

Estimation of Private Health Expenditure in Cyprus

Isavella Pittokopitou-Papiri¹, Eleni Jelastopulu^{1,2}, Despina Andrioti¹ and George Charalambous¹

¹Postgraduate Program Health Management, Frederick University, Nicosia, Cyprus

²Department of Public Health, Medical School, University of Patras, Greece

*Corresponding author: Isavella Pittokopitou- Papiri, Email: isavella.pap@hotmail.co.uk

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Abstract

This research aims at studying the origin and distribution of private health expenditure in Cyprus, with focus on the economic relations between health system and households, whether they involve standard transactions or underground (black) economy.

In this context, a specially developed questionnaire was used, gathering data from 400 Cypriot households, via telephone interviews. The statistical platform SPSS was used to record and process data and results, applying methods of descriptive and inferential statistics, in order to present the results of both the first and second-degree statistical analysis.

The findings of the research have affirmed the weaknesses of Cyprus' health system, indicating both the extent of black economy and the lack of user satisfaction in the provision of public health services, which inevitably leads to the increased use of private health services and out-of-pocket payments.

Keywords: Private health expenditure; Public health expenditure; Cyprus; Out of pocket health expenditure; Black economy; Bribery

Introduction

OECD defines health as the state of complete physical, mental and social well-being and not just the absence of illness or disability, while it considers safeguarding and maintaining optimal health status as one of the fundamental human rights, regardless of racial, religious, ideological or socio-economic differences. On the other hand, illness is defined as every abnormal state of body or mind, which creates the need of treatment and/or leads to inability to work [1].

Therefore, health expenditure refers to the economic resources which are used to the safeguarding of health, as well as the prevention and/or remedy of illnesses.

The world financial crisis which broke out in 2010 has caused a dramatic decrease in health expenditure in most countries worldwide, with numerous of them, mostly in the EU, generating low, even negative, average yearly growth rates of per capita real health expenditure for almost three consequent years [2].

Apart from the definite effect of the financial and economic crisis on health expenditure, Europe continues facing the phenomenon of great disparities in the area of Health, both among and within different countries, despite the progress achieved in Public Health sector. Although life expectancy continues to increase, access to public health services and quality of life and health seem to be significantly influenced by factors such as gender, socioeconomic status, income, education and other factors [3].

A comparative study of health expenditure among various countries and in terms of funding sources has shown that between 2005 and 2009, public health expenditure had demonstrated a continuous uptrend

worldwide, while the global crisis in 2009-2011 caused a drastic fall with gradual balancing trends in 2011-2013. On the other hand, private health expenditure had faced a relatively less steep downtrend two years before the financial crisis broke out, with stabilizing trends in 2007-2011 and a continuous uptrend following the post-crisis years. Moreover, since 2011, private health insurance has played an important role, rebounding from the downward trend of previous years and practically doubling the growth rate of per capita expenses from then on [2].

Furthermore, when studying the progress of health expenditure per health sector, it is apparent that despite the evident growth rate fall within all sectors during the post-crisis period, the sectors of in-hospital, out-of-hospital care and chronic treatment were more protected, preserving their steady uptrend, while the areas of prevention and pharmaceutical care demonstrated negative growth rate in the same period [2].

In order to perform comparative studies of health expenditure, either among different countries or within the same country across different time periods, it is essential to use and apply common tools and methodologies, so as to guarantee safe and valid conclusions [4]. To this end, OECD has developed a System of Health Accounts (SHA) with specific structure and predefined practices, whose application is promoted worldwide [5].

In Cyprus, the aforementioned SHA has not been used yet by state authorities. However, this methodology was applied in the actuarial study performed for the establishment and implementation of the new National Health System [6]. Until now, to study and estimate health expenditure, two other methods have been used, Family Budget Surveys [7] and National Accounts [8].

Generally, Cyprus' health system consists of two coexisting areas of service supply, the public one, which has been through a transitional period for many years, and the private one, which is mainly funded via out-of-pocket household payments [9].

Since 2001 when the law for the institution of the General Health System was passed, there have been various efforts to implement a single, universal and uniformly mandatory health system [10], which will contribute to the safeguarding of the public sector of health service provision, as long as the challenges met by the new system are effectively managed [11].

Regarding the dissemination of health expenditure, Cyprus is one of the countries with the lowest public health expenditure, reaching only 3.4% of GDP in 2013, while total health expenditure was at 7.4% of GDP in the same year. In contrast, Cyprus has one of highest private health expenditure among the EU countries [11].

Household contribution in the cost of health services has raised mixed reactions and views. In any case, however, in a country with such high private health costs as Cyprus, social inequalities in access to quality care are inevitable, with consequent negative consequences for the health of the population [12].

An issue of equal severity is underground (black) economy in health sector, involving illegal money exchanges within the public health system, regarding both in-hospital and out-of-hospital treatment [13].

In this respect, this study was performed with focus on the recording and study of the origin and distribution of private health expenditures in Cyprus, aiming not to quantify the levels of private health expenditure, but to draw conclusions on the economic relations between households and health system, be it formal transactions or the phenomena of the

underground economy. For this purpose, the methodology applied comprised a specially formulated questionnaire, by taking a sample of 400 households, via telephone interviews.

Literature Review

Although life expectancy continues to increase, disparities still exist in the area of Health, both among and within different countries, with varying degrees of access to health services, depending on the socioeconomic status, the income, the education and other factors [4,14].

The world financial crisis led to a substantial fall of the yearly increase rates of health expenditure per capita in OECD countries, despite the evidence of gradual recovery. However, the crisis impact varied among the countries of OECD and among the different funding sources (public or private). In affected countries, the crisis had a severe effect on health, mortality and quality of healthcare, but also on the frequency of habits such as smoking and alcohol. Simultaneously, it led to a reduction of health expenditure, both public and private, where inequalities have also been recorded. On the other hand, the available income definitely affects health status: income reduction caused by economic crisis and/or unemployment leads to the deterioration of health indexes [3,15-17].

Regarding health expenditure distribution, total expenditure is distinguished between public, funded by national budgets and social security funds, and private, which includes the official payments for purchasing private health products or services, the purchase of services not covered by social security, cost-sharing, as well as any unofficial or illegal transactions [18]. A significant tool for calculation and comparative estimation of health expenditure is OECD's System of Health Accounts. In Cyprus, health expenditure is estimated through Family Budget Surveys and National Accounts [19,8,20].

The main funding source of private health expenditure is out-of-pocket household payments, while the share of optional private security represents a small percentage of the total health expenditure, holding a different role in various countries [11,4,21]. The participation of health service users in the total cost (co-sharing) involves a group of special policy instruments applied in the area of health services market demand, usually in the context of insurance (public or private) or of a national health system, in one of three basic modes : deduction, co-payment and co-insurance. It may reduce the total demand of health services and, simultaneously, increase the income and broaden the healthcare provisions to ensure a more wide cover of the financially deprived. Nevertheless, it risks intensifying social disparities and introducing negative changes in medical ethics [22,23,4,24].

The determinants of demand for private health services include the available income of citizens, the country's population health levels, new diseases and the effect of socioeconomic factors on the citizens' health, pathological health issues, such as obesity, which may lead to many health conditions, as well as the inefficiency of the public sector, in matters of logistics or human resources, and the citizens' dissatisfaction for the national health system [25,4,26].

In Cyprus, the health system consists of two parallel service sectors, the public sector managed by the Ministry of Health, and the private sector mostly funded by the out-of-pocket household payments. In fact, Cyprus ranks at the first place among 28 EU countries regarding the percentage of out-of-pocket payments out of the total health expenditure, and at the tenth place, regarding the percentage of out-of-pocket payments out of the total private health expenditure. At the same time, Cyprus has one of the lowest percentages of public health expenditure per GDP, while ranking on the top places in Europe regarding the extent of social disparities in the health sector [11,27,6]. There are also delays in the full deployment of the General Health System (GHS), which is expected to ensure mandatory universal access of all Cyprian

citizens to the integrated national health system, with funding sources coming from the state, the employers and employees, so as to reduce the average yearly increase rate of total health expenditure. Meanwhile, the role of optional private insurance is substitute, due to the lack of universal cover by the national health system [10,28,9].

Finally, black economy in the health sector involves illegal transactions inside the public health system for services which should be provided without charge, as a means of facilitating access to health services and better quality of healthcare. On the other hand, when it comes to outpatient care, informal payments depend on the patient's available income, as opposed to hospital care where emergency "forces" the patients to make additional payments despite their financial capabilities. However, there has been no research revealing a clear quantitative and qualitative distinction of the forms of black economy in health, including the informal payments or bribes ("fakelakia") and the regular payments for which a full receipt is not supplied [29,30-33,4].

Methodology

Objective

The purpose of this study was to complement existing sources of information on the origins and distribution of private health expenditures, focusing on those dimensions that have not been adequately explored. It was not intended to draw quantitative results on the level of private spending but to draw useful conclusions about economic relations between households and the health system, whether these involve formal transactions for the reimbursement of health services or bribery - voluntary or not - of the medical staff.

In detail, this study aimed to:

- ✓ identify the frequency of use of private sector healthcare services by households, in comparison to those of the public sector, and assess the level of payments per category of health professionals, possibly revealing public health shortcomings and the public health system's inability to serve sufficient citizens in these categories
- ✓ explore the role of social security in the coverage of health expenditure and the reasons for incomplete coverage of healthcare expenditure paid by social security
- ✓ search for and record the factors that either hinder or promote household access to private health services, possibly indicating the possible existence of inequalities
- ✓ assess the magnitude and extent of the underground economy in both the private and public health sectors, whether it is atypical payments in the form of gratuities and "fakelakia" or tax evasion through non-issuance / receipt of full proof, in order to detect the frequency of these phenomena in the different categories of households, and to propose a possible treatment of these phenomena
- ✓ evaluate the role of private insurance in promoting access to private health services with a survey of households covered by private contracts and their characteristics

Study Implementation – Population Sample

The research carried out in the context of this study was carried out by completing a questionnaire through the process of personal telephone interviews. Telephone interviews were opted against direct completion by the participants, in order to avoid cases of increased unanswered questions and lack of understanding of the questions.

Regarding the interview process, the researchers requested to speak with the head of the household, the person contributing the main income to the family, or the housewife of the house. They had to recognize if the

respondents were in a good position to participate in the interview, i.e. whether they had the ability to understand and communicate on the one hand, and whether they had the necessary mental calm to successfully complete the process.

The sample of the survey was random and consisted of 400 households, the demographic characteristics of which are summarized in the corresponding section of the results.

The Questionnaire

The questionnaire consisted of three sections. The first section includes questions about the frequency of use and the amount of payments for products and services outside the hospital sector. In addition, the participants were asked to define the receipt amount provided by the various health professionals, as well as the amount reimbursed from social and private insurance for each category of out-of-hospital expenditure, such as visits to physicians, purchase of therapeutic equipment, etc. Moreover, a first investigation of the wages paid by the respondents for a gift or 'fakelaki' to doctors in the public sector outside the hospital sector is performed.

The second part consists of three sub-sections, which examine the frequency of use and the amount of payments for hospital services for each member of the household in the last 12 months. The first sub-section includes questions about the frequency of hospital admissions (public / private), the frequency of payment to hospital professionals, the frequency of use of non-hospital professionals such as exclusive nurses and physiotherapists, the frequency of hospitalization in a unit intensive care and the frequency of surgeries. The second sub-section refers to hospitalization in a public hospital and involves questions about the way of hospitalization and means of access, the waiting time for hospitalization in a public hospital, the frequency and size of "fakelakia" offered, as well as the satisfaction of participants regarding their hospitalization in the public hospital (evaluation based on a 1-10 scale). Similarly, the third sub-section refers to hospitalization in a private hospital with questions about the amounts of payments to various health professionals within the private hospital, the amount of hospitals and the amounts of reimbursement from social and private insurance for the above costs. This sub-section concludes with the question of satisfaction with hospitalization in the private hospital (evaluation based on a 1-10 scale).

Finally, the third part focuses on the demographic and socio-economic characteristics of the household. The placement of this group of questions at the end of the questionnaire has been deliberately made so that the respondent has a sense of complete anonymity and can more honestly answer for sensitive issues in the first two parts of the interview.

It is worth mentioning that the structure of the questionnaire was such to provide a clear flow of questions depending on the answers given by the participant during the course of the interview.

Data Recording, Coding, Analysis & Processing

The recording of collected data was initially carried out in an Excel worksheet, where the first filtering of the answers was performed. After the 400 completed questionnaires were gathered, the responses were transferred to a SPSS statistical datasheet, where they were coded in mostly categorical variables with specific values.

The coding process involved replacing responses from specific alternatives that were numerically denoted by 0 for a negative response, 1 for a single-positive positive response or a range of integer values in the case of multiple alternatives. If the questions had no answers because they did not apply to the particular participant, the variables did not get any value so the statistical packet would recognize them as missing and separate them during the statistical processing.

In addition, during the coding phase, a label was filled for each variable, along with the values to which the alternate responses with the numeric symbol corresponded.

During the phase of statistical processing, frequencies were calculated both in absolute figures and in percentages, while bar graphs were depicted, which demonstrated the percentage distribution of the answers to each question.

Once the frequency of occurrence of alternative responses had been fully recorded, the results were gathered and recorded in summary tables, which contribute to the extraction of direct conclusions on the demographics of the participants, the prevailing trends for the use of both private and public services health, and the degree of satisfaction of users of these services.

Then, further data processing was carried out by creating a new SPSS database, where the original data was grouped appropriately to explore possible correlations between specific variables. For instance, possible relationships were investigated between the individual demographics of respondents and actions, characteristics or behaviors of the respondents, such as private spending, the level of family payments and the category of health providers, the level of total health costs per family, access to private health care providers and private insurance, participation in the shadow economy etc. Correspondingly, additional possible correlations between questions - variables, could possibly reveal further features of private health spending in Cyprus.

Constraints & Assumptions

While carrying out the research, there have been some constraints regarding the content of the questions and the extent to which they cover the whole range of private health expenditure, but also their full understanding by the respondents. In order to tackle these constraints, corresponding assumptions were made.

First of all, as the research required the recall of information from the memory of the individual participant for events that in his daily life was most often not important to restrain, the whole process involves a risk of reduced precision and validity of the data. In fact, the so-called memory error may vary according to household demographics, for example, residents of large urban centers will focus less on events such as visiting a private physician in order to adequately restrain them, compared to semi-provincial areas. In this case, it was assumed that all participants were equally prone to memory errors in order to avoid assigning them a particular weight and a different evaluation.

An important factor not considered in this study is the health status of participants, which undoubtedly affects the frequency of receiving health services, but it is not related to the socio-economic implications with which this research is concerned.

In addition, this research did not address pharmaceutical spending at all, although it is a very important sector of health expenditure, particularly private expenditure. However, the degree of difficulty in recalling information about pharmaceutical spending over an entire year was even greater, especially in the limited time of a telephone interview.

It should also be noted that data on the frequency of hospitalization in public or private hospitals abroad could not be gathered since no one answered the question. On the other hand, as will be further analyzed in the next chapter, questions of quantitative content, concerning either the frequency of receiving health services or the amounts of fees, gifts, returns, etc., the respondents either did not understand that they had to give a numerical answer or hesitated to do. Therefore, in several questions that should provide more specific quantitative data, the questionnaire ultimately gives only a more general picture with alternative answers "Yes" or "No".

Results

Findings of the Questionnaire Implementation and First-Degree Data Analysis

Studying the sample's demographics, the participants were relatively split on the alternative answers regarding the majority of sample households originated from the main cities of Cyprus, while each household included 1-3 persons. The person bearing the main income had reached an average or high education level, while their monthly net family income ranged from €1000-3000. The vast majority of interviewees claimed to belong in the middle or highest socioeconomic classes. Finally, most of the participants were insured in the public insurance fund.

Only 14.4% of the participants have private health insurance, with over half of them being the only person privately insured in their household. The total yearly payments for private insurance ranged from €40-180 (mostly 70 or 100 euros).

Approximately 85% have stated that in the past twelve months, either they or some other member of their household (husband, wife, child and so on) had made use of private health services. However, they were not willing to provide further clarifications on the nature or cost of those services. Generally, related costs varied from €12 to €2000. On the other hand, it appeared that when visiting private health professionals or diagnostic centers, most neither got a receipt, nor claimed a refund from their public or private insurance.

17% have stated that they had consulted a Public Health doctor during the past year.

When asked if they had offered a gift or bribery ("fakelaki") to the Public Health doctor during their last visit, a few of them (37%) denied doing so, while most admitted it, justifying it as a means to get approval for a leave of absence, medicine or nursing abroad or to thank the doctor for provided services and guarantee extra care and more thorough treatment.

Approximately 1/3 of the participants had bought, rented or borrowed medical equipment during the past year, without offering further details.

62% of the interviewees stated that either they or another member of their family had been hospitalized in a public or private hospital, in Cyprus or abroad, within the previous 12 months. Nevertheless, they did not supply more information regarding the frequency and duration of their hospitalization. About 1/4 of them had been operated, while 4% were treated in ICU.

Regarding their stay at the hospital, only few claimed that they offered money as a gift (and not bribery) to doctors (20%) or other medical (13%) or hospital staff (3%).

Available information concerning payments to other health suppliers during hospitalization was little to none, hindering safe conclusions in the matter related payments or refunds from public and/or private insurance. However, it is often not to receive a payment receipt from health suppliers or a refund from public and/or private insurance.

More than half of those hospitalized in a public hospital were brought as emergency cases. The rest had regular appointments. To gain access to public hospital treatment, many took advantage of their acquaintance with hospital staff, medical or non-medical. Waiting time for hospitalization was generally limited, mostly from 0 to 2 days.

Most of these participants refused having offered any kind of bribery ("fakelaki"), while one third admitted doing so - with related sums varying from €20 to €100 - either as a habit or as a token of gratitude, even as a way to achieve better quality in provided health services.

Most gave negative or non-positive feedback about their stay in the public hospital, with low to minimum satisfaction levels, regarding their experience with the medical and other staff, or the hospitalization conditions.

Less than 10% of the participants stated having been hospitalized in a private hospital or clinic. Related payments ranged from €100 to 14000€, while they got a receipt for little to none of these amounts. In most cases, they received no refund from their public or private insurance.

The satisfaction levels regarding the staff and hospitalization conditions in private hospitals were significantly higher than those of public hospitals.

Findings of the Second-Degree Statistical Analysis

The combinatory study on possible relationships between several of the sample data variables - for which the methods applied involved cross-tabulation for categorical or binary variables and linear regression for continuous variables - has led to some interesting findings:

- ✓ The use of private health services is significantly influenced by both the number of house members and the monthly net family income.
- ✓ Where supplied data was adequate, it was revealed that consulting visitations to private health providers are affected by demographics in various ways.
- ✓ Total payments to private health providers are affected by the degree of urbanization of the place of permanent residence and the person's insurance fund.
- ✓ No statistically significant relations were found between the independent variables (demographics, private insurance coverage) and either bribing (offering "fakelaki") of public health doctors or expenses for medical equipment.
- ✓ Hospitalization in a public or private hospital is affected by all previously mentioned independent variables except for the person's insurance fund.
- ✓ Offering gratuities (not bribe, "fakelaki") to medical, nurse and other staff during hospitalization appears significantly related to the place of permanent residence, the number of household's members, the monthly net family income and the socioeconomic status.
- ✓ Payments to private health providers during hospitalization are affected only by the number of household's members.
- ✓ Offering bribe ("fakelaki") to public hospital doctors has a statistically weak relation with the person's educational level and no influence on the degree of satisfaction of those hospitalized in a public hospital by doctors.
- ✓ Overall satisfaction regarding hospitalization in a public hospital is affected only by the required waiting time.
- ✓ No statistically significant relations were found between independent variables and either doctor specialty during hospitalization in a private hospital or total payments to the tending doctors. The same applied between private hospital doctor's specialty and payment with receipt provision.
- ✓ Only the degree of urbanization affects the total private hospital expenses covered by the hospitalized persons themselves.
- ✓ Total satisfaction regarding hospitalization in a private hospital did not prove influenced by either the tending doctor's total payments or hospital expenses covered by the patients themselves.

Conclusions

The research carried out in the context of this study affirmed the existence of certain major flaws in Cyprus' health system, with monetary transactions related to underground economy in the public health sector, known as 'fakelaki(a)' prevailing and leading to the lack of user satisfaction in the provision of public health services, ultimately directing households to the extended use of private health services and out-of-pocket payments.

The study has also demonstrated that the use of private health services is affected by the number of household members and the monthly net family income. Demographics seem to influence the frequency and amounts spent on consulting visitations to private health providers in various ways, however the supplied data was not always adequate to support a more detailed analysis and reach more specific conclusions. Total payments to private health providers are affected by the degree of urbanization of the place of permanent residence and the person's insurance fund. All demographic factors but the patient's insurance fund influence the statistics related to hospitalization in a private hospital. Payments to private health providers during hospitalization is affected only by the number of household's members.

There were no statistically significant relations found between independent variables and neither doctor specialty during hospitalization in a private hospital or total payments to the tending doctors. Furthermore, there was no significant relation between the private hospital doctor's specialty and the payment amount for which they offered a receipt. Finally, the degree of urbanization of the place of permanent residence seems to be the only independent variable which seems to affect the total private hospital expenses covered by the hospitalized persons themselves.

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