

# Health and social care in aging population: an integrated care institution for the elderly in Greece

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## Abstract

**Purpose:** To describe the nature of the services actually offered to the elderly in Greece by an institution of integrated care, as opposed to those that should be offered according to the relevant law, and to investigate the factors influencing the supply of those services.

**Background:** By the year 2020 about 20 million people will be aged 80 and over in the European Union. People of third age consist 16.9% of the total Greek population. Population aging has major implications on health services, employment and society as a whole. “Open Care Centres for the Elderly” (KAPI) is a rapidly developing and expanding institution providing integrated care for the elderly.

**Methods:** A questionnaire to be completed by the staff was sent to all 370 KAPI. Response rate reached 66%. For the analysis of the data multiple logistic regression analysis was performed using SPSS 10.0.

**Results:** Both medical and social care is provided by the KAPI to the elderly with different magnitude all over the country. Factors such as number of members, medical, paramedical and non-medical staff and fund availability in the KAPI mainly influence the supply of services.

**Conclusions:** Integrated care services are offered by the KAPI. However, more steps need to be taken towards the direction of other European countries’ integrated care schemes, in order to improve both quality and quantity of the services provided.

## Keywords

integrated care, elderly, open care

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## Introduction

A silent revolution has been taking place over the last decades in Europe’s age structure. Researchers call the European continent a “grey” continent and by the year 2020 about 20 million people will be aged 80 and over in the present territory of the European Union, representing an increase of almost 300% in this age category since 1960 [1]. Moreover, declining fertility rates in most European Union countries make

the problem worse. On average, 2.1 children per woman of childbearing age are required to replace the population, while today’s average in the European Union territory is 1.59, with rates as low as 1.15, as is the case in Spain.

Greece, where life expectancy has increased significantly, has the third lowest fertility rate in the European Union, with 1.30 children per woman of childbearing age. Today Greece faces a serious demographic problem, as people of third age consist 16.9% of the

total Greek population [2]. The aging rate of the Greek population in the 1990s was the fastest compared to all other European Union countries [3] and the 0–14 years old age group represents less than 16% [4]. In 1997 Greece was the country with the highest proportion of older people [5].

Various factors may influence older people's lifestyles and social relations. Technological advances and their consequences in society, the new type of nuclear family, economic independence of the elderly through retirement, new way of life and the disappearance of the "neighbourhood", are some of the factors that may cause older people to feel isolated and insecure. In addition, the social contract between generations that is a constitutional part of the western welfare regimes is in a state of changing [6]. New needs arise and new institutions oriented towards old people are necessary. On the other hand, the availability of resources is considered to be an important determinant of services provision [7].

## **Integrated care for the elderly in Greece**

Long-term care for the elderly in Greece is based on a mixed system comprising formal and informal care, which include direct provision via social services, coverage of the need for care via social insurance and limited support for informal caring via tax reductions. Formal care is provided by the State, by for-profit and by not-for-profit private organisations. The State provides institutional care through Chronic Diseases Clinics, Psychiatric Hospitals and Full Recovery Centres for Physical and Social Rehabilitation. The non-profit and for-profit private organisations operate homes for the aged providing residence services. The former are financed through social insurance and state budget while the latter are financed through private resources. In addition, tax reductions have been established in order to help families, which are the main informal caregivers, and benefits, including therapeutic social tourism and spa-therapies, are offered by social insurance funds [8].

In the early 1980s, the state acknowledged the importance of the non-institutionalisation of older people who were generally healthy, but faced some problems, mainly social. The first KAPI (abbreviation for "Open Care Centres for the Elderly") begun originally as pilot centres run by volunteer groups using public finance, with the objective to provide social support and preventive medical services to the elderly. In 1982 local authorities throughout rural and urban Greece assumed responsibility for the KAPI, while the state remained the main financial contributor. Today, there

are 370 KAPI all over the country. However, about 120 do not yet operate properly, due to lack of adequate personnel or lack of financing, reflecting the fact that the state's commitment to provide open care services to the elderly is not yet as strong as it should be.

The most important contribution of the KAPI is that they enable old people to receive open care while at the same time they remain at their homes. The KAPI's aims are: (a) the prevention of biological and psychosocial problems of the elderly, (b) the co-operation of the KAPI with the communities and with specialised centres, when necessary, (c) the research on issues concerning the elderly. The main services offered by the KAPI include preventive medical services such as blood pressure measurement, blood sugar tests, etc, physiotherapy programmes (preventive physiotherapy, rehabilitation, etc), ergotherapy programmes (orthopaedics, etc), education on health matters including lectures for proper diet, clothing, prevention of accidents, individual hygiene, etc, as well as recreational activities.

In 1992 a new pilot project called "Help at Home" was introduced under the auspices of the Ministry of Health, run by municipalities in close collaboration with KAPI. This programme is now running in more than half of the KAPI and health services, counselling and psychological services, aid to everyday tasks to old people unable to perform them on their own are provided. The programme is compatible with the cultural characteristics of the Greek society and it started to become very popular during the mid-1990s.

The purpose of this paper is to present the results of a research conducted by the authors in order to evaluate the services offered to the elderly by the only institution of integrated care in Greece. The question addressed is which services are really offered to the elderly and what are the factors that influence the supply of these services.

## **Materials and methods**

For the completion of the research a questionnaire was constructed, with both open-ended and closed questions. The authors drew up the first draft of the questionnaire after three consecutive meetings. It was then discussed with two experts working in the Office of Care for the Elderly of the Department of Family Protection of the Ministry of Health and Welfare, during which procedure no major changes were made, but four questions were slightly reworded. The questionnaire, which was completed by the staff and not by the members, was piloted on the staff members of an

urban KAPI, for ease of use and comprehensibility. Further testing was not considered to be required, as the aim was to produce preliminary data rather than to produce an instrument for wider use.

The construction of the questionnaire was directed towards the recording of inputs and outputs of KAPI. More specifically, there were seven distinct chapters, each one dealing with a different aspect that could influence the operation and the services offered by the KAPI. In the first chapter basic data were given, such as the location of the KAPI, the length of operation and the age and sex of active members. In the second chapter the actual staff working in the KAPI is presented, including medical, dental, paramedical and administrative staff. The third chapter concerns the way of operation (working hours and whether medical history of the elderly is kept), while the fourth one deals with the available medical and technical equipment and the suitability and adequacy of the premises (size, special amendments for people with special needs etc). In the fifth chapter the services provided are described in detail, as well as the participation of members in each one. The next chapter provides information concerning complementary activities organised by or offered in the KAPI, such as loan library, restaurant etc. Finally, the last chapter refers to the sources of funding and to the expenses incurred by the KAPI.

The first dispatch of the questionnaire took place on June 15, 2000. A letter accompanying the questionnaire was included in the envelope, alongside with a stamped reply envelope. A new such set was sent later to those KAPI that had not reply at first place.

**Table 1.** Receivers of KAPI services

	Median	Min	Max
Population of reference	9,850	1,000	200,000
Number of registered members	762	30	3,074
Gender of registered members			
Males	330	21	1,900
Females	350	10	1,805
Number of active members	300	9	1,800
Gender of active members			
Males	150	8	800
Females	140	1	1,000
Age			
60–70	50	10	92
71–79	37	7	80
80+	10	1	60

The questionnaire was sent to all the KAPI in Greece (370), according to the list available from the Ministry of Health and Welfare. The analysis of the research included data from 231 KAPI that had replied by 28 November 2000. The response rate (66%) is judged to be highly satisfactory, especially considering that a number of KAPI enrolled in the list were not fully operating on the day the questionnaires were received. The data were entered in a spreadsheet (MS Excel 7.0 for Windows) and were analysed using the statistical package SPSS 10.0. For the analysis of the data multiple logistic regression was used. The dependent variable was the services offered by the KAPI (cardiological examination, cholesterol level determination, blood sugar determination, chest X-rays, prostate examination, mammography and Pap test, influenza vaccination, physiotherapy, ergotherapy, health education programmes, home help programmes) and the independent variables were the factors that could influence the delivery of those services, namely: number of active members, number of physicians, nurses, ergotherapists, physiotherapists and family helpers, period of operation and funds availability. In the limited space of the present paper it is not possible to present all the results. We will be sufficed to examine the determinants of the provision of KAPI services as well as certain elements that give an overview of their operation.

## Results

From the analysis of the data it results that the average time of operation of KAPI of the sample is 10.7 years (SD=5.8 years). Of these, 25.3% are located in a prefecture capital while 32.3% in cities with population up to 5000 residents. The mean reference population of KAPI is 17,010 residents (median=9850). The mean number of the registered as well as the active male members of KAPI is lower in relation to the equivalent of females. Concerning the age-related composition of registered members, individuals between 60 and 70 years old constitute the major (49.6%) part of them (Table 1).

From the questionnaires received, it is concluded that the KAPI mainly offer: (i) preventive services, (ii) health education programmes and (iii) rehabilitation services, namely physiotherapy and ergotherapy. All the KAPI have developed recreational activities, which operate at an exceptional level and attract the majority of members. Additionally, some KAPI have developed the programme “Home Help”. As expected, all those activities and programmes are not offered at the same level by all KAPI (Table 2).

**Table 2.** Percentage of KAPI offering medical and social services

Services	Percentage (%)	Services	Percentage (%)
Blood pressure measurement	89	Physiotherapy	68
Cardiological examination	40	Ergotherapy	39
Chest ray	7	Health education programmes	73
Cholesterol level determination	40	“Help at Home” programme	54
Blood sugar determination	78	Excursions	100
Influenza vaccination	80	Summer camps	84

The research team assumed that a number of factors must influence the provision of specific services. To determine these factors, multiple (stepwise) logistic regression (for each service which is a dichotomous variable) was used and a model that contained the significant variables was obtained. Then, the existence of interactions and confounders was studied. At the last step of the analysis, Hosmer & Lemeshow test checked models’ goodness of fit (pHosmer & Lemeshow 0.05 indicates a good fit). Methodology of the analysis is based on D. Hosmer & S. Lemeshow work [9]. The results that were obtained from the analysis are given below.

### 1. Provision of cardiological examination

The results indicate that the likelihood of cardiological examination provision increases as the “Number of Physicians”, “Number of Active Members” and “Number of Nurses” increase (see [Appendix, Table 3](#)).

### 2. Cholesterol level determination

The results indicate that the likelihood of cholesterol level determination provision increases as the “Number of Nurses” & “Number of Physicians” increase (see [Appendix, Table 4](#)).

### 3. Blood sugar determination

The results indicate that the likelihood of blood sugar determination provision increases as the “Number of Nurses”, “Number of Active Members” & “Funds Availability” increase (see [Appendix, Table 5](#)).

### 4. Chest ray

The results indicate that the likelihood of chest ray provision increases as the “Number of Physician” increases and decreases as the variable “Number of Nurses” increases (see [Appendix, Table 6](#)).

### 5. Prostate examination

The results indicate that the likelihood of prostate examination provision increases as the “Number of Physicians” & “Period of Operation” increase (see [Appendix, Table 7](#)).

### 6. Mammography and pap test

The results indicate that the likelihood of mammography and Pap test provision increases as the variables “Number of Physicians” and “Number of Active Members” increase (see [Appendix, Table 8](#)).

### 7. Influenza vaccination

The results indicate that the likelihood of vaccination provision increases as the “Period of Operation”, “Funds Availability” & “Number of Nurses” increase (see [Appendix, Table 9](#)).

### 8. Physiotherapy

The results indicate that the likelihood of physiotherapy provision increases as the “Period of Operation” & “Number of Physiotherapists/Ergotherapists” increase (see [Appendix, Table 10](#)).

### 9. Ergotherapy

The results indicate that the likelihood of ergotherapy provision increases as the “Number of Physiotherapists/Ergotherapists” & “Funds Availability” increase and decreases as the “Number of Nurses” increases (see [Appendix, Table 11](#)).

### 10. Health education

The results indicate that the likelihood of health education programmes provision increases as the “Number of Active Members”, “Period of Operation”, “Funds Availability” & “Number of Physicians” increase and decreases as the variables “Number of

Nurses” & “Number of Ergotherapists/Physiotherapists” increase (see [Appendix, Table 12](#)).

## 11. Help at home programme

The results indicate that the likelihood for the provision of Help at Home programmes increases as the “Number of Active Members” & “Number of Family Helpers” increase (see [Appendix, Table 13](#)).

## Discussion

Population aging has major implications on health and welfare services, employment and society as a whole. The consumption of health and social care services is considerably increased among older people, and those over 65 consume four times more health services than the general population [10]. This means that in the context of the new integrated care approach for the elderly, the adequacy of provided services must be ensured. The main results of the present study indicate the strong relationship between inputs (human and financial resources) and outputs in relation to the provision of services for the elderly by integrated care structures in Greece.

A very interesting point is the identification of the members, those that are actually using the KAPI services. According to the staff that completed the questionnaires, the majority of members (65%) are aged up to 74 years old and only 35% are over 75 years old. It can be suggested that those in real need of the KAPI may not be able to join them, especially considering the fact that only 31% of the KAPI are accessible by people with special needs. This suggestion is further supported by previous research [11] that stated that almost 90% of all members do not have any kind of disability. In addition, the same research concluded that members usually enjoy a relatively good economic status (80%) and more than 70% live in their own property. Therefore, it could be assumed that those of lower economic status may not join the KAPI, even though membership fee is very low and is not applied in cases of hardship.

In its role as a provider of integrated care, the KAPI offer both medical and social services. But what is the real contribution in the reduction of the use of medical services? This is something that needs further research, therefore at present only assumptions can be made. It is a fact that preventive services, physiotherapy, ergotherapy, “Help at Home” and health education programmes, are all performed below expected level and are only offered at a limited num-

ber of KAPI and only recreational activities (excursions, summer camps etc) are performed at expected level. Accordingly, it would not come as a surprise if members were found to continue visiting their doctor, besides receiving medical care at the KAPI. An assumption like this is in accordance with a previous finding that stated that 60% of all KAPI members continue to visit their doctor at least once a month [11]. Moreover, it has to be stressed out that apart from the KAPI and the programme “Help at Home”, formal care provided by institutions for the elderly is greatly lacking, especially when preventive services are concerned. KAPI’s aim is to help maintain the elderly as active and participating members of their local communities. In dealing with the elderly, families in Greece are mainly against admitting them to an institution, according to the prevalent moral, religious and cultural obligations. Besides, the percentage of people aged 65 or more living alone is lower in Greece than the European average [12].

The findings of the study confirm the conclusions of a previous research indicating the significant role of KAPI as an institution with positive effects on the lives of the elderly, especially because the KAPI can offer both medical services and entertainment activities [11]. In addition, another study in line with the findings of the present study, pinpoints the facilities in the KAPI as a factor influencing the provision of services and the degree of participation of the elderly in activities performed by the KAPI [13].

In the era of cost-containment policies, the KAPI constitute an alternative proposal with low engagement of resources. According to the data of the present research the average annual cost of operation of KAPI amounts to € 112,940, with maximum value € 454,965 and minimum € 1,467. The 51.94% of the expenses concern salaries, 10.91% cultural activities, 1.19% expenses for medicines and 1.58% medical consumables. Therefore, the KAPI are a unique kind of organisation in that they try to combine services oriented at both healthy, self-catered old people and at those not healthy, with low budget. However, appeal for professional services is bound to rise in the coming years and a broader range of health and social services through the KAPI needs to be implemented and tailored to the individual needs of the elderly. European countries’ experience can prove invaluable for the improvement of quality of integrated care provided in Greece by the KAPI.

## Conclusions

The burgeoning number of elderly makes it imperative to ensure that older adults will not be regarded as a

burden on health systems or societies. The institution of the KAPI is considered as an innovative mode of providing open care for the elderly, helping them remain active participants in the society. This need is even greater nowadays, when traditional forms of care for older people are disappearing due to changes in societal trends and public health budgets keep on shrinking.

The services offered by the KAPI are indeed invaluable for the health of the elderly, as well as their social and mental well-being [11]. However, discrepancies between what should and what is actually offered exist as to the range of services provided. Proper attention

needs to be given to crucial issues such as funds, personnel, space availability and suitability. More initiatives are necessary to improve the scheme of integrated care in Greece, possibly by redesigning it. Policy decision-makers should try to support the provision of integrated care by the KAPI by adopting appropriate policy measures.

## Acknowledgements

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## Appendix

The results that were obtained from the analysis are given below (confounders are noted with \* while interaction terms are noted with \*\*):

### 1. p-Value of Hosmer & Lemeshow goodness of fit test=0.786

According to the results of the logistic regression variables (Table 3), “Number of Active Members” and “Number of Physicians” are considered to be predictors of cardiological examination provision, while the variable “Number of Nurses” is a confounder.

The logit g (cardiological examination provision) of the multiple logistic regression model is given by the equation:

$$g(\text{cardiological examination provision}) = -3.077 + 0.003 \times \text{Number of Active Members} + 0.958 \times \text{Number of Physicians} + 0.465 \times \text{Number of Nurses}$$

### 2. p-Value Hosmer & Lemeshow goodness of fit test=0.705

According to the results of the logistic regression variable (Table 4), “Number of Nurses” is considered as predictor of cholesterol level determination provision, while the variable “Number of Physicians” is a confounder.

The logit g (cholesterol level determination’s provision) of the multiple logistic regression model is given by the equation:

$$g(\text{cholesterol level determination’s provision}) = -1.521 + 0.636 \times \text{Number of Nurses} + 0.294 \times \text{Number of Physicians}$$

### 3. p-Value of Hosmer & Lemeshow goodness of fit test=0.067

According to the results of the logistic regression variables (Table 5), “Number of Active Members” & “Funds Availability” are considered as predictors of blood sugar determination provision, while the variable “Number of Nurses” is a confounder.

The logit g (blood sugar determination’s provision) of the multiple logistic regression model is given by the equation:

$$g(\text{blood sugar determination’s provision}) = -1.698 + 0.005 \times \text{Number of Active Members} + 0.0001 \times \text{Funds Availability} + 0.455 \times \text{Number of Nurses}$$

### 4. p-Value of Hosmer & Lemeshow goodness of fit test=0.952

According to the results of the logistic regression variable (Table 6), “Number of Physicians” is considered as predictor of chest ray provision, while the variable “Number of Nurses” is a confounder.

The logit g (provision of chest ray) of the multiple logistic regression model is given by the equation:

$$g(\text{provision of chest ray}) = -2.973 + 0.694 \times \text{Number of Physicians} - 0.364 \times \text{Number of Nurses}$$

**Table 3.** Logistic regression results for the provision of cardiological examination

Variable	Coefficient (b)	p-Value	exp(b)	95% CI for exp(b)
Number of Active Members	0.003	0.028	1.003	1.0002–1.005
Number of Physicians	0.958	0.005	2.606	1.327–5.119
Number of Nurses*	0.465	0.162	1.592	0.830–3.055
Constant	–3.077	<0.001	0.046	

**Table 4.** Logistic regression results for the provision of cholesterol level determination

Variable	Coefficient (b)	p-Value	exp(b)	95% CI for exp(b)
Number of Nurses	0.636	0.036	1.889	1.042–3.426
Number of Physicians*	0.294	0.095	1.342	0.950–1.895
Constant	–1.521	0.007	0.218	

**Table 5.** Logistic regression results for the provision of blood sugar determination

Variable	Coefficient (b)	p-Value	exp(b)	95% CI for exp(b)
Number of Active Members	0.005	0.019	1.005	1.001–1.009
Funds Availability	0.0001	0.015	1.000	1.0...084–1.0...782
Number of Nurses*	0.455	0.352	1.576	0.605–4.106
Constant	–1.698	0.115	0.183	

### 5. p-Value of Hosmer & Lemeshow goodness of fit test=0.385

According to the results of the logistic regression variables (Table 7), “Number of Physicians” & “period of Operation” are considered as predictors of prostate examination provision.

The logit g (provision of prostate examination) of the multiple logistic regression model is given by the equation:

$$g (\text{provision of prostate examination}) = -9.317 + 0.556 \times \text{Number of Physicians} + 0.039 \times \text{Period of Operation}$$

### 6. p-Value of Hosmer & Lemeshow goodness of fit test=0.7

According to the results of the logistic regression variables (Table 8), “Number of Active Members” & “Number of Physicians” are considered as predictors for the provision of mammography and pap test.

The logit g (provision of mammography and pap test) of the multiple logistic regression model is given by the equation:

$$g (\text{provision of mammography and pap test}) = -2.457 + 0.002 \times \text{Number of Active Members} + 0.334 \times \text{Number of Physicians}$$

### 7. p-Value of Hosmer and Lemeshow goodness of fit test=0.149

According to the results of the logistic regression variable (Table 9), “Funds Availability” is considered as predictor of vaccination provision, while the variables “Period of Operation” and “Number of Nurses” are confounders.

The logit g (provision of influenza vaccination) of the multiple logistic regression model is given by the equation:

$$g (\text{provision of influenza vaccination}) = -1.109 + 0.0001 \times \text{Funds Availability} + 0.003 \times \text{Period of Operation} + 0.328 \times \text{Number of Nurses}$$

### 8. p-Value of Hosmer and Lemeshow goodness of fit test=0.882

According to the results of the logistic regression variables (Table 10), “Number of Physiotherapists/Ergotherapists” and “Period of Operation” are considered as predictors of Physiotherapy’s Provision.

**Table 6.** Logistic regression results for the provision of chest ray

Variable	Coefficient (b)	p-Value	exp(b)	95% CI for exp(b)
Number of Physicians	0.694	0.004	2.002	1.244–3.221
Number of Nurses*	–0.364	0.554	0.695	0.208–2.325
Constant	–2.973	0.004	0.051	

**Table 7.** Logistic regression results for the provision of prostate examination

Variable	Coefficient (b)	p-Value	exp(b)	95% CI for exp(b)
Number of Physicians	0.556	0.014	1.744	1.121–2.714
Period of Operation	0.039	0.010	1.040	1.009–1.072
Constant	–9.317	0.002	0.000	

**Table 8.** Logistic regression results for the provision of mammography and pap test

Variable	Coefficient (b)	p-Value	exp(b)	95% CI for exp(b)
Number of Active Members	0.002	0.031	1.002	1.0...01–1.004
Number of Physicians	0.334	0.019	1.397	1.056–1.849
Constant	–2.457	<0.001	0.086	

**Table 9.** Logistic regression results for the provision of influenza vaccination

Variable	Coefficient (b)	p-Value	exp(b)	95% CI for exp(b)
Funds Availability	0.0001	0.005	1.00	1.0...02–1.0...11
Period of Operation*	0.003	0.620	1.003	0.992–1.013
Number of Nurses*	0.328	0.514	1.388	0.518–3.722
Constant	–1.109	0.363	0.330	

The logit g (provision of physiotherapy) of the multiple logistic regression model is given by the equation:

$$g \text{ (provision of physiotherapy)} = -2.104 + 0.51 \times \text{Number of Physiotherapists/Ergotherapists} + 0.017 \times \text{Period of Operation}$$

**9. p-Value of Hosmer & Lemeshow goodness of fit test=0.957**

According to the results of the logistic regression variables (Table 11), “Number of Physiotherapists/Ergotherapists”, “Funds Availability” and “Number of Nurses” are considered as predictors of ergotherapy provision.

The logit g (provision of ergotherapy) of the multiple logistic regression model is given by the equation:

$$g \text{ (provision of ergotherapy)} = -1.262 + 0.512 \times \text{Number of Physiotherapists/Ergotherapists} + 0.0001 \times \text{Funds Availability} - 0.866 \times \text{Number of Nurses}$$

**10. p-Value of Hosmer & Lemeshow goodness of fit test=0.813**

According to the results of the logistic regression variables (Table 12), “Number of Active Members” and “Period of Operation” are considered as predictors for the provision of health education programmes, while “Funds Availability”, “Number of Nurses”, “Number of Physicians”, “Number of Ergotherapists/Physiotherapists” are confounders.

The logit g (provision of ergotherapy) of the multiple logistic regression model is given by the equation:

$$g \text{ (provision of health education programmes)} = -1.106 + 0.005 \times \text{Number of Active Members} + 0.012 \times \text{Period of Operation} + 0.0001 \times \text{Funds Availability} + 0.471 \times \text{Number of Physicians} - 0.772 \times \text{Number of Nurses} - 0.151 \times \text{Number of Ergotherapists/Physiotherapists}$$



**Table 10.** Logistic regression results for the provision of physiotherapy

Variable	Coefficient (b)	p-Value	exp(b)	95% CI for exp(b)
Number of Physiotherapists/ Ergotherapists	0.51	0.003	1.665	1.185–2.342
Period of Operation	0.017	<0.001	1.017	1.01–1.023
Constant	–2.104	0.001	0.122	

**Table 11.** Logistic regression results for the provision of ergotherapy

Variable	Coefficient (b)	p-Value	exp(b)	95% CI for exp(b)
Number of Physiotherapists/ Ergotherapists	0.512	0.001	1.669	1.230–2.265
Funds Availability	0.0001	0.017	1.000	1.0...29–1.0...3
Number of Nurses	–0.866	0.004	0.421	0.235–0.753
Constant	–1.262	0.12	0.283	

**Table 12.** Logistic regression results for the provision of health education programmes

Variable	Coefficient (b)	p-Value	exp(b)	95% CI for exp(b)
Number of Active Members	0.005	0.037	1.005	1.0003–1.01
Period of Operation	0.012	0.044	1.012	1.0003–1.025
Funds Availability*	0.0001	0.356	1.000	0.99–1.00
Number of Physicians*	0.471	0.348	1.601	0.599–4.278
Number of Nurses*	–0.772	0.139	0.462	0.166–1.285
Number of Ergotherapists/ Physiotherapists*	–0.151	0.612	0.860	0.481–1.540
Constant	–1.106	0.371	0.331	

**Table 13.** Logistic regression results for the provision of help at home programme

Variable	Coefficient (b)	p-Value	exp(b)	95% CI for exp(b)
Number of Active Members	0.002	0.036	1.002	1.0001–1.003
Number of Family Helpers	0.349	0.047	1.417	1.004–1.999
Constant	–0.840	0.045	0.432	

### 11. p-Value of Hosmer & Lemeshow goodness of fit test=0.931

According to the results of the logistic regression variables (Table 13), “Number of Active Members” and “Number of Family Helpers” are considered as predictors of Help at Home programme provision.

The logit g (provision of Help at Home programme) of the multiple logistic regression model is given by the equation:

$$g(\text{provision of Help at Home programme}) = -0.840 + 0.002 \times \text{Number of Active Members} + 0.349 \times \text{Number of Family Helpers}$$

## Vitae

**Natasa V. Daniilidou** was born in Thessaloniki, Greece, where she graduated the Department of Economics, University of Macedonia. She received her MSc with distinction in “Economic and Quantitative Methods in Health Care” from City University,

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