programs, with membership depending on the type of work. The government also has a system of earthquake and other disaster compensation. Banks have been established to support particular sectors of the economy. Caring for the personal needs of the elderly is considered a family responsibility.

The National Health Service, a network of hospitals, clinics, and insurance organizations, was established in 1983 (Jakubowski, 1998). It provides basic health care around the country with hospital facilities, doctors, and nurses concentrated in Athens and other major cities. Private health care facilities exist for those who can afford them. The culture in Greece includes beliefs that certain foods, the wind, hot and cold temperatures, greed, anxiety and even dreams have a strong effect on people’s health.

Social Participation and Depression among the Elderly in Greece

In their study, “Social Activity and Participation as Determinants of Anxiety and Depression Among Elderly in Primary Care,” the Greek psychiatrists Grammatikopoulos and Koutentakis (2010) investigated anxiety disorders and depression in correlation with their activity and participation levels among members of the Open Care Centre for the Elderly (KAPI) in the rural district Crete in Greece. A cross-sectional study was designed for 132 participants in age over 65 (mean age 75.7 years). Data were collected through face-to-face interviews. The study included the Short Anxiety Screening Test (SAST) and the Geriatric Depression scale
(GDS-15) to assess anxiety disorders and depression among the elderly. Eighteen point two percent of the participants had minor depression and 8.3% moderate to severe depression; 17.4% (6.8% men versus 26.4% women) had an anxiety disorder. According to the study results, increasing age, female gender, and the absence or minor participation in KAPI were related with higher risk of depression; low levels of participation in KAPI and female gender were linked with higher risk of anxiety. The conclusion was for higher prevalence of anxiety and depression in elderly with limited social activity in primary care centers, especially among women and aged in widowhood.

In December 2006 a team of Greek researchers published the results of a study, “Overview on Health Promotion for Older People in Greece” (Kalokerinou et al., 2006). Promoting health by actively involving the elderly as volunteers is relatively rare in Greece. The social participation of the elderly people in Greece is strongly connected with families’ cultural values. The traditional Greek view is that family members care for the elderly at home. Family members experience feelings of guilt and shame if the elderly person receives home care services or is living in a residential facility setting. They may associate it with their family’s inability to fulfill their traditional obligations and responsibilities.

It is generally accepted that depression is a common problem of older people. The presence of depression in older people was measured in a study (Kyriakopoulou, Beazoglou, & Heffley, 2000). A questionnaire was given to 30 people (21 women and 9 men), who were visiting KAPIs frequently, at the beginning and after three months. The study showed that at the first visit 7 of the 30 older people had depression, while at the second visit the number of people with depression was 8 (Kyriakopoulou et al., 2000). The role of health professionals and a patient’s family is significant for the treatment of elderly people’s depression. Another research
A study was performed in order to prepare health professionals, who work in KAPIs and the Help at Home program, for the diagnosis of depression of older people (Kyriakopoulou et al. 2000). A questionnaire was given to 304 people. The results showed that 29% of older people suffered from depressive symptoms (Kyriakopoulou et al. 2000). A study was accomplished to detect depression in older people who visit Health Centers frequently (Mihailidis, Papanikolaou, Kavga-Paltoglou, & Belos, 2000). Three hundred twelve elderly people (145 men and 167 women), who visited the Health Centre of Kropia, filled in a questionnaire. Depressive symptoms were recognized in 71 patients (22.75%), of which 48 were women (15.38%) and 23 men (7.37%). In this study, they tried to determine if patients with depression visited their family doctor more frequently. To conclude, the study showed the frequent visits in a Health Centre from older people must sensitize the primary health care physicians to look for depressive symptoms through appropriate diagnostic tools (Mihailidis et al., 2000). Finally, the presence of depression in older people, as a cause of psychiatric hospitalization, was measured by another study (Christofeli et al., 2000). In a sample of 47 older people (22 women and 25 men), Seventeen (36%) people suffered from depression. The researchers believe the existing social policy should be re-sketched, in order to include programs, which are important for the maintenance of mental health, such as occupational therapy (Christofeli et al., 2000).

Policy initiatives for older people and health promotion have been studied as well. The services for older people are mainly focused on mental health promotion (Georgouli, Kondili, Chandanos, & Chatzivarnava, 1996). In 1996 the Ministry of Health, in cooperation with the Ministry of the Interior Affairs, developed the so-called Help at Home health care programs which provide health and social care services at home. These programs are the first official, governmental effort to provide home care services all over Greece. Health services (and health
promoting services) are also provided in few care units (nursing homes) for the elderly, in
psycho-geriatric homes and within programs of the National Organization of Welfare and other
social care programs. The Hellenic Association of Gerontology and Geriatrics, the Alzheimer
Association, and the Psycho-geriatric Association “NESTOR” have provided many health
promotion programs in Greece and support any kind of effort done in this field.

According to Kalokerinou et al. (2006), the social environment (family, friends, and
society) and the communication have a major role in Greek elderly people’s life. One significant
factor is the strong emotional supportive network, both from their family and the society. The
sources of psycho-social support are different for male and female elderly. Men are involved in
external activities (friends, café and dining out, and participation in local clubs and associations,
etc.), while women seem to receive support from their family, close friends, and religion. There
is a relationship between psycho-social support and depression in older people. Older people
who take visits from their children, relatives, and friends seem to have less risk for depression.
The psycho-social support differs in the urban and rural areas.

The Greek Ministry of Health and Social Welfare has established a social care program in
order to encourage older people to get involved in their health care (Giotaki-Charatsi &
Georgaki., 2002). This program provides nursing care at home, services from social workers, and
domestic help to older people. The total number of the participants in the study was 98 elderly
people, who received services from this program. Data were collected via a questionnaire. The
study showed 52% of the sample was not satisfied with their living conditions, while the service
providers thought 51% of old people were living in unsuitable environment. 43.9% of older
people were not able to serve themselves and 40.8% had mental health issues (Giotaki-Charatsi
& Georgaki, 2002).
At the same context, in a study conducted in Tzaneio General Hospital of Piraeus, 50 hospitalized elderly were asked to complete a questionnaire in order to evaluate their ability to function independently, to contribute to their treatment and to measure their expectations from the current health system. Respondents reported low level of empowerment and high level of stress which lowers their ability to participate efficiently in the therapeutic process. (Giannakaki, Lela, Papadodimas, 2000).

Social isolation and loneliness is a common occurrence among the elderly population. Poverty is also a limitation to older people’s access to social life. Therefore, social support and networks for health promotion in the elderly are significant issues. A survey was performed which focused on the evaluation of a social program founded by the health and welfare ministry (Giotaki-Charatsi & Georgaki., 2002). Elderly people and service providers, as social workers and nurses, were included. According to the study results, the needs of the elderly are dependent on their physical or mental health problems, as well as their financial situation.

The relationship among the members of the family is another factor strongly related to older people’s health promotion. The results from one survey (Iordanou, Babatsikou, Dontas, & Beka, 2000) showed the importance of frequent contact with their family for older people. One hundred older people (>65 years old) and 100 caregivers from different nursing homes in Athens participated in this study. The elderly (54%) and their caregivers (58%) mentioned that longing for their family (husband or wife, children and grandchildren) is the most common feeling of the elderly.

Social Participation and Depression around the World

To determine cultural uniqueness in Greece, a major focus of this study was on social participation within the family life of the elderly. The connection between family, social life, and
well-being among the elderly population has been studied widely around the world (Helliwell & Putnam, 2004) and associates positive good contact with family, friends, and neighbors with life satisfaction, happiness, and health status. One researcher studied the life satisfaction of elderly people specifically in the UK and determined the number of contacts with friends, relatives, and neighbors and the quality of those contacts were factors for the presence of satisfaction (Powdthavee, 2008). Other researchers compared elderly people from the U.S. and the Netherlands, and determined that satisfaction with social contacts contributes to satisfaction with life, health satisfaction, and satisfaction with work or daily activities (Kapteyn, Smith, & Soest, 2010).

Bukov, Maas, and Lampert conducted a study in Berlin, Germany, entitled “Social Participation in Very old Age.” The study results showed that social participation is an important measure of quality of life in old age. The authors illustrated three types of participation: collective, productive, and political participation. The used data was from the multidisciplinary Berlin Aging Study. Analyses showed that individuals who engaged in political activities also participated in the other two categories, and those who engaged in productive activities also participated in collective activities.

Related SHARE Research

A research article, “Social Involvement, Behavioral Risks and Cognitive Functioning among Older People’ by German and Austrian scientists (Engelhardt, Buber, Skirbekk, & Prskawetz, 2010), was published in “Aging and Society,” an international journal dedicated to the understanding of human aging and the statuses of older people in their social and cultural contexts. The researchers analyzed the relationships between cognitive performance, social participation, and behavioral risks, taking into account age and educational achievement. The
researchers examined individual data for 11 European countries and Israel from the first wave of the Survey on Health, Aging and Retirement in Europe (SHARE). The study identifies different sources of flexibility on cognitive functioning while taking into account age-related decline in cognitive performance. Several social participation variables were examined: employment status; attending educational classes; volunteer work; providing help to family, friends, or neighbors; and participating in sports and other clubs, in a religious organization, and in a political or community organization. The researchers controlled for age, education, income, physical activity, body-mass index, smoking, and drinking. The results showed that all kinds of social involvement enhance cognitive functions. Behavioral risks such as physical inactivity, obesity, smoking, or drinking were unfavorable to cognitive performance. For both genders, all social involvement indicators were associated with better cognitive performance.

In 2006, the same journal, “Aging and Society,” published the work of German researchers Erlinghagen and Hank, “The Participation of Older Europeans in Volunteer Work.” Using data from the 2004 Survey of Health, Aging and Retirement in Europe (SHARE), the researchers examined the relationships between selected socio-demographic characteristics and the rates of participation in volunteer work in 10 European countries among people over the age of 50. The analysis revealed relatively high participation rates in Northern Europe and relatively low participation rates in Mediterranean countries. The study showed that age, education, health, and involvement in other social activities strongly influence an individual’s tendency to engage in volunteer work.

A study titled “Depression and Social Involvement among Elders” was published in 2006 by Hisham Motkal Abu-Rayya Ph.D., associated with the Unit of Psychology, Åbo Akademi University, a Swedish language university in Finland. The study involved social participation
among European elderly, and particularly the relationship between social participation and depression. The researcher used data from the 2004 Survey of Health, Aging and Retirement in Europe (SHARE). The sample included 10,207 participants age 65 or older, 45% males and 55% females. Results showed participants to be socially involved to only a low degree. About 58% did not indicate any involvement, 28% showed participation in one activity, 9% showed involvement in two different activities, and 5% were involved in three or more different social activities. The researcher concluded elderly people in Europe participate less in social activities as they age, without gender difference. Younger elderly people tend to be more socially involved often. The study also determined depression negatively correlates with social participation for both males and females. The study results also suggested that increasing social participation would delay depression among the elderly.

A longitudinal study, using SHARE data from 2006 and 2007, titled “Effect of Physical Inactivity on Cognitive Performance after 2.5 Years of Follow-Up,” was published by a team of German psychiatrists (Aichberger, Reischies, & Heinz, 2010). The authors studied 17,333 people over the age of 50 from 11 European countries. Self-reported physical activity was used as a baseline. Cognitive function was also measured at baseline and then measured again after 2.5 years. The effects of physical activity on cognitive performance at follow-up were assessed by using such variables as age, education, functional impairment, depressive symptoms, and body mass index. The researchers determined that physical inactivity is associated with a higher rate of cognitive decline and delayed word recall. Further analyses showed that dynamic activities performed more than once a week were mainly related to changes in cognition over time. The conclusion was engagement in moderate and dynamic physical activities protects elderly people against cognitive decline in older age.
Bonsang and van Soest (2011) used SHARE data to study “Satisfaction with Social Contacts of Older Europeans.” The authors analyzed the determinants of an important component of well-being among individuals aged 50 years or older in 11 European countries – satisfaction with social contacts. Most of the older Europeans reported being satisfied with their social contacts. Differences across countries determined respondents from Northern countries tended to be more satisfied than respondents from Central or Mediterranean countries.

“Cross-National Differences in Older Adult Loneliness,” by Fokkema, Gierveld, and Dykstra (2011) was published in the “Journal of Psychology: Interdisciplinary and Applied.” The aim of this study was to research loneliness among the elderly population and its determinants across Europe. The data used was from the SHARE surveys, Wave 2, 2008. The studied group consisted of 12,248 participants over 50 in age from Austria, Belgium, the Czech Republic, Denmark, France, Germany, Greece, Ireland, Italy, the Netherlands, Poland, Spain, Sweden, and Switzerland. The authors studied country differences in demographic characteristics, wealth and health, and social networks. Elderly people living in the southern and central European countries, that include Greece, were generally lonelier than those living in the northern and western European countries. In the southern and central European countries, which also includes Greece, reasons for loneliness were mostly not being married, financial difficulties, or health issues. In almost all of the countries, social participation and family relations were an important factor in preventing loneliness.

A study, “Societal Determinants of Productive Aging: A Multilevel Analysis across 11 European Countries” by Karsten Hank was published in January 2010 in Germany. The aim of the researcher was to characterize older people’s participation in non-market productive activities, based on micro-data from SHARE. The study estimated elderly engagement in formal
volunteering, informal helping, and caring across 11 European countries. The hypotheses of the study concerned a positive relationship between political and religious freedom, welfare state services, and older people’s engagement in social activities.

A research article, “Living Conditions and Life Satisfaction of Older Europeans Living Alone: A Gender and Cross-Country Analysis,” was published in 2010 by French authors, Gaymu and Springer. These researchers focused on the influence of objective living conditions on the life satisfaction of older Europeans living alone from a gender and cross-national perspective. The data used were from the first wave of SHARE on life satisfaction, health, family, and socio-economic indicators. As a result, women living alone declared themselves to be satisfied with life less often compared to men. Determinants of life satisfaction differed for men and women among countries. A variety of factors increased life satisfaction for both men and women living alone - daily activities, higher level of education, and an older age. The existence of a child influenced only the life satisfaction of men; financial security had an impact only for women. In general, women had a higher probability of declaring themselves satisfied with life in northern European countries than in the South European countries (including Greece).

A team of researchers from Germany and Italy published a study, “The Social Connectedness of Older Europeans: Patterns, Dynamics and Contexts” (Kohli, Hank, & Kunemund, 2009). Based on data from SHARE, the researchers aimed to demonstrate that the population in the age 50+ demographic is socially connected in several ways. The analysis suggested the importance of social connectedness among the elderly population and concluded the dynamics of formal and informal social relations and family relations, as well, are indicators of subjective resources and needs.
A researcher from the Israel Gerontological Data Center, Howard Litwin, published an article in 2009 titled, “Social Networks and Well-being: A Comparison of Older People in Mediterranean and Non-Mediterranean Countries.” Litwin examined the social networks of older people in Mediterranean and non-Mediterranean countries and whether those social networks were significantly different or if they functioned in similar fashion in relation to well-being outcomes. The sample included family household participants of age 60+ data from the first wave of SHARE in five Mediterranean (3,583 respondents) and seven non-Mediterranean (5,471 respondents) countries. Variables for the study were structure and interaction, exchange, engagement, and relationship quality. The data were controlled for background and health characteristics. In addition, two outcomes were regressed on the study variables – depressive symptoms and perceived income inadequacy. The results exposed that the cultural differences between the older people from Mediterranean and non-Mediterranean countries were significant and their social network should be seen within their unique regional environment. Those cultural differences correlated with the differences that exist in background characteristics and health status.

UK researchers Seidel, Brayne, and Jagger (2011) published the study, “Limitations in Physical Functioning among Older People as a Predictor of Subsequent Disability in Instrumental Activities of Daily Living.” The researchers described the physical functioning of older adults as the basic necessity for their ability to live independently and to perform in social situations. The participant’s abilities for cooking, shopping, and housework were studied based on SHARE data. The respondents were asked about physical functioning (climbing, pulling/pushing, stooping/crouching/kneeling, lifting/carrying, and reaching/extending) and they had their grip strength and walking speed measured. Respondents were 6,841, both men and
women over the age of 65, who reported no disability in cooking, shopping, and housework at baseline. Self-reported measures of physical functioning with disability were taken at two years, controlling for age, gender, educational level, cognitive function, and chronic conditions.

The Journal of European Social Policy in October 2011 published the report, “Participation in Socially Productive Activities and Quality of Life in Early Old Age: Findings from SHARE” by German researchers, Siegrist and Wahrendorf. The researchers determined associations between socio-economic status, socially productive activities, and well-being across 14 European countries, based on the first two waves of SHARE. The respondents included approximately 15,000 retired men and women. The conclusion was continued participation in socially productive activities improves the prospective quality of life in early old age.

The International Journal of Public Health in 2010 published an article, “An Assessment of Socio-Economic Inequalities in Health among Elderly in Greece, Italy and Spain” from the Greek author Tsimbos. The researcher explored socio-economic inequalities in health among Mediterranean people over the age of 50. The data used in the analysis came from SHARE, Wave 1, Release 2. The sample included 2,671 Greek, 2,502 Italian, and 2,343 Spanish older adults. The result was socio-economic position declines with age. Those with lower socio-economic position experience had worse health. Unrelatedly to education and gender, Greek people demonstrate the lowest rates for self-reported health and physical and depressive symptoms. Spanish people show the highest rates for chronic conditions. Italians with functional limitations perform better. The analysis indicate that the level of socio-economic differences in self-reported health is greatest in Greece, followed by Spain and Italy.

The European Journal of Aging published “Are Changes in Productive Activities of Older People Associated with Changes in their Well-Being?” by Wahrendorf and Siegrist
(2010). Using the first two waves from SHARE, the study included 11 European countries with 10,309 participants age over 50. The authors explored the dynamics of participation in two different types of activities – volunteering and care for a person. The researchers conducted testing of participants’ association with changes in well-being. The results claimed older people, who maintain or start their productive activity/volunteering between 2004 – 2010, have a lower probability of experiencing a significant decrease in well-being and no association with a significant increase in well-being was observed.

In 2006, the European Journal of Aging published the study, “Social Productivity and Well-Being of Older People,” by Wahrendorf, Knesebeck and Siegrist. Social participation has been associated with well-being and better health outcomes in older populations. The researchers used data from the 2004 SHARE; including approximately 22,000 participants, age 50+ from 10 European countries. The authors studied types and quality of productive activities (volunteering, care for a person, informal help) and their association with two indicators of well-being: depressive symptoms and quality of life. The results stress the need for an enhanced quality of socially productive activities.

“Occupational Activities and Cognitive Reserve: a Frontier Approach Applied to SHARE,” by Adam, Bay, Bonsang, Germain, and Perelman (2007), was created as a working paper for the Belgium Research Center on Public and Population Economics (CREPP) in 2006. The purpose of this paper was to explore the effect of the concept of activity on the constitution and the care of cognitive reserve among the European population age 50+. SHARE data from 2004 was used for this purpose. This survey included a sample of 18,623 respondents. Several topics were analyzed: physical and mental health, mobility, occupational activities,
socioeconomic status, etc. The results confirmed the positive impact of occupational activities on
the cognitive functioning of elderly people.

Increasing the older population’s social participation was studied and published in
“Promoting Social Participation for Healthy Aging - A Counterfactual Analysis from SHARE”
(Debrant & Sirven, 2008). Older people have additional time to take part in social activities and
such participation contributes to continued social and emotional support. Using SHARE data for
respondents aged 50 and over in 2004, the researchers tested these hypotheses by evaluating the
role of social participation to self-reported health (SRH) in 11 European countries. The
possibility of reporting good or very good health was calculated for the whole sample (after
controlling for age, education, income, and household composition) using regression coefficients
estimated for those who do and do not take part in social activities (with correction for selection
bias in these two cases). The analysis showed social participation adds three percent to the
growth in the share of individuals reporting good or very good health on average. Higher rates of
social participation could improve health status and reduce health disproportions within the
whole sample and within every country.

Research on Caregiving and Depression

According to Arehart-Treichel (2008) caregivers of any age or gender can face numerous
overwhelming challenges. Caregiving can be extremely time-consuming and physically and
mentally exhausting. Studies have found female caregivers are more likely than males to
experience anxiety, depression, and other emotional stress due to caregiving (Family Caregiver
Alliance, 2001). Researchers examined the relationship between providing care and caregiver
health behaviors as exercise, sleep patterns, weight maintenance, smoking, and consuming
alcohol (Gallant & Connell, 1998). Among both women and men, health behavior changes were
found to be influenced by depressive symptoms and burden. Caregivers showed some common experiences: social isolation, loss of control, sense of accomplishment, a problem-solving approach, and burden declining with years of caregiving (Harris, 2007). Ducharme et al. (2007), based on Pearlin et al.’s model, defined the factors associated with the health of older male caregivers. The results showed psychological distress and worsen health among 51% of the sample. Another researcher’s data from a qualitative study of caregivers in Rochester, New York claimed that the major problem is coping with the isolation (Russell, 2007).

A caregiver gender research project included 143 informal adult caregivers. The caregivers provided 244 care activities (Kelley, 2005). One-hundred and three women provided 194 care activities, and 40 men provided 50 care activities. Women and men provided different amount and type of care involvement, and had different motivational mechanisms for involvement in elderly care (Kelley, 2005). According to other studies, female caregivers provided the most difficult caregiving tasks (i.e., bathing, toileting, and dressing), while male caregivers were more likely to help with finances, arrangements, entertainment and other less difficult tasks.

Men have a tendency to react differently to the depression of long-term caregiving (Trubo, 2002). They are less likely to admit that they feel depressed, to seek medical help or to take antidepressant medication. Men are more likely to deal with their depression by working long hours or by abusing alcohol (Trubo, 2002).

The research of Hooker, Manoogian-O’dell, Monahan, Frazier, and Shifren (2000) included 175 spouse caregivers. Female caregivers reported significantly more mental health problems than males. The European experience shows similar evidences (Alzheimer Europe, 2007). Men are aware of their objective burden but ignore their own mental health. All of them
are aware of the tasks involved, the practical problems and their physical limitations. Their
efforts and expectations are more focused towards financial, legal and administrative aid, as well
as toward receiving information about the progression of the disease; and less toward finding
support for their psychological well-being and that of their loved one. (Alzheimer Europe, 2007).

Literature Review Summary

The sources reflected issues of depression among the Greek elderly; policy initiatives for
older people and health promotion; the specifics of volunteering; the social environment (family,
friends, and society) and the opportunities for communication; the need of empowerment and
dealing with high levels of stress; the social isolation and loneliness as a common phenomenon;
the important issue of social support and networks for health promotion in the elderly; the effects
of activity programs; and the elderly’s relationships as a factor strongly related to older people’s
health promotion. The literature review also reflected research from other countries around the
world regarding social involvement, behavioral risks, and cognitive functioning among older
people. In almost all of the countries, social participation and family relations were an important
factor in preventing loneliness. Gender differences found were the existence of a child influenced
only the life satisfaction of men and financial security had an impact only for women. The
importance of social connectedness and the dynamics of formal and informal social relations
among the elderly population were validated. The importance of volunteer work and care for a
person was endorsed as well.

An important finding was determining the cultural uniqueness of Greece. Several sources
that addressed cultural differences between the older people from Mediterranean and non-
Mediterranean countries are significant and their social network should be seen within their
unique regional environment. Several of the sources concluded that social participation rates
among the elderly in Northern Europe were relatively high; however they were relatively low in Mediterranean countries, including Greece. Elderly people living in the southern and central European countries (including Greece) were generally lonelier than those living in the northern and western European countries. In the southern and central European countries, the reasons for loneliness were mostly not being married, financial difficulties, or health issues. Satisfaction with social contacts was determined to be an important component of well-being; and respondents from Northern countries tended to be more satisfied than respondents from Central or Mediterranean countries, including Greece. In general, women had a higher probability of declaring themselves satisfied with life in northern European countries than in South European countries (including Greece).

According to the findings of the review, increasing the older population’s social participation was seen as a promising strategy for healthy aging in Europe. The author found this outcome justifying the choice of research to investigate the relationship between social participation and depression specifically among the elderly people in Greece.
CHAPTER 3
SAMPLE, METHODS, PROCEDURES, AND HYPOTHESES

Introduction

In this chapter, I discuss the research methodology used. There are four sections in this chapter: (1) Introduction, (2) Methods (sample, instruments, and procedures), (3) Hypotheses, and (4) Conclusion. For this study, I employed the secondary data collected by the Survey of Health, Ageing and Retirement in Europe (SHARE), accessible at the Research Data Center which is physically located at CentERdata on the Tilburg University campus in the Netherlands. The analyses for this data were made using the statistical software package SPSS 20.0. Of the 12 countries participating in this project, I chose Greece because of the uniqueness of Greek traditions, culture, and inter-generational relationships; and the fact that compared to other countries in Europe, Greece remains underdeveloped in regard to public social services for the elderly.

Method

Sample

The empirical analysis is based on data from The Survey of Health, Ageing and Retirement in Europe (SHARE). The Survey was created as a multidisciplinary and cross-national database on health, socio-economic status and family systems. Approximately 110,000 individuals from 20 European countries age 50 or older were included. SHARE characterizes the non-institutionalized population and spouses are also interviewed when younger than 50. Respondents did the face-to-face, computer-aided personal interviews (CAPI) and completed a paper and pencil drop-off questionnaire with self-assessment evaluations on satisfaction with their life.
Table 1 shows the breakdown of Wave 1 2004 sample for Greece by gender and age. It also displays the household response rates and the individual response rates.

Table 1

*Breakdown of Wave 1 2004 Sample for Greece by Gender, Age, and Response Rates*

<table>
<thead>
<tr>
<th>Sample</th>
<th>#</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Greece</td>
<td>2,898</td>
<td>100</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>1,244</td>
<td>42.9</td>
</tr>
<tr>
<td>Female</td>
<td>1,654</td>
<td>57.1</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Under 50</td>
<td>112</td>
<td>3.9</td>
</tr>
<tr>
<td>50-64</td>
<td>1,369</td>
<td>47.2</td>
</tr>
<tr>
<td>65-74</td>
<td>729</td>
<td>25.1</td>
</tr>
<tr>
<td>75+</td>
<td>688</td>
<td>23.7</td>
</tr>
<tr>
<td>Response Rates</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Household</td>
<td></td>
<td>63.1</td>
</tr>
<tr>
<td>Individual</td>
<td></td>
<td>91.8</td>
</tr>
</tbody>
</table>

Instruments

The first stage of the SHARE development process started in January 2002, when an English-language draft questionnaire was produced. That first version was based on the role models of the U.S. Health and Retirement Study ([HRS]; Juster & Suzman, 1995) and the English Longitudinal Study of Ageing ([ELSA]; Marmot et al., 2003). This draft questionnaire was conducted in the UK in September 2002 in collaboration with the National Centre for Social Research. Later the English-language questionnaire was carefully reviewed and translated into all SHARE languages.

Eleven European countries have participated in the 2004 SHARE baseline study – Denmark, Sweden, Austria, France, Germany, Switzerland, Belgium, Netherlands, Spain, Italy
and Greece. Israel joined in late 2004 and became the first country in the Middle East to conduct a systematic study of its aging population.

The SHARE main questionnaire consists of 20 modules. Table 2 shows the modules. Not all respondents had to answer all modules of the questionnaire. It took about 80 minutes for a person to complete both the interview and the questionnaire.

Table 2

*Overview of All Modules in the Main Instrument*

<table>
<thead>
<tr>
<th>Module</th>
<th>Module Abbreviation</th>
<th>Module Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>CM</td>
<td>Household demographics (main sections)</td>
</tr>
<tr>
<td>2.</td>
<td>DN</td>
<td>Demographics and networks</td>
</tr>
<tr>
<td>3.</td>
<td>PH</td>
<td>Physical health</td>
</tr>
<tr>
<td>4.</td>
<td>BR</td>
<td>Behavioral risk</td>
</tr>
<tr>
<td>5.</td>
<td>CF</td>
<td>Cognitive function</td>
</tr>
<tr>
<td>6.</td>
<td>MH</td>
<td>Mental health</td>
</tr>
<tr>
<td>7.</td>
<td>HC</td>
<td>Health care</td>
</tr>
<tr>
<td>8.</td>
<td>EP</td>
<td>Employment and pensions</td>
</tr>
<tr>
<td>9.</td>
<td>GS</td>
<td>Grip strength</td>
</tr>
<tr>
<td>10.</td>
<td>WS</td>
<td>Walking speed</td>
</tr>
<tr>
<td>11.</td>
<td>CH</td>
<td>Children</td>
</tr>
<tr>
<td>12.</td>
<td>SP</td>
<td>Social support</td>
</tr>
<tr>
<td>13.</td>
<td>FT</td>
<td>Financial transfers</td>
</tr>
<tr>
<td>14.</td>
<td>HO</td>
<td>Housing</td>
</tr>
<tr>
<td>15.</td>
<td>HH</td>
<td>Household income</td>
</tr>
<tr>
<td>16.</td>
<td>CO</td>
<td>Consumption</td>
</tr>
<tr>
<td>17.</td>
<td>AS</td>
<td>Assets</td>
</tr>
<tr>
<td>18.</td>
<td>AC</td>
<td>Activities</td>
</tr>
<tr>
<td>19.</td>
<td>EX</td>
<td>Expectations</td>
</tr>
<tr>
<td>20.</td>
<td>IV</td>
<td>Interview</td>
</tr>
</tbody>
</table>

The interviewers went from door-to-door to conduct face-to-face interviews using a laptop computer with the installed questionnaire. The software used for that purpose was interviewing system tool called Blaise, developed by Statistics Netherlands. Both the U.S. Health
and Retirement Study (HRS) and the English Longitudinal Study of Ageing ELSA use the same survey tool for their research.

The generic CAPI questionnaire had the same structure across countries and the only difference was the language used in the question texts. It consisted of two separate modules: the cover screen and the main questionnaire. The cover screen provided an introduction to the study and the statement of confidentiality. It included a complete household listing and the eligible respondents. The main instrument consisted of 20 modules supplemented by the questionnaire. Respondents were allowed to answer ‘Don’t Know’ (DK) or to refuse to answer the question (RF).

SHARE data in Greece was collected by Kapa Research Institute under the leadership of Dr. Tasos Georgiadis and Clive Richardson. The target population was all Greek speaking residents born in 1954 or earlier and their spouses/partners at the time of the interview. Data was collected from all 54 Greek prefectures called Nomos. The first contact was made via telephone directories. Phone numbers were selected by simple random selection.

The available data consists of information for 2,898 individuals from Greece over the age of 50. The average age of the actual participants was 73.84 (SD = 6.84). About 43% of the participants (n = 1,244) were males and 57% females (n = 1,654).

Statistical Procedure

To analyze the data I used Logistic Regression. The association between social participation and depressive symptoms is analyzed by comparing means of EURO-D by social participation. Multivariate regression models are applied to analyze the association between social participation and depressive symptoms.
The independent variables are the following, measured by SHARE, social activities: a) religious activities; b) non-religious activities: volunteer or charity work; educational or training course; sport, social or other kind of club activities; political or community organizations; caring for family. Social participation is measured by asking individuals to report whether they had engaged in any of the religious or non-religious activities.

The SHARE survey did not feature a unified or explicitly designated scale intended to measure the social involvement of participants. Instead, participants were asked seven yes/no questions relating to their possible involvement in different social activities over the last month. Participants’ answers were again coded in binary fashion by either 1 = “presence of involvement” or 0 = “absence of involvement.” The questions referred to participation in volunteer or charity work, caring for a sick or disabled person, providing help to family/friends/neighbors, attendance of an educational or training course, going to a sport or social club, taking part in a religious organization, and taking part in a political or community organization. I used the sum of answers to indicate the level and diversity of participants’ social involvement.

The dependent variable is respondents’ state of mental well-being, measured by the number of depressive symptoms reported in the interview. This variable was operationalized using the EURO-D scale (Prince et al., 1999). The EURO-D scale has been developed for measuring the prevalence of depression among older people within a European context, but has many similarities with the widely used CES-D scale (Radloff, 1977). The EURO-D scale ranges from zero (no symptoms of depression existent) to 12 (12 symptoms of depression existent). The symptoms are depressed mood, pessimism, suicidality, excessive feelings of guilt, sleeping problems, loss of interest, irritability, diminution in appetite, fatigue, difficulties in concentrating
on entertainment or reading, lack of enjoyment in recent activities, and tearfulness. Respondents answer “yes” or “no” to questions about the presence of the aforementioned symptoms. All the items refer to the presence of those symptoms within the last month.

Analyzes included controlling for age, education, marital status, and gender. Age groups considered in this study were: 1) 50-65; 2) 65-75; and 3) 75+. Reference group is “age 50-64.”

SHARE used the ISCED 97 classification (Organization for Economic Co-Operation and Development [OECD], 1999) of the highest degree as the measure of education. The seven original education levels are recoded into four broader categories: (1) “low” (pre-primary and primary education or elementary school); (2) “medium” (lower secondary education or middle school); (3) “high” (upper secondary and post-secondary or high school and associate degree); and (4) “very high” (undergraduate, graduate and post-graduate degree). Reference group is “very high” level.

Marital status groups considered in the study are: 1) Separated or Divorced; 2) Never Married; 3) Widowed; and 4) Female. Reference group is “married.”

Hypotheses

Hypothesis 1

Greek elderly participate more in religious activities with increasing age; controlled for education, marital status, and gender.

Hypothesis 2

Greek elderly participate less in non-religious activities with increasing age; controlled for education, marital status, and gender.
Hypothesis 3

Participation in religious activities decreases the risk of depressive symptoms among the elderly, controlled for education, marital status, and gender.

Hypothesis 4

Participation in non-religious activities decreases the risk of depressive symptoms among the elderly, controlled for education, marital status and gender.

Conclusion

In summary, I applied secondary analysis of quantitative data, using the statistical software package SPSS. In order to test the hypothesis, a cross-section of self-reported data from Greek elderly aged 50 and over was considered. The data was analyzed through logistic regressions. The association between social participation and depressive symptoms was analyzed by comparing means of EURO-D by social participation. Multivariate regression models were applied to analyze the association between social participation and depressive symptoms. The independent variables were, measured by SHARE, social activities: 1) religious activities; 2) non-religious activities: volunteer or charity work, educational or training course, sports, social or other kind of club activities, political or community organizations, and caring for family. Social participation was measured by asking individuals to report whether they had engaged in any of the religious or non-religious activities. The dependent variable was respondents’ state of mental well-being, measured by the number of depressive symptoms reported in the interview. Analysis included controlling for age, education, marital status, and gender.
CHAPTER 4

RESULTS

In Chapter 4, I present the results of the study. This chapter consists of four parts, starting with descriptive analyses, followed by more sophisticated statistical analyses via logistic regression. The statistical software package SPSS was used to analyze the secondary data and to identify the relationships between the independent and dependent variables. Descriptive tables illustrate the sample for the study. Logistic regression tables show whether there were statistically significant predictors (religious and non-religious activities and control variables) affecting the dependent variables. The hypotheses for this study are discussed based on the results.

Descriptive Analyses

The SHARE study included 2,898 Greek elderly, age 50+. Missing data exists as no data value is stored for certain variables in an observation. For the purposes of this study, the author has considered the valid participant selected data. The results of the descriptive analyses for social participation showed 1,684 (58.18%) attended social activities and 1,256 (43.3%) indicated they have not attended any social activities. Of the whole sample, 976 (33.68%) have attended religious activities and 708 (24.5%) have attended non-religious activities. From those who have indicated attending non-religious activities, 171 (5.9%) have gone to a sport, social, or some other type of club; 161 (5.6%) have cared for a sick or disabled adult; 144 (5.0%) have taken part in a political or community organization; 143 (4.9%) have attended an educational or training course, and 89 (3.1%) have done some volunteer or charity work.

The results of the descriptive analyses for depression showed out of the 2,898 (100%) total respondents, 436 (15.0%) indicated experiencing depression at some point in their life; and
107 (3.7%) have been treated for depression by a doctor or psychiatrist at some point in their life. Table 3 consists of the descriptive analysis results for social participation and depression among the Greek elderly.

Table 3
*Descriptive Analyses Results for Social Participation and Depression*

<table>
<thead>
<tr>
<th>Categories Activities</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Religious</td>
<td>976</td>
<td>33.68</td>
</tr>
<tr>
<td>Non-Religious</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Volunteer or charity work</td>
<td>89</td>
<td>3.1</td>
</tr>
<tr>
<td>Cared for a sick or disabled adult</td>
<td>161</td>
<td>5.6</td>
</tr>
<tr>
<td>Taken part in political or community organization</td>
<td>144</td>
<td>5.0</td>
</tr>
<tr>
<td>Attended educational or training course</td>
<td>143</td>
<td>4.9</td>
</tr>
<tr>
<td>Gone to sport, social or other kind of club</td>
<td>171</td>
<td>5.9</td>
</tr>
<tr>
<td>Total non-religious:</td>
<td>708</td>
<td>24.5</td>
</tr>
<tr>
<td>Attended Activities Total</td>
<td>1,684</td>
<td>58.18</td>
</tr>
<tr>
<td>None of these</td>
<td>1,256</td>
<td>43.3</td>
</tr>
<tr>
<td>Depression</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depression ever</td>
<td>436</td>
<td>15.0</td>
</tr>
<tr>
<td>Ever treated for depression by doctor or psychiatrist</td>
<td>107</td>
<td>3.7</td>
</tr>
<tr>
<td>Total Respondents</td>
<td>2,898</td>
<td>100</td>
</tr>
</tbody>
</table>

As is stated in the method section of Chapter 3, the control variables for this study are age, education, marital status, and gender. The descriptive analysis showed the number of the participants by age, education, marital status, and gender. Out of the total number of participants, 112 (3.9%) were under age of 50, due to the fact they were spouses of respondents over 50. The
total respondents of each age groups were: 1,369 (47.2%) were in the age group 50-65; 729 (25.1%) were age 65-75, and 688 (23.7%) were age 75+.

The descriptive analysis also showed the main part of the respondents had accomplished upper secondary and post – secondary or high school and associate degrees (1,190, 41.1%) as the highest education level; 281 (9.7%) of the respondents had reached a very high level (undergraduate, graduate, and post-graduate degree); 1,091 (37.6%) reached the lower secondary education or middle school level; and 336 (11.6%) of the Greek elderly indicated pre-primary and primary education or elementary school, no degree yet/still in school, or no education.

The descriptive analysis also showed most of the Greek respondents 2,062 (71.1%) were married and living together with spouse or had registered a partnership, 586 (20.2%) were widowed, 112 (3.9%) were divorced, and 138 (4.8%) had never married. The result of the descriptive analysis showed there were 1,244 (42.9%) male respondents; and there were 1,654 (57.1%) female respondents. Table 4 shows the descriptive analysis results for the control variables - age, education, marital status, and gender.

Statistical Analyses for Testing Hypothesis 1

I used age 50-64 as a reference group for age. The logistic regression shows participants “65 and over” were more likely to participate in religious activities compared to the younger age group (64 or younger) \((OR = 1.86; p < 0.001)\). Age 75 and over were significantly more likely to participate in religious activities compared to under 65 \((OR = 1.54; p \leq 0.01)\). The difference showed religious participation after age 75 declines.
Table 4

*Control Variables: Age, Education, Marital Status, and Gender*

<table>
<thead>
<tr>
<th>Control Variables</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Under 50</td>
<td>112</td>
<td>3.9</td>
</tr>
<tr>
<td>50-65</td>
<td>1,369</td>
<td>47.2</td>
</tr>
<tr>
<td>65-75</td>
<td>729</td>
<td>25.1</td>
</tr>
<tr>
<td>75+</td>
<td>688</td>
<td>23.7</td>
</tr>
<tr>
<td>Total</td>
<td>2,898</td>
<td>100.0</td>
</tr>
<tr>
<td><strong>Highest educational degree obtained</strong></td>
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<td></td>
</tr>
<tr>
<td>High</td>
<td>1,190</td>
<td>41.1</td>
</tr>
<tr>
<td>(upper secondary and post – secondary or high school and associate degree)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very high</td>
<td>281</td>
<td>9.7</td>
</tr>
<tr>
<td>(undergraduate, graduate and post-graduate degree)</td>
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<td></td>
</tr>
<tr>
<td>Medium</td>
<td>1,091</td>
<td>37.6</td>
</tr>
<tr>
<td>(lower secondary education or middle school)</td>
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<td></td>
</tr>
<tr>
<td>Low education</td>
<td>336</td>
<td>11.6</td>
</tr>
<tr>
<td>(pre-primary and primary education or elementary school; no degree yet/still in school; no education)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>2,898</td>
<td>100.0</td>
</tr>
<tr>
<td><strong>Marital Status</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married and living together with spouse; living separate &amp; registered partnership</td>
<td>2,062</td>
<td>71.1</td>
</tr>
<tr>
<td>Never married</td>
<td>138</td>
<td>4.8</td>
</tr>
<tr>
<td>Divorced</td>
<td>112</td>
<td>3.9</td>
</tr>
<tr>
<td>Widowed</td>
<td>586</td>
<td>20.2</td>
</tr>
<tr>
<td>Total</td>
<td>2,898</td>
<td>100.0</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>1,244</td>
<td>42.9</td>
</tr>
<tr>
<td>Female</td>
<td>1,654</td>
<td>57.1</td>
</tr>
<tr>
<td>Total</td>
<td>2,898</td>
<td>100.0</td>
</tr>
</tbody>
</table>

I defined “very high level” as a reference group for education. The logistic regression shows the difference in odds ratio of religious participation was not statistically significant.
between various educational levels. SHARE used the ISCED 97 classification (OECD, 1999) of the highest degree as the measure of education. The seven original education levels are recoded into four broader categories: (1) “low” (pre-primary and primary education or elementary school), (2) “medium” (lower secondary education or middle school), (3) “high” (upper secondary and post – secondary or high school and associate degree), and (4) “very high” (undergraduate, graduate and post-graduate degree).

I defined “married” as a reference group for marital status. Separated or divorced Greek elderly were less likely to participate in religious activities than those married with spouse ($OR = 0.59; p \leq 0.05$). Never married Greek elderly were less likely to participate in religious activities than those married with spouse ($OR = 0.49; p \leq 0.01$). The logistic regression shows the difference between widowed and those married with spouse was not significant for the level of religious participation.

Female Greek elderly were more likely to participate in religious activities compared to male elderly ($OR = 3.13; p \leq 0.001$). Table 5 consists of the statistical analysis thru logistic regression for the first hypothesis stating that Greek elderly participate more in religious activities with increasing age; controlled for education, marital status, and gender. The research shows the evidence supported the hypothesis.

**Statistical Analyses for Testing Hypothesis 2**

The second hypothesis states Greek elderly participate less in non-religious activities with increasing age, controlled for education, marital status, and gender. I defined 50-64 as a reference group for age. The logistic regression shows participants “65 and over” were less likely to participate in non-religious activities compared to younger age group (64 or younger). However, this difference was not statistically significant ($OR = 0.82; p \geq 0.05$). Age 75 and over
were significantly less likely to participate in non-religious activities compared to under 65 (OR = 0.63; p ≤ 0.001).

Table 5

*Logistic Regression Analyses for Hypothesis 1 – Controlled for Education, Marital Status, and Gender*

<table>
<thead>
<tr>
<th>Predictors</th>
<th>Category</th>
<th>OR</th>
<th>95% C.I. for OR</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Lower</td>
</tr>
<tr>
<td>Age †</td>
<td>65-74</td>
<td>1.855***</td>
<td>1.487</td>
</tr>
<tr>
<td></td>
<td>≥75</td>
<td>1.536**</td>
<td>1.177</td>
</tr>
<tr>
<td>Education ‡</td>
<td>Low Level</td>
<td>1.865</td>
<td>0.902</td>
</tr>
<tr>
<td></td>
<td>Middle Level</td>
<td>0.810</td>
<td>0.375</td>
</tr>
<tr>
<td></td>
<td>High Level</td>
<td>0.981</td>
<td>0.475</td>
</tr>
<tr>
<td>Marital Status ††</td>
<td>Separated or Divorced</td>
<td>0.585*</td>
<td>0.382</td>
</tr>
<tr>
<td></td>
<td>Never Married</td>
<td>0.494**</td>
<td>0.308</td>
</tr>
<tr>
<td></td>
<td>Widowed</td>
<td>0.943</td>
<td>0.729</td>
</tr>
<tr>
<td>Gender</td>
<td>Female</td>
<td>3.129***</td>
<td>2.572</td>
</tr>
<tr>
<td>Constant</td>
<td></td>
<td>0.173***</td>
<td></td>
</tr>
</tbody>
</table>

*Note. 2 Log likelihood = 2871.960; χ²(df) = 305.453 (9)*

OR: Odds Ratio

†Reference group is age 50-64
‡ Reference group: very high level
†† Reference group: married

***p ≤ 0.001, **p ≤ 0.01, *p ≤ 0.05

I defined “very high level” as a reference group for education. The logistic regression shows that the difference in non-religious activities was not statistically significant across different educational levels. SHARE used the ISCED 97 classification (OECD, 1999) of the highest degree as the measure of education. The seven original education levels are recoded into
four broader categories: (1) “low” (pre-primary and primary education or elementary school), (2) “medium” (lower secondary education or middle school), (3) “high” (upper secondary and post-secondary or high school and associate degree), and (4) “very high” (undergraduate, graduate and post-graduate degree).

I defined “married” as a reference group for marital status. The logistic regression shows the difference in non-religious activities was not statistically significant across different marital statuses. The logistic regression shows the difference in non-religious activities was not statistically significant across genders. Table 6 shows the analyses of the data. The research shows the evidence supported the hypothesis.

Statistical Analyses for Testing Hypotheses 3 and 4

The third hypothesis states participation in religious activities decreases the risk of depressive symptoms among the elderly, controlled for education, marital status, and gender. The fourth hypothesis states participation in religious activities decreases the risk of depressive symptoms among the elderly, controlled for education, marital status, and gender. Hypotheses #3 and #4 were analyzed together in the following equations with logistic regression. In Table 7 participation was added to age, education, marital status, and gender to predict depression.

The logistic regression in the equation shows participation in religious activities was not significant in decreasing the risk of depressive symptoms among the elderly (OR = 1.07; p ≥ 0.05). Therefore, religious activities were not shown to be associated with depression overall nor by age group. The logistic regression in the equation shows participation in non-religious activities increases the risk of depressive symptoms among the elderly (OR = 1.60; p ≤ 0.001). This decisively rejects the fourth hypothesis that participation in non-religious activities would be associated with lower likelihood of depression.
Table 6

Logistic Regression Analyses for Hypothesis 2 – Controlled for Education, Marital Status, and Gender

<table>
<thead>
<tr>
<th>Predictors</th>
<th>Category</th>
<th>OR</th>
<th>95% C.I. for OR</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Lower</td>
</tr>
<tr>
<td>Age †</td>
<td>65-74</td>
<td>0.820</td>
<td>0.662</td>
</tr>
<tr>
<td></td>
<td>≥75</td>
<td>0.628***</td>
<td>0.476</td>
</tr>
<tr>
<td>Education ‡</td>
<td>Low level</td>
<td>0.911</td>
<td>0.462</td>
</tr>
<tr>
<td></td>
<td>Middle level</td>
<td>1.186</td>
<td>0.583</td>
</tr>
<tr>
<td></td>
<td>High level</td>
<td>1.336</td>
<td>0.682</td>
</tr>
<tr>
<td>Marital Status ††</td>
<td>Separated or Divorced</td>
<td>1.002</td>
<td>0.691</td>
</tr>
<tr>
<td></td>
<td>Never Married</td>
<td>1.427</td>
<td>0.984</td>
</tr>
<tr>
<td></td>
<td>Widowed</td>
<td>0.977</td>
<td>0.745</td>
</tr>
<tr>
<td>Gender</td>
<td>Female</td>
<td>1.118</td>
<td>0.931</td>
</tr>
<tr>
<td>Constant</td>
<td></td>
<td>0.440*</td>
<td></td>
</tr>
</tbody>
</table>

Note. -2 Log likelihood= 3010.700*
χ²(df)= 51.038 (9)
OR: Odds Ratio
†Reference group is age 50-64
‡Reference group: very high level
††Reference group: married
*** p ≤ 0.001, ** p ≤ 0.01, * p ≤ 0.05

The SHARE data defines 50-64 as a reference group for age. Age 65 and over were more likely to be depressed than those under 65 (OR = 1.30; p ≤ 0.05). Age 75 and over were even more likely to be depressed than those under 65 (OR = 1.76; p ≤ 0.001).
Table 7

*Multivariate Regression Analysis for Hypothesis 3 & 4 – Participation is Added to Age, Education, Marital Status, and Gender to Predict Depression*

<table>
<thead>
<tr>
<th>Predictors</th>
<th>Category</th>
<th>OR</th>
<th>95% C.I. for OR</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Lower</td>
<td>Upper</td>
</tr>
<tr>
<td>Activities</td>
<td>Religious</td>
<td>1.026</td>
<td>0.842</td>
<td>1.251</td>
</tr>
<tr>
<td></td>
<td>Non-religious</td>
<td>1.598***</td>
<td>1.316</td>
<td>1.940</td>
</tr>
<tr>
<td>Age†</td>
<td>65-74</td>
<td>1.300*</td>
<td>1.040</td>
<td>1.623</td>
</tr>
<tr>
<td></td>
<td>≥75</td>
<td>1.751***</td>
<td>1.329</td>
<td>2.308</td>
</tr>
<tr>
<td>Education‡</td>
<td>Low Level</td>
<td>3.430**</td>
<td>1.367</td>
<td>8.607</td>
</tr>
<tr>
<td></td>
<td>Middle Level</td>
<td>2.643*</td>
<td>1.029</td>
<td>6.791</td>
</tr>
<tr>
<td></td>
<td>High Level</td>
<td>2.046</td>
<td>0.818</td>
<td>5.114</td>
</tr>
<tr>
<td>Marital Status††</td>
<td>Separated or</td>
<td>1.390</td>
<td>0.944</td>
<td>2.047</td>
</tr>
<tr>
<td></td>
<td>Divorced</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Never Married</td>
<td>1.567*</td>
<td>1.046</td>
<td>2.350</td>
</tr>
<tr>
<td></td>
<td>Widowed</td>
<td>1.444**</td>
<td>1.099</td>
<td>1.898</td>
</tr>
<tr>
<td>Gender</td>
<td>Female</td>
<td>1.922***</td>
<td>1.580</td>
<td>2.337</td>
</tr>
<tr>
<td>Constant</td>
<td></td>
<td>0.132***</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note. 2 Log likelihood=2757.276a
χ2(df)= 7.951 (8)
OR: Odds Ratio
†Reference group is age 50-64
‡Reference group: very high level
††Reference group: married
***p ≤ 0.001, **p ≤ 0.01, *p ≤ 0.05

The SHARE data defines “very high level” as a reference group for education. Those with low education were 3.5 times more likely to experience depressive symptoms compared to those with very high education (OR = 3.43; p ≤ 0.01). Those with middle education were over 2.6 times more likely to experience depressive symptoms compared to those with very high education. (OR = 2.64; p ≤ 0.05). The logistic regression shows that the variable high education
was not significant for decreasing the risk of depressive symptoms among the elderly (OR = 2.05; p ≥ 0.05). SHARE used the ISCED 97 classification (OECD, 1999) of the highest degree as the measure of education. The seven original education levels are recoded into four broader categories: (1) “low” (pre-primary and primary education or elementary school); (2) “medium” (lower secondary education or middle school); (3) “high” (upper secondary and post-secondary or high school and associate degree); and (4) “very high” (undergraduate, graduate and post-graduate degree).

The SHARE data defines “married” as a reference group for marital status. The logistic regression shows separated or divorced marital status among Greek elderly was not significant for decreasing the risk of depressive symptoms among the elderly (OR = 1.40; p ≥ 0.05). Never married Greek elderly were more likely to experience depressive symptoms compared to those married with spouse (OR = 1.57; p ≤ 0.05). Widowed Greek elderly were more likely to experience depressive symptoms compared to those married with spouse (OR = 1.44; p ≤ 0.01).

The SHARE data defines “male” as a reference group for gender. Female Greek elderly were more likely to experience depressive symptoms compared to male (OR = 1.92; p ≤ 0.001).

In Table 8, participation was interacted with age group and these interaction variables were added to the equation for depression, with the predictors: religious/non-religious participation, both age groups, marital status, education, and gender. The logistic regression in the equation shows participation in religious activities was not significant in decreasing the risk of depressive symptoms among the elderly (OR = 0.92; p ≥ 0.05). The logistic regression in the equation shows participants in non-religious activities were two times more likely to experience depressive symptoms among the elderly (OR = 1.99; p ≤ 0.001).
Table 8

Logistic Regression Analysis for Hypothesis 3 & 4 – Depression Predicted by Activity Interacted with Age Group

<table>
<thead>
<tr>
<th>Predictors</th>
<th>Category</th>
<th>OR</th>
<th>95% C.I. for OR</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Lower</td>
</tr>
<tr>
<td>Activities</td>
<td>Religious</td>
<td>0.925</td>
<td>0.701</td>
</tr>
<tr>
<td></td>
<td>Non-religious</td>
<td>1.996***</td>
<td>1.548</td>
</tr>
<tr>
<td>Age †</td>
<td>Religious AGE 65-74</td>
<td>1.403</td>
<td>0.903</td>
</tr>
<tr>
<td>Engaged in activities</td>
<td>Non-religious AGE 65-74</td>
<td>0.567*</td>
<td>0.360</td>
</tr>
<tr>
<td></td>
<td>Religious AGE ≥75</td>
<td>0.993</td>
<td>0.607</td>
</tr>
<tr>
<td></td>
<td>Non-religious AGE ≥75</td>
<td>0.625</td>
<td>0.363</td>
</tr>
<tr>
<td>Not engaged in any activities</td>
<td>AGE 65-74</td>
<td>1.369*</td>
<td>1.004</td>
</tr>
<tr>
<td></td>
<td>AGE ≥75</td>
<td>2.061***</td>
<td>1.429</td>
</tr>
<tr>
<td>Education‡</td>
<td>Low Level</td>
<td>3.377**</td>
<td>1.341</td>
</tr>
<tr>
<td></td>
<td>Middle Level</td>
<td>2.582*</td>
<td>1.001</td>
</tr>
<tr>
<td></td>
<td>High Level</td>
<td>1.989</td>
<td>0.793</td>
</tr>
<tr>
<td>Marital Status††</td>
<td>Separated or Divorced</td>
<td>1.373</td>
<td>.930</td>
</tr>
<tr>
<td></td>
<td>Never Married</td>
<td>1.588*</td>
<td>1.058</td>
</tr>
<tr>
<td></td>
<td>Widowed</td>
<td>1.416*</td>
<td>1.077</td>
</tr>
<tr>
<td>Gender</td>
<td>Female</td>
<td>1.919***</td>
<td>1.577</td>
</tr>
<tr>
<td>Constant</td>
<td></td>
<td>.128***</td>
<td></td>
</tr>
</tbody>
</table>

Note. 2 Log likelihood=2747.778a  
χ2(df)= 20.882 (8)  
OR: Odds Ratio  
†Reference group is age 50-64  
‡ Reference group: very high level  
†† Reference group: married  
***p ≤ 0.001, **p ≤ 0.01, *p ≤ 0.05

The SHARE data defines 50-64 as a reference group for age. The logistic regression in the equation shows participation in religious activities in age 65 and over was not significant in
decreasing the risk of depressive symptoms among the elderly (OR = 1.40; p ≥ 0.05). Participants engaged in non-religious activities and in age 65 and over were less likely to experience depressive symptoms than those under 65 (OR = 0.57; p ≤ 0.05). The logistic regression in the equation shows participation in religious activities in age 75 and over was not significant in decreasing the risk of depressive symptoms among the elderly (OR = 0.99; p ≥ 0.05).

The logistic regression in the equation shows participation in non-religious activities in age 75 and over was not significant in decreasing the risk of depressive symptoms among the elderly (OR = 0.63; p ≥ 0.05). Participants not engaged in any activities and in age 65 and over were more likely to experience depressive symptoms than those under 65 (OR = 1.37; p ≤ 0.05). Participants not engaged in any activities and in age 75 and over were two times more likely to experience depressive symptoms than those under 65 (OR = 2.06; p ≤ 0.001)

The SHARE data defines “very high level” as a reference group for education. Those with low education were over three times more likely to experience depressive symptoms compared to those with very high education (OR = 3.38; p ≤ 0.01). Those with middle education were more likely to experience depressive symptoms compared to those with very high education (OR = 1.37; p ≤ 0.05). The logistic regression shows that the variable high education was not significant for decreasing the risk of depressive symptoms among the elderly (OR = 1.99; p ≥ 0.05). SHARE used the ISCED 97 classification (OECD, 1999) of the highest degree as the measure of education. The seven original education levels are recoded into four broader categories: (1) “low” (pre-primary and primary education or elementary school); (2) “medium” (lower secondary education or middle school); (3) “high” (upper secondary and post–secondary or high school and associate degree); and (4) “very high” (undergraduate, graduate and post-graduate degree).
The SHARE data defines “married” as a reference group for marital status. The logistic regression shows that separated or divorced marital status among Greek elderly was not significant for decreasing the risk of depressive symptoms among the elderly ($OR = 1.37; p \geq 0.05$). Never married Greek elderly were more likely to experience depressive symptoms compared to those married with spouse ($OR = 1.59; p \leq 0.05$). Widowed Greek elderly were more likely to experience depressive symptoms compared to those married with spouse ($OR = 1.42; p \leq 0.05$).

The SHARE data defines “male” as a reference group for gender. The logistic regression shows that female Greek elderly were two times more likely to experience depressive symptoms compared to male ($OR = 1.92; p \leq 0.001$).

Given the unexpected finding that non-religious activity is associated with a higher likelihood of depression, a further step in this research is to investigate whether higher depression is concentrated in specific types of nonreligious activities. Table 9 includes a further analysis by breaking up nonreligious activities into their components: sports, political, volunteering, and training as predictors of depression - dummy variables alongside religious activities, age groups, education, marital status, and gender.

The logistic regression in the equation shows participation in the non-religious activities (sports, political, volunteering, and training) was not significant in decreasing the risk of depressive symptoms among the elderly. By contrast, the logistic regression in the equation shows participation in the non-religious activity, caring for family, increases the risk of depressive symptoms among the elderly. Caring for family was strongly linked to depression and is the only non-religious activity influencing depression ($OR = 2.02; p \leq 0.001$).
Table 9

Logistic Regression Analysis for Hypothesis 3 & 4 by Breaking Up Nonreligious Activities into their Components

<table>
<thead>
<tr>
<th>Predictors</th>
<th>Category</th>
<th>OR</th>
<th>95% C.I. for OR</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Lower</td>
<td>Upper</td>
</tr>
<tr>
<td>Activities</td>
<td>Non-religious:</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Volunteering</td>
<td>1.527</td>
<td>0.877 2.661</td>
</tr>
<tr>
<td></td>
<td>Sports</td>
<td>1.332</td>
<td>0.900 1.973</td>
</tr>
<tr>
<td></td>
<td>Political</td>
<td>1.127</td>
<td>0.747 1.701</td>
</tr>
<tr>
<td></td>
<td>Training</td>
<td>1.190</td>
<td>0.794 1.785</td>
</tr>
<tr>
<td></td>
<td>Caring for family</td>
<td>2.018***</td>
<td>1.361 2.992</td>
</tr>
<tr>
<td></td>
<td>Religious</td>
<td>1.002</td>
<td>0.820 1.223</td>
</tr>
<tr>
<td></td>
<td>Age†</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>AGE 65-74</td>
<td>1.296*</td>
<td>1.038 1.619</td>
</tr>
<tr>
<td></td>
<td>AGE ≥75</td>
<td>1.723***</td>
<td>1.309 2.270</td>
</tr>
<tr>
<td></td>
<td>Education‡</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Low Level</td>
<td>3.715**</td>
<td>1.463 9.432</td>
</tr>
<tr>
<td></td>
<td>Middle Level</td>
<td>2.918*</td>
<td>1.123 7.580</td>
</tr>
<tr>
<td></td>
<td>High Level</td>
<td>2.231</td>
<td>0.882 5.639</td>
</tr>
<tr>
<td></td>
<td>Marital Status††</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Separated or Divorced</td>
<td>1.382</td>
<td>0.938 2.036</td>
</tr>
<tr>
<td></td>
<td>Never Married</td>
<td>1.628*</td>
<td>1.083 2.449</td>
</tr>
<tr>
<td></td>
<td>Widowed</td>
<td>1.471**</td>
<td>1.120 1.933</td>
</tr>
<tr>
<td></td>
<td>Gender</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Female</td>
<td>1.955***</td>
<td>1.603 2.384</td>
</tr>
<tr>
<td></td>
<td>Constant</td>
<td>0.129***</td>
<td></td>
</tr>
</tbody>
</table>

Note. 2 Log likelihood=2759.312a
χ2(df)= 4.959 (8)
OR: Odds Ratio
†Reference group is age 50-64
‡ Reference group: very high level
†† Reference group: married
***p ≤ 0.001, **p ≤ 0.01, *p ≤ 0.05

The activity “volunteering” is the only one, besides “caring for family,” that comes closer to be linked to depression; however, its effect is not significant (OR = 1.52; p ≥ 0.05). The other
non-religious activities, sports \((OR = 1.33; p \geq 0.05)\); political activities \((OR = 1.13; p \geq 0.05)\) and training \((OR = 1.19; p \geq 0.05)\), were also not significant for decreasing the risk of depressive symptoms among the elderly.

The logistic regression in the equation shows participation in religious activities was not significant in decreasing the risk of depressive symptoms among the elderly \((OR = 1.00; p \geq 0.05)\). The SHARE data defines age 50-64 as a reference group for age. Age 65 and over were more likely to be depressed than those under 65 \((OR = 1.30; p \leq 0.05)\). Age 75 and over were even more likely to be depressed than those under 65 \((OR = 1.72; p \leq 0.001)\).

The SHARE data defines “very high level” as a reference group for education. Those with low education were more than 3.5 times more likely to experience depressive symptoms compared to those with very high education \((OR = 3.72; p \leq 0.01)\). Those with middle education were almost three times more likely to experience depressive symptoms compared to those with very high education \((OR = 2.92; p \leq 0.05)\). The logistic regression shows the variable higher education was not significant for decreasing the risk of depressive symptoms among the elderly \((OR = 2.05; p \geq 0.05)\). SHARE used the ISCED 97 classification (OECD, 1999) of the highest degree as the measure of education. The seven original education levels are recoded into four broader categories: (1) “low” (pre-primary and primary education or elementary school); (2) “medium” (lower secondary education or middle school); (3) “high” (upper secondary and post-secondary or high school and associate degree); and (4) “very high” (undergraduate, graduate and post-graduate degree).

The SHARE data defines “married” as a reference group for marital status. The logistic regression shows that separated or divorced marital status among Greek elderly was not significant for decreasing the risk of depressive symptoms among the elderly \((OR = 1.40; p \geq 0.05)\)
0.05). Never married Greek elderly were more likely to experience depressive symptoms compared to those married with spouse ($OR = 1.63; p \leq 0.05$). Widowed Greek elderly were more likely to experience depressive symptoms compared to those married with spouse ($OR = 1.48; p \leq 0.01$).

The SHARE data defines “male” as a reference group for gender. The logistic regression shows female Greek elderly were two times more likely to experience depressive symptoms compared to male ($OR = 1.96; p < 0.001$). The research does not support Hypothesis # 3 and strongly rejects Hypothesis # 4 (for different age groups).

A very strong finding of this research was the participants in non-religious activities in the youngest group (50-65) are two times more likely to have depression. There was not a significant effect for the other two groups (65-75 and 75+). Also a strong finding was the participants in the non-religious activity, caring for family, increases the risk of depressive symptoms among the elderly.
CHAPTER 5
DISCUSSION

The primary purpose of this study was to disclose how social involvement changes with aging among people from Greece. The study results suggested only a low percentage of the Greek elderly were socially involved. Those engaged in religious activities were almost as numerous as those engaged in any other social activity.

The study results showed older elderly were more likely to participate in religious activities than the younger elderly. The author suggests old age is when most people retire and have more time for social activities; and the culture of the Greek people, strongly applying Greek Orthodox Christianity, contributes to the fact they are choosing religious activities before other social activities such as political, educational, sports, or volunteering. The study results show the level of education does not have an effect on the level of religious participation. Marital status can influence Greeks’ tendency to participate in religious activities. The results of the study show that separated, divorced, and never married elderly were less likely to participate in religious activities than those who were married; also, there was not a significant difference between the widowed and married Greek. There were notable gender differences with Greek women three times more likely to participate in religious activities than the Greek men.

In contrast to religious participation, when studying participation of the Greek elderly in non-religious activities, the study showed the older participants were less likely to participate in activities than the younger group. The study results show the level of education does not have an effect on the level of non-religious participation. Marital status does not have an effect on the level of non-religious participation, as well. The study results showed the gender of the participants also does not have an effect on the level of non-religious participation.
The second central purpose of the study was to examine the relationship between social involvement (both religious and non-religious) and depression by age among study participants, controlled for education, marital status, and gender. Findings were very different from what was hypothesized. The study showed participation in religious activities was not shown to relate to decreasing the risk of depressive symptoms among the elderly. In fact, religious activities were not shown to be associated with depression overall nor by age group. In contrast, the study results show participation in non-religious activities considerably increases the risk of depressive symptoms among the elderly, contrary to the hypothesis.

These unexpected findings led to an effort to investigate whether higher depression was concentrated in specific types of non-religious activities: sports, political, volunteering, training, and caring for family. The results showed participation in one non-religious activity, caring for family, increased the risk of depressive symptoms among the elderly. Participation in other non-religious activities (sports, political, volunteering, and training) was not significant in decreasing the risk of depressive symptoms among the elderly. Therefore, caring for family was strongly linked to depression and was the only non-religious activity influencing depression. This can be explained in terms of the burden of caregiving, although such burden had not been hypothesized to increase depression. Volunteering was another non-religious activity besides “caring for family” that came closer to being linked to depression; but its estimated effect was not significant.

The study results also showed older Greek elderly are more than twice as likely to be depressed as the younger elderly. Regarding educational level, the study showed those with low education are more than three times more likely to experience depressive symptoms compared to those with very high education; those with middle education are over two times more likely to
experience depressive symptoms compared to those with very high education. The study showed that there was not a significant difference between those with high education (high school or associate degrees) and those with very high education (undergraduate, graduate, and post-graduate degrees). The study showed separated or divorced marital status among the Greek elderly was not significant for decreasing the risk of depressive symptoms among the elderly. At the same time, never married and widowed Greek elderly were more likely to experience depressive symptoms compared to those married with a living spouse. Another finding was female Greek elderly were almost two times more likely to experience depressive symptoms compared to male Greek elderly.

To deepen the research, the author also analyzed the data from a different point of view, participation was interacted with age group and these interaction variables were added to the equation with the predictors: religious/non-religious participation, both age groups, marital status, education, and gender. The results showed participation in religious activities is not significant in decreasing the risk of depressive symptoms among the elderly, while participants in non-religious activities are two times more likely to experience depressive symptoms among the elderly. The findings showed participation in religious activities among the older elderly was not significant in decreasing the risk of depressive symptoms, while the older participants engaged in non-religious activities were less likely to experience depressive symptoms than those younger than them. Participation in both religious and non-religious activities among the oldest Greek was not significant in decreasing the risk of depressive symptoms among the elderly. The study results also showed the older Greek elderly not engaged in any activities were more likely to experience depressive symptoms than those younger than them; and those not engaged in any activities, in the oldest group, are two times more likely to experience depressive
symptoms than those in the younger group. Analyzing the interaction respondents’ age and their participation or non-participation in religious or non-religious activities; and controlling for education, marital status, and gender, the findings of the study were compared to those with very high education. Those with low education were over three times more likely to experience depressive symptoms, those with middle education were more likely to experience depressive symptoms compared to those with very high education; and there was not a significant difference compared to those with high education. Separation or divorce among the Greek elderly was not significant for decreasing the risk of depressive symptoms; never married and widowed Greek elderly were more likely to experience depressive symptoms compared to those married with a living spouse. Also, female Greek elderly were two times more likely to experience depressive symptoms compared to male Greek elderly.

The research supports the first hypothesis, which states Greek elderly participate more in religious activities with increasing age; as well as the second, claiming Greek elderly participate less in non-religious activities with increasing age. The research findings do not support the third hypothesis that participation in religious activities decreases the risk of depressive symptoms among the Greek elderly; and strongly rejects the fourth hypothesis that participation in non-religious activities decreases the risk of depressive symptoms among the Greek elderly.

The finding of the current study that elderly people who were caring for family members were more likely to express depressive symptoms confirms previous research results. The literature review consists of evidence-based research on the burden of caregiving, conducted by authors from various European countries and the United States. The researchers claimed that elderly caregivers of a family member had physical and mental problems; they were likely to suffer from anxiety, depression, and other symptoms associated with emotional stress due to
caregiving (Family Caregiver Alliance, 2001). Some researchers claimed that there is not a significant difference between female and male caregivers in terms of care burden. Researchers examined the relationship between the demands of providing care and caregiver health behaviors, specifically exercise, sleep patterns, weight maintenance, smoking and alcohol consumption (Gallant & Connell, 1998). Among both women and men, health behavior changes were found to be directly influenced by depressive symptoms and caregiver burden.

The current study results showed female Greek elderly were almost two times more likely to experience depressive symptoms compared to male Greek elderly. The literature review supports that claim as well. Other researchers have found female caregivers handled the most difficult caregiving tasks (i.e., bathing, toileting, and dressing) when male would help with finances, arrange care, and other less difficult tasks.

The current study results also showed the gender of the survey respondent does not have an effect on the level of non-religious participation; and, in this case, that includes caring for family members. Kelley (2005) claimed women and men differed in the amount and type of care contribution. However, in Greece, historically, the majority of family caregivers were women. The author suggests future research is needed to determine the correlation between the gender of the care provider and specifically caring for a family member as a non-religious social activity.

Another finding of this study was that Greek women were three times more likely to participate in religious activities than Greek men. This theme may need additional research, as there is very little literature on the topic. However, the claim is consistent with the facts about the Greek culture and the roles adopted by men and women. Greek society was male-dominant until recently, and people over 50 years old have been living in that past reality. Traditionally, men have been associated with the public space and women with the private space. The only
exception about women, besides being mother; wife, daughter; as well as taking care of the household and the family, has been that they have played the role of attending, cleaning, and maintaining churches. There have never been many other social fields in which women were able to participate.

A very strong finding of this research is that the participants in non-religious activities in the youngest group are two times more likely to have depression. There is not a significant effect for the other two groups – the older and the oldest Greek. Participation in non-religious activities (sports, political, volunteering, and training) was not significant in decreasing the risk of depressive symptoms among the elderly.

Another result is participation in religious activities was not significant in decreasing the risk of depressive symptoms among the elderly and, therefore, religious activities are not associated with depression overall or by age group. Almost 98% of the people in Greece are Orthodox Christians. Greeks are strongly involved in church daily, weekly, and annual services. Many people integrate religious practice into their daily lives. Therefore, religious activities are considered a normal part of the Greek elderly’s life. At the same time, participants in non-religious activities are two times more likely to experience depressive symptoms among the elderly. One can speculate that, as attending non-religious activities is rare in the Greek elderly’s culture, mostly those who feel depressed (lonely, unhappy, unsatisfied, etc.) choose to attend non-religious activities; or the relationship may be a coincidence. Greek elderly have the opportunity to attend volunteer organizations such as hobby clubs, Scouts, sports organizations, environmental groups, craft and political groups. Among the most common are organizations formed by people from the same rural area. One reason for the rare participation in non-religious activities is cultural - social life in Greece takes place within a close circle of family and friends.
and revolves around eating, drinking, playing games, listening to music, dancing, and conversations. Caring for a family member, as already discussed, is slightly different in involvement. Greek culture includes taking care of aging family members at home and that can bring a serious burden and depression among those providing care.

As was previously mentioned, the research found that the older Greek elderly are more likely to participate in religious activities, but less likely to participate in non-religious activities than the younger group. This finding is relevant to the claims in the literature that as they age, Greek elderly become more involved in religious and less in political, educational, sports, and other non-religious activities. The only exception is their involvement in caring for a family member, as with aging they are more likely to need to take care of a sick or disabled spouse. This connects with the next finding that the older Greek elderly are more than two times more likely to be depressed than those younger than them. However, participation in both, religious and non-religious activities among the oldest Greek was not significant in decreasing the risk of depressive symptoms among the elderly. Another finding of the current research, confirmed by the literature, is Greek elderly not engaged in any activities and older are more likely to experience depressive symptoms than the younger elderly.

Controlling for educational status, the results of this study showed the level of education does not have an effect on the participation rate in either religious or non-religious activities. Those with low education are 3.5 times more likely to experience depressive symptoms than those with very high education; and those with middle education are over 2.6 times more likely to experience depressive symptoms than those with very high education; there was not a significant difference between those with high education (high school or associate degrees) and those with very high education (undergraduate, graduate and post-graduate degrees). This result
compares favorably with the literature that claims in Greek culture, the successful establishment of their children and highly valuing education are primary goals. According to statistics, 95% of the population is well-educated. Higher education is strongly valued. Therefore, in a culture where educated people are highly respected, the finding that those with low or middle education are several times more likely to be depressed than those with high and very high education, is expected.

Controlling for marital status, the results of this study showed the separated, divorced, and never married elderly are less likely to participate in religious activities than those who were married or widowed; and marital status does not have an effect on the level of non-religious participation. As the literature review claims, families in Greece are fundamental units of support and identity, and marriage is considered the normal condition of adulthood. With very few exceptions, nearly all people in Greece marry. The divorce rate is among the lowest in Europe. Therefore, one can claim that separated, divorced, and never married elderly are rather isolated cases in the Greek culture; and the reason they are less likely to participate in religious activities could be that they feel isolated from other people. Perhaps the same explanation is valid for the finding that never married and widowed Greek elderly were more likely to experience depressive symptoms than those who were married.
CHAPTER 6
CONCLUSION, IMPLICATIONS, LIMITATIONS AND RECOMMENDATIONS

Conclusion

With the present study, I analyzed the relationship between social involvement and depression among the study participants. The study used data from the Aging and Retirement in Europe database, subjecting a sample of 2,898 elderly aged 50 or older. The research included the following social participation variables: participating in religious activities; attending training/educational courses; doing volunteer or charity work; participating in sports, social, or other clubs; participating in a political or community organization; caring/providing help to family. The analysis was controlled for age, education, marital status, and gender. The findings of the study suggest that slightly over half of the Greek elderly are socially involved (58.18%), with almost equal numbers being observed reporting participation in religious (33.68%) and non-religious (24.5%) activities. A very strong finding of this research is the participants in non-religious activities among the youngest elderly, age 50-65, are two times more likely to have depression. The major finding in my research is that caregiving increases the risk of depressive symptoms among the elderly. However, it is important to note that a relatively small number of Greek elderly reported being depressed at some time in their life - 436 (15%) and only 107 (3.7%) of them indicated they had ever been treated for depression by a doctor or psychiatrist at some time in their life.

The research was needed due to the limited amount of studies examining social involvement in later life and its effect on Greek elderly’s feelings of depression. The fact that, compared to other countries in Europe, Greece remains underdeveloped in regard to social and mental health services for the elderly additionally motivated the author to examine the
relationship between social participation and depression among the elderly; in order to suggest positive changes and development of existing policies, procedures, and practices in Greece toward the elderly’s healthy aging and well-being. Therefore, the results of the study suggest policies based on social participation promotion may be beneficial for decreasing the risk of depression among the aged population in Greece.

Implications

Social participation and its relationship to depression among the elderly are phenomena that have major implications for Greek society as a whole; its changing culture, and those who are already using the Greek health and social services. With the increasing numbers of elderly in society, the need for health and social care services and programs is rapidly increasing. Therefore, the Greek government needs to ensure the adequacy of provided services focused on social participation and prevention and treatment of depression.

The main results of the present study indicate Greek elderly are more likely to be depressed with increasing age. Even though participating in religious activities is not related to the level of depression, the study results show the paradox of those attending non-religious activities being increasingly depressed. In order to investigate the causes for the negative influence of non-religious activities as factors associated with depression, I identified directions for future research on social participation and depression among the elderly in Greece; stressing the importance of exploring the quality of available non-religious activities for the elderly, and the anticipated positive outcome of improving their mental health status.

The results of this study are significant because the author has exposed the insufficient research done on social participation and depression among the Greek elderly and the need for further research in this area. Additionally, prior research in this matter has been limited, as
relatively little research has been done on how social participation influences depression during the lifetime of the Greek people taking into account the cultural specifics of Greek society.

Limitations

The limitations of this study are that it only notes correlation between results, rather than connections. Also, the relationships showed between age, levels of social involvement, and depression were not strong. In addition, since studies of depression tend to rely on cross-sectional data collected at a single point in time, it is difficult to establish a direct relationship among past components of individuals’ lives and how they contribute to current levels of depression. Another limitation of this study is the data gathered by SHARE may not reflect the cultural uniqueness of Greece. As the cultural differences among the Greek and other European societies are significant, their social network should be seen within their unique regional environment and not necessarily within other countries typical understanding of social participation.

In addition, The Survey of Health, Ageing and Retirement in Europe (SHARE), like all large household surveys, suffers from the problem of item non-response. There are many reasons why this is the case, including the length of the questionnaire, respondents’ privacy concerns, physical and mental health problems, cognitive limitations, and their lack of free time due to work obligations, or to the provision of care to young children or elderly relatives.

Recommendations

Caregiving

A major finding was those providing care for family members are significantly more likely to experience depression. The author would suggest the creation of a strong system for providing social and mental health support to those caregivers. Some suggestions would be the
creating and implementing of support group models nationwide, that would reliably lessen depression and the burden commonly experienced by caregivers. Helping the caregiver manage and cope with changes in their patterns, responsibilities, social network, etc., would be an essential need. Support groups should provide its members with information regarding skills training, emotional support, counseling, problem solving strategies, stress management, and coping strategies to reduce the risk of caregiver depression effectively and ease their burden. Additional suggestions regarding caregivers’ support are initiating a national forum on this theme to foster an exchange of ideas and experience; holding educational modules to disseminate information on support group offerings; and advertising in doctors’ offices, on the web, TV, radio, etc. Also issuing brochures, video-materials, and holding news conferences to educate the media about the importance of caregivers’ support groups; fundraising/financial efforts towards hiring professional group therapists; surveying the international community for their experiences, etc. Creating a network of community partners would be necessary: local churches, neighborhood groups, and volunteer organizations; aging agencies, home care services, geriatric care managers, elder law attorneys; etc. Needs assessment research should be applied periodically. Future researchers should examine the relationships between structure and frequency of support group meetings and caregiver depression and burden.

Social Activities Participation

As a result of the current research findings, the author suggests the creation of various programs and policies that would increase Greek elderly’s participation in both religious and non-religious activities to improve their social and mental health well-being. Taking steps toward encouraging the elderly to increase their levels of social participation should be applied toward Greek elderly, both men and women, of any age. As the number of elderly age 65 or older is
expected to increase substantially in many countries, including Greece, within the next 50 years, there is a strong need for the quality of life of elderly people to be significantly improved. A diverse and intense program of social involvement, such as volunteer or charity work; education or training; sport or social clubs; and religious, civic, and political activity, etc., may play a role in the primary prevention of later life depression among the elderly.

Religious Participation

As the researcher found the highest percentage of the Greek elderly, indicating social participation, have been engaged in religious and church activities, other recommendations would include continuously studying the effects of religious attendance among various groups, differentiated by age, social status, demographics, urban or rural living, etc. A combination of quantitative and qualitative research pertaining to different groups may provide insights into the nature of interactions within people participating in religious activities, and the influence of this participation on their mental health. Future research possibilities include efforts to learn how Greek humanitarian organizations and the government understand religious and spiritual beliefs and practices, in relation to mental health. Preventative and therapeutic mental health community programs may find it effective to collaborate with religious organizations in promoting better mental health. National and international humanitarian health projects with a religious or spiritual component could possibly be developed for a more integrative and long-lasting impact on the mental health of the elderly Greek population.
REFERENCES


