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Testing the Waters for GeSY: Patients' Opinion of Cost-sharing Arrangements in the Public Health Care System in Cyprus

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Abstract

User charges constitute a common practice for most health policy makers, and are mainly used to discourage unnecessary demand and to generate extra revenues. Cyprus joined the group of countries with cost-sharing arrangements in August 2013, when user charges were imposed for some outpatient services. The objective of this study was to investigate Cypriot patients' knowledge and understanding of a number of different co-payment aspects, to lead to useful policy considerations and recommendations for the future. A cross-sectional study was carried out, with a convenient sample of 885 patients who were beneficiaries of the public system, and data were collected using a structured questionnaire. The main results from multivariate logistic regression analysis indicate that a) lower income was associated with increased rates of those who judged the charges to be high or very high and of those who borrowed to pay the charges, b) as educational level dropped, a higher percentage considered the charges to be high or very high, and c) being male, being older and having a higher educational level were associated with increased percentages of those who agree that charges should be made for all health services. The experience of introducing co-payments in the healthcare system in Cyprus is valuable, and will be very useful for the upcoming implementation of the new General Healthcare Scheme (GeSY) that is likely to be accompanied by higher charges for patients. In this case it is apparent that patients' opinions need to be considered, so as to lead to smarter planning, with evidenced based exceptions for certain vulnerable groups, and caps per month and user or family so as to avoid catastrophic and impoverishing effects.

Keywords: co-payments, health services, patients' opinion, Cyprus

1. Introduction

Patient charges are out-of-pocket payments levied at the point of use, for a treatment or service, for cost-sharing purposes. They are introduced officially, and they have nothing to do with informal payments, which are also out-of-pocket payments but are made under the table and are not

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officially endorsed by the system. Patient charges appeared at the time of the establishment of public health systems in Europe, and became more common from the 1970s onwards. An interesting overview of cost-sharing arrangements in fifteen European Union countries is presented in the book entitled *Funding health care: Options for Europe* (Robinson, 2002).

Today, user charges constitute a common practice for most health policy makers, and they often have the encouragement and support of international organizations. The introduction of user fees in many low- and middle-income countries in the 1980s with the support of Unicef, the World Bank and the International Monetary Fund is one such example (Lagard and Palmer, 2011). Despite their rapid spread, user charges also have opponents, including the well-known Canadian health economist Bob Evans (1993), who said that user charges are the invention of "zombie masters", and Cam Donaldson (2008), who considers that it is "wrong, unfair, and ineffective to try to limit consumer and patient access through user fees".

User charges can take different forms in different systems and services. They may appear as a co-payment (a flat fee for a service), as co-insurance (in the form of a percentage of the total service cost), as a deductible amount (a payment covering the first x amount before insurance coverage begins), or as balance billing (an additional fee levied by the provider in addition to the payment received from the third party payer) (Mossialos and Dixon, 2002).

These charges are primarily implemented in order a) to deter or discourage unnecessary demand and "frivolous" consumption of health services, reducing the so-called moral hazard effect, b) to generate extra revenues for the system, and c) to improve the sustainability, quality and effectiveness of the system (Chalkley and Robinson, 1997; Kutzin, 1998; Willman, 1998; Pavlova et al., 2010; Atanasova et al., 2013). In assessing any charging arrangements, health policy makers should take into consideration the impact of charges on the equity of the system, the administrative cost of the introduction and collection of charges and also the public acceptability of the measure.

Advocates of user charges claim that such charges have an educational function for patients, forcing them to become more responsible and cost-conscious consumers of health services so that they forgo those services that are of marginal value. A second argument in favour of user charges is that they can bring additional revenues into the system, which contributes to a better provision of health services. Whether or not there is a reduction of overall demand and whether or not additional revenue is raised depends on the elasticity of demand, and if the first objective is achieved,

then the second cannot be (Towse, 1999). Thus, if an increase in user charges reduces the utilization of health services, it will not increase aggregate revenue, while if demand is inelastic, increased user charges will only lead to additional revenues (Kutzin, 1998).

Regarding the impact of the introduction of user charges, there is adequate research evidence to show that user charges cause people's use of health services to decrease (Rice and Matsuoka, 2004; Lagard and Palmer, 2011; Qingyue, Liying and Beibei, 2011; Kiil and Houlberg, 2013). The magnitude of this reduction depends on the level of the fee and the service for which it is charged (elasticity of demand). Different levels of cost-sharing arrangements can bring different extents of changes in the level of utilization of services.

The relevant literature does not provide data on the net revenue raised by user charges. Nevertheless, supporters of charges maintain that the extra revenue raised can be used in favour of the poor, to tackle inequalities in access and to top up the inadequate state funding of the system, particularly during periods of shrunken public revenues and when it is difficult to raise additional revenues from alternative sources.

Apart from the impact on demand and revenue, the administrative cost should be taken into account to ensure that it does not exceed the revenue raised; if there are different exception schemes, the system becomes complicated, so that it requires serious administrative effort and has high running costs (van de Ven, 1983; Rice and Morrison, 1994; Evans and Barer, 1995; Mossialos and Le Grand, 1999), especially in low-income countries. In these countries equal access is usually attempted by introducing several exceptions, which, along with administrative, informational, economic and political constraints, make any such intervention difficult and costly (Abel-Smith, 1994; Kutzin, 1998).

Victims of user charges are not only patients but also the equity and solidarity of the system. This is because cost-sharing arrangements shift part of the funding burden from social insurance to individuals, mostly those of low income and poor health (Rice and Morrison, 1994), thereby reducing the system's equity and solidarity. Finally, the introduction of cost-sharing arrangements in any health system is always a hot topic that causes intense political debate and controversy. The final result should have the broadest possible consensus and acceptance, not necessarily between political parties but among citizens.

2.Cost–sharing arrangements and Cyprus

The health system in Cyprus consists of two parallel sub-systems, the public and the private one, which are of almost equal size. The public sub-system is a non-universal coverage system, funded by the state. Entitlement is based on the gross annual earnings of a citizen, so that only 80% of the population benefits. Total health expenditures account for 6% of GDP, which is very low in comparison with other developed countries in Europe. More interesting is the fact that about half of the total health expenditures are private payments, placing Cyprus at the top of the EU member states, with the highest out-of-pocket payments in health (Theodorou et al., 2012).

Despite the very high rate of out-of-pocket payments, charges for user-beneficiaries were until recently minimal, being imposed for very few services and with quite a lot of exceptions. More specifically, there was a €2 co-payment for each visit to a GP or specialist, except for patients over the age of 65 and, in dental care, a charge of €154 for dentures, both upper and lower. The above two cases of cost-sharing arrangements were the only charges until July 2013.

Things changed significantly with the economic crisis and the consequent accession of Cyprus to the European support mechanism, which led in November 2012 to the signing of a draft Memorandum of Understanding (MoU) between the Troika and the Cypriot government. The MoU makes special reference to the health care sector with twelve recommendations in order "*…to strengthen the sustainability of the funding structure and the efficiency of the health care provision...*". Later, in an updated version there were clear and explicit recommendations (terms) for the "*introduction of disincentives in the form of co-payments…"* for the beneficiaries[1] of the system (Cyprus MoU, 2013).

Following the MoU recommendations, the Ministry of Health (MoH) prepared a law which was passed by Parliament, and on 1st August 2013 new regulations came into force regarding the public provision of health care services, with the introduction of flat rate co-payments at the point of use for beneficiaries as follows:

€10 for a visit to an accident & emergency department;

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[1] -…create a co-payment formula with zero or low admission fees for visiting general practitioners, and increasing fees for using higher levels of care for all patients irrespective of age;
- introduce effective financial disincentives for using emergency care services in non-urgent situations;
- introduce financial disincentives (co-payment) to minimize the provision of medically unnecessary laboratory tests and pharmaceuticals;

€3 for a visit to a GP or dentist;

€6 for a visit to a specialist; and

€0.50 for each prescribed pharmaceutical product and laboratory test, with a maximum charge ceiling of €10 per prescription.

Exceptions apply to certain vulnerable groups.

The implementation of the memorandum recommendations was one reason for imposing co-payments; others were to reduce the number of unnecessary visits to doctors and the excessive use of lab tests and prescribed pharmaceuticals, and to collect additional revenues for the public system, in a period of restrained public expenditure and underfunding of the health system (Press and Information Office, 2013). It should be pointed out here that there was no preceding consultation with civil society and stakeholders, and nor was there a study of the possible effects on demand and the equity of the system. Most importantly, though, no-one in the MoH thought about users, and nobody asked them about the issue and their perceptions and views. The truth is that there were a lot of reasons or excuses, some of which were even quite convincing. Primarily, the obligations of Cyprus to the Troika, the urgency of the matter, the economic crisis and the consequent difficulty in funding the system, and finally the relatively low level of the fees introduced, could be sufficient grounds for the introduction of co-payments.

The main objective of this study was to investigate the knowledge and understanding of patients, as well as their opinions, on a number of different aspects of the co-payments that have recently been introduced into the system at a time of severe economic crisis, and, secondarily, to suggest some considerations for policy and some proposals for the future. Since the policy on benefits and patient cost-sharing entails perhaps the most direct connection between the health system and the population, it is crucial to understand how patients respond to new cost-sharing arrangements and what the consequences of these arrangements could be. The acceptance of these charges by patients, and their impact on the system, has not been studied in Cyprus, even though this is an issue of high importance in view of the forthcoming implementation of the NHS (GeSY) that, it is alleged, could impose much higher co-payments for patients in many more health services.

3. Data and methods

A cross-sectional study was carried out, with a convenient sample of 885 patients – beneficiaries of the public system who were mostly selected in

outpatient waiting rooms of public hospitals and health centres during working hours. We considered that, since it is patients who will shoulder the charges, the sample should consist of patients and not of members of the general public. In order to make the sample as representative as possible, it was formed from patients visiting many different health facilities (hospitals and urban health centres) in Nicosia and Paphos.

Data were collected using a structured questionnaire that had been developed specifically for the needs of the study. The preparation and development of the questionnaire followed an extensive literature review from which a set of questions was selected; these were discussed in a form of focus group with colleagues and beneficiaries. Through this procedure, it was decided that some questions should be deleted and some adjusted to the Cyprus particularities, and some others associated with the needs of the study should be added. The final completed questionnaire consisted of 33 questions, distributed into four categories as follows: (a) socio-demographic characteristics (11 questions); (b) self-assessment of health status (4 questions); (c) knowledge, perceptions and understanding of the fees imposed (13 questions); and (d) utilization of health services (5 questions). The issues investigated through the questionnaire were: patient knowledge and understanding of co-payments; whether patients agree with the implementation of patient charges; patients' views on which population groups should be exempted from charges and which health services should be subject to user charges; patients' understanding of the basic purpose of imposing charges; patients' views on the impact on utilization of services, etc.

The internal consistency coefficient, Cronbach's alpha, for all seven Likert scale questions that investigated the patients' knowledge and understanding of the user charges measure, was found to be 0.8, which indicates fairly good internal consistency.

A pilot study with 32 patients from different health facilities was conducted, and the face validity of the questionnaire was assessed.

The completion of questionnaires was carried out by three different researchers through face-to-face interviews with participants. Participants were fully informed about the aim of the study and the confidentiality and anonymity of the information and data that they would give. The time taken for completion of the questionnaire was about 35 minutes. Data collection began in May 2014 and finished at the end of July 2014.

Categorical variables are expressed as numbers (percentages), while continuous variables are given by their mean (standard deviation) or median (interquartile range). The normality assumption was evaluated by using both the Kolmogorov-Smirnov criterion ($p>0.05$ for all variables) and

normal probability plots. The independent samples t-test and the Mann-Whitney test were used to compare a continuous variable among two groups. The chi-square test was used to compare two categorical variables, while the chi-square trend test was used to compare a categorical with an ordinal variable. Variables that were statistically significant ($p<0.20$) in bivariate analysis were included in the multivariate logistic regression. The backward stepwise elimination method was applied for model development in multivariate logistic regression. Multivariate analysis was applied for the control of the potential confounding of each statistically significant factor to the others. Criteria for entry and removal of variables were based on the likelihood ratio test, with entry and removal limits set at $p<0.05$ and $p>0.05$. We estimated adjusted odds ratios (OR) with 95% confidence intervals (CIs). A two-tailed p-value of less than 0.05 was considered to be statistically significant in the multivariate logistic regression analysis. Statistical analysis was performed using IBM SPSS 21.0 (Statistical Package for Social Sciences) for Windows.

4.Results

Characteristics of the sample

The socio-demographic characteristics of the sample are summarized in table 1. Women were overrepresented in the sample, with a percentage of 63.6%; 93.1% of the respondents were Greek Cypriots, 72.4% were married and the mean age was 50.4 years. Nicosia was the district of residence for 60.9% of the participants, followed by Paphos (32.0%). The distribution of patients per health unit shows the large participation of hospitals (Paphos 32.5%, Nicosia 22.4%, Makarion 14.0%) followed by urban health centres (Strovolos 11.4%) and other smaller units and emergency departments. Regarding the educational level of the respondents, 40.1% were high school graduates and 27.1% university graduates; a high percentage of them were civil servants (27.5%) or pensioners (26.8%), and their mean family income per month was €2,001.

TABLE 1

Socio-demographic characteristics of the sample

Characteristic	N (%)
Gender	
Male	322 (36.4)
Female	563 (63.6)
Age (years)	50.4 (16.1)[α]
Marital status	
Married	641 (72.4)
Unmarried	138 (15.6)
Divorced/widowed	106 (12.0)
Citizenship	
Greek Cypriots	824 (93.1)
EU citizens	36 (4.1)
Turkish Cypriots	10 (1.1)
Other	15 (1.7)
Health unit	
Paphos general hospital	288 (32.5)
Nicosia general hospital	198 (22.4)
Makarion hospital	124 (14.0)
Strovolos urban center	101 (11.4)
Accident & emergency department of Paphos general hospital	47 (5.3)
Accident & emergency department of Nicosia general hospital	45 (5.1)
Nicosia old hospital	39 (4.4)
Other (Kaimakli, Lakatamia, Ag. Dometiou, egkomis, Latsia etc)	43 (4.9)
District of residence	
Limassol	32 (3.6)
Larnaka	27 (3.1)
Nicosia	538 (60.9)
Paphos	283 (32.0)
Famagusta	3 (0.3)
Employment status	
Civil servants	243 (27.5)
Pensioners	237 (26.8)
Private employees	133 (15.0)
Unemployed	126 (14.2)
Self-employed	41 (4.6)
Others (housewives, students, soldiers)	105 (11.9)
Family monthly income (€)	2001 (1501)[α]
Education	
None/not completed elementary	34 (3.8)
Elementary graduates	93 (10.5)
High school graduates (six years)	355 (40.1)
Post-secondary tertiary (less than 2 years)	93 (10.5)
University graduates	240 (27.1)
Postgraduate studies	70 (7.9)

Note: [α] Mean (standard deviation).

Health problems

Table 2 presents the health problems reported by the sample. More specifically, 67.0% assessed their health as *very good/good*, while 33.0% considered their health to be *moderate/poor/very poor*. Half of them declared that they were chronically ill, and 54.1% took medication or followed a course of treatment on a regular basis. The most significant problems reported were cardiovascular (49.9%), pathological (42.0%) and endocrinological (24.3%) conditions.[2]

TABLE 2

Characteristics of the sample related to health status

Characteristics	**N (%)**
Health status	
Very good	218 (24.7)
Good	374 (42.3)
Moderate	248 (28.1)
Poor	38 (4.3)
Very poor	6 (0.7)
Medication/treatment on a regular basis	
No	404 (45.9)
Yes	477 (54.1)
Chronic health problem	
No	438 (49.6)
Yes	445 (50.4)
Health problem (concerns only those with a chronic health problem)	
Cardiovascular	222 (49.9)
Pathological	187 (42.0)
Endocrinological	108 (24.3)
Neurological	36 (8.1)
Nephrological-Urological	35 (7.9)
Pneumatological	23 (5.2)
Hematological	22 (4.9)
Oncological	21 (4,7)
Psychiatrical	17 (3.8)
Others (ENT, ophthalmological, dermatological, musculoskeletal)	26 (5.7)

[2] From now on and where rates are cumulatively higher than 100%, there was the option for respondents to choose more than one answer.

Knowledge and understanding of user charges

Almost all the patients (98.2%, n=868) stated that they were aware of the new regulations on user charges that entered into force on 1st August 2013. When then asked if they knew the exact amount of the fee for each individual service, they replied as follows:

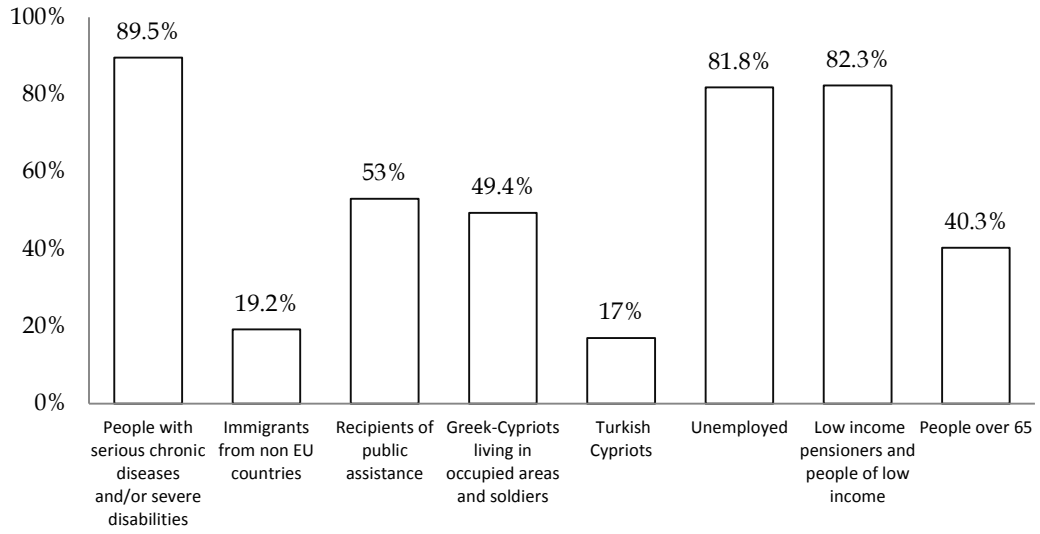
- for a visit to an emergency department, 82.2% (n=714) responded positively (they said they knew the fee) and 17.5% (n=155) negatively (they didn't know the fee);
- for a visit to a GP or dentist, 78.6% (n=683) responded positively and 21.4% (n=186) negatively;
- for a visit to a specialist, 74.1% (n=643) responded positively and 25.9% (n=225) negatively;
- for each prescribed pharmaceutical product, 80.6% (n=700) responded positively and 19.4% (n=168) negatively; and
- for each prescribed laboratory and preventive test, 65.1% (n=565) responded positively and 34.9% (n=303) negatively.

Regarding the level of charges, 26.3% (n=227) said that the charges were *high/very high*, and 73.7% (n=638) said they were *very low/low/moderate*, while 8.1% (n=72) reported that they had borrowed money to pay the charges. Of the respondents, 86.2% (n=759) agreed that there should be exceptions to the charges for certain population groups (Figure 1), and they mentioned in descending order the following population groups:

- People with serious chronic diseases and/or severe disabilities (89.5%, n=679);
- Low income pensioners and people of low income generally (82.3%, n=625);
- Those who are unemployed (81.8%, n=621);
- Recipients of public assistance (53.0%, n=402);
- Greek-Cypriots living in occupied areas and soldiers (49.4%, n=375);
- People over 65 (40.3%, n=306);
- Immigrants from non EU countries (19.2%, n=146); and
- Turkish Cypriots (17.0%, n=129).

FIGURE 1

Population groups to be exempted from paying fees

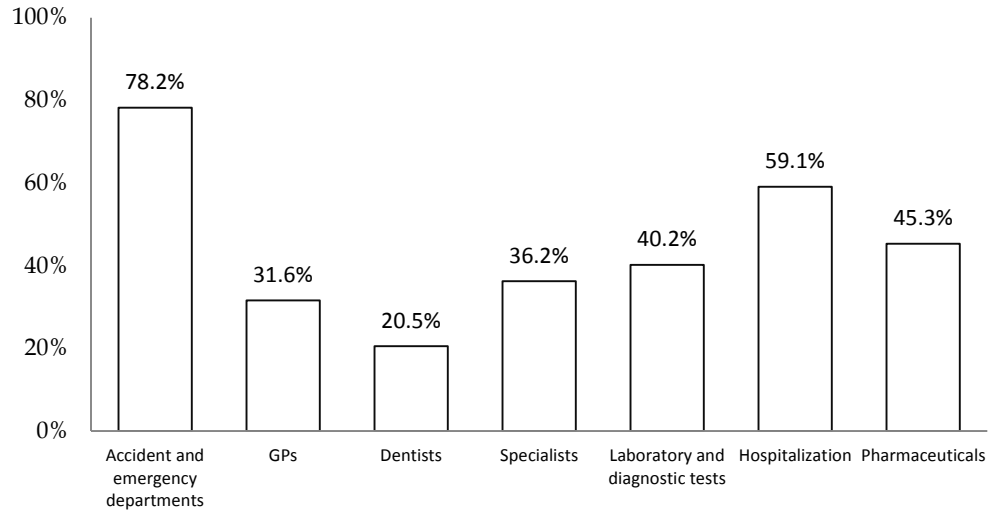


Asked whether there should be charges for all health services, 60.1% (n=528) of patients responded negatively. Those who answered negatively were then asked to indicate which services should be exempt from payment charges; the responses were as follows (Figure 2):

- Visits to accident & emergency departments (78.2%, n=413);
- Hospitalization (59.1%, n=312);
- Pharmaceuticals (45.3%, n=239);
- Laboratory and diagnostic tests (40.2%, n=212);
- Visits to specialists (36.2%);
- Visits to GPs (31.6%);
- Visits to dentists (20.5%).

FIGURE 2

Services to be exempt from paying fees



In a question about the reasons why these charges were imposed, the responses were as follows:

- to generate additional revenues for the Ministry (48.0%, n=425);
- to reduce unnecessary visits, pharmaceuticals and lab tests (39.4%, n=349);
- to teach people to use the health services properly (32.8%, n=290); and finally
- simply because it was requested by the Troika (35.9%, n=318).

Regarding the impact of these cost-sharing arrangements on consumption, patients believe that they will:

- reduce *quite a lot* or *very much* unnecessary visits to hospital outpatient departments (40.9%, n=359);
- reduce *quite a lot* or *very much* unnecessary visits to accident & emergency departments (46.1%, n=405),
- reduce *quite a lot* or *very much* the wastage and misuse of pharmaceuticals (51.2%, n=450); and
- reduce *quite a lot* or *very much* unnecessary laboratory and diagnostic tests (41.3%, n=362).

Additionally, in a relevant question, 41.2% (n=361) stated that user charges will raise *enough* or *a lot* of revenues to be used for the improvement of

health services, 17.8% (n=156) that they will force some patients to visit services in the private sector and 31.7% (n=277) that they will make people think twice before going to the doctor.

In answer to the question of whether they had seen any change to the health services due to the introduction of cost-sharing arrangements, 63.8% (n=556) reported that they had found no changes in the health services after August 2013, 12.2% (106) said they had found changes for the worse, and 24.1% (n=210) said they had found changes for the better. Changes for the worse were the full deregulation of the system, a lack of staff, and a failure to address congestion and inconvenience. Changes for the better were a reduction in congestion, a better quality of health services, and a reduction in the unnecessary and irresponsible use of pharmaceuticals.

Utilization of health services

Table 3 shows the responses of patients regarding the utilization of health services. The average number of visits to a private doctor from 1st August 2013 onwards was 1.7, while the average to a doctor in the public sector was 5.6.

8.2% of patients stated that after 1st August 2013 they had needed to visit an emergency department, but had not done so because of the charges. The corresponding percentages for the other services with cost-sharing arrangements were: 4.5% for visits to a GP, 2.1% for visits to a dentist, 3.4% for visits to a specialist, 2.7% for pharmaceuticals and 1.9% for lab tests.

Table 4 presents the proposals made by patients to improve the health system. These, ordered by the number of responses, were: (a) better quality of services, (b) reduction or elimination of waiting time, (c) reduction or elimination of waiting lists and (d) free of charge medical care. Among those who proposed improvements in the health system, 46.9% (n = 362) were keen to pay an amount of money each time they visited the health services so as to allow the relevant improvements to be carried out, while 53.1% (n = 410) felt reluctant to do so.

TABLE 3

Patients responses on the utilization of health services

	N (%)
Number of visits to private doctors made from the 1st of August 2013 onwards	1.7 (2.8)[a]
Number of visits to the doctors of the public sector from the 1st of August 2013 onwards	5.6 (7.4)[a]
Need to visit the emergency departments, which was not met because of the charges imposed from the 1st of August 2013 onwards	
No	812 (91.8)
Yes	73 (8.2)
Number of times	1.7 (0.9)[a]
Need to visit a GP, which was not met because of the charges imposed from the 1st of August 2013 onwards	
No	845 (95.5)
Yes	40 (4.5)
Number of times	1.8 (1.2)[a]
Need to visit a dentist in a health center, which was not met because of the charges imposed from the 1st of August 2013 onwards	
No	866 (97.9)
Yes	19 (2.1)
Number of times	1.5 (1.0)[a]
Need to visit a specialist, which was not met because of the charges imposed from the 1st of August 2013 onwards	
No	855 (96.6)
Yes	30 (3.4)
Number of times	1.6 (0.8)[a]
Was once a case you asked the doctor not to prescribe a pharmaceutical because of the charges imposed from the 1st of August 2013 onwards?	
No	861 (97.3)
Yes	24 (2.7)
Number of times	2.2 (2.1)[a]
Was once a case you asked the doctor not to prescribe a lab or diagnostic test because of the charges imposed from the 1st of August 2013?	
No	868 (98.1)
Yes	17 (1.9)
Number of times	1.4 (1.2)[a]

Note: [a] mean (standard deviation).

TABLE 4

Patients' proposals for the improvement of the system

Proposal	N (%)
Better quality of the provided services	238 (31.0)
Reduction or elimination of waiting time	182 (23.7)
Reduction or elimination of waiting lists	167 (21,7)
Free of charge medical care	38 (4.9)
Implementation of GeSY	32 (4.2)
Equity in access	20 (2.6)
Increases in staff	18 (2.3)
Medical responsibility	15 (2.0)
User charges based on income criteria	12 (1.6)
Better behaviour by the personnel	12 (1.6)
Computerization of health system	11 (1.4)
Other	23 (3.0)

Relations

Dependent variable: "patient satisfaction with health services". From the bivariate analysis, a statistical relationship was found at the level of 0.20 ($p<0.20$) between "satisfaction with health services" and the following variables: gender, age, occupation and chronic health problem (data are not shown). Multivariate logistic regression analysis identified that males and increasing age were associated with increased satisfaction (table 5).

Dependent variable: "assessment of the level of charges". In the bivariate analysis, a statistical relationship was found at the level of 0.20 ($p<0.20$) between "assessment of the level of charges" and the following variables: gender, occupation, educational level, monthly family income and chronic health problem (data are not shown). Multivariate logistic regression analysis identified that (a) a reduced income was associated with increased rates of assessing the level of charges as *high* or *very high*; (b) a higher percentage of the unemployed, students, soldiers and housewives declared that the charges were *high* or *very high*, in relation to the other participants; and (c) as educational level dropped, the percentage of those who considered the charges to be *high* or *very high* increased (table 5).

Dependent variable: "assent for charging for all health services". In the bivariate analysis, statistical relationships were found at the level of 0.20 ($p<0.20$) between "assent for charging for all health services" and the following variables: gender, age, occupation, educational level and monthly family income (data are not shown). Multivariate logistic regression analysis identified that males, increasing age and increasing educational level were associated with increased percentages of those who agree that a charge should be made for all health services (table 5).

Dependent variable: "observe changes to health services". In the bivariate analysis a statistically significant relationship was found at the level of 0.20 ($p<0.20$) between an observation of changes in the health services and the following variables: gender, age, occupation and chronic health problem (data are not shown). Multivariate logistic regression analysis identified that males and increasing age were associated with an increased rate of detecting changes for the better in the health services (table 5).

Dependent variable: "need to consult a GP, but did not do so because of the charges". In the bivariate analysis, a statistical relationship was found at the level of 0.20 ($p <0.20$) between having needed to consult a GP but not having done so because a fee would need to be paid and the following variables: gender, occupation, educational level and monthly family income (data are not shown). Multivariate logistic regression analysis identified that reduction in income was associated with an increased frequency in having needed to consult a GP but not having done so because of the fee that would need to be paid (table 5).

Dependent variable: "borrowing for the payment of charges". In the bivariate analysis, a statistical relationship was found at the level of 0.20 ($p<0.20$) between borrowing to pay charges and the following variables: gender, occupation, educational level and monthly family income (data are not shown). Multivariate logistic regression analysis identified that the reduction in income was related to an increase in the rate of borrowing for the payment of charges and that the unemployed, students, soldiers and housewives were more likely to borrow to pay charges than were employees (table 5).

Dependent variable: "payment of charges by all". In the bivariate analysis, a statistical relationship was found at the level of 0.20 ($p<0.20$) between "payment of charges by all" and the following variables: gender, age and monthly family income (data are not shown). Multivariate logistic regression analysis identified that a higher percentage of males than females agreed that charges must be paid by all patients (table 5).

TABLE 5

Multivariate logistic regression analysis models

Independent variable	Dependent variable			
	Odds ratio	95% CI[b]	P value	R^2(%)
	Patient satisfaction with health services			3.5
Age (years)[a]			<0.001	
18-36 (reference category)				
37-51	1.6	1.1 to 2.3		
52-64	1.5	1.0 to 2.2		
>64	2.2	1.5 to 3.3		
Males vs females	1.3	1.0 to 1.8	0.048	
	Assessment of the level of charges			14.4
Family monthly income (€)[a]			<0.001	
>2700 (reference category)				
0-1000	2.7	1.8 to 4.1		
1001-1600	1.5	0.9 to 2.3		
1601-1700	1.0	0.3 to 3.7		
Educational level			0.02	
University and TEI graduates (reference category)				
Elementary school & three year high school graduates	1.8	1.1 to 2.9		
High school graduates (six years)	1.2	0.8 to 1.8		
unemployed, students, soldiers and housewives in relation to employees	2.1	1.4 to 3.2	0.001	
	Assent for charging all health services			6.0
Age (years)[a]			0.002	
18-36 (reference category)				
37-51	1.5	1.0 to 2.3		
52-64	1.8	1.2 to 2.7		
>64	2.0	1.3 to 3.2		
Educational level			<0.001	
Elementary & 3 year high school graduates (reference category)				
High school graduates (six years)	1.6	1.1 to 2.4		
University and TEI graduates	2.2	1.4 to 3.3		
Males vs females	1.7	1.2 to 1.8	0.001	
	Verify changes to health services			5.0
Age (years)[a]			<0.001	
18-36 (reference category)				
37-51	1.4	0.8 to 2.2		
52-64	1.6	1.0 to 2.6		
>64	2.3	1.2 to 2.3		
Male vs female	1.7	1.2 to 2.3	0.002	

	Need to consult a GP, which was not met because of the charges			4.0
Family monthly income (€)[a]			0.002	
>2700 (reference category)				
0-1000	3.6	1.6 to 8.0		
1001-1600	2.6	1.1 to 6.6		
1601-1700	2.7	0.3 to 22.7		
	Borrowing for the payment of charges			10.5
Family monthly income (€)[a]			<0.001	
>2700 (reference category)				
0-1000	4.4	2.1 to 8.8		
1001-1600	2.9	1.4 to 6.3		
1601-1700	4.2	0.9 to 20.6		
unemployed, students, soldiers and housewives in relation to employees	2.3	1.2 to 4.4	0.013	
	Payment of charges by all			2.0
Males vs females	1.8	1.2 to 2.6	0.003	

Notes: [a] cut-off values that continuous variable was transformed in ordinal variable were produced according to quartiles; [b] CI: confidence interval.

Limitations of the study

This study is subject to certain limitations and therefore the findings should be interpreted with caution, taking into consideration the facts that: a) since the questionnaire was answered by patients themselves, systematic bias may be involved due to the subjective assessment of certain parameters; and b) the sample is a convenient one.

5. Discussion and Conclusions

The effect of patient charges on health care systems is not a new research topic, since there is voluminous literature assessing the effect of cost-sharing arrangements on the utilization of health services, as well as the distributional effects of cost-sharing arrangements, with heterogeneity of findings. While some well-known studies show that cost-sharing arrangements reduce appropriate as well as inappropriate demand for health services (Manning et al., 1987; Newhouse and the Insurance Experiment Group, 1996), some others show that the effect is marginal or even does not exist (Chiappori 1998; Cockx and Brasseur, 2003). Additionally, there have been arguments that patient cost-sharing may not be as effective in containing expenditure, due to substitution, and that it may raise problems by discouraging access to medical care for those of low

income and in the worst health (Cherkin et al., 1992; Akin et al., 1995; Kupor et. al., 1995; Kiil and Houlberg, 2013).

Studying the level of charges per service in Cyprus, it may be argued that, apart from the flat rate of €10 per visit to an emergency department, the charges can be considered to be low compared to those in other developed countries This is also confirmed by the high percentage (73.7%) of those who said that they considered the level of the charges to be *very low*, *low* or *moderate*. Therefore this should be taken into account in assessing the impact of user charges on the health system, but also in the commentary on and interpretation of the patient views.

Despite the relatively low level of the charges, 8.1% (n=72) of the respondents stated that they had borrowed money to pay them, and 12% (n=106, mean of times 1.73, SD 0.89) that they had had a health need but had not used the health services because of the charges. In both cases it was found that the phenomena appear more frequently in people with low incomes ($p<0.001$ and $p=0.002$ respectively), so the percentages will obviously grow and be exacerbated as the economic crisis continues. These findings, if confirmed, are alarming and must be considered by the MoH, since equity in access and financial protection should be secured in any cost-sharing arrangements. Equity in access means equity according to need and not according to ability to pay, and financial protection means that people should not become poor as a result of using health care, nor should they be forced to choose between their health and their economic well-being. It is obvious that those who chose to cancel a visit to the doctor because of these charges simply chose economic well-being rather than their health (Kutzin, 2008).

Unlike other studies (Atanasova et al., 2013), the majority of the respondents (60.1%) in Cyprus do not agree with there being charges for all health services. Visits to accident and emergency departments and hospitalization scored the highest exception rates. Regarding the exemption of some population groups from paying charges, the findings are similar to those of other studies (Pavlova et al., 2002; Atanasova et al., 2013). In the first place are people with serious chronic diseases and/or severe disabilities (89.5%, n=679), and they are followed by low income pensioners and people of low income generally (82.3%, n=625).

The fact that almost one in two patients (48.0%) considers the charges as an additional source of revenue indicates that users see the charges primarily as a complementary source of funding and secondarily as a measure to reduce demand (39.4%). Other results that supplement the picture of the views of patients are the high rates of those who indicated that charges will raise *enough* or *a lot* of revenue and will reduce *quite a lot* or *very much*

the wastage and misuse of pharmaceuticals and unnecessary visits to accident and emergency departments, indicating two areas in which patients feel that there may be waste and abuse. However, 63.8% of patients said that they had not seen any change in health services provision, while 12.2% had seen changes for the worse. Either the view of a large number of beneficiaries of the public health system was that they could not assess the net effect of the introduction of charges, or the net effect was so small that it was not seen in the health services.

The proposals made by patients to improve the health system illustrate the major problems, of which the most important are the long waiting times and waiting lists. The elimination of those problems would be enough to convince about half of the respondents to accept some kind of cost-sharing arrangement for the services provided. Consequently, the criteria of transparency, accountability and information about what happens with these additional revenues must be met in any attempt to assess or reform the financial aspects of the system. If these criteria were met, it could increase patients' acceptance and willingness to pay. Patients who approve of the fees are more willing to pay if the fees contribute to an increase in quality.

In any case, the health care system should clearly define citizens' entitlements and obligations. Even though the findings did not indicate that the introduction of charges has caused great dissatisfaction or distrust to the public, the upcoming implementation of the GeSY may be accompanied by higher co-payments for more services and will need not only greater public dialogue and adequate information for citizens and society, but also a smarter design plan. On the other hand it is extremely important to understand how patients will respond to higher levels of charges, bearing in mind that the introduction of high user charges for outpatient care services may lead to hospitalization "offsets" and/or the substitution of those services by others that are free of charge. Consequently, higher co-payments in a future universal coverage system should be accompanied, as well as by dialogue and communication, by smarter planning, which means evidenced based exceptions for certain groups and caps per month and per user or family.

Leaving aside the findings of this study, there is no doubt that the experience of introducing co-payments in the Cyprus healthcare system is valuable for health policy makers, and will be very useful for the forthcoming implementation of GeSY. Such co-payment arrangements can be regarded as a dress rehearsal which paves the way and prepares public opinion for higher charges within the new NHS. But it would be a great mistake to believe that the introduction of increased co-payments may once again be made without considering both patient opinion and

behaviour and the possible distributional consequences, especially in a period of deep economic crisis (Cylus et al., 2013).

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