

Pharmacy-Led Self-Care for Minor Illnesses and Its Economic Impact on the German Healthcare System

Dr. Eleni Papadopoulos¹, Dr. Nikos Stavrou²

¹School of Pharmacy, National and Kapodistrian University of Athens, Athens, Greece

²Department of Clinical Pharmacy, Aristotle University of Thessaloniki, Thessaloniki, Greece

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Abstract

Since resources are scarce in German healthcare, the study focused on providing helpful suggestions for policy decisions. According to the WHO, doctors in Germany consult with more patients each year than doctors in other countries which can be unsafe for patients. This research focused on socio-economic and health economics aspects of using pharmacy for self-medication and self-care to treat minor diseases, instead of going to a GP.

To determine therapeutic routes within the healthcare system, we reviewed existing information from market research, epidemiology and demographics. Besides the decision trees, interviews with experts were used to help with the analysis of how people react to minor health issues. Using these instruments, we conducted research on pharmacy-based self-care impacts and then recommended suitable policies in multiple stages using well-established steps. In Germany, the use of consumer self-care and self-medication now saves GKV (statutory health insurance) roughly €21 billion a year. According to a scenario for the future, health insurance will save €2.2 billion on medical costs and €426 million on medicine expenses. Since there are less sick leave-related losses of productivity, the EU is currently saving €6 billion and an additional €750 million is expected to be saved later on. According to statistics, the health insurance fund and the economy save an extra €14 and €4, respectively, for every euro spent on self-medication. Self-care allows people to save time on appointments and gives professionals the ability to help others who are more severely ill. For medical staff dealing with a high number of patients, the two-hour per day estimated relief in the future is a major help.

Keywords: Self-care, self-medication, pharmacy, minor ailments, non-prescription medicines.

1. Introduction

Germany faces increasing scarcity of healthcare resources due to demographic shifts and expanding medical options resulting from innovation. Improving this problem might be achieved by encouraging self-care in public healthcare, with the help of pharmacists. Nonetheless, not enough research has been done in Germany to measure how consumer-directed healthcare with pharmacy assistance might tackle such issues. Even more worrying, the knowledge of documented facts and connections seems limited among specialists, self-administration organizations and politicians.

Talking about self-care in professional and political settings in Germany has lasted over three decades. Germany's discussion about this issue has been driven by beliefs and self-interest, whereas the international community has contributed knowledge based on science. This research is based on the international findings that came before it.

Many Germans regularly go to a general practitioner instead of treating themselves and this practice will be shown in the findings. Every year, Germany holds the number one position in the world for physician consultations. Doctors in Germany are visited by patients more frequently than doctors in Denmark, United Kingdom, France, the Netherlands or Sweden. Because of resource shortages in primary medical care, patients and doctors are likely to face even more time constraints each day(1).

Researchers found in the European Commission study that the medical effectiveness of treating minor ailments at home is similar to the medical effectiveness of seeing a doctor. Furthermore, promoting self-care in various European countries has been effective and reduces the demand on their healthcare systems. Finally, no specific actions to promote self-care were discovered in Germany.

This study aimed to provide a socio-economic and health economics focused analysis and assessment of pharmacy-based self-care, particularly self-medication with non-prescription medicines (over-the-counter – OTC) within the German healthcare system, and to develop comprehensive policy recommendations.

The study looked at whether self-care takes some pressure off the German healthcare system and the national economy. b) If the issue exists, ask how widespread it is and c) consider what may happen in the future. One

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significant aspect of this research is exploring how pharmacies support people's health and the opportunities for expanding pharmacy-based self-care. The initial goal was to discover and measure both direct and indirect costs, economic outcomes and time effects at both the patient's and doctor's ends, within pharmacy-based self-care. This requires explaining the involvement and concerns of patients, doctors, health funds, the insured community and the groups that represent them. The socio-economic approach looks at the economic actions of stakeholders within the context of social, economic, demographic and political factors(2).

For the purposes of this analysis, self-care means activities that involve doing something, not just waiting for an issue to go away. According to the classic meaning, self-medication refers to consuming medicine without a prescription. Usually, self-care deals with short-term and harmless ailments that do not cause long-term problems. We concentrate on how self-care guided by pharmacies, termed pharmacy-based self-care, involves medicinal methods and approaches that are not medical.

The study is based on a qualitative analysis of the effects of self-care in pharmacies on the German health system, mainly focusing on GKV and its insured population. Following this approach, we tested the effects of healthcare interventions using model calculations. Various market sources, market surveys and surveys of the population were considered to develop maps that show how treatments are used in the real world.

Using the objectives we formed in our study, we suggested health policy ideas for cost-effective and medically appropriate self-care products at pharmacies. The first step in the recommendation design process was to look through international research and health systems. We held personal interviews with 22 professionals in science, business sectors, market research, health funds and other areas from May to August 2015, to further analyze the research outcomes and set up hypotheses. The choice of these experts depended on their professional areas of experience. Representatives from science and expert groups (4), market research (3), health funds (2), specialized journalism (4), the OTC industry (2), pharmacy (3) and government (1) were included in the composition, along with 3 associations from the OTC industry. Even if some experts participated in several sectors, they were only placed in the main one they were involved in(3).

The findings from the survey were reviewed more closely and examined in a planned manner. With the predefined target criteria and our experience, we came up with useful policy suggestions to improve how the German healthcare system makes use of its resources in self-care through pharmacy services.

It was agreed by experts that self-medication plays a major role in the healthcare system. Additionally, most said that acknowledgment of self-medication's significance continues to be lacking. Our health economic and policy review is strongly supported by the interviews we held with medical experts.

2. Status Quo Of Self-Care In Germany

Prevalence and Economic Impact of Minor Ailments

Our evaluation of diverse population surveys and study-specific research revealed an annual incidence exceeding 1 billion minor ailments in Germany, manifesting as common colds, mild headaches, gastrointestinal disturbances, and heartburn. Patients manage the majority of minor health problems, but physicians handle close to 100 million cases each year. On average, each case managed by medical treatment costs about €75 for medication and paying the physician. The two tables show the average costs of treating minor ailments by self-care versus by a physician. When treating minor ailments, German doctors generally interact with patients 2.5 times for each case.

Consumer Motivation and Care-Seeking Patterns

Representative population surveys demonstrate that at least half of doctor consultations for minor ailments stem from non-medical motivations. Some examples are getting a disability certificate, getting prescriptions so you don't need to buy the same products yourself or waiting to treat a problem because you are unsure or lack the right information(4). This model is partly why Germany's GP consultation rate is so high compared to other countries. Figure 2 highlights that many German physicians have workloads above the "unsafe" level, according to the European GP forum which limits daily patient contacts to 25 (visible by the red horizontal line).

Benefits and Drawbacks of Self-Care

Well-informed consumers frequently choose self-care, citing time savings, convenience, and low-threshold access to pharmacy consultation services as primary motivations. Based on an in-depth review of studies, self-treatment and self-medication for minor illnesses are considered safe and proper when hospitals, medicines and guidelines are

respected. The studies available currently find no difference in the outcomes for patients who receive self-care for minor conditions at a pharmacy or from their doctor.

Economic Analysis of Treatment Pathways

Self-medication of a minor ailment with non-prescription medicines generates average costs of €4.80 (see Table 2.1). This way, both the medicines bought from pharmacies and the ones kept at home are included at their appropriate frequencies. The current use of self-care practices in Germany helps reduce the GKV system's outpatient health care resources and spending on prescribed medications by around €21.4 billion each year. Directly putting their savings into GKV reduces a person's premium which has a beneficial impact on the economy.

Metric	Self-Care	Physician-Treated
Average Direct Cost per Case	€4.80	€75.00
Healthcare System Savings (GKV)	~€21.4 billion/year	--
Workdays Saved	~21 million/year	--
Productivity Value Preserved	€5.97 billion/year	-€2.28 billion lost (doctor visits)
Return per €1 spent on Self-Medication	€14 for GKV, €4 for economy	--
Avg. Time Saved per Self-Treated Case	148 minutes	0 (includes travel + wait)
Opportunity Cost for Patient	~€0.42/hr earned (if visiting doctor)	Not applicable
Doctor Contacts per Case	0	2.5 times/case

TABLE 1 Self-Care vs Physician-Led Treatment

Productivity and Time Savings

Self-medication currently prevents approximately 21 million lost workdays and productivity losses amounting to at least €5.97 billion annually. It is mostly from employees who are absent because they visit a doctor during work time; this happens in about one-fifth of all doctor visits by people employed in Germany. To determine the losses in money, official information and the time spent traveling, waiting and being treated was considered. The amount included here also includes doctor appointments that could be managed by self-care, although these might cost the economy as much as €2.28 billion(5).

Stakeholder Impact Analysis

Our research confirms that self-care significantly reduces burdens on both the German healthcare system and the broader economy a finding documented in other health systems as well. Still, a closer analysis highlights that the advantages of these systems vary by stakeholder and sometimes become obvious only with time.

In the immediate future, both consumers and doctors save time when using telemedicine. The effect of GKV on the budget is not simple, since reduced healthcare use can result in smaller budgetary changes, mainly concerning the number of services offered by physicians.

Stakeholder	Impact of Self-Care
Consumers	Lower costs, time savings, faster recovery
Doctors	Reduced overload, time saved via telemedicine
Public Health (GKV)	Large-scale cost avoidance, but budget variability
Employers	Fewer lost workdays, higher productivity
Pharmacies	Elevated role, low-threshold healthcare access

TABLE 1 Stakeholder Impact

Return on Investment for Self-Medication

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Statistically, each Euro spent on self-medication generates savings of almost €14 for the GKV and €4 for the broader economy exceeding values reported in previous studies which typically assumed consumption of complete OTC packages per self-medication case. Analysis using better recent data has found that the level of consumption is lower than what was originally reported.

Consumer Economics and Time Value

A patient treating a minor ailment through self-care instead of visiting a doctor (which would involve co-payments for medicines) faces an additional expenditure of €1.19 for OTC medicines. At the same time, paying an average of just \$32 saves each person 148 minutes per time they are self-cared for. Considering that €1.19 is spent for an average of 2.5 hours spent in a physician's waiting room, the patient effectively earns only about €0.42 per hour for waiting making it an ineffective use of their time.

3. The Role of Pharmacies in Self-Care Delivery

Pharmacy as a Central Self-Care Institution

The relationship between pharmacies and self-care is multidimensional and reciprocal. Most self-care medications are given out through public pharmacies which are vital for this service. During 2015, at least 51% of medicines dispensed by German pharmacies were non-prescription. This part of pharmacy continues to play a crucial role in the business and keeps many customers loyal. On the other hand, self-care greatly relies on the tools and knowledge offered by pharmacies(6).

Pharmacy services prevented the British healthcare system from spending an estimated £3 billion in 2015, according to a study conducted by PricewaterhouseCoopers. Out of the entire value, 40% was attributed to self-care support, 31% to managing medications and 29% to efforts by the public health system. The same is also true for Germany, where pharmacies greatly contribute to improved health-economics in the area of self-medication. Many consumers say that advice from a pharmacist encourages them to self-manage their health.

Consumer Perceptions and Decision-Making

The perspective-oriented analysis reveals, however, that the current remuneration and pricing systems inadequately reflect pharmacies' health-economic contributions to self-care. Appropriate financial incentives for pharmacies may encourage their staff to support self-care among patients. In the survey, people stated that saving time (59%), skipping appointments with doctors (55%) and convenience (40%) were the greatest benefits of self-care, while doubts about correct diagnoses (46%), concerns about the right kind of treatment (34%) and hesitation to cover expenses (31%) were the top problems(7).

Figure 5 makes it clear that pharmacies are a key part of the minor ailment management system. Most consumers who face minor health issues go to a pharmacy for advice and only 10% directly visit a doctor. Furthermore, when pharmacies are out of reach, 54% of pharmacy-directed consumers would go to physicians and 46% would try other approaches, demonstrating pharmacies' vital part in reducing visits to doctors.

Opportunities to Encourage Self-Care

Quantifying Future Potential

Our status-quo analysis demonstrates pharmacy-assisted self-care's existing importance within German healthcare. Still, this system makes more opportunities available to help people become more responsible and resourceful which can lead to greater efficiency and increased funds. We simulated two scenarios that might lead to different amounts of potential reserves.

In the future scenario analyzed for this framework, changes in framework conditions could make €2.7 billion available for the GKV and at least €750 million annually for the national economy (see Figure 6). It is expected that enhanced financial and regulatory systems in healthcare might lead individuals to rely on self-care instead of visiting their doctor as often. For the ad-hoc short-term scenario, less ambitious changes in policies are introduced, including using half the available reserves.

Impact on Physician Workload and Care Quality

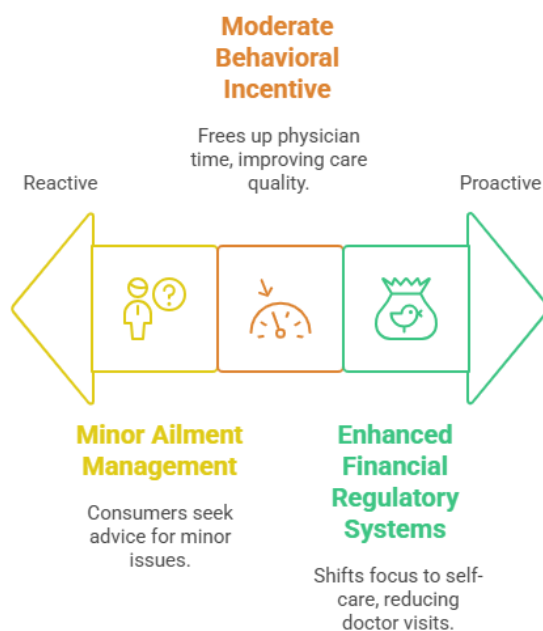
With moderate behavioral incentive changes under the ad-hoc scenario, every German general practitioner could save approximately one working hour daily, while the future scenario projects up to two working hours daily gained over medium-to-long term. Using the extra time on other patients would enable doctors to provide each patient with an extra quarter of the usual amount of attention, leading to better results in both diagnosis and treatment. Since

medical staff and patients both notice that there is not enough time for thorough examinations and explanations in outpatient clinics, the significance of these results from a medical and health-economic perspective grows.

With improved self-care, a physician's time is freed up, creating the equivalent of about 3,600 full-time positions when ad-hoc settings are considered and 7,200 positions when further goals are achieved. As there is already a shortage of health workers, increasing healthcare capacity could help address these gaps. If care capacity for serious cases is increased, the outpatient sector can perform more efficiently and help ease the burden on hospitals. Many diseases that are currently either unnoticed or addressed in a suboptimal way due to not having enough time could be better managed more cost-effectively.

Whether more efficiencies are gained and more cases are managed with self-care is mainly up to the future developments in laws and health policies(8). People involved in legislating, participating in the market and running self-administration organizations have the flexibility to suggest new policies that promote self-care.

Pharmacy's impact on healthcare: From reactive to proactive care.



Made with Napkin

FIGURE 1 From reactive to proactive care

Policy Implications for Self-Care Enhancement

The efficiency potentials achievable through enhanced personal health responsibility and self-care could meaningfully impact scarcity scenarios and impending rationing concerns. Even so, Germany and other countries in Europe do not have current strategies or agendas in place to make use of these extra efficiency reserves.

We mainly recommend opening up more opportunities for self-care, as well as reward systems for consumers and those involved in health care. As a fifth of consultations are just for disability certificates and OTC expenditure is another leading cause for doctor visits, our recommendations aim to minimize the effects of these reasons on the system. Among the targets are laws that help with work absence due to sickness, as well as supporting self-care by giving people self-care budgets(9).

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Under a self-care budget, insured people would get a clear amount of money from their health funds to buy medicine for common health problems at their own responsibility, often along with co-payments. Measures that create obstacles for physicians to be consulted (including charges for consultations) are not logical in our view. Table 5 outlines the assessment of different self-care promotion proposals on the basis of detailed criteria.

4. Implementing Effective Self-Care Promotion Strategies

Addressing Consumer Barriers to Self-Care

Beyond financial disincentives, consumers face several overlapping barriers to self-care adoption, with uncertainty and information deficits representing the most significant obstacles. Most consumers are more aware of how much money and time they have spent on treatment than of any positive results from that treatment—this happens because health conditions are complex and ordinary people may lack the same medical knowledge as doctors. Thus, each person's decision depends on having useful information, easy access to credible sources and evaluating how reliable the sources are.

It is recommended to set up detailed information materials on an internet platform and also have a healthcare professional staff a telephone hotline. Countries in Europe such as the Netherlands and United Kingdom, have effectively carried out these approaches which German authorities can look to for guidance. They will ensure customers receive answers and, at the same time, invest less in therapies.

Enhancing Pharmacy's Role in Self-Care

Representative surveys indicate pharmacists occupy the primary position in addressing knowledge and information gaps that might otherwise impede individual self-care decisions. Thanks to their easy accessibility, consumers can save money on their treatments. With this in mind, pharmacies can strongly influence how people view and consider self-care as an option instead of going to a doctor.

The results of our research indicate that the push for self-care often starts with pharmacies. Nevertheless, pharmacies could do more as community health centers. The use of pharmacists for additional roles is well-established in countries like Northern Europe and Switzerland. Benefits and savings from internationally studied factors can be applied to the German healthcare system. It is important to consider how parts of the British Minor Ailment Scheme (MAS) could be used in Germany.

Via the Minor Ailment Scheme, pharmacies are able to build their roles and enhance their skills through a wide range of functions such as helping to manage minor illnesses. Pharmacists could also be trained to issue disability certificates, following the example set in Switzerland and considering the scheme we discussed for Germany.

Creating Economic Incentives for Self-Care Stakeholders

Self-care potential could be more dynamically realized if the process offered commercial attractiveness for pharmacies. Applying new methods of payment could support consumers in paying for over-the-counter pharmacy consultations. Healthcare payers might be interested in testing alternative ways to provide caregivers with pay. Payers who spend less on pharmacy-based care should, accordingly, help fund self-care promotion as part of a MAS or self-care budget plan.

In all our organized expert interviews, the role of pharmacies in keeping self-medication safe was stressed. All the experts recommended that OTC medicines should be available only in pharmacies a view that was also supported by our health-economic study.

Expanding Self-Medication Through Regulatory Reclassification

Increasing reclassification of prescription medicines to OTC status (so-called "switches") would further promote self-medication adoption. New products may either widen the areas self-care can be applied to or increase the types of active ingredients used. Our findings suggest that the way a switch is handled depends greatly on the supporting framework conditions. The steps outlined here can contribute to a better switch climate. When both consumers and pharmacists receive incentives, the results could reinforce each other.

Balancing Reimbursement and Self-Care Promotion

Non-prescription medicine reimbursement through statutory health insurance (GKV) requires socio-economic balancing of solidarity and subsidiarity principles. People can decide to improve their health on their own, even if reimbursement policy is not involved. Giving individuals more money for self-care products could help support their health. Promoting self-care can support either more or less social compensation; these two strategies are compatible.

All suggested ways to support self-care can support themselves if they are successful. What happens is that self-care affects the economy by making self-medication in EU countries more effective. It makes financial sense from an overall viewpoint to cover the costs of self-care when every Euro put towards it saves €14 for the individual and also €4 for the GKV and national budgets. It suggests that government and legal changes are required to help individuals look after their health.

Case-Specific Implementation Approaches

Different minor ailment categories require tailored implementation strategies to maximize appropriate self-care adoption. Educational programs that teach people how to assess and address their coughs and sore throats with the right OTC products help improve conditions in around 42% of cases. On the other hand, when a patient has musculoskeletal complaints, it is important for the pharmacist to intervene to help with an accurate diagnosis and recommend the right product (which occurs in approximately 13% of minor ailments).

Since gastrointestinal complaints represent 18% of minor ailments, triage systems at pharmacies are very helpful because they allow pharmacists to decide if home care is enough or if the patient needs to visit a doctor. For patients with skin diseases, being able to visually assess them in pharmacies makes it much easier for pharmacists to help with self-care.

When creating implementation programs, attention should be given to those conditions with the highest chances for self-care and the least risk. From what we have studied, promoting self-care for upper respiratory infections, minor pain and some stomach problems could lead to yearly savings of €850-950 million just in these groups.

Technology-Enhanced Self-Care Support

Digital health technologies present significant opportunities for enhancing self-care adoption and effectiveness. Applications designed for smartphones that include ways to assess symptoms, set reminders for drugs and monitor health trends might increase the self-care trust of individuals. If these technologies were used in pharmacy information systems, pharmacists would be better able to provide personal support and follow-up.

If all self-care players were connected in one platform, this would streamline the whole self-care process. By bringing everything together, patients could receive greater care and more support for their self-management when needed. Investing in digital wellness services could bring a gain of more than 300% in just three years, thanks to lower medical use and increased productivity.

5. Conclusion and Future work

If patients choose not to follow their doctor's advice, this results in outcomes that are not beneficial either medically or in terms of health spending. However, if people choose to see a physician when self-care would work, they take up resources that should be used for different needs. Policies in the health field ought to encourage individuals to take medicine when required and care for themselves when appropriate.

In Germany, gaining more efficiency means providing consumers with new information and incentives. Furthermore, the rule that only pharmacies can sell certain OTC medicines should remain and pharmacists should be given more responsibility in health care.

It outlines how important research is for developing self-care promotion policies. Many ideas have been offered for effectively encouraging self-care. The main problem is sharing this understanding with the public and people responsible for healthcare policies to help create widely supported plans that can be carried out. Outcomes will be determined by ensuring that resources provided by the measures are equitably distributed among all parties for a reasonable period.

It has been established by our research that pharmacy-based self-care for minor conditions benefits the healthcare system in many ways and is more than just a convenient or money-saving approach. With this method, patients with minor illnesses get treatment without overloading the primary healthcare system. Since self-care results in much higher savings than it costs, it clearly highlights the need for cooperation among policymakers.

Acknowledging that pharmacy-based self-care is part of healthcare can help policymakers add it to the overall plan for health services. It is unusual for a healthcare policy option to do all these: lower costs, make things easier to access, lessen the pressure on the system, preserve patient outcomes and benefit various stakeholders. Go through the responses carefully.

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Conflicts of interest

The authors have no conflicts of interest to declare

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