



Co-payments in the Austrian social health insurance system Analysing patient behaviour and patients' views on the effects of co-payments

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Abstract

Austrian health politicians constantly claim that patients have to be the focus of interest when providing health care services. However, due to increasing demand, scarce resources and insufficient guidance for health care provision at the national level, Austrian patients have been confronted with a variety of health care reforms during recent years. These reforms include the introduction of additional, mainly lump sum co-payments and the increase of existing (lump sum) co-payments. Using a sample of 378 socially-insured patients, the aim of this study is to analyse patients' attitudes towards co-payments, their views on the effects of co-payments on health care demand and their actual behaviour in response to co-payments. The study is descriptive rather than hypothesis testing due to the limited data. The results of this survey indicate that co-payments have no major guiding effect on health care demand. This is confirmed by what the patients indicate as regards their actual behaviour.

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1. Introduction

The major intention of the Austrian health care policy during the last few decades can be described as the attempt to maintain unrestricted access to health care services irrespective of age, physical condition and social status, under the condition that cost containment efforts succeed in ensuring health care financing (for an overview see [1,2]). However, as in

many other countries, the Austrian health care system is under financial pressure due to increasing demand, scarce resources and insufficient guidance for health care provision at the national level. This has led to an increasing interest displayed by federal government and social health insurance companies to renew the financing and organisation of health care provision in order to allocate scarce resources efficiently. As a consequence, a variety of health care reforms has been put into action during recent years, such as the introduction of the activity-based hospital financing system. More reforms are proposed for the near future. The Austrian compulsory social health insurance system is designed to generously cover the use of

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health care services while co-payments are relatively small. As there may be moral hazard involved in the demand for health care services previous reforms have relied heavily on co-payments [3–6]. This will continue to be the case for future reforms [7,8].

Theoretically, health insurance might cause two different kinds of moral hazard, *ex ante* and *ex post* moral hazard. While *ex ante* moral hazard is reflected in “the reduction of preventive effort in response to insurance coverage” ([9], p. 410), *ex post* moral hazard is revealed by the increased demand for medical services once an illness has already occurred. For an extensive overview on the definitions of *ex ante* and *ex post* moral hazard see [10].

The aim of this descriptive study is to provide a first picture of patients’ views on co-payments in general as they are implemented in social health insurance in Austria and their assessment of the effects of co-payments on health services utilisation behaviour. In particular, there are three major fields of interest: patients’ attitudes towards co-payments (denoted as acceptance), the assessment of the effects of co-payments on health care demand in general and the effects on their own behaviour in particular (denoted as effects) and their actual behaviour (denoted as cost consciousness). This patient-based approach was chosen because no information on health services utilisation (either in monetary or in quantity terms) or the amount of co-payments at the patient level was available. In general, we assume that the co-payments analysed provide financial incentives to induce behavioural changes if the patients surveyed confirm that co-payments have a guiding effect on health care demand in general, if they confirm an effect on their own health services utilisation behaviour or if they show cost conscious behaviour. If patients doubt the guiding effect of co-payments in general and/or do not confirm a guiding effect in particular or if they do not show any cost-conscious behaviour at all, then health policy makers might consider an increase in co-payments to achieve the desired guiding effect. The same conclusion applies if the patients surveyed think that co-payments are generally suitable to guide health care demand but do not show any behavioural changes or cost conscious behaviour.

There have been several empirical studies analysing the impact of co-payments on health care demand. Among these analyses there is a substantial amount

of studies on *ex post* moral hazard in the demand for health care services: Newhouse et al. (1993) [11] investigate the effect of alternative cost-sharing on health care demand using data from a randomised study. The results clearly indicate a negative correlation between health care demand and cost-sharing: As the level of cost sharing rises, the demand for health care services decreases. For France, Chiappori, Durand and Geoffard (1998) [12] present empirical results on the elasticity of demand for physician visits based on a longitudinal data set. This data set is composed of two subgroups which differ in that a 10% co-payment has been introduced for one group whereas no co-payment has been implemented for the other group during the observation period. They found no influence of the change in co-payments on the number of physician visits, except for general practitioner (GP) home visits where a moderate influence was observed. Based on a Swiss data set, Schellhorn (2001) [13] estimated the changes in the number of physician visits resulting from the choice of a deductible which is higher than is minimally required. He found that the observed reduction in the number of physician visits among patients with higher deductibles is the effect of self-selection rather than moral hazard. Grandchamp, Geoffard and Gardiol (2001) [14] empirically assess the effect of moral hazard and self selection on the demand for medical care in Switzerland. They find a significantly positive correlation between health care cost and insurance level. In their study on the influence of different deductibles implemented in the Swiss health insurance system on health services utilisation behaviour, Werblow and Felder (2002) [15] prove that deductibles have a significant influence on the demand for health services: The higher the deductible, the lower the expenditure for medical services. Zweifel and Manning (2000) [9] provide a synopsis of empirical studies on both *ex ante* and *ex post* moral hazard in the demand for health care services. Obviously, to rely on co-payments in social health insurance is well-founded in economic literature. As opposed to the above-mentioned studies we have to be content with a descriptive rather than a hypothesis testing analysis due to the limited data and the restricted number of observations.

The paper is structured as follows. In the next section we briefly discuss the Austrian system of compulsory health insurance, concentrating on the

subject of co-payments. In Section 3, the design of the analysis is presented including the discussion of the questionnaire which was applied to collect the data. In Section 4 we then discuss the results of the empirical study. Section 5 concludes by summarising the findings and drawing conclusions for further analysis.

2. Social health insurance in Austria

2.1. Organisation and financing

The Austrian social insurance system is organised as compulsory insurance with contributions from employers and employees. Enrolment in the social insurance system commences immediately on entering employment and comprises social health insurance, accident insurance and pension insurance.

Social health insurance covers about 8 million Austrians (99% of the Austrian population) of which about 74% actually make payments to the health insurance companies (referred to as direct health insurance relationships, HIR) and around 25% are co-insured (indirect HIR, mainly for spouses currently raising children and for children). The remaining 1% is covered by institutions caring for the sick ([16], p. 12f). A person's enrolment in one insurance branch depends on the type and region of employment, i.e. people cannot choose a certain insurance company. The largest group of insurers, which covers around 79% of all direct HIR, comprises the nine regional health insurance funds (so-called "Gebietskrankenkassen", GKK) for blue- and white-collar workers. There is a GKK in each of the Austrian provinces. The second largest insurer is the civil servants' health insurance

scheme (called the "Versicherungsanstalt öffentlich Bediensteter", BVA) with 9% of all direct HIR. The health insurance funds for railway workers ("Versicherungsanstalt der österreichischen Eisenbahner"), for those self-employed in trade, commerce and industry ("Versicherungsanstalt der gewerblichen Wirtschaft"), for farmers ("Sozialversicherungsanstalt der Bauern"), for miners ("Versicherungsanstalt des österreichischen Bergbaus") and a few very small company health insurance funds comprise the remaining 12% of all direct HIR. Subsequently, we neglect the health insurance funds with few insured persons and concentrate on the two largest (in terms of direct HIR) insurance companies, the GKK and the BVA ([16], p. 12).

Social health insurance in Austria is based on the principles of solidarity and risk pooling. Contributions to social health insurance in % are defined by law and solely depend on a person's income. Table 1 shows that in 2003 blue-collar workers and civil servants have to pay 3.95% of their gross income to the respective social health insurance company; white-collar workers pay only 3.4%. Employers' contributions vary from 3.15 to 3.65%. On the whole, contributions in % have to be paid from a minimum gross income of 309.38 EUR for GKK and 504.00 EUR for BVA patients up to a maximum gross income of 3360.00 EUR. With these contributions to social health insurance, any insured or co-insured person has a legal claim to medical care (usually) in the sense of benefits in kind, irrespective of the personal risks, the time insured and the actual contributions made. In general, benefits from social health insurance comprise: Medical care performed by GPs and specialists with their own practice, drug consumption, dental care, hospital care, medical home care, medical rehabilitation, care in case of pregnancy,

Table 1
Contributions to social health insurance in % and threshold values for 2003

GKK				BVA	
White-collar worker		Blue-collar worker		Civil servant	
Employee	Employer	Worker	Employer	Civil servant	Employer
3.4	3.5	3.95	3.65	3.95	3.15
Minimum income value: 309.38 EUR				Minimum income value: 504.00 EUR	
Maximum income value: 3360.00 EUR				Maximum income value: 3360.00 EUR	

Source: ([17], p. 1ff).

preventive care and the financial benefits of sick pay and partial reimbursement concerning the cost of transport. Within the scope of the analysis we have concentrated on the following benefits in kind: “medical care provided by GPs” and “consumption of pharmaceuticals”. We have chosen these two services for several reasons: First, the use of these services requires co-payments for both GKK and BVA patients. Secondly, while the amount of co-payments in the case of pharmaceutical use is identical for GKK and BVA patients, the type of co-payment for medical care differs considerably between GKK and BVA patients (for a comprehensive overview on the type of co-payments see Section 2.2). This may result in different assessments as regards the effects of these co-payments on consumption behaviour. Thirdly, patients’ use of pharmaceuticals is an important factor for social health insurance since the expenses for pharmaceuticals are among the main cost drivers.

As regards medical care and drug consumption, the Austrian health care market works as follows: The social health insurance institutions sign annual contracts with the General Medical Council and with individual physicians (denoted as contracted physicians in the following) who, in return, commit themselves to treat socially-insured patients. Each socially-insured person has a claim to medical care which has to be “[...] sufficient and effective but must not exceed the necessary extent of treatment” [19]. The reimbursement of contracted doctors is based on a health insurance voucher (HiV) which entitles its holder to medical treatment and which serves as a kind of collection-only cheque between doctors and social health insurance. As regards pharmaceuticals, public pharmacies, self-employed doctors in rural regions and hospitals may dispense drugs licensed by the Federal Ministry of Social Security and Generations. Licensed pharmaceuticals comprise prescription-only and over-the-counter drugs. Drugs which are directly remunerated by social health insurance are listed in the drug and therapeutic product list approved by the social health insurance funds (the “Heilmittelverzeichnis”). If the patient has a current prescription from a contracted doctor, drugs included in the Heilmittelverzeichnis may be dispensed on account of health insurance funds.

2.2. The role of co-payments

Roughly 50% of overall health expenditures are financed through social health insurance contributions. The remaining 50% of costs are covered by taxes and private budgets. During recent years, private expenditures have increased steadily [[1], p. 29ff.]. This is partly due to the fact that several additional co-payments have been implemented and many existing co-payments have been raised.

In principle, patients’ claims for health care provision are unlimited and financially covered by patients’ contributions to health insurance institutions. However, as the financial burden on health insurance and federal and local governments has increased as a consequence of increasing demand, the financial burden on patients has also risen due to the variety of out-of-pocket payments. Patients are confronted with co-payments when demanding (1) primary care (including health care performed by GPs and specialists with their own practice and health care provided in outpatient units of hospitals) (2) hospital inpatient care, (3) pharmaceuticals and therapeutic equipment and also when demanding (4) stays in spas and rehabilitation centres (covered by social health insurance). Due to the multitude of different types of co-payments, we provide an overview and describe the most important co-payments for GKK and BVA patients (see Fig. 1) chronologically, starting in 1996.

For GKK insured patients, 1996 can be considered as a starting point in the implementation of additional co-payments in the field of primary care. Since 1997, GKK patients have had to pay a 3.63 EUR fee (a kind of administration charge; see [4]) for each HiV. Generally, GKK patients receive one HiV per accounting period (a quarter) for attending a GP and at least (there are differences among the nine Austrian provinces) one HiV per accounting period for attending a specialist. If GKK patients attend a physician *without* a GKK contract they are refunded only 80% of the compensated rate that social health insurance companies would have paid to a contracted physician, irrespective of the amount the patient is charged by the physician. This co-payment was introduced in April 1996 [4].

BVA insured patients, on the other hand, neither face any restrictions concerning the number of HiV per accounting period nor any HiV fee, but they have always been confronted with a 20% co-payment for

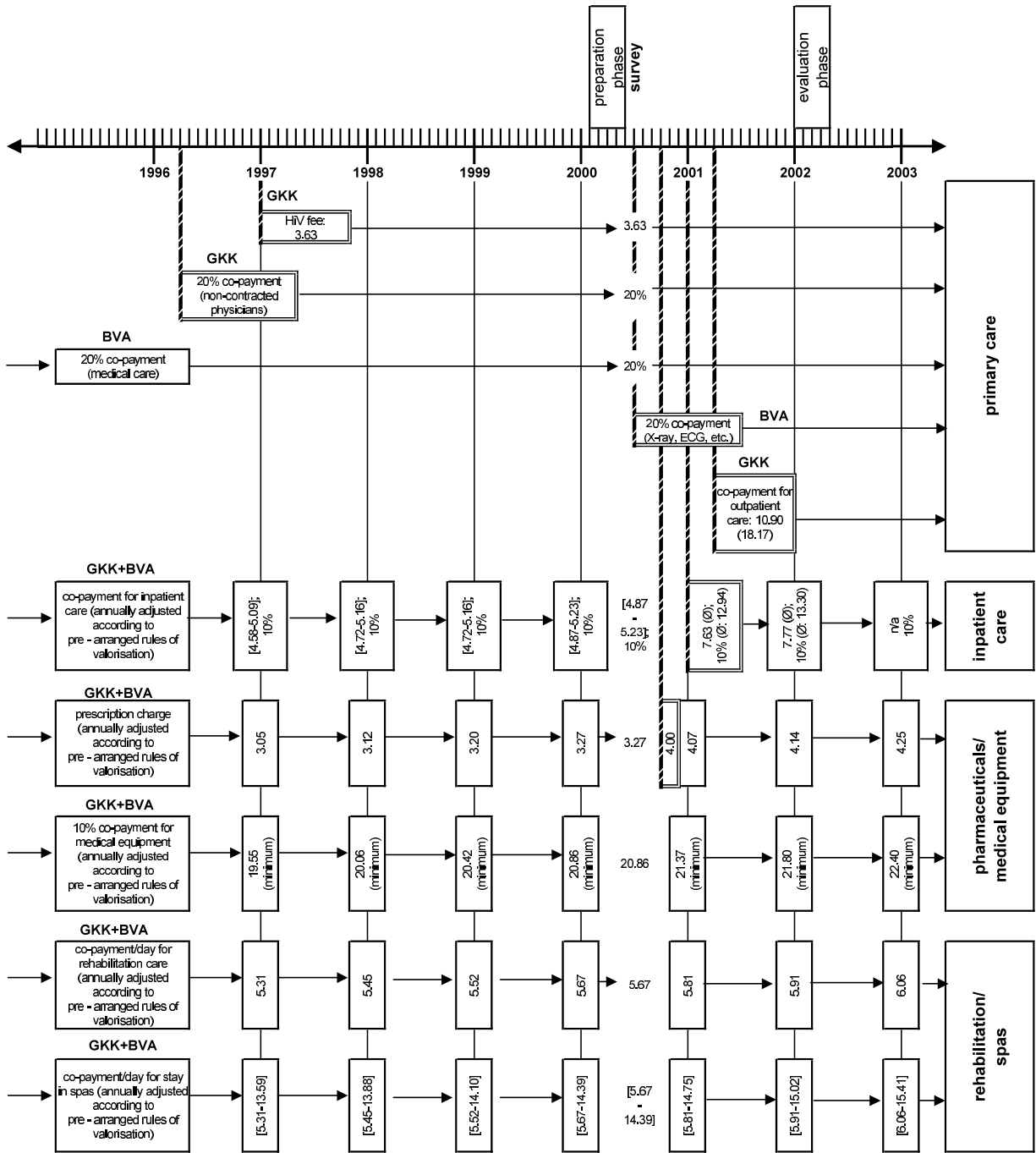


Fig. 1. Co-payments in EUR.

the compensation rate for services and examinations rendered by GPs/specialists with their own practice¹. The compensation rate may consist of two parts: a remuneration rate in the narrow sense (physician fee) and a reimbursement rate (covering the physician's expenses). When attending a physician without a contract with the BVA, the BVA insured persons may possibly be exposed to an additional financial burden if there is a difference between the amount compensated by social insurance and the amount actually charged by the physician. In 2000, the BVA also made a few substantial changes concerning co-payments. First, the 20% co-payment for X-ray check-ups, computer tomographics and similar examinations which was formerly restricted to the remuneration rate was extended to the compensation rate for the respective services². Secondly, a 20% co-payment for services such as electro-cardiograms and ergometric tests was introduced [20].

In Austria, GPs are considered to fulfil a gate-keeping function concerning the use of hospital services. So far, patients have had the possibility of evading this rule by directly attending outpatient wards in hospitals to receive health care services. However, since April 2001, GKK patients have to pay a controversial 10.90 EUR co-payment per visit up to an annual maximum of 72.67 EUR per insured person if referred to an outpatient ward by a GP/specialist and 18.17 EUR per visit if not referred [5]. This co-payment only has to be paid by GKK patients since BVA patients are still charged a lump sum payment, calculated as a 20% co-payment for medical treatment for two initial visits to a GP.

In the case of hospitalisation, the co-payments in 2002 amounted to 7.77 EUR per day (on average) for patients with direct HIR and 13.30 EUR for co-insured patients (on average). These co-payments are charged up to a maximum of 28 days of inpatient

stay per year. The co-payment for inpatient care has been considerably extended for patients with direct HIR [3] in 2001: It additionally comprises a 1.45 EUR co-payment per inpatient day (collected by the hospitals for the social health insurance) and a 0.73 EUR co-payment per inpatient day to partly cover the claims of harmed patients when the liability of hospitals is limited. The co-payment for co-insured patients has not been changed during the observation period, still amounting to 10% of an agreed daily rate.

Another co-payment which has been increased constantly is the prescription charge. Both GKK and BVA patients have to pay a 4.25 EUR co-payment per prescription in 2003. The prescription charge has been increased considerably from 3.27 to 4.00 EUR in October 2000 as a consequence of rising drug expenditure [6]. Co-payments for medical equipment, e.g. arch support, spectacles, etc. amounts to 10%. However, patients have to pay a minimum 22.40 EUR charge.

If patients need medical rehabilitation they now have to pay 6.06 EUR per inpatient day of rehabilitation care. There is a similar co-payment if patients stay in spas, the actual co-payment for these health-promoting stays depends on the patient's income and now varies from a minimum of 6.06 EUR to a maximum of 15.41 EUR per inpatient day. These co-payments are also charged up to a maximum of 28 days/year.

In general, several exceptions to co-payments are possible, mainly for social reasons, but exemptions partly exist for children, handicapped persons, unemployed and retired patients. As regards the limits of co-payments, in Austria patients are either entirely exempted from co-payments or they hit individual ceilings such as the 72.67 EUR ceiling when attending outpatient care units. There is no general ceiling covering all co-payments.

As illustrated by Fig. 1, Austrians are confronted with a variety of different types of co-payments. However, the statement of expenditures and earnings of social health insurance institutions for the years 1997, 1999 and 2001 (see Table 2) reveals that the share of expenses for medical care did not essentially change between 1997 (24.72%) and 2001 (24.54%), with expenses for medical care increasing about 18% between 1997 and 2001. The share of expenses for pharmaceuticals, which amounted to 16.51% in 1997, increased about 20% between 1997 and 2001, amounting to

¹ Thus, due to the limited number of HiV a GKK patient receives per accounting period, a GKK insured patient (in contrast to BVA insured patients) may only change the GP/specialist during any one accounting period with the consent of the health insurance fund.

² Supposing the agreed compensation rate for X-ray examinations is 20 EUR, consisting of a 10 ? physician fee and 10 ? compensation for the physician's expenses, the BVA patient is now confronted with a 100% increase in the amount of co-payments [(0.2 × 20) instead of (0.2 × 10)].

Table 2
Total expenses and earnings of all health insurance companies in million EUR

	1997	In % of total	1999	In % of total	2001	In % of total
Total expenses	8779.17	100	9714.98	100	10 403.80	100
<i>Including:</i>						
Expenses for medical care ^a	2170.01	24.72	2384.69	24.55	2552.70	24.54
Expenses for pharmaceuticals	1449.24	16.51	1861.66	19.16	2061.94	19.82
Total earnings	8911.22	100	9457.86	100	10 255.63	100
<i>Including out-of-pocket payments:</i>						
Prescription charge	216.35	2.43	254.50	2.69	307.67	3.00
HiV fee	45.64	0.51	47.67	0.50	47.00	0.46
Other ^b)	90.55	1.02	100.29	1.06	150.79	1.47

Source [18].

^a Without hospital care.

^b Including, e.g. the 20% out-of-pocket payments from BVA patients, the 20% co-payments from GKK patients when attending non-contracted physicians and, as of 2001, the co-payments from GKK patients for services provided in hospitals' outpatient wards.

19.82% of total expenses in 2001. In general, the total expenses of social health insurance increased by almost 19% within 4 years. As regards the earnings of social health insurance, we find that earnings from the prescription charge increased around 42% within 4 years, although it still amounts to only 3.00% of total earnings and only 14.9% of expenses for pharmaceuticals in 2001. The contribution from prescription charges to the financing of drug consumption is, therefore, considered to be rather moderate; the contributions from the HiV charge and the other co-payments are even smaller. Consequently, we assume that, from 1997 to 2001, these out-of-pocket payments fulfil (if at all) the function of a guiding tool rather than contributing considerably to the financing of health care services, especially with regard to the additional administration costs. It remains to be seen whether the financial effect of the newly introduced and increased co-payments will gain in importance over the years.

Concentrating on GKK and BVA patients who receive medical care from GPs and who consume pharmaceuticals, we now further restrict our analysis to the out-of-pocket payments which arise when patients attend *contracted* GPs and consume *prescription-only* pharmaceuticals, i.e. the analysis of co-payments is confined to the HiV fee for GKK patients, the 20% co-payment for BVA patients to the rate compensated by social health insurance and the prescription charge which is valid both for GKK and BVA insured patients. Consequently, as regards potential moral hazard effects, the results of this analysis only

provide information on ex post moral hazard since we survey patients rather than insured persons. On the other hand, since social health insurance is organised as compulsory insurance, i.e. the insured have no possibility of choosing a particular health insurance contract, we may reject any effect of self selection on health services utilisation in advance.

3. Design of the analysis

3.1. Design of the questionnaire

To survey the patients' attitudes towards co-payments, their views on the effects of co-payments and their actual behaviour, we developed a questionnaire covering the three fields of interest: acceptance, effects and cost consciousness³. While the prescription charge is identical for GKK and BVA patients (3.27 EUR), the type and extent of co-payments when attending GPs differ for BVA patients (variable rate of 20% of the agreed compensation rate) and GKK patients (lump sum payment of 3.63 EUR per HiV). Consequently, we had to develop different questionnaires for GKK and BVA patients. Each of the two questionnaires comprises the subjects "personal background" (section 1, e.g. age, education, place of residence), "prescription charge" (section 2) and "co-payment for

³ The following figures relate to the figures valid through the survey period in 2000.

medical care performed by GPs” (section 3). While sections 1 and 2 are identical in both questionnaires, section 3 differs slightly due to the differing structure of co-payments for medical care. Sections 2 and 3 comprise the following questions (summarised in Table 3) each of which can be assigned to the fields of cost consciousness, effects and acceptance.

As regards the field *cost consciousness* we assume the following: To know the absolute amount of the prescription charge is interpreted as an indication of cost consciousness in connection with the prescription charge (question 1), i.e. if patients do not know the

absolute amount of the prescription charge we conclude that this co-payment may not affect their drug consumption behaviour. If patients agree that they ask for free specimens (question 2), large-size packs (question 3) and for the cost of drugs (question 4) or if they check whether or not they already possess the prescribed drug (question 5), these behavioural patterns indicate cost conscious behaviour as regards drug use. However, if patients ask for a free specimen, if they check whether they already possess the drug prescribed and/or if they ask for large-size packs, their cost conscious behaviour might simply reflect a

Table 3
Questionnaire: sections, fields and questions^a

Section 1: Personal background

Age, education, place of residence

Section 2: Prescription charge

Cost consciousness

1. Do you know the actual amount of the prescription charge?
2. Do you ask for free specimens?
3. Do you ask for large-size packs?
4. Do you ask for the cost of drugs?
5. Do you check whether you already possess this drug?

Effects (in general)

6. Do you think the prescription charge is a suitable tool for guiding the demand for drugs?^b
7. Do you think the prescription charge guarantees the financing of health care services?
8. Do you think it is up to physicians to influence the demand for drugs?^c

Effects (in particular)

9. Does the actual prescription charge make you consume drugs more sparingly?

Acceptance

10. Do you generally accept the prescription charge?

Section 3: Co-payment for medical care performed by GPs

Cost consciousness

11. Do you know the actual amount of the HiV fee/the co-payment for medical care?
12. Would you be interested in a periodical cost statement concerning the services you have required?

Effects (in general)

13. Do you think the HiV fee/the co-payment for medical care is a suitable tool for guiding the demand for medical care?
14. Do you think the HiV fee/the co-payment for medical care guarantees the financing of health care services?

Effects (in particular)

15. Does the actual HiV fee/the co-payment for medical care make you attend GPs less frequently?

Acceptance

16. Do you generally accept the HiV fee/the co-payment for medical care?
-

^a The wording of the following questions is not exactly identical to the wording of the questions in the questionnaire, since we only intend to provide an insight into the type of questions.

^b The translation of the wording in the questionnaire is: “The prescription charge is a suitable tool for guiding the patients’ demand for drugs”.

^c The translation of the wording in the questionnaire is: “Only physicians are able to successfully influence the demand for drugs”.

certain self-interest because, in the first two cases, patients might not have to pay anything at all and, in the third case, patients simply save money: i.e. if the physician prescribes a package with 24 pieces instead of two packages with 12 pieces the patients save one of the prescription charges. Social health insurance companies might also profit from this selfish patient behaviour since they do not have to refund anything to the public pharmacies or they have to pay less if large size packs are cheaper than several small size packs. If patients ask for the cost of the prescribed drug we deduce two different kinds of conclusions: On the one hand, asking for the cost of drugs might show rather unselfish cost consciousness and interest in the financial effects of drug consumption, on the other hand, this behaviour might be the result of self-interest, since it is possible that the cost of drugs is lower than the actual prescription charge. However, in most cases, public pharmacies draw patients' attention to this fact.

In the case of attending a GP, we ask whether patients know the absolute amount of the HiV fee or the percentage to be paid when attending a GP (question 11) and whether patients are interested in a periodical cost-setting for services that have been required and, subsequently, been refunded by social health insurance (question 12). Apart from the fact that the latter question is supposed to reveal any existing lack of patient information, we assume that questions 11 and 12 could be an indication of cost consciousness. One might argue that as long as information is free, it is rational to ask for more information. However, we do not think this is necessarily true in today's society in which people are flooded with information. The questions asked to analyse cost consciousness are scaled as follows: Questions 1 and 11 use a cardinal scale while questions 2–5 use an ordinal scale: Based on a 5-stage scale, the patients have to judge whether they "always", "frequently", "sometimes", "seldom" or "never" act in the manner described above. Question 12 uses a different 5-stage scale: the patients have to indicate whether they "completely agree", "partially agree", "are indifferent", "partially disagree" or "completely disagree".

The field *effects* deals with patients' views on the effects of co-payments in general and with the effects of co-payments on their own health care utilisation behaviour in particular. Concerning the effects of

co-payments in general, we ask whether co-payments are suitable as a guiding and/or an essential financing tool (questions 6 and 7 relate to co-payments in connection with drug consumption, questions 13 and 14 refer to co-payments when GP services are utilised) and whether it is up to physicians to influence drug consumption behaviour (question 8). All these questions use the second 5-stage scale (completely agree, partially agree, indifferent, partially disagree, completely disagree). As regards the effects of co-payments on health services utilisation behaviour in particular, we ask patients whether the actual prescription charge makes them consume drugs more sparingly (question 9) and whether the actual HiV fee/the 20% co-payment makes them attend GPs less frequently (question 15) where both questions have a dichotomous character. Regardless of whether patients agree or disagree with questions 9 or 15, we suppose that if patients do not know the absolute amount of the prescription charge or the co-payment when attending a GP, any guiding effect resulting from these co-payments may be rejected. As regards drug consumption, we additionally check the correspondence between the assessment of the effects of the prescription charge in general (question 6) and in particular (question 9), and between the assessment of the effect of the prescription charge in particular (question 9) and the actual behaviour (questions 2, 3, and 5). Concerning GP services, we examine the correlation between the assessed behavioural influence in general (question 13) and in particular (question 15).

The field *acceptance* asks whether patients generally accept the prescription charge (question 10) and the HiV fee/the 20% co-payment (question 16).

The first section *personal background* is used to analyse whether there are any differences among patients of different age, education and place of residence as regards the fields "cost consciousness", "effects" and "acceptance". As far as the variable "age" is concerned we distinguish between young (up to 45 years) and old patients (older than 45 years), with the variable "education", we distinguish between lower and higher educated patients (the latter requires graduation from college or university) and with reference to the place of residence, we differentiate between patients who live in urban regions (includes all district capitals) and those who live in rural regions.

3.2. Design of the survey

First, the regional Medical Association randomly selected 50 GPs, whereby 25 GPs were contracted to the GKK and 25 contracted to the BVA. Each of the randomly selected GPs was supposed to receive either 100 GKK or 100 BVA questionnaires. Overall, 34 out of 50 GPs consented to support the study. Thus, we sent out a total of 3350 questionnaires to the GPs, 1800 GKK and 1550 BVA questionnaires (one GP only accepted 50 BVA questionnaires), including an explanatory covering letter for the patients surveyed. We asked the GPs to hand the questionnaires out themselves or to ask their receptionists to hand them out to GKK/BVA insured patients. The patients were supposed to complete the questionnaire independently and send it back to Graz University. When we sent out the questionnaires we included an envelope which was stamped with “recipient pays postal charges” in order to increase the response rate.

From the 3350 questionnaires sent out to GPs, we received 378 completed questionnaires, which corresponds to a response rate of 11.28%. Among those responding there were 275 GKK patients (73% of all patients who responded) and only 103 BVA patients (27% of all patients who responded). Consequently, the response rate amounts to 15.28% for GKK patients and to 6.65% for BVA patients. We did not analyse the reasons for the low BVA response rate in detail but we suppose that there were simply too few BVA patients who frequented the randomly chosen practices with a BVA contract within the investigation period (June–July 2000)⁴.

To provide an overview, we summarise the number of patients surveyed based on the three criteria “age”, “education” and “place of residence”. Table 4 illustrates that 45% of the patients surveyed belong to the category “young” (up to 45 years)⁵, whereas 55% belong to the category “old” (older than 45). Both groups are almost equally represented, although we expected older patients to predominate. One possible explanation why the distribution among young and old

⁴ We should mention that GPs who are contracted to the GKK mainly treat GKK insured patients although they may also have contracts to other (smaller) social health insurance companies as opposed to the GPs with BVA contracts.

⁵ Including only adults.

Table 4

Patients surveyed: attributes and distribution

Criteria	Attributes and distribution	
Age	Young (45%)	Old (55%)
Education	Lower (60%)	Higher (40%)
Place of residence	Urban (33%)	Rural (67%)

is approximately equal is the fact that older patients are perhaps more likely to refuse to complete the questionnaire. Relative to the criterion “education”, the group of lower educated patients (no graduation from college/university) predominated in the sample. This percentage is considered to be representative of all GKK and BVA insured patients. The same is true for the proportion of 1:2 of patients who live in urban regions to those who live in rural regions.

4. Results

The results are presented according to the fields “cost consciousness”, “effects” and “acceptance” as defined in Section 3. We compare the findings concerning the prescription charge with those concerning the HiV fee and the 20% co-payment, especially in cases where the questions coincide (see Table 3). In addition, we examine whether there are any differences among the surveyed GKK and BVA patients concerning the different co-payments for medical care. Lastly, for drug consumption we check the correlation between actual behaviour and assessed behavioural effects and the correlation between our findings concerning the co-payments and the personal background variables “age”, “education” and “place of residence” using the Spearman rank correlation coefficient. As the study is descriptive, the transfer of results to people other than the patients surveyed is limited.

4.1. Cost consciousness

As already mentioned, we suppose that if patients do not know the amount of the prevailing co-payments they will not act cost-consciously as a result of existing co-payments. For this purpose we asked patients to state whether they know the *exact* amount and ask them to write it down in the questionnaire. The results had a sobering effect (see Table 5): Only 77% of all

Table 5
Knowledge of exact/approximate amount of co-payments

	Type of co-payment		
	Prescription charge	HiV fee	20% co-payment
Know exact amount (%)	77	80	49
Know approximate amount (%)	92	83	49
Do not know (%)	8	17	51
Total number of patients surveyed	361	268	101
<i>Correlation</i>			
Age	0.056	0.279	0.263
Education	0.111	0.042	0.057
Place of residence	0.108	0.037	0.224 ^a

^a In fact, this correlation is a spurious correlation since the correlation is between age and place of residence and not between place of residence and knowledge of exact amount (since the older BVA patients surveyed in the sample are more likely to live in rural regions).

patients surveyed knew the *exact* amount of the prescription charge. 92% knew approximately how much they have to pay per prescription ($\pm 20\%$, i.e. all values between 2.62 and 3.92 EUR are rated as correct). We suppose that the then ongoing public discussion concerning the forthcoming increase in the prescription charge as well as its annual adjustment might have influenced this result. Concerning the HiV fee (GKK), 80% of the GKK patients knew the exact amount and 83% of the GKK patients knew the approximate amount ($\pm 20\%$, i.e. all values between 2.90 and 4.36 EUR are rated as correct). We see that patients are not as familiar with the approximate amount of the HiV charge as with the approximate amount of the prescription charge, possibly reflecting the fact that the prescription charge has already been in existence for decades as opposed to the HiV fee which was first introduced in 1997. Additionally, the discrepancy between those who knew the amount of the HiV fee exactly and those who knew it approximately is not as large as is the case with the prescription charge. One possible explanation is that the HiV fee has been held constant over the years, as opposed to the prescription charge which is adjusted annually. In the case of BVA patients, only 49% knew the exact percentage of 20%. Based on the $\pm 20\%$ interval, i.e. all values between 16 and 24% are rated as correct, an identical 49% of the BVA patients knew approximately how much, in %, they have to pay out of their pocket. These results indicate a considerable lack of information for BVA patients. These deficits could be eliminated through appropriate information campaigns on the part of the BVA.

As far as the prescription charge is concerned, the correlation between the variables “education” and “place of residence” and the knowledge of the approximate amount is worth mentioning. Lower educated patients are more likely to know the amount of the prescription charge. Since we suppose that lower educated persons earn less than higher educated persons they, therefore, seem to be forced to plan their expenses in more detail. For higher educated patients, the prescription charge is obviously too low to be of any importance. Additionally, patients who live in rural regions were more likely to know the amount of the prescription charge than patients who live in urban regions. Here, we suppose again that in rural regions the per capita income is lower than in urban regions so that the prescription charge is more important for those who live in rural regions. These facts imply the following: If politicians and social health insurance intend to guide the demand for drugs using the prescription charge they might consider the introduction of a *proportional* prescription charge, depending on a person’s income.

With regard to the HiV fee and the 20% co-payment, we found that the knowledge of these co-payments is correlated with the variable “age”. Younger GKK patients were more likely to know the amount of the HiV fee than older patients as opposed to the BVA 20% co-payment where we found that older BVA patients were more likely to know the amount. This is plausible since the HiV fee is a rather new co-payment so that older patients may not yet be familiar with it. The fact that retired persons are exempted from the HiV fee does not affect this result since within the

group of older patients (>45 years), the difference between employed and retired persons is negligible. In case of BVA insurance, where retired patients are not exempted from the co-payment, the group of older patients is more likely to know the 20% co-payment. Since the 20% co-payment for medical care has been an essential component of the BVA since the early 1920s, older patients have been confronted with the co-payment more frequently than younger patients, so this result was to be expected. Additionally, we note that patients who know the prescription charge are more likely to know the HiV fee and the 20% co-payment fee and vice versa.

As regards the actual behaviour concerning pharmaceutical use, we found that patients hardly ask their physician for a free specimen or the cost of drugs (see Table 6). Firstly, asking these questions might be embarrassing to patients. Secondly, since the prescription charge is designed as a lump sum payment, the cost of drugs does not influence the amount of the co-payment. Additionally, patients may not be aware of the fact that physicians usually possess several free specimens. Therefore, these results seem plausible. Asking for large size-packs, however, is more likely to occur. To avoid waste of resources, e.g. if patients throw away a large part of the contents, it is up to physicians to prescribe large size packs only if medically necessary. As regards patients checking whether

they already have the drugs at home, 58% of all patients surveyed indicate that they always act accordingly. However, social health insurance companies might consider undertaking an extensive campaign to establish this kind of behaviour as routine in the case of drug prescription.

The analysis concerning correlations between the personal background variables and drug consumption behaviour indicates two correlations which are worth mentioning: The group of older patients is more likely to ask for large-size packs and to check whether they already have the prescribed drugs at home. Since older patients are more likely to have to take drugs, they are, in fact, more affected by the prescription charge than younger patients. The correlation between the knowledge of the approximate amount of the prescription charge and the observed types of drug consumption behaviour is not worth mentioning.

Regarding the HiV fee and the 20% co-payment, we see that the interest in periodical cost statements concerning the services refunded to physicians by social health insurance reveals some cost sensitivity (see Table 7). Almost 80% of all surveyed patients would agree to receive some kind of cost statement periodically. This indicates, however, a certain extent of information deficit in connection with the demand for medical care. A periodical cost statement might support social health insurance efforts to contain

Table 6
Prescription charge and cost-conscious behaviour

	Type of cost-conscious behaviour			
	Free specimen	Asking for		Checking for existence
		Large-size pack	Cost of drug	
Always (%)	3	16	5	58
Frequently (%)	5	10	5	18
Sometimes (%)	4	20	8	11
Seldom (%)	12	17	17	5
Never (%)	76	37	65	8
Total number of patients surveyed	365	369	368	364
Median	Never	Seldom	Never	Always
Modus	Never	Never	Never	Always
<i>Correlation</i>				
Age	0.023	0.212	0.078	0.124
Education	0.050	0.044	0.002	0.033
Place of residence	0.092	0.110	0.032	0.065
Knowledge of approximate amount	0.033	0.119	0.013	0.011
Sparing use of drugs	0.101	0.157	–	0.219

Table 7
Agreement concerning periodical cost statement

	Periodical cost statement
Completely agree (%)	54%
Partially agree (%)	24%
Indifferent (%)	14%
Partially disagree (%)	5%
Completely disagree (%)	3%
Total number of patients surveyed	369
Median	Completely agree
Modus	Completely agree
<i>Correlation</i>	
Age	0.026
Education	0.041
Place of residence	0.024
Knowledge of approximate amount	0.019

health care costs by sensitising patients in their health services utilisation behaviour. This kind of cost consciousness does not depend on the variables “age”, “education”, “place of residence” or knowledge concerning the HiV fee and the 20% co-payment.

Overall, we draw the following conclusions: The assumption that the knowledge of the amount of the prescription charge is an indication of cost-consciousness has not been confirmed by the actual drug consumption behaviour. Thus, the different types of actual drug consumption behaviour analysed using questions 2–5 may be influenced simply by a general cost-conscious behaviour, irrespective of the existence of co-payments. Additionally, it is amazing that barely 50% of BVA patients know the percentage of their respective co-payment for medical care: It, therefore, remains to be seen whether this co-payment develops any guiding function with regard to health care demand.

4.2. Effects

At this point in the analysis we remind the reader that the assessment of the effects is as experienced by the insured patients themselves. The results are summarised in Table 8.

As regards the assessed effects in general, patients think that co-payments on the whole are useful tools to guide health services utilisation behaviour: 54% of the patients surveyed indicate that the prescription charge is suitable for guiding the use of

pharmaceuticals through patients, whereas only 23% are indifferent and another 23% think it is unsuitable for this purpose. Older patients are more likely to agree that the prescription charge is suitable for guiding drug consumption. As far as the suitability of the co-payment for medical care is concerned there are differences among GKK and BVA patients. Thus, we have listed the results separately: Only 12% of the BVA patients (i.e. seven (five) out of 101 BVA patients disagree partially (completely)) think that the 20% co-payment for medical care does not develop a guiding effect, whereas 29% of the GKK patients (i.e. 39 (35) out of 260 GKK patients disagree partially (completely)) are of the opinion that the HiV fee does not guide the demand for medical care. The fact that more GKK patients think this may be due to the situation that the HiV fee is much lower and also much “younger” than the BVA co-payment, the latter reason possibly causing much more annoyance. Surprisingly, 40% of GKK patients think that the HiV fee is suitable for guiding health services demand. Lower educated GKK patients and GKK patients who live in rural areas as well as older BVA patients and BVA patients who live in urban areas are more likely to agree with this statement. Overall, the design of the BVA co-payment as a proportional contribution is in fact more likely to ensure cost sharing according to the principle of causation, since the co-payment varies with the actual extent of resource use as opposed to the HiV fee which is designed as a lump sum payment and, therefore, is more of an administration charge than a co-payment. For this reason, it is plausible that BVA patients are more likely to agree that the 20% co-payments is in general suitable as a guiding instrument.

Additionally, we found that 76% of the patients surveyed think that it is up to physicians to successfully guide the demand for pharmaceuticals (see Table 9). In this context we think that the patients surveyed may have interpreted the wording “. . . **only** physicians are able to. . .” as “. . . **also** physicians are able to. . .”. so that questions 6 and 8 provide consistent results. Otherwise, patients simply contradict themselves. Older patients and lower educated patients in particular think that physicians are responsible for rationing the demand for pharmaceuticals. This result may be due to the fact that these patients place a great amount of trust in physicians.

Table 8
Types of co-payment and views on effects

	Type of co-payment		
	Prescription charge	HiV fee	20% co-payment
<i>Suitable as guiding tool</i>			
Completely agree (%)	32	25	37
Partially agree (%)	22	15	21
Indifferent (%)	23	31	30
Partially disagree (%)	14	15	7
Completely disagree (%)	9	14	5
Total number of patients surveyed	366	260	101
Median	Partially agree	Indifferent	Partially agree
Modus	Completely agree	Indifferent	Completely agree
<i>Correlation</i>			
Age	0.200	0.030	0.258
Education	0.086	0.263	0.030
Place of residence	0.072	0.155	0.170
<i>Guarantees financing</i>			
Completely agree (%)	49	35	55
Partially agree (%)	26	21	21
Indifferent (%)	15	30	19
Partially disagree (%)	5	7	4
Completely disagree (%)	5	7	1
Total number of patients surveyed	367	263	101
Median	Partially agree	Partially agree	Completely agree
Modus	Completely agree	Completely agree	Completely agree
<i>Correlation</i>			
Age	0.164	0.043	0.140
Education	0.074	0.065	0.103
Place of residence	0.011	0.224	0.018
	Sparing use of drugs	Influences frequency of attending GPs	
Yes (%)	64	17	18
No (%)	36	83	82
Total number of patients surveyed	375	264	102
<i>Correlation</i>			
Age	0.105	0.058	0.075
Education	0.129	0.060	0.099
Place of residence	0.061	0.077	0.110
Suitable as guiding tool	0.286	0.015	0.120

It is interesting that 75% of the patients surveyed think that the prescription charge contributes essentially to the financing of health care services and 49% agree completely (see Table 8). This illustrates that few people know that the earnings from the prescription charge are rather low, namely 14.9% of the total expenses for drugs which does not seem to be a major contribution. In this case, a more offensive information policy could improve this situation and might illustrate the development of expenses and earnings for pharmaceuticals. Older patients are more likely to

agree that the prescription charge is a major financing tool. This might be due to the fact that older patients more frequently consume drugs, and therefore, spend more money on the prescription charge. A periodical cost statement concerning the benefits from social health insurance would be suitable for providing an overview. Such a cost statement would also reveal that the contribution of the HiV fee and the 20% co-payment to the financing of medical care is even smaller than is the case for the prescription charge. Nevertheless, 56% of GKK patients and 76% of BVA

Table 9
Agreement concerning guidance by physicians

	Guidance by physicians
Completely agree (%)	51%
Partially agree (%)	25%
Indifferent (%)	19%
Partially disagree (%)	4%
Completely disagree (%)	1%
Total number of patients surveyed	368
Median	Completely agree
Modus	Completely agree
<i>Correlation</i>	
Age	0.159
Education	0.213
Place of residence	0.019

patients agree that the co-payment for medical care is a major financing tool.

We can now consider the assessment of the effects of co-payments on the patients' health care utilisation behaviour in particular: Table 8 illustrates that 64% of the patients surveyed indicate that the prescription charge makes them consume pharmaceuticals sparingly. Obviously, as the majority of patients agrees to be influenced in its drug consumption behaviour this might be an indication of ex post moral hazard. Compared with the results regarding the actual drug use behaviour (see questions 2, 3 and 5), the 64% still seem to be rather excessive. As can be seen from the last row of Table 6, the correlation between the different types of actual drug use behaviour and the assessment of the effects of the prescription charge in particular is much lower than expected⁶. The same is true for the correlation between the assessment of the effects of the prescription charge in general (question 6) and in particular (question 9). Thus, the corresponding conclusion might be to either increase the (lump sum) prescription charge or to implement a proportional prescription charge to reduce excess demand. Irrespective of the effect of the increased prescription charge on patients' behaviour, it might at least increase the earnings from the prescription charge. Increasing the prescription charge or

implementing a proportional charge might adversely affect older patients who tend to consume more pharmaceuticals and lower educated patients who tend to earn less money than higher educated patients. On the other hand, we can expect inefficient users to considerably reduce excess demand. Overall, a proportional prescription charge seems to be more socially acceptable than an increase in the lump sum payment, especially if combined with socially appropriate ceilings and exemptions.

More drastic is the situation concerning the assessed effects of co-payments on GP services utilisation behaviour in particular. Only 17% of the GKK and 18% of the BVA patients surveyed indicate that the HiV fee and the 20% co-payment make them attend GPs less frequently. Two explanations are possible: Firstly, this result might be an indication that there is no ex post moral hazard in the demand for GP services. Secondly, we rather assume that, especially for GKK patients, the low HiV fee provides no financial incentive for behavioural changes. However, the fact that BVA patients disagree on the guiding effect in particular is an immediate consequence of the fact that roughly 50% of the BVA patients know the exact amount of that co-payment. It is no surprise, then, that the correlation between the assessment of the effects of the co-payment for medical care in general (question 13) and in particular (question 15) is extremely low: A majority of BVA patients (58%) confirms a guiding effect of the 20% co-payment in general. However, if the same patients are asked whether the 20% co-payment makes them attend GPs less frequently only 18% agree. As regards the GKK patients, 40% confirm a guiding effect of the HiV fee in general, but only 17% say this influences their frequency of attending a GP. As regards GP services, the results are not as clear as the results concerning drug use: A minority of patients still indicates that they are influenced in their GP services utilisation behaviour. We assume that there is also ex post moral hazard in the demand for GP services, the co-payment for GP services obviously being too small (especially for GKK patients) to induce behavioural changes. However, the BVA results simply seem to be distorted towards "healthier" BVA patients since the mean number of GP visits during a 12-month period is 7.95 for BVA as opposed to 10.59 for GKK patients. Therefore, the co-payment for medical care might be of minor

⁶ Compared with the actual drug consumption behaviour we find that checking for existence (this is the kind of behaviour one might doubtless expect from patients) is in fact wide-spread (76%). This is the only kind of drug consumption behaviour which shows a correlation with the question concerning the sparing drug use worth mentioning (0.22) (see Table 6).

Table 10
Acceptance concerning co-payments

	Type of co-payment		
	Prescription charge	HiV fee	20% co-payment
Yes (%)	80	51	82
No (%)	20	49	18
Total number of patients surveyed	370	270	102
<i>Correlation</i>			
Age	0.053	0.061	0.014
Education	0.108	0.094	0.021
Place of residence	0.027	0.061	0.048

importance for the BVA patients who completed the survey.

4.3. Acceptance

The prescription charge and the 20% BVA co-payment are well-accepted by the patients (Table 10). The acceptance of the HiV fee probably suffered from the recent introduction in January 1997. Although we suppose that the financial burden resulting from the 20% co-payment is, on average, higher than the financial burden of the HiV fee, BVA patients are more likely to accept the co-payment. The results depend slightly on the patient's education. Higher educated patients are more likely to accept the co-payments than lower educated patients.

5. Conclusions

Nowadays, the Austrian health care system is confronted with a variety of changes. The social health care system seems to be increasingly under pressure. According to the agreement of the ruling parties in 2000, one major effort is to standardise and further develop existing features of the social health insurance system. One reformatory attempt is to "develop a system of co-payments in social health insurance which is supposed to replace the HiV fee" [[7], p. 21f]. In that context, the ruling parties plan to authorise social health insurance to define proportional co-payments up to 20% in their statutes. So far, all efforts indicate major changes, at least for GKK patients. We, therefore, expect private health care expenditure to tend to further increase.

Using a sample of 378 patients, we tried to provide a first insight into the patients' point of views as regards their attitude towards co-payments and their assessment of the effects of co-payments in general and in particular. We also surveyed drug consumption behaviour to get an impression of how resources are used by patients. However, whatever effect is expected by introducing and/or raising co-payments, at least for lump sum co-payments, such as the HiV fee and the prescription charge, we doubt that they will strongly contain the dynamics of health care expenditures via induced behavioural changes. These co-payments are still too small to have a major guiding effect and, moreover, to provide a major contribution to the financing of health care expenditures. However, co-payments seem to be desirable since we found symptoms of ex post moral hazard in the demand for health care services in Austria. As far as the results of this survey are concerned, there are several limitations to be taken into consideration: First, as indicated above, the transfer of results to people other than the patients surveyed is limited since the study is descriptive. It might be of considerable interest to check the results found with this sample using a larger number of observations and using a controlled sample. Secondly, as regards the impact of co-payments on the individual health services utilisation behaviour, it is desirable to pass from a subjective to an objective assessment by econometrically analysing health insurance data. Finally, we have to bear in mind that the study results provide no information on the effect of co-payments on ex ante moral hazard.

Overall, from a policy perspective, it seems to be reasonable to standardise the system of co-payments in Austria in a first step. Since patients do not have the possibility of choosing a particular health insurance, contributions should solely depend on a person's income rather than on a person's income *and* the type of insurance company. However, general upper limits should be considered, at best representing ceilings per period rather than per type of service used.

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