

# Personal use of medical care and drugs among Swiss primary care physicians

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## Summary

**Objective:** To measure medical care and pharmaceutical drug use among Swiss primary care physicians and its determinants.

**Design:** Cross-sectional mailed survey.

**Setting:** 1784 randomly selected Swiss primary care physicians, including general practitioners, internists and paediatricians.

**Results:** Twenty one percent (95% CI: 19 to 23) indicated having a regular doctor and 53% (95% CI: 50 to 55) reported at least one visit to a health professional in the preceding year. Sixty five percent (95% CI: 62 to 67) of the respondents had used pharmaceutical drugs during the preceding week, 34% (95% CI: 31 to 36) analgesics, 14% (95% CI: 12 to 15) tranquillizers, 6% (95% CI: 5 to 8) antidepressant and 13% (95% CI: 12 to 15) antihypertensive drugs. Among respondents reporting drug use in the past week, self-medication was reported in 90% (95% CI: 88 to 92) of the cases. In multivariate analyses, female sex, older age, higher work-related satisfaction and higher perceived stress were associated with more fre-

quent visits to any health professionals; paediatricians reported more visits to primary care physicians, whereas women and physicians living alone reported more visits to mental health specialists. Reported use of analgesics was more frequent for younger physicians and general internists. Older physicians reported a higher use of tranquillizers, whereas physicians living alone reported higher use of antidepressants. Finally use of antihypertensive drugs was more frequent among men, older physicians, general internists and physicians with higher levels of work-related stress.

**Conclusions:** Swiss primary care physicians rarely have their own general practitioner and self-medication is common with frequent use of analgesics and tranquillizers. Psychological distress due to increasing constraints on primary care doctors probably contributes to these behaviours.

**Key words:** attitudes of health personnel; physicians; family; self care / methods; self medication; job satisfaction; Switzerland

## Introduction

Physicians are extensively trained to deliver efficient and timely medical care. This training includes thorough knowledge of medical science and – particularly for primary care physicians – psychological and social aspects of care [1]. Primary care physicians are considered as specialists able to establish a long-standing relationship to their patients, which in turn facilitates appropriate and comprehensive medical care [2, 3].

However, as a popular expression says, “the tailor’s wife is worst clad”, physicians tend to demonstrate inappropriate behaviour when it comes to taking care of their own health. Already during medical school, they tend to treat themselves for minor and major ailments [4, 5] and some

continue to do so even when confronted with potentially fatal diseases [6]. In various studies from Europe and Australia [7–9], less than 50% of physicians had a general practitioner for their own health. This may contribute to the fact that physicians consume high numbers of pharmaceutical drugs. They often use tranquillizers [10], antibiotics, contraceptives and analgesics [4]. Further reasons for this use of drugs include lack of time to consult a physician due to high work load for hospital-based or community-based physicians [11]. Primary care physicians probably find it more difficult to consult their own “family” doctor, because they may consider that they have the necessary knowledge and competence to take care of their

own health problems. It might be easier for non primary care specialists to admit that they need a "family" physician, in particular when their health problems fall outside their own field of competence.

Why bother about this problem? Perhaps primary care physicians perform better when they take care of their own health. Although this may be true for some minor health problems, most experts [12] recommend that doctors do not take care of their own health because they lack the necessary distance to make optimal decisions, particularly regarding mental health [13].

This might be particularly true when an im-

portant proportion of doctors experience problems with their health. A recent mail survey among 1'755 Swiss primary care physicians found that 32% had a high score on either the emotional exhaustion or the depersonalisation/cynicism scale (moderate degree of burnout) and 4% had scores in the range of burnout in all three scales (high degree of burnout) [14].

To explore the importance of this problem in Swiss primary care providers we used the data from the same survey to determine the medical care and drugs use of Swiss primary care physicians and its determinants and compared these results with self-reported use in the Swiss population [15].

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## Setting and methods

A postal survey was conducted during the spring of 2002 among Swiss primary care physicians identified through the membership database of the professional organisation of Swiss physicians (Federatio Medicorum Helveticorum) [14]. Primary care physicians included all community-based generalists, general internists, paediatricians and physicians without a specialty qualification (7711 physicians). Among these physicians, a random sample of 3000 was drawn. After exclusion of 3 deceased doctors, 8 doctors with incorrect addresses, 15 doctors who did not practice clinical medicine and 218 doctors who did not practice as primary care doctors, 2'756 (91.9%) physicians remained eligible for the survey, representing 36% of all Swiss primary care physicians.

### Measure of medical care use

Medical care use was measured with the following question "During the past 12 months how many times did you consult one of the following health professionals or health service for a personal problem?" Respondents could report the number of visits to a primary care physician, a colleague at work, a gynaecologist (for women), a mental health specialist (psychiatrist or psychologist) or another health professional. They could also indicate the number of days of hospitalisation over this period of time.

For comparison with the Swiss population, we used the items of the 2002 Swiss Health Survey addressing visits to a regular doctor, a health care professional, a primary care physician, a gynaecologist (for women) or hospitalisation during the past 12 months [15].

### Measure of drug use

Drug use was assessed by asking the participants: "During the past 7 days, have you taken any of the following drugs?" This item was similar to the question addressing drug use in the Swiss health survey [15]. Possible answers were any drug taken orally, analgesics (except opiates), opiates, benzodiazepine, non-benzodiazepine sleeping tablet, antidepressant and antihypertensive drugs. For each category respondents had to indicate whether this drug had been prescribed by a colleague or taken without prescription (self-medication).

For comparison with the Swiss population, reported use of pain killer, tranquillizers, sleeping drugs and antihypertensive drugs in the past week was used [15]. To allow for comparison between both surveys, we defined a new category of "tranquillizers, including sleeping drugs". We combined reported use of benzodiazepine and non-benzodiazepine sleeping tablets in the physicians' survey and

of tranquillizers and sleeping drugs in the general population survey.

### Determinants of medical care and drug use

Socio-demographic characteristics (sex, age, living alone) and medical specialty (generalist, general internist, paediatrician and no specialty qualification) were used as determinants of medical care and drug use. Based on the literature we also included the measures of work-related satisfaction [16], work-related stress [14], burnout [17] and self-reported physical and mental health [18, 19] as additional determinants.

### Translation of the questionnaire

The initial questionnaire was developed in French and pre-tested among a small group of physicians for readability and acceptability. When validated items in German or Italian were not available, three independent translations were made by bilingual physicians and professional translators and a final version was obtained by consensus. The translated items were pre-tested for readability and acceptability among 10 primary care practitioners in each language before their use. The study was approved by the research ethics committee of the Institute of Social and Preventive Medicine at the University of Geneva.

### Data analysis

Rates of medical care and drug use among primary care physicians were calculated using frequency tables. To assess the effect of response bias on medical care and drug use, we used firstly post-stratification to estimate this kind of bias across sex, age and medical specialty [20] and secondly computed a propensity score for participation to the survey based on age, sex, number of years in medical practice and medical specialties for all eligible physicians and correlated this score with the probability of having reported medical care and drug use based on the same set of predictors [21].

To identify the multivariate determinants of medical care and drug use, we used the same set of predictors in logistic regression models to identify multivariate predictors of visits to any health professionals, primary care physicians, mental health specialists, self-medication use and reports of analgesic, tranquillizers, antidepressant and antihypertensive drugs in the past week. Socio-demographic (sex, age, living alone) and medical specialty, as well as work-related stress, work-related satisfaction, and mental and physical health scores were included in the regression models. To study the effect of work-related satisfaction (17 items) and work-related stress (19 items), we

computed global scores whenever answers to at least half of the items were present. Answers to the SF-12 were used to compute summary score of mental and physical health. To facilitate the interpretation of the regression models, all continuous variables were transformed into discrete intervals. For age, the resulting odds ratio represents the risk

change for a difference of 10 years of age. For the other continuous scores, the odds ratio represents the risk change for a difference of 1 standard deviation. All statistical tests were two-tailed, with a level of significance of 0.05. Statistical analyses were performed with SPSS (Statistical Package for Social Sciences, version 11.0).

## Results

After a first mailing and three reminders, 1784 physicians (65%) responded to the survey. The majority were men and in solo practice ( $n = 1123$ , 63%). The mean age was 51 years (table 1). Forty eight percent were board-certified generalists ( $n = 848$ ), 25% general internists ( $n = 446$ ), 9% ( $n = 151$ ) internists with a subspecialty, 9% paediatricians ( $n = 168$ ) and 10% practitioners without specialty qualification ( $n = 171$ ). The majority were living in the German-speaking region of the country (73%), 24% in the French-speaking, and 3% in the Italian-speaking. Only 7% lived alone ( $n = 119$ ) and 67% ( $n = 1195$ ) had children. They worked on average 51 hours per week (standard deviation (SD) 14), with 74% of this time devoted to consultations with patients. Respondents reported a mean of 112 consultations per week (SD 50). Eighty five percent were the principal source of income for their household in 85% ( $n = 1510$ ).

Twenty nine percent ( $n = 524$ ) had their practice in a rural environment.

Physicians who responded were younger (51 vs. 53 years), more often men (84% vs. 78%) and board-certified generalists (45% vs. 26%) than those who did not respond. General practitioners had a higher response rate (72%) than general internists (55%), paediatricians (65%), and physicians without specialty qualification (41%).

### Use of medical care

Among the responders, 21% indicated having their own regular doctor (table 2). In the year preceding the questionnaire, 53% had consulted a health professional. For 10% this was a colleague at work. Thirteen percent had visited a primary care physician and a majority of women (57%) their gynaecologist. Eight percent had either sought help from a mental health specialist or been

**Table 1**

Demographic characteristics of 1,784 Swiss primary care practitioners and of a random sample of 19,706 persons aged 15 years and over living in Switzerland (2002 Swiss Health Survey).

		Swiss primary care practitioners		2002 Swiss Health Survey	
Sex, n (%)	Male	1491	(84)	8909	(45)
	Female	293	(16)	10,797	(54)
	Age (years), mean (SD)	51	(8)	49	(18)
Region, n (%)	German-speaking	1277	(72)	13,082	(66)
	French-speaking	437	(25)	4911	(25)
	Italian-speaking	70	(4)	1712	(9)

**Table 2**

Medical care and drug use of 1,784 Swiss primary care practitioners and of a random sample of 19,706 persons aged 15 years and over living in Switzerland (2002 Swiss Health Survey).

	Swiss primary care practitioners		2002 Swiss Health Survey	
Has a regular doctor, n (%)	378	(21)	17,713	(90)
Medical care use in last 12 months, n (%)				
Any health care professional	940	(53)	15,260	(77)
Primary care physician	226	(13)	11,615	(59)
Gynaecologist (for women)	167	(57)	5323	(49)
Mental health specialist	150	(8)	NA	–
Hospitalisations	136	(8)	2424	(12)
Drug use in the last week, n (%)				
None	632	(35)	11,083	(56)
Yes, self-medication	1040	(58)	1640	(8)
Yes, on prescription	112	(6)	6983	(35)
Analgesics	598	(34)	3016	(15)
Tranquillizers, including sleeping drugs <sup>1</sup>	247	(14)	1564	(8)
Antidepressants	115	(6)	NA	–
Antihypertensive agents	234	(13)	2589	(13)

NA: no information available

<sup>1</sup> this category includes reported use of benzodiazepine and non benzodiazepine drugs for primary care physicians and reported use of tranquillizers and sleeping drugs for the general population.

hospitalised. For respondents who had consulted a health professional during the preceding year, the median reported number of visits to primary care physicians was 1 (interquartile range 1) and 6 (interquartile range 9) to mental health specialists. For those who had been hospitalized during the preceding year, the median duration of stay was 3 days (interquartile range 4).

Using post-stratification to estimate the size and direction of response bias did not change the results for having a regular doctor (21% after post-stratification) and visits to a health professional (53% after post-stratification). The propensity score to participate correlated only weakly with

predicted reports of medical care use, suggesting that participants and non participants were alike when reporting medical care use.

**Use of drugs**

During the week preceding the questionnaire 1152 (65%) physicians reported use of pharmaceutical drugs (table 2). Approximately a third of the respondents had taken analgesics, 9% benzodiazepines (n = 164), 7% non benzodiazepine sleeping drugs (n = 116), 2% both (n = 33), 6% antidepressant drugs and 13% antihypertensive agents.

Physicians reporting use of drugs on prescription were more likely to have visited any health

**Table 3**

Factors associated with self-reported medical care use in past 12 months among 1784 Swiss primary care physicians. Odds ratios (OR) and 95% confidence intervals (CI) were computed using logistic regression models.

	Any health professional <sup>1</sup>		Primary care physician		Mental health specialist <sup>2</sup>		Self-medication use	
	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
Female (vs. male)	4.23	3.05 to 5.89	0.89	0.59 to 1.35	1.72	1.10 to 2.69	0.71	0.41 to 1.23
Age (per 10 years increase)	1.18	1.04 to 1.34	1.09	0.91 to 1.31	1.00	0.80 to 1.25	0.62	0.48 to 0.79
Living alone (vs. no)	1.05	0.69 to 1.61	0.87	0.48 to 1.57	2.32	1.36 to 3.96	0.68	0.35 to 1.34
<b>Medical specialty (vs. General medicine)</b>								
General internal medicine	0.91	0.71 to 1.16	0.97	0.66 to 1.41	0.79	0.51 to 1.22	1.40	0.81 to 2.42
Internal medicine specialties	0.79	0.54 to 1.14	0.75	0.40 to 1.39	0.58	0.28 to 1.21	0.82	0.41 to 1.64
Paediatrics	1.16	0.79 to 1.69	3.63	2.37 to 5.55	0.55	0.27 to 1.13	0.55	0.29 to 1.06
None	0.67	0.47 to 0.97	1.20	0.71 to 2.01	1.07	0.60 to 1.89	0.86	0.43 to 1.73
Work-related satisfaction (per 1 SD increase)	1.27	1.12 to 1.44	1.15	0.96 to 1.39	1.15	0.92 to 1.43	0.83	0.64 to 1.08
Perceived stress (per 1 SD increase)	1.14	1.01 to 1.28	1.11	0.94 to 1.31	1.11	0.91 to 1.37	0.85	0.67 to 1.07
Self-perceived physical health (per 1 SD decrease)	1.78	1.47 to 2.15	1.55	1.26 to 1.92	1.32	1.03 to 1.69	0.72	0.56 to 0.94
Self-perceived mental health (per 1 SD decrease)	1.33	1.18 to 1.49	1.22	1.03 to 1.43	1.73	1.45 to 2.07	0.93	0.74 to 1.17

<sup>1</sup> includes informal consultations with peers. <sup>2</sup> includes psychiatrist and psychologist.

**Table 4**

Factors associated with self-reported drug use in past week among 1784 Swiss primary care physicians. Odds ratios (OR) and 95% confidence intervals (CI) were computed using logistic regression models.

	Analgesics		Tranquillizers <sup>1</sup>		Antidepressant		Antihypertensive drugs	
	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
Female (vs. male)	1.25	0.94 to 1.68	0.99	0.64 to 1.52	1.55	0.92 to 2.61	0.43	0.24 to 0.76
Age (per 10 years increase)	0.85	0.75 to 0.97	1.51	1.26 to 1.81	0.92	0.71 to 1.19	2.57	2.12 to 3.12
Living alone (vs. no)	1.05	0.69 to 1.58	1.53	0.92 to 2.55	1.92	1.01 to 3.63	1.63	0.94 to 2.82
<b>Medical specialty (vs. General medicine)</b>								
General internal medicine	1.29	1.01 to 1.66	1.21	0.86 to 1.67	1.23	0.76 to 2.01	1.55	1.08 to 2.23
Internal medicine specialties	1.37	0.94 to 1.98	0.80	0.46 to 1.38	0.94	0.43 to 2.03	1.38	0.81 to 2.34
Paediatrics	0.90	0.61 to 1.32	0.61	0.33 to 1.12	0.43	0.16 to 1.15	1.11	0.62 to 2.00
None	0.90	0.62 to 1.32	0.77	0.45 to 1.30	1.33	0.69 to 2.58	1.68	1.02 to 2.77
Work-related satisfaction (per 1 SD increase)	0.99	0.87 to 1.12	0.96	0.81 to 1.14	1.24	0.96 to 1.60	1.01	0.85 to 1.21
Perceived stress (per 1 SD increase)	0.94	0.83 to 1.05	0.99	0.83 to 1.17	1.03	0.81 to 1.32	1.28	1.08 to 1.52
Self-perceived physical health (per 1 SD decrease)	1.88	1.57 to 2.24	1.25	1.02 to 1.55	1.68	1.29 to 2.19	1.37	1.10 to 1.71
Self-perceived mental health (per 1 SD decrease)	1.13	1.01 to 1.28	1.72	1.48 to 1.99	2.29	1.86 to 2.81	0.99	0.83 to 1.17

<sup>1</sup> this category includes reported use of benzodiazepine and non benzodiazepine drugs for primary care physicians and reported use of tranquillizers and sleeping drugs for the general population.

professionals (data not shown). Use of analgesics, benzodiazepine, antidepressant and antihypertensive drugs displayed the same pattern. Benzodiazepine and antidepressant use was more frequent among those reporting visits to mental health specialists, whereas use of antihypertensive drugs was associated with reported visits to primary care physicians.

Among respondents who reported drug use in the past week, self-medication was reported in 90% (1040/1152) of the cases. Self-medication was more frequent for analgesics (577/598, 96%) and tranquillizers (237/247, 96%) and less frequent for antidepressants (81/115, 70%) and antihypertensive drugs (152/234, 65%).

Using post-stratification to estimate the size and direction of response bias did not change reports of drug use in the past week (65% after post-stratification) and of self-medication (90% after post-stratification). The propensity score to participate correlated moderately with predicted reports of drug use (Pearson correlation coefficients:  $-0.47$ ), suggesting that participants reported lower drug use (measured prevalence: 65%) than non participants (predicted prevalence: 66%). No correlation was found for reports of self-medication.

### Multivariate predictors of medical care and drug use

Female sex, older age, higher work-related satisfaction, higher perceived stress and poorer physical and mental health were associated with more frequent visits to any health professional, whereas physicians without a specialty reported less visits (table 3). Paediatricians and physicians with poorer physical and mental health were also more likely to report a visit to a primary care physician. Women, physicians living alone and physicians with poorer physical and mental health were also more likely to report visits to a mental health specialist. Self-medication was more frequently reported by younger physicians and physicians with better physical health.

Younger physicians, general internists and physicians with poorer physical and mental health had a higher reported use of analgesic drugs (table 4). Older age and poorer physical and mental health were associated with a higher reported use of tranquillizers. Physicians living alone and with poorer physical and mental health reported more frequent use of antidepressant drugs. Finally physicians who were male, older, general internists or without a specialty reported higher perceived stress and worse physical health and had a higher use of antihypertensive drugs.

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## Discussion

In the 2002 Swiss health survey [15] a representative telephone survey among the Swiss population on health, 90% of the persons between 35 and 70 years indicated having a family physician, while only 21% among the surveyed physicians did so. The mean number of visits to the primary care physician's practice in the past 12 months in the Swiss health survey was 3.2 (median 2), while the primary care physicians reported on average only 1.9 (median 1) visits for the same period of time. This low rate of consultations may lead to suboptimal care [22], even though a high proportion of this difference can probably be explained by the fact that physicians do not seek medical help for benign conditions like a common cold. However, their use of pharmaceutical drugs reveals that they frequently suffer from chronic health problems such as hypertension or mental health problems such as depression. The high rate of self-medication also suggests that Swiss primary care doctors tend to be their own doctors and not only for benign conditions. Psychological traits may also contribute to the low use of medical care by primary care physicians. Personal histories of physicians affected by diseases tell of individual difficulties in becoming a patient [23-26].

The survey showed that physicians frequently consume pharmaceutical drugs, most of them prescribed by themselves. Physicians are known to

have easy access to drugs and therefore few barriers to using them. A Norwegian study found that physicians were more likely than the general population to take tranquillizers [10]. There is concern that the high consumption of psychoactive drug, caused possibly by various components of psychosocial distress, may facilitate addiction to these drugs [27]. However, data on measurable health impairment due to self-prescribing are scarce.

The Swiss health survey also contains information on drug consumption in the general population. In this survey only 43% of the population between 35 and 70 years had taken any kind of drug in the last week compared to 65% of primary care physicians. Primary care physicians consumed more analgesics and tranquillizers than the general population. A recent French study [28] found that the use of analgesics and tranquillizers was higher among older physicians, among those dissatisfied with their job or overworked, and among those prescribing tranquillizers to their patients.

Our study has several limitations. Firstly, as a cross-sectional survey, our results can only give hints on possible causal relationships and we cannot draw definitive temporal relationships between socio-demographic characteristics and our outcome measures. Secondly, a mailed questionnaire with self-reported rating scales is subject to measurement error. Even with the prospect of

anonymous analysis, the participating physicians may have preferred to give socially or professionally acceptable answers and thus introduce a “social desirability” bias. On the bright side, the participation rate to the survey was excellent (65%), given that response rates in surveys among physicians rarely exceed 50%. In addition, the differential participation among eligible physicians across gender, age and medical specialty did not affect reports of medical care and drug use, as the size of this source of bias was small (1% or less). Finally, the sample was sufficiently large to allow exploration of even weak associations.

### Conclusion

At the time of the survey, Swiss primary care physicians did not comply with the recommendation to have their own general practitioner (GP) [29]. With the exception of paediatricians they tended to “be their own GP” [30]. In spite of this reticence, they consumed more pharmaceutical drugs than the general population and were prone to self-medication, even for chronic illness such as depression and hypertension. Along with the easy access to drugs, psychological distress in an ever

more complex health system environment probably contributed to this behaviour.

As legal measures against self-medication seem counterproductive [31], emphasis must be placed on preparing medical students and future primary care physicians for the various aspects of their work, including psychosocial dimensions in order to improve coping with the stressors of the daily life as primary care physician.

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