Thesis of a doctoral dissertation (PhD)

ORGANISATIONAL DEVELOPMEN ALTERNATIVES IN GENERAL PRACTICE

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1. BACKGROUND, OBJECTIVES AND RESEARCH HYPOTHESES

1.1. Background of the research

I have been interested in this topic since the beginning of my teaching career. During my years as a teacher, I have constantly noticed the deterioration of health indicators in our country. I began to examine family doctor care when I was learning about reform concepts. During conversations with nursing and paramedic students, it became clear what types of problems doctors and healthcare professionals were facing in the sector, so I chose a complex analysis of family doctor activities as the objective of my scientific work.

Nowadays, most people only see the financial or human resource problems, but these are just the tip of the iceberg. In my opinion, no matter how big and complex the problems are, a significant part of them could be improved with appropriate management methods. First, by exploring the situation, then with the right strategy, as ad hoc interventions have not enabled system-wide coordination during previous reform attempts.

The extraordinary scope of the healthcare sector is demonstrated by the fact that it encompasses industry and services, theoretical and applied research, business and non-profit services, and public and private, or rather business, financing. Due to its complexity, a complex set of problems has arisen, the modern management of which is still awaiting a solution. As a result of healthcare reorganisations, a wide variety of organisational structures have now been linked together, the functioning of which requires the performance of scientific, policy, administrative, organisational and management tasks simultaneously.

I traced the origins of research back to the 18th century, when state involvement began under the influence of Enlightenment ideas. I sought primarily to recall the historical roots of the domestic situation and found that, during the era of dualism, all of the healthcare institutions that laid the foundations for modern public health and social security-based patient care already had their predecessors.

Subsequently, in order to compare international organisations and domestic services, I examined the social security models and organisational structures that were already in place at the beginning of the 20th century.

As we approached the present day, I looked for the impact of international trends and legislation, as reflected in the documents of the World Health Organisation (WHO) and the positions of the European Union, on the development of the Hungarian situation.

1Table Health care systems based on different social security models Health care systems

Society Insurance models	Bismarck (Western Europe)	Szemaskó (Soviet)	Beveridge (Anglo-Saxon)	Private insurance - mixed	Hybrid
	Social insurance system	State benefits are	Tax-funded system (National	Privately financed system,	state-↔ private providers

	based on compulsory contributions	financed from central taxes, with strong state centralisation	Health Service, NHS).		international insurers EU healthcare fund
Hungary	Until	1848-1992		1992	present day ongoing

(Source: Own compilation)

The characteristics of the above systems were shaped by the economic and social conditions prevailing at the time of their creation (Boncz, 2011) .

The foundations of Europe's oldest social security model were laid by the renowned Otto von Bismarck (1815-1898), and it is still known today as the Bismarck model. He recognised the danger of labour unrest and the possible political consequences of their demands, so in 1883 he introduced a social security system based on the principle of solidarity. The system was financed by compulsory social insurance contributions paid by employees in proportion to their income, but employers also had a payment obligation under this system. The obvious shortcoming of this model is linked to its very origins, as social insurance initially only covered industrial workers, but was gradually extended to other social groups over time.

It is named after William Henry Beveridge, the creator of the Anglo-Saxon Beveridge system, who was commissioned by the government during the Second World War to develop a tax-funded health and social care system (Kornai, 1998) , but it also includes significant additional services: free general healthcare, insurance benefits in the event of unemployment, accident, old age, widowhood and orphanhood, as well as maternity benefits.

Due to its relevance to our country, it is also important to be familiar with the Semashko socialist healthcare system, as it was in place in Hungarian society for decades and its effects can still be felt today. This system also bears the name of its creator, the first Minister of Health of the Soviet Union. Shortly after the victorious revolution, he announced that all citizens were entitled to free healthcare (Karner, 2008) . Over time, however, financing problems and shortages (of medicines, etc.) caused problems. One of the great advantages of the system was the development of public health services.

Individualism has been a significant factor in the United States since its inception, so it is no surprise that their healthcare system is also based on self-care. For a long time, private insurance dominated healthcare financing, but today it is considered more of a free market (American mixed system) model. It is in the interest of insurance companies to ensure that citizens who enter into a business relationship with them are in good health, so they have tried to focus on prevention, but this also undermines the principles of solidarity and fairness. As a result, private insurance was eventually supplemented by Medicare (for the elderly) and Medicaid (for the poor), introduced in 1965 and financed by a federal tax on the wages of active earners, which

provides care for the very elderly and the very poor (Informative country study on healthcare in the United States, 2010, Túri et al., 2018).

The World Health Organisation (WHO) and the European Union have also developed their positions on expectations for healthcare systems. The WHO Constitution has been incorporated into the Hungarian Constitution, so it can presumably be taken into account when organising our own affairs. The WHO recognizes various health organizations if they are capable of achieving the following objectives, among the others:

- a service based on insurance operating on the principle of compulsory solidarity,
- a service structure that meets "consumer" needs,
- the system of services and the use of public funds are transparent,
- healthcare is financed through a sustainable system.

Previous domestic health reforms have generally focused on specific areas, particularly financing. Since the change of regime, there have also been some organisational developments that have either been born or failed as a result of power-political, socio-political or professional contradictions. It is worth considering that the economic conditions for Soviet-style universal healthcare were not in place. However, the social security reform that followed the transition was not successful due to its specific nature, as it placed a significant burden on the healthcare system to deal with previously unknown levels of unemployment (Szalai, 2007) . Even more tragic is the fact that no consensus could be reached on the question of where to start the inevitable reform, or development, as it might be called, and which part of the sector should be developed first. There was a modern, economically sound proposal (Kornai, 1998) , but it was not accepted in Hungary. However, it was so well received internationally that most of its proposals became part of WHO and European Union decisions.

The domestic reforms after the turn of the millennium became widely known as the need to expand or close hospitals, possibly extending the role of hospitals with professional supervision and management powers, or separating certain functions from them.

A study published in 2009 by the European Hospital and Healthcare Federation (HOPE) (Hope and Dexia, 2009) assessed the specific characteristics of inpatient care in the 27 Member States and divided hospital management into three groups, primarily based on management systems.

These are as follows:

Decentralisation: hospital management is the responsibility of regional or local organisations, which may coincide with traditional large provincial or county administration, or more recently, regional administration.

Centralised: management remains at the central level.

Deconcentration: management remains at the central level, but operations are transferred to the local level.

The above are recommendations and models that can be used in the modernisation of the domestic healthcare system. Proponents, researchers, and experts of the latter position have convinced me that the modernization of the two levels of patient care, namely primary and

specialized care, should not be initiated from above and through centralization, but rather from below, starting with primary care.

Well, in my opinion, these issues can only be resolved at the legislative level, which, let's face it, is by no means easy when it comes to insurance Even in recent times, some areas of the country have been characterized by high unemployment and low incomes, resulting in minimal insurance revenues, meaning that solidarity can only be financed with state support.

However, regarding the second criterion, the service structure, I believed that the best way to initiate reform would be to seek the help of experts.

Ownership and governance activities were summarized into five types at the national, regional, and municipal levels in accordance with WHO recommendations in a decision formulated by the European Union in 2012. At the same time, it strives to develop a uniform European health protocol that primarily facilitates cooperation during epidemics and mobilization.

Type 1

Regional health management system, where regulation, management, operation and, in part, financing are the responsibility of regional authorities or provinces. Funding through the regional budget is above the EU average. Health institutions are maintained (owned) and managed by regional authorities. This group includes Austria, Italy and Spain.

Type 2

Healthcare management systems in which local and regional authorities are responsible for financing as well as for several planning and implementation functions, and are also the owners and operators of healthcare institutions. Subtypes can be distinguished based on the subnational level of financing (below or above the EU average). Countries that fall into this category include Denmark, Estonia, Finland, Lithuania, Poland, Sweden, Belgium, the Czech Republic, Germany and Hungary. In Hungary, hospitals have since been transferred from municipal to state ownership and are therefore no longer included in this category.

Type 3

This type includes healthcare management systems where local and regional governments have operational functions arising from their ownership of healthcare institutions. Funding from the regional budget is limited. Within this type, the Netherlands is in a unique position, as hospital management is centralised, but local and regional authorities play a role in planning and implementation, including limited funding from the regional budget. Due to the operational role of local authorities, the Dutch healthcare management system can be classified under this type. The United Kingdom is another special case, as all four countries (England, Scotland, Northern Ireland and Wales) have their own national health systems, although in each case the prevailing type is a centralised system structured at regional level. The United Kingdom falls into type 3 on the basis of the operational function in all four countries. Other countries in this category include Bulgaria, Latvia, Luxembourg, Romania, Slovakia, Slovenia, the Netherlands and the United Kingdom.

Types 4-5

These health management systems are either fully centralised (type 5) or highly centralised (type 4). In the latter, most responsibilities are assigned to the central government, even at the territorial level, with operational management carried out through organisations representing the central government. Local and regional authorities in Type 4 systems (with the exception of Portugal) may also manage health institutions. Countries: France, Greece, Portugal, Cyprus, Ireland, Malta.

This classification clearly demonstrates that differences between countries in terms of health insurance systems, economic conditions and budgetary constraints have a significant impact on the quality of healthcare, but even within the same group of countries there can be considerable differences.

Taking all this into account, and drawing on international trends and practices, Hungary has the opportunity to develop its own healthcare system.

An important question to be decided is what strategy should be used to achieve effective development. This raises the following questions: who is responsible for this change, and who should prepare and lead it?

The constraints of our historical heritage also had to be taken into account. After the Second World War, healthcare was the first service to be removed from market regulations. Universal and free healthcare brought hope and relative results after the social shock of the war, but this came to a halt in the late 1960s, while modernisation processes also slowed down significantly and "the institutional network was powerless in the face of new tasks awaiting solution." (Szalai, 2007) .The period since the change of regime has brought numerous technological and scientific discoveries, but at the same time, people's subjective well-being and health have given rise to unexpected problems, which, in my opinion, have primarily generated public and professional policy decisions, management and structural problems. Based on this recognition, I assume that effective reform of the healthcare system – or, to be more precise, crisis management – can only begin with an understanding of the underlying problems and the modernisation and organisational development of primary and outpatient care.

More than 30 years ago, the healthcare system also underwent a system change. Before 1990, the healthcare system was exclusively state-owned. The three-component system: district medical care (general practitioners and paediatricians, dentistry), the Trade Union Social Insurance Centre (TUSIC) and hospitals formed the basis of the healthcare system. During the restructuring of the system, the three-tier healthcare system was divided into two parts: primary care and specialist care (Igazné, 2006) .

Even in the three-tier healthcare system, district doctors played a distinguished role. They were directly accessible to patients at any time, knew their patients by name and remembered their health conditions. Entire families usually turned to them with confidence, so they knew the illnesses that occurred in the family from generation to generation and were able to pay special attention to them. When the system was transformed into a two-tier system (primary care and specialist care), the free choice of doctor also applied to family doctors. However, no significant changes took place, as patients did not want to destroy the relationship of trust they had built up with their family doctors. Instead of switching to someone unknown, they generally stayed

with the family doctor closest to their home, whether they called them a district doctor or a family doctor. They continued to entrust them with the management of their health. It is this management approach, the knowledge and expertise available in the changed digital world, which, with my economic perspective, drew my attention to unequal access to healthcare during my studies and teaching practice. so the aim of my chosen topic is to improve access to healthcare, which can best be achieved through a concept of organisational development.

The need for change was identified decades ago, which has resulted in a variety of ideas since the change of regime, while the crisis in healthcare has become apparent. During and after the pandemic, several regulations were issued to make crisis management more effective, but they did not alleviate the problems of the healthcare sector as a whole, and signs of organisational crisis became increasingly apparent (staffing, vaccination organisation and administrative problems, emergency closures).

I therefore began my examination of the current Hungarian healthcare system by comparing the causes, manifestations, parallels and organisational shortcomings of the past and present in the areas of primary and specialist care. The relevance of my topic has been accelerated by life itself, as the COVID-19 pandemic has highlighted all the shortcomings that are making the need for modernisation and general reform of the healthcare system increasingly clear.

At the beginning of my research, I started from the premise that a multi-actor hybrid organisation has emerged in healthcare today, and that, beyond researching the problems of its individual parts, the primary task is to develop an appropriate structure in which development, financing, development and cooperation systems can meet both international and domestic needs and comply with the objectives set out in the WHO's basic documents.

The internationally accepted English name for the healthcare organisation programme I teach is Healthcare Management, which encouraged me to apply a management approach in my research, as I believe that management methods could/should be used to improve the modernisation of the healthcare system more effectively. As a starting point for examining the development of the organisation, it is necessary to analyse the strategy in which the principles of state sector policy can be found. With this knowledge, it would be easier to decide what is needed in Hungary: organisational transformation, possibly partial or complex development (organisation development), i.e. a series of reforms, or a complete restructuring. Unfortunately, despite the fact that several reform concepts have been developed over time, I have not found such a complex strategic document, even though the COVID-19 pandemic has forced us to engage in crisis management. Unfortunately, there is still no officially adopted complex strategic plan, despite the fact that the government has repeatedly announced reforms and made decisions on financing, competences and organisational issues.

The introduction of the right to practise as a general practitioner became extremely important in the Hungarian healthcare system during the transition to democracy, and then during the COVID-19 pandemic, numerous crisis phenomena highlighted the need for a new strategy and crisis management in the sector. At this point, the possibility of modernising primary care came back into focus. The aging of the medical profession, the large number of specialists leaving the country, and the shift from the public to the private healthcare sector have made it increasingly difficult to provide healthcare to the population. The aging of the medical

community, the large number of specialists leaving the country, and the transition from the public healthcare system to the private sector have made it increasingly difficult to provide healthcare to the population. A concept was first developed, followed by legislation, for the modernisation of primary care, which is currently provided independently, with a view to promoting organised cooperation between GPs. Homogeneous practice communities involve cooperation between practices with the same qualifications and responsibilities. However, the establishment of group practices would allow a community of GPs with additional specialist qualifications to become involved in the provision of specialist care. The latter have higher competence, the shared use of equipment is more efficient, and patient waiting lists could be significantly shortened, as GPs who provide primary care in their own practices could spend a certain amount of their working time performing routine specialist tasks closer to their patients, thereby helping to relieve the pressure on overcrowded specialist services. However, the 2021 government decree did not provide for this type of development of practice communities.

1.2. Key objectives of the research

With my research, I would like to provide arguments and data to help those involved make a significant portion of the professional problems more solvable. I am convinced that modern research based on human resources, organisational structure, and mutually reinforcing arguments can help transform and improve the functioning of healthcare. Finding and applying synergies gives us hope that we can improve basic and specialist care for those sections of society who live in disadvantaged areas and cannot afford private services. One of the objectives of my research is to prepare the necessary decisions by assessing and analysing the professional qualifications, openness and motivation of healthcare professionals and the conditions for cooperation.

Unfortunately, during my PhD studies, the COVID-19 pandemic reached our country, making it difficult to carry out primary research.

1. I considered it necessary to first explore and formulate the current problems of the Hungarian healthcare system, summarising the relevant needs, opportunities and alternatives supporting the reasons for change based on sectoral, institutional, structural and other aspects. However, in order to present the changes that have taken place in healthcare, it is essential to have knowledge of the legislation documenting domestic and international trends and the relevant literature. The multi-faceted analysis is also based on a comparative analysis and evaluation of documentation and statistics from sectors that influence healthcare.
2. Another objective of my research is to take stock of the internal structure and operational anomalies of the sector and to help implement a bottom-up structure that increases the efficiency of primary and specialist care, which could gradually lead to a new type of operational coordination of the entire care and operational system. I believe this concept can be implemented by continuing the draft plan already developed by the Hungarian Medical Chamber (Kincses 2000 and the MOK reform plan 2021) under the name of group practice, but unfortunately, due to the existence of other drafts with different content but similar names, and therefore its support is inadequate.

In my interpretation and proposal, the essence of its operation is that in the case of group practices, several types of care can be provided in one place. With appropriate organisation, the coordination of appointment times would allow the two levels of care (basic and specialist) to complement each other, provided that GPs obtain additional specialist qualifications and the necessary technological equipment is available. In addition to traditional primary care tasks, a certain level of specialist care would thus be integrated into group practices, which would also take over a significant part of the routine work of specialist clinics ( ). Its implementation would increase the prestige and income of those working in primary healthcare and could contribute to the implementation of the strategy for healthcare reform starting at the grassroots level (Paulikné Varga, 2020).

1.3. Research questions and hypotheses

Based on the above, it is clear that the complexity of the problem requires reform, which raises the following questions: What strategy can be used to achieve effective development? Does the Hungarian healthcare sector have such a consensus-based strategy? The next question to be decided is who is responsible for preparing and leading this change? We cannot answer all these questions here, but we have begun an analytical experiment which, drawing primarily on management tools and experience gained in the competitive sector, has opened up new perspectives, mainly through the adaptation of change and strategic management methods.

Answering most of the above questions is beyond the scope of a dissertation, so two areas of research remain that are subjective conditions for possible reform, namely:

- Could healthcare reform be achieved through an organisational development concept combining primary and specialist care?

- Are GPs sufficiently prepared and competent to cooperate with outpatient care, and are they motivated to develop the new system?

Taking all this into account, I have formulated my hypotheses, which I would like to support by interviewing and researching the people involved.

Q1. I assume that the organisational development of the Hungarian healthcare system can be started by combining basic and specialist care within the framework of group practices and with new operating regulations.

Q.2. I assume that the human resource capacity of the Hungarian healthcare system is suitable for this, which I intend to prove by examining the receptiveness, preparedness and operating conditions of the stakeholders.

2. DESCRIPTION OF THE DATABASE AND METHODS USED

Description of the research process:

Title of the dissertation

ORGANISATIONAL DEVELOPMEN ALTERNATIVES IN GENERAL PRACTICE

Q1. I assume that organisational development in Hungarian healthcare can be initiated by combining basic and specialist care within the framework of group practice and with new operating regulations.	**Q.2.** I assume that the human resources of the Hungarian healthcare sector are suitable for organisational restructuring, which I intend to demonstrate by examining the receptiveness, preparedness and operating conditions of those affected.
Research questions	
1. What strategy can be used to achieve effective development?	1. Are Hungarian general practitioners prepared for the reform of their operations?
2. Does the Hungarian healthcare sector have a strategy based on such a consensus?	2. What do they consider to be the essential moral and professional duties of their medical profession?
3. Who is responsible for preparing and implementing this change?	3. Is burnout a problem among GPs, and if so, how does it manifest itself?
4. What organisational development model would you recommend?	4. What kind of human resource development do you consider realistic?

QUESTIONNAIRE ON THE CAREER PATH OF GENERAL PRACTITIONERS

Structural elements of the questionnaire survey used to test my hypotheses

Primarily to verify hypothesis 1	*Primarily to verify hypothesis 2*
2. Questions related to the work of family doctors 3. Family doctor/district doctor, type of district 4. Alternatives for reforming the family doctor service	6. Survey on workload during the pandemic 7. Organisational and professional commitment 8. Job satisfaction (MSQ) and professional motivation
Data is provided for both hypotheses	
1. Socio-demographic questions 5. In your opinion, what are the fundamental problems in healthcare?	

2.1. Research material and methodology

The study was conducted using a questionnaire survey between March and December 2022 on a sample of general practitioners working in Hungary.

The online questionnaire was developed in-house, although we used several accredited questionnaires and research samples as a basis. It consisted of several parts and contained a branch depending on whether the respondent belonged to a practice community. As is inherent in online surveys, there were mandatory questions that all respondents were asked to answer.

Due to the entrepreneurial nature of general practice, businesses are required to report data to various government agencies (National Health Insurance Fund of Hungary (NHIFH), Hungarian Central Statistical Office (HCSO), National Tax and Custom Administration (NTCA)). The basic idea behind my research was based on the HCSO's annual report on the activities of general practitioners and pediatricians, which I presented to my students every year as part of my teaching activities. This report includes information on the registered office, the location of the practice, the form of operation, the number of employees and information on substitutes, thus providing a perfect basis for statistical processing. I then conducted preliminary research to determine which data qualify as public data in the case of general practitioners and healthcare providers. For this purpose, I used the database of GPs contracted by the National Health Insurance Fund of Hungary and the State Health Care Centre (SHCC) (currently the Human Resources Development Directorate of the National Hospital Directorate) search engine. This information was very helpful in compiling the questionnaire. The biggest problem with the research after the questionnaire was compiled was timing, as the pandemic in March 2020 placed a significant burden on GPs, who were already busy. Opportunities for face-to-face meetings were limited and conferences were cancelled.

The main constraint on the conduct of the study was the outbreak of the COVID-19 pandemic in March 2020, as personal contact was initially impossible and later became difficult. The availability of GPs was a problem, as the NHIFH's list of GPs contains a lot of information about GP surgeries, including their addresses, telephone numbers and email addresses, but only the column for the email address required for online access is visible, with no values in the list. I was eventually able to obtain this information by contacting the health organisations. A total of 253 family doctors agreed to respond, including practice group leaders, members, and family doctors who did not want to be part of a practice group.

The modules of the questionnaire:

The first module of the questionnaire contains socio-demographic questions, in which the highest level of education completed was not included for reasons of target group definition . The second module of the questionnaire deals with the work, form of business and specialist qualifications of general practitioners, based on the reasons given at the beginning of this chapter. The next module asked about the possibilities for reforming GP services and the respondents' attitudes, opinions and ideas regarding reform. Here, respondents had the opportunity to express their relationship with their practice community, the composition of their current practice community and their opinions on the development of group practices. The fourth module asked about current problems in primary healthcare. Respondents had the

opportunity to express their satisfaction with their working conditions and to identify problems related to the operation of GP services. The fifth module addressed issues related to workload during the pandemic (consultation hours, use of telemedicine). The sixth module focused on organisational and professional commitment, while the last module aimed to assess job satisfaction and professional motivation.

The target group of the research is doctors authorised to practise as general practitioners, paediatricians and dentists in accordance with Decree 4/2000. (II. 25.) EüM on the activities of general practitioners, paediatricians and dentists.

A person working for a healthcare service provider with an operating license from the National Center for Public Health and Pharmacy and a contractual relationship with the National Health Insurance Fund of Hungary who:

- obtained or naturalized their general medical education in Hungary, or - has a professional qualification in family medicine in the case of adults or mixed districts, or in the case of a pediatric district, a professional qualification in infant and pediatrics, or - has an internal medicine and/or other professional qualification specified in the regulation.

Several renowned researchers agree that questionnaire surveys are the most suitable method for examining people's attitudes (Babbie, 2001; ; Boncz & Buda, 1996; The responses were processed using descriptive and advanced statistical analyses and cross-sectional studies. The questionnaire mainly contained closed questions, which in some cases allowed for deviation from the given answer options ("other"). In most cases, respondents could select the answer that best suited them from 2-5 options. For such discrete responses, distribution ratios (number of cases, percentage) were calculated. The relationship between variables was examined using Pearson's chi-square test ( ) and Fisher's exact tests. To refine the calculations, the Monte Carlo analysis method built into the SPSS software package was also used, which provides sufficiently accurate results in cases with a small number of cases. For larger tables, the SPSS software package was unable to perform the calculations within the set time limit; in these cases, the use of the Monte Carlo method is recommended. The basic principle of the method is based on repeated sampling of reference tables, allowing for accurate significance estimation without relying on the assumptions required by asymptotic (Pearson-type) methods. The confidence interval (CI) was set at 95%.

Respondents were able to assess their agreement with the statements in the questions. With the exception of a few questions, I used closed-ended questions in the questionnaire. Attitudes were measured using five- and seven-point Likert scale questions recommended by (Göb, McCollin, & Ramalhoto, 2007) and (Jamieson, 2004) , which allowed respondents to express their opinions.

The population is not homogeneous, but using SPSS we were able to sort the sample according to different criteria, group it, and thus compare it. Another method of comparison is cross-tabulation analysis, which can be used to refine the study, identify multi-faceted effects (sex, age, geographical distribution, specialist medical qualifications) and establish comparisons and combinations.

The areas of application for each method are indicated in the presentation of the results.

We used cluster analysis to model the variables of respondents' gender, age, type of practice (adult, paediatric, mixed) and recoded marital status (married, in a relationship/single), which enabled us to produce a complex, explainable and justifiable cluster structure. As the research progressed, we also took into account variables such as the categorised variable of the location where the activity is performed (urban/rural GP) and the variable 'All things considered, how satisfied are you with your GP's work? (v121)'.

Presentation of explanatory variables created for the purposes of processing the research:

· In our research, based on the responses regarding marital status, we separated respondents into those who were married or in a relationship (married/in a relationship) and those who were without a partner (living alone/divorced/separated/widowed).

· We distinguished between adult, pediatric, and mixed family doctor districts.

· For the purposes of examining medical careers, we separated those who had always worked in their current GP practice from those who had previously worked in other GP practices or other healthcare institutions.

· The designation of the location of the family doctor service made it possible to create two types of groupings. On the one hand, we could distinguish between Budapest, regions, and counties. On the other hand, in the case of settlement type, we chose to distinguish between urban (capital, county seat, city) and rural (village).

· Based on the number of patients registered with the family doctor service, we grouped children's districts into small (under 600), medium (600-1199), and large (over 1200) districts. For adult and mixed districts, we used small (under 1,200), medium (1,000-2,499), and large districts as a basis.

We grouped those providing long-term substitution regardless of the duration of the substitution, so respondents were placed in the group of those providing long-term substitution (within 1 year/between 1 and 5 years/more than 5 years) and the group of those not providing long-term substitution.

· We grouped the relationship to the practice community in such a way that I designated those who gave the following answer as members of the practice community (I am the leader of a practice community consortium/I am a member of a close practice community consortium/I am a member of a close united practice community/I am a member of a close integrated practice community/I am a member of a loose collegial practice community), while non-members (I have worked in a practice community, but am not currently a member/ I am not a member of a practice community, but I plan to join/I am not a member and do not plan to join a practice community).

· We grouped the leadership of the practice community. The practice community consortium leader is the person in charge, while the others are family doctors who are not leaders from the perspective of the practice community.

3. RESULTS AND THEIR EVALUATION

We analyzed the data of 253 respondents – 107 men (47.3%) and 146 women (57.7%). The youngest respondent was 24 years old, and the oldest was 82 years old on the day of the survey. The average age was 55.6 years (standard deviation 11.34 years), which corresponds to both international and domestic data (OECD Health Statistics 2020; Papp Magor, 2021). The age distribution shows that 8.8% of all respondents were under 40, while 36.8% were over 60. Based on our preliminary expectations regarding the research topic, the most active and motivated age group, 40-59, accounted for 53.4% of the sample. Of the 253 respondents, 3 did not provide their year of birth, so we were unable to take their data into account when applying descriptive and advanced statistical methods for age group analysis.

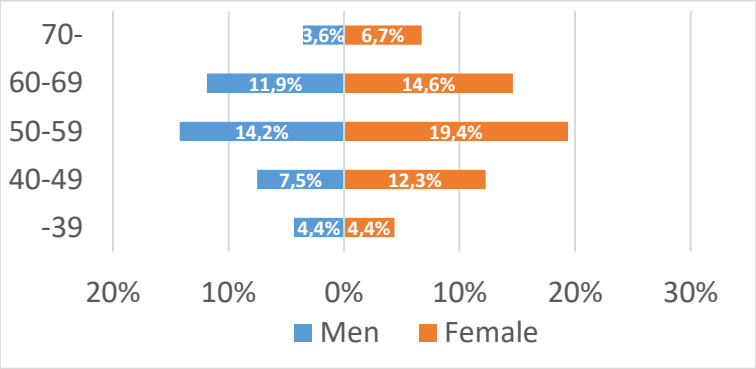

FIGURE 1: DISTRIBUTION OF RESPONDENTS BY AGE AND GENDER

Source: own compilation

The marital status of respondents can be considered traditional. Of those participating in the survey, 206 (81.4%) were married or in a relationship, while 47 (18.6%) were not in a relationship. Using the Monte Carlo method and Fisher's exact test, we confirmed that there is a significant correlation between marital status and age (χ^2 (df=4,N=251)=11.122, p=0.025), and we also found a significant correlation between the marital status and gender of respondents ((χ^2 (df=4,N=252)=6.479, p=0.011).

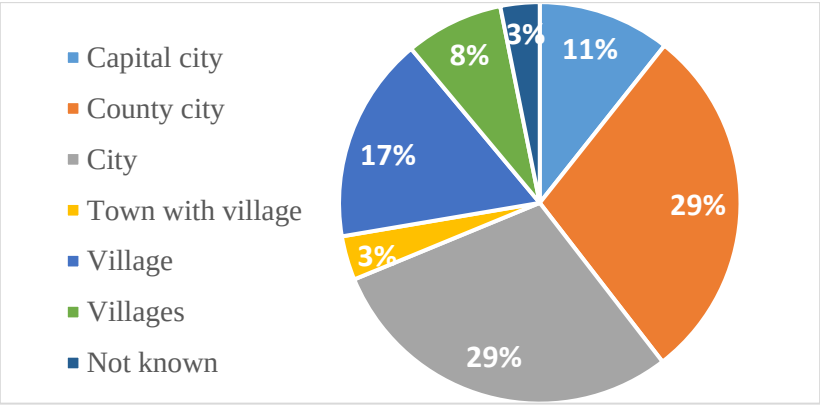

Figure 2. Distribution of respondents by type of settlement

Table 2 shows the data for occupied GP practices and the distribution of responding physicians by type of district. Adult GP practices are slightly overrepresented, pediatric practices are slightly underrepresented in the sample of respondents, while the proportion of mixed practices is almost exactly the same.

Table 2. Distribution of respondents by district type

Type of district	Number of filled GP practices	Ratio of filled GP practices	Number of respondig GPs	Ratio of respondig GPs
Adult	3168	54,6 %	147	58,8 %
Pediatric	1301	22,4 %	45	18,0 %
Mixed	1334	23,0 %	58	23,2 %
Total	**5803**	**100,00%**	**250**	**100,0 %**

The survey was not representative because we did not receive responses from some counties. The number of respondents was higher in the eastern part of the country, and the proportions were higher in settlements with better infrastructure.

Table 3 shows the geographical distribution of registered and responding GPs based on National Health Insurance Fund Administration (NHIFA) data from March 2022, comparing the number and proportion of GP services, filled practices, and responding GPs by county. A total of 217 respondents provided information on their place of work. The distribution of respondents by county does not, for the most part, reflect the national proportion of GP services: certain counties (e.g., Borsod-Abaúj-Zemplén, Hajdú-Bihar, Szabolcs-Szatmár-Bereg) are overrepresented in the sample, while other areas (e.g., Pest, Fejér, Győr-Moson-Sopron, Veszprém) are underrepresented. Based on the data, the national coverage of the sample is 85.8%, but the distribution shows regional distortions. The proportion of respondents shows average representativeness in five counties, is overrepresented in five counties, while the statistical test indicated low representativeness in the capital and nine other counties.

Table 3 Number of GPs and respondents, their proportion and representativeness by county

Name of county	Family doctor services by county		Fill-in family doctor services		Respondig GP		Total respondents	Representation level
	number	share (%)	number	share (%)	number (person)	share (%)	share (%)	
Baranya	277	4,3 %	257	4,4 %	10	4,6 %	4,0 %	average
Bács-Kiskun	350	5,4 %	320	5,5 %	6	2,8 %	2,4 %	low
Békés	245	3,8 %	204	3,5 %	15	6,9 %	5,9 %	high
Borsod-Abaúj-Zemplén	466	7,2 %	393	6,8 %	42	19,4 %	16,6 %	high
Csongrád- Csanád	284	4,4 %	264	4,5 %	10	4,6 %	4,0 %	average
Fejér	258	4,0 %	219	3,8 %	1	0,5 %	0,4 %	low
Győr-Moson-Sopron	267	4,1 %	250	4,3 %	1	0,5 %	0,4 %	low
Hajdú-Bihar	346	5,3 %	324	5,6 %	35	16,1 %	13,8 %	high
Heves	199	3,1 %	167	2,9 %	7	3,2 %	2,8 %	average
Jász-Nagykun-Szolnok	254	3,9 %	209	3,6 %	7	3,2 %	2,8 %	average
Komárom-Esztergom	194	3,0 %	176	3,0 %	1	0,5 %	0,4 %	low
Nógrád	132	2,0 %	97	1,7 %	10	4,6 %	4,0 %	high
Pest	712	11,0 %	651	11,2 %	1	0,5 %	0,4 %	low
Somogy	215	3,3 %	184	3,2 %	8	3,7 %	3,2 %	average
Szabolcs-Szatmár-Bereg	334	5,2 %	303	5,2 %	39	18,0 %	15,4 %	high
Tolna	158	2,4 %	131	2,3 %	7	3,2 %	2,8 %	average
Veszprém	174	2,7 %	146	2,5 %	0	0,0 %	0,0 %	low
Vas	215	3,3 %	191	3,3 %	5	2,3 %	2,0 %	low
Zala	179	2,8 %	160	2,8 %	0	0,0 %	0,0%	low
Budapest	1211	18,7%	1157	19,9 %	19	8,8 %	7,5 %	low
Total	6470	100 %	5803	100 %	217	100,0 %	85,8 %	
Unknown GP service location					36	100	14,2%	

Source: neak.gov.hu (31 March 2022), own data, own compilation)

This willingness to respond is similar to that found in an article by Gyulai et al. on career dropout among health visitors, where 20% of those living in villages participated in the survey, compared to 44% of those living in the capital and county seats (2021).

Commitment to the profession is demonstrated by the fact that 80% of the valid responses (N=245) indicate that all of the respondent's professional qualifications are valid, while in nearly 10% of cases, not all existing professional qualifications are valid, and given their age, they do not wish to extend or renew the validity of their qualifications for other reasons. lack

of financial incentives or other reasons for not wishing to extend or renew the validity of their qualifications, which would provide a good basis for providing additional services. 3.2% of respondents did not yet have a professional qualification. At the time of responding, 80.6% had all their professional qualifications valid. 6.8% did not have all their professional qualifications valid, but were willing to extend them. Based on their responses, nearly one-tenth do not plan to renew their invalid professional qualifications.

The choice of business form depends on the family doctor's freedom of choice. It also emerged that there is a strong correlation between the form of operation chosen by GPs and their age ($\chi 2$ (df=24, N=245)=46.749, p=0.004), as GPs mostly perform this activity as sole traders or members of partnerships. Family doctors under the age of 60 typically started their family doctor practice as members of a partnership, while family doctors over the age of 60 tended to start their practice as individual healthcare entrepreneurs (χ^2 (df=4,N=209)=11.591, p=0.021).

Funding of age-adjusted districts based on population size

The financing of GP practices depends on performance-based remuneration and age-adjusted per capita quotas. The table shows the ratio of registered patients by district type.

A low number of patients is not profitable. Only 0.8% of respondents have practices with fewer than 600 patients. Due to the degressive multiplier introduced in connection with quality work, general practitioners are not interested in achieving high patient numbers, which is well illustrated by the fact that 2.4% (SD: 1.4) of them have more than 600 patients. The financing of family doctor practices depends on performance-based remuneration and the age-adjusted capitation rate. Table 3 shows the ratio of registered patients by district type. Responding family doctors most often strive to establish practices with an ideal number of patients between 1,200 and 1,999 in adult clinics, while pediatric clinics mainly fall into the smaller categories (600-1,200 patients). Mixed districts occur in the medium and large categories.

A low number of patients is not profitable. Only 0.8% of respondents have practices with fewer than 600 patients. Due to the degressive multiplier introduced in connection with quality work, general practitioners are not interested in achieving high patient numbers, which is well illustrated by the fact that 2.4% (SD: 1.4) of them have this.

Table 4 Distribution of respondent GP practices by type of district and number of registered patients

Number of registered patients	Type of practice						Total number of practices	Share of practices (%)	Standard deviation of practices
	Adult practice		Pediatric practice		Mixed practice				
	Count	Share (%	Count	Share (%	Count	Share (%			
Under 600	1	50,0%	1	50,0%		0,0%	2	0,8%	0,0
600-799 patients	1	8,3%	10	83,3%	1	8,3%	12	4,8%	5,2
800-1199 patients	5	12,2%	24	58,5%	12	29,3%	41	16,4%	9,6
1200-1499 patients	33	67,3%	8	16,3%	8	16,3%	49	19,6%	14,4
1500-1999 patients	60	72,3%	2	2,4%	21	25,3%	83	33,2%	29,6
2000-2499 patients	28	80,0%		0,0%	7	20,0%	35	14,0%	14,8
2500-2999 patients	15	68,2%		0,0%	7	31,8%	22	8,8%	5,7
3000 and above	4	66,7%		0,0%	2	33,3%	6	2,4%	1,4
Total	**147**		**45**		**58**		**250**	100,0%	

(Source: own compilation, N=250)

The professional examinations required and mandatory for general practitioners to perform their duties cover various fields. Most of them have to take several professional examinations. 3.2% of respondents had not yet taken a professional examination. 80.6% had all their professional examinations valid at the time of responding. 6.9% did not have all their professional exams valid, but were willing to renew them. Based on their responses, nearly one-tenth do not plan to renew their invalid professional exams.

One of the most important indicators of family doctors' commitment is the rate of turnover and job changes. Fortunately, 80% of respondents believed that they would continue working as family doctors for at least another 10 years, so they did not plan to stop working. In contrast, 17.8% believed that they would give up this activity within 5 years. The following are the most common reasons for leaving general practice: We did not ask for the reasons because we thought that this was due to the retirement of older people. The number of those who will definitely stop working within 5-10 years is negligible, at 1.2%. Based on the results in Table 5, it can be concluded that 20% of respondents had previously worked in a healthcare institution, i.e. they chose to become general practitioners instead of working in specialist care.

Table 5: Place of work and length of service in a given GP practice

Category	Number of GPs	Frequency	Average (year)	Std.dev.	Minimum (year)	Maximum (year)	Median (year)
I have always worked in this district	105	42%	23,3	13,7	0	56	24
I have previously worked in another GP	97	39%	23,4	12,2	1	52	22
I have previously worked in another health facility	49	20%	13,4	11,3	1	42	16,5

Source: own compilation, N=250

The research focused specifically on assessing the impact of the pandemic. This was important for several reasons: firstly, no one was prepared to deal with an epidemic of this magnitude; secondly, this was when telemedicine tools began to be used on a large scale. With further development, telemedicine could offer new perspectives for improving healthcare.

The questions were essentially based on EMMI Decree 33/2020. (IX.16) on telemedicine services authorised in general practice, i.e. counselling, consultation, prescribing medication, patient referral, diagnosis, therapeutic recommendations, referral letters, patient care and rehabilitation activities. The table below analyses questions relating to changes in consultation hours and changes in the performance of individual tasks due to the pandemic. The data in the table below were based on responses given on a five-point scale, where 1 meant that telemedicine solutions greatly facilitated the daily activities of GPs and 5 meant that they made them very difficult.

Table 6: How has the pandemic changed the way you perform your daily tasks?

	Chi-Square Tests	
	Pearson Chi-Square	Fisher's Exact Test Monte Carlo Sig. (2-sided)
Type-of practice - COVID-19 diagnostic and care	X^2 (df = 8,N = 245) = 18,051, p = 0,021)	,020
Type-of practice - COVID- 19 organization and scheduling	X^2 (df = 8,N = 243) = 14,154, p = 0,078)	,084
Type-of practice - COVID-19 prescription	X^2 (df = 8,N = 245) = 5,023, p = 0,755)	,762
Type-of practice - COVID- 19 patient referral	X^2 (df = 8,N = 245) = 21,445, p = 0,006)	,007
Type-of practice - COVID-19 medical test result and discharge summary	X^2 (df = 8,N = 244) = 9,394, p = 0,310)	,305
Type-of practice - COVID- 19 patient care	X^2 (df =8,N = 245) = 19,159, p = 0,014)	,021
Type-of practice - COVID-19 screening	X^2 (df = 8,N = 245) = 28,634, p = 0,000)	**,015**
Type-of practice – COVID-19 vaccination	X^2 (df = 8,N = 245) = 46,104, p = 0,000)	,000
Type-of practice - COVID- 19 other new tasks	X^2 (df = 8,N = 241) = 16,964, p = 0,000)	,000

Source: Own compilation

Table 6 shows the correlation between type of practice and activities carried out during the COVID-19 pandemic. Significant associations were found between the type of practice and treatment, patient referral, patient care, screening, vaccination, and other newly assigned tasks, which influenced how these activities were performed. In contrast, the type of practice was less relevant for administrative tasks, prescribing, or appointment scheduling. The age group of the family doctor showed a significant correlation only with screening activities. In contrast, the type of settlement where the service provider was located had a significant impact on screening, care, appointment scheduling, and vaccination activities.

The age of the family doctor had an impact on telephone consultations. The type of settlement in which the service provider was located influenced the use of e-mail for prescribing medication and referrals in the capital, while in all other types of settlements, medication was prescribed by telephone and telephone referrals were only used in villages.

In this study, the type of practice also had a significant impact on telemedicine prescriptions, consultations, and telephone consultations, as well as on patient referrals, as all practice types stated that telemedicine could not be used for this activity. (None of the variables listed here had a significant impact on patient referrals and care.)

Based on experience, the prolonged state of emergency has placed a heavy psychological burden on citizens. In the case of GPs, this has mainly taken the form of excessive workloads. The opinions of those affected are shown in the table below:

Table 7 GPs' opinion on the pandemic

Opinion in choosing to become family doctor	Mean	Median	Std. dev.	95% CI
46. During the pandemic, how often did you feel that difficulties had piled up to such an extent that	4,972	5	1,692	[4,758 – 5,201]

you could no longer cope with them? (perceived stress)				
47. How often did you feel stressed due to unexpected events during the pandemic?	5,218	6	1,666	[4,988 – 5,435]
48. During the pandemic, how often did things you couldn't control cause you problems?	5,044	5	1,655	[4,843 – 5,250]
49. During the pandemic, did you feel that you were able to successfully complete the tasks assigned to you?	4,988	6	1,338	[4,815 – 5,157]
50. How often did you feel nervous or stressed during the pandemic?	5,128	5	1,717	[4,912 – 5,333]
51. „During the period of the state of emergency, did you consider that organizational or structural changes were needed?"	5,390	6	1,798	[5,165 – 5,615]

Source: own compilation

Receptiveness to reforms was determined by responses that included, on the one hand, the distribution of GPs' current employment relationships and their assessments and suggestions.

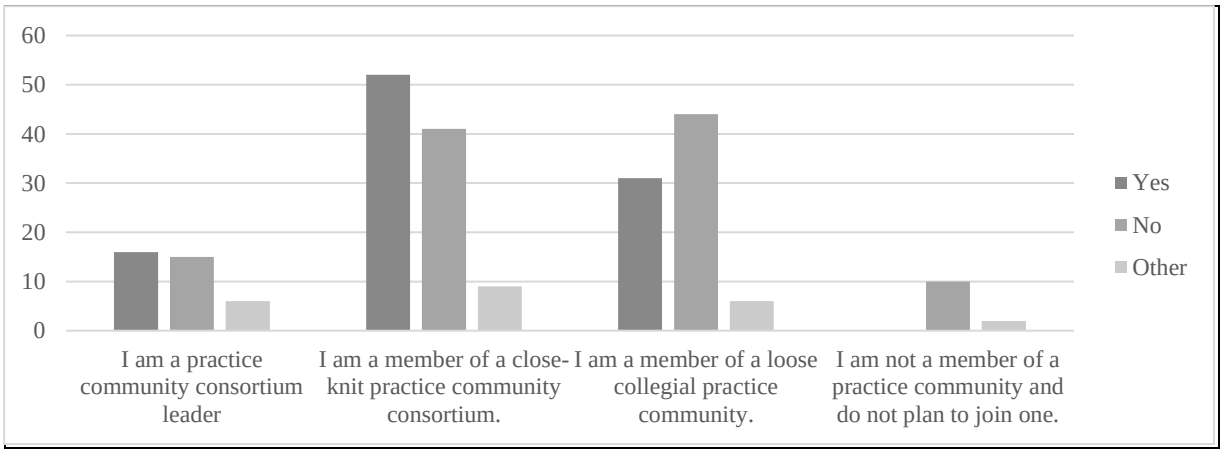

Figure 3. Attitudes of respondents towards homogeneous forms of practice communities

Source: own compilation

Table 8 shows respondents' membership of practice communities broken down by age group. 41.6% of respondents are members of a practice community consortium and 15.9% are leaders of a practice community consortium, meaning that 57.5% of respondents considered this form to be appropriate.

Table 8 Respondents' attitudes towards practice communities by age group

	Age group					
Relationship to communities of practice	**-39**	**40-49**	**50-59**	**60-69**	**70-**	**Total**
I am the head of a practice community consortium.	0	5.3	5.3	4.5	0.0	15.9
I am a member of a close-knit community consortium.	2.4	7	15	12.	3	41.6
I am a member of a closely integrated practice community.	0	0	0	0	0	2.4

I am a member of a closely affiliated practice community.	0	0	0	0	0.4	0

38.3% of respondents had previously joined a practice community in some form. We wanted to prove whether belonging/not belonging to a practice community established before 2021 had any correlation with the motivational factors for joining a practice community. We found that neither professional development, nor belonging to a community, nor patient interests, nor even financial benefits showed any correlation with membership. In the case of the new practice community form, however, financial interest showed a significant correlation (X^2 (df=1, N=230)=6.206, p=0.013) between joining and joining for financial reasons.

The age group corresponding to the age of the family doctor and the type of practice district have no influence on the leadership/membership classification assumed in the practice community or on participation in the practice community. The age group corresponding to the age of the family doctor and the type of practice district had no influence on the current relationship with the practice community or on the leadership/non-leadership role assumed in the practice community.

The question of whether they are satisfied with their current working conditions could already be gauged from their answers to questions about their working conditions, but it is very interesting to see the distribution of responses by age and community type, which shows that family doctors are satisfied on average. However, it is worth looking at the average for each age group, which is indicated as a total, as this reveals tensions within the age groups regarding the assessment of working conditions.

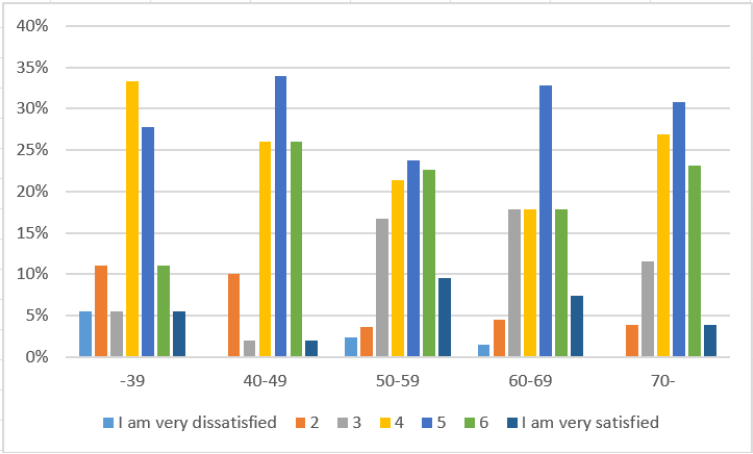

Figure 4 Correlation between age group and satisfaction with current working conditions

From the perspective of the reforms outlined in the thesis, it is very important to know what kind of professionals doctors who are open to group practices would like to work with. It turns

out that the number of professionals employed in practices is low, but it is surprising who they could imagine working with in the event of a reform.

Apart from GPs and dentists, the colleagues they would most like to work with in group practices during the survey period were physiotherapists (91.9%), health organisers (87.4%), psychologists (81.8%) and physiotherapy specialists (67.6%). During the pandemic, other needs arose, but GPs are increasingly requesting the employment of nurses with extended competences and APN qualifications.

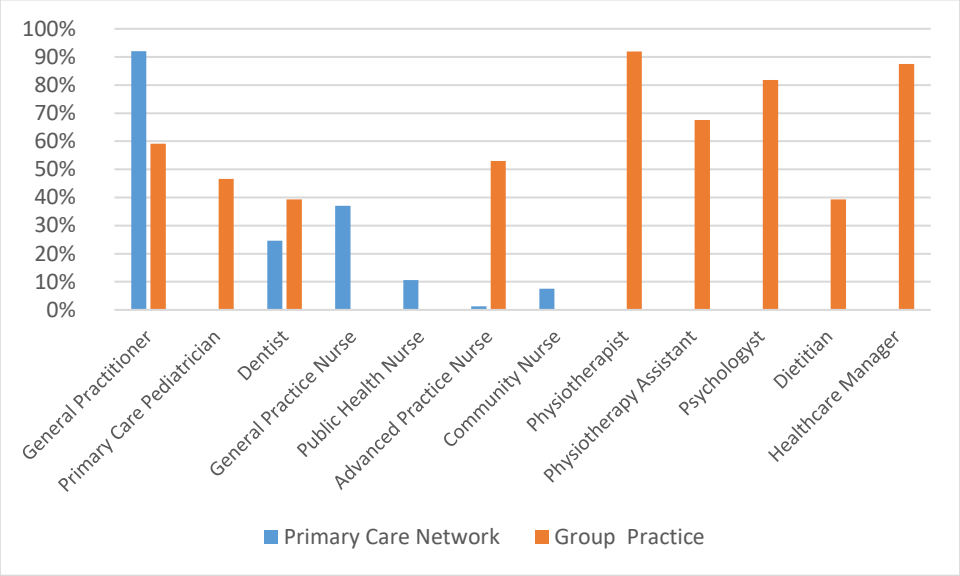

Figure 5 People currently working together in the practice community (N=227) and willingness to cooperate between GPs and specialist staff in group practices (N=247)

The table 9 does not show the variables of type of practice, marital status, and Overall, how satisfied are you with the work of your family doctor? which were examined using cluster analysis.

Table 9 Anova table created during cluster analysis

Table 9 Anova table created during cluster analysis

ANOVA

	Cluster		Error			
	Mean Square	df	Mean Square	df	F	Sig.
Zscore(v8)	21,372	2	,831	242	25,703	<,001
Zscore(V2)	51,355	2	,584	242	87,965	<,001
Zscore(v4k)	3,920	2	,968	242	4,049	,019
Zscore(v121)	67,560	2	,456	242	148,177	<,001

The F tests should be used only for descriptive purposes because the clusters have been chosen to maximize the differences among cases in different clusters. The observed significance levels are not corrected for this and thus cannot be interpreted as tests of the hypothesis that the cluster means are equal.

Based on the ANOVA table for cluster analysis, it can be concluded that the differences between clusters are primarily determined by the variables "How satisfied are you with your family doctor's work, taking everything into account?" (v121) and your gender (v2), which have exceptionally high F values (148.177 and 87.965, respectively) and a significance level below 0.001. In addition to these, the district type (v8) also contributed to the separation of clusters ($F=25.703$; $p<0.001$), while the F value of the variable living in a marriage, relationship/without a partner (v4k) was lower (4.049; $p=0.019$), thus playing only a minor role in the creation of the groups, meaning that the latter two variables are only of marginal significance in the interpretation of the clusters. Overall, therefore, when interpreting the clusters, it is worth paying attention to the variables of job satisfaction (v121) and gender (v2), while district type (v8) is only supplementary here, and the recoded marital status (v4k) is of merely marginal significance.

We formed three clusters related to job satisfaction: Cluster 1 included 38 family doctors, most of whom are married adults working in pediatric districts, the majority of whom are women (68%), and who tend to be dissatisfied with their work as family doctors. Cluster 2 includes 86 people, who are typically married/in a relationship (85%) and work as family doctors in adult districts. They are very satisfied with their work. Cluster 3 includes 121 family doctors, who typically work in mixed family doctor districts (61%), are married women (85%), and are very satisfied with their work.

The questionnaire included questions that allowed respondents to express their opinions freely, and I received a wide range of responses, from suggestions to criticism, comments to evaluations. I would like to analyse these in a separate study, as the commitment of those involved is demonstrated by the fact that, in many cases, they broke their anonymity and made comments that suggested criticism, disillusionment and despair.

4. TESTING THE HYPOTHESES

Experts have been calling for change and reform in the healthcare sector for decades, not only in our country, but globally, as the healthcare industry and the use of various IT tools have called into question the ability of insurance-based financing systems to sustain themselves. The COVID-19 pandemic has reinforced these signs of crisis, which have affected different countries in different ways. In Hungary, the development of reforms was preceded by numerous social and professional policy debates, and the need to change a system that has brought some results but continues to hamper healthcare has accelerated in recent years and has become socially acceptable. The first change since the transition to democracy, and the only one still in force today, was the decision to allow general practitioners to become self-employed doctors. It seemed that primary care would be able to provide both medical treatment and public health services to the broadest sections of society for a long time to come. This formed the basis of the concept represented by Gyula Kincses and the Hungarian Medical Chamber that the reform of the healthcare sector should be initiated through cooperation between primary and specialist care. The topic of my doctoral research, which sought to explore alternatives for the organisational development of the healthcare sector, was also inspired by this concept.

Q1. I assume that the organisational development of the Hungarian healthcare sector can be started by combining primary and specialist care within the framework of group practice and with new operating regulations.

In formulating my first hypothesis, I wanted to examine whether the combination of primary and specialist care is indeed suitable for providing a good basis for preventing a crisis in the provision of care for the broadest sections of society. According to the responses to my research questions, the stakeholders themselves feel that GP services could be modernised, but there is no consensus-based strategy for the Hungarian healthcare sector. Most chose forms of practice communities that misinterpret the basic concept for financial reasons or to protect their practices, but these did not facilitate specialist care. It also emerged that there is a need for competence development and more paramedical staff (healthcare professionals) in order to address regional inequalities and provide care for people living in areas where practices have closed. This is supported by the fact that one of the important criteria for assessing the health status of the population in the is access to care, as differences in access also mean differences in life expectancy and quality of life (Abel-Smith, 1992) .

Although there are those who doubt the feasibility of the reform, believing that it will not happen under the current circumstances, they agree in principle that the participation of GPs in primary and specialist care could be effective, provided that they receive infrastructural and financial support.

Based on the above, I consider my first hypothesis to be confirmed by the survey.

Q.2. I assume that the human resources of the Hungarian healthcare system are capable of organisational restructuring, which I intend to prove by examining the receptiveness, preparedness and operating conditions of those affected.

To prove this hypothesis, it is necessary to establish the subjective conditions for the feasibility of the reforms. Further professional qualifications can guarantee the professional preparedness required for integration into specialist care and the new operating model. If the majority of GPs have some form of additional professional qualification or are open to obtaining one, there will be more opportunities to capitalise on this knowledge, with the following expected benefits: patient satisfaction would increase, waiting times for specialist care would decrease, GP practices would receive additional income from the National Health Insurance Fund, and the prestige and income of GP practices would increase. The WHO has recommended that governments spend an additional 1% of GDP on strengthening primary care in order to consolidate the situation after the pandemic. This is only a recommendation, but it is worth considering as it would prove to be a good investment.

3.2% of respondents did not yet have a professional qualification. At the time of responding, 80.6% had all their professional qualifications valid. 6.9% did not have all their professional qualifications valid, but were willing to extend them ( ), and there are some who no longer wish to renew their professional qualifications. This is presumably the position of the oldest age group. The nature of professional examinations naturally varies, so it would be advisable to introduce a pilot system, but the personal requirements are basically in place and can be developed. In order to estimate whether GPs have professional qualifications beyond the mandatory requirements, I collected data on doctors in Szabolcs-Szatmár-Bereg County.

Table 10 Number of doctors with professional qualifications working in Szabolcs-Szatmár-Bereg County by district type

Type of district	Number of specialist qualifications/person					
	1	2	3	4	9	Total
Mixed	4	3	8		1	94
Adult	31	37	12	3		83
Children	19	13	4			3
Total	99	86	24	3	1	213

Own compilation

As we have seen, the national figure is higher, but GPs could be encouraged to expand their professional qualifications, and if 50% of GPs are also qualified to work in specialist care, and some even have 3-4 specialist qualifications, then group practices could be established.

Based on the above, I consider my second hypothesis to be valid.

However, both hypotheses can only be put to practical use once a comprehensive strategic plan has been drawn up that provides long-term incentives and adequate guarantees for GPs, who

are already overworked, so that they can receive moral, professional and financial support for this professionally rewarding but extra work.

5. NEW AND NOVEL RESULTS OF THE THESIS

In the health care reform concepts of recent decades, obligations and legal requirements have been imposed on doctors, and especially on GPs working in private practices. Those affected were not consulted on issues such as the size of practices and anomalies in financing.

Based on the research described in my thesis, I consider the following to be new findings:

1. a survey of the subjective opinions of the GPs concerned revealed that they are suitable and motivated to work in a new organisational structure with extended powers.

2. It emerged that in order to improve regional and social inequalities and to provide care for people living in vacant practices, there is a need for competence development and a larger number of paramedical staff (health professionals).

3. It has been proven that international organisations and legislation allow for the transformation of the Hungarian healthcare system into a patient care system that is initiated from the bottom up, based on a combination of primary and specialist care, regionally decentralised but cooperating with specialist care centres, which is internationally acceptable and that it would be the most feasible innovation under domestic conditions.

My findings can be classified as novel and substantiated results:

1. It has been proven that the average age of GPs in the sample studied is 55.6 years, which is close to the national data published by the Hungarian Central Statistical Office.
2. It has been proven that the age group corresponding to the age of the GP and the type of practice area have no influence on the leadership/membership classification assumed in the practice community, nor on participation in the practice community.
3. It has been proven that the age group corresponding to the age of the GP and the type of practice area had no influence on the current relationship with the practice community or on the leadership/non-leadership role assumed in the practice community.
4. It has been proven that the financial interest associated with joining had a significant influence on joining the currently existing practice communities.
5. It has been proven that membership in the former practice community did not influence the decision to become a member of the current community. Furthermore, it has been proven that neither professional development, nor belonging to the community, nor the interests of patients showed any correlation with joining the community.
6. It has been proven that there is a demand among GPs for the involvement of paramedical professionals. The care of patients registered in GP districts requires a new type of teamwork from the healthcare system.
7. It has been proven that telemedicine care developed during the pandemic has facilitated the work of family doctors in performing certain tasks. However, when listing these tasks, it became clear that this is not feasible for all activities.

8. It has been proven that the type of family doctor service had a significant impact on tasks related to direct patient care (diagnosing the disease, caring for and screening patients) during the COVID-19 pandemic, but played a less relevant role in administrative activities. The age of the family doctor only had a significant impact on telemedical consultations, and the type of settlement where the service provider was located only influenced the prescription of medication and patient referrals.

Similar to the results of advanced statistical analyses, when forming clusters, the type of practice and recoded location variables play a highly distinctive and significant role, while age can be considered a moderate or negligible factor.

I believe that the results of the research have succeeded in proving that family doctors have the will to participate in bottom-up organizational development.

When designing a motivation system during organizational development, the type of practice, the type of settlement where the family doctor practices, and the age of the family doctor must be taken into account due to their significant influence.

In the establishment of practice communities, the age of the GP has the least influence on the decision to join the organization. In the current system, GPs question the effectiveness of practice communities, as they have not received any other incentives besides financial motivation when joining a practice community, and unfortunately not even afterwards, and they do not see any support or assistance in creating the conditions for additional services.

It has been proven that the telemedicine services established during the pandemic have facilitated the work of GPs in performing certain tasks. However, when listing the tasks of the " " (Healthy Home) programme, it became clear that this is not considered feasible for all activities.

6. PRACTICAL APPLICABILITY OF THE RESULTS

Comments and suggestions for improving the current situation and preparing for reform

Ensuring equal distribution within county boundaries is valid. It would be worth considering whether the possibilities offered by current modern technology and databases would make it possible to replace the county system with a district system. This would make it easier to ensure equal access. There are settlements in Hungary and professional procedures in which patients belong to one county in some cases and another in others.

Areas of the current healthcare system in need of rapid change:

1. Maintaining the current structure carries the risk that the decline in the number of practices will continue unabated, resulting in even more areas in the capital, towns and rural areas becoming underserved compared to the current 910 practices. This can only be achieved by increasing the number of healthcare professionals assigned to these practices.
2. The National Practice Management Agency can abolish and restructure districts by modifying them, which reduces the expenditure of the Health Insurance Fund as the salaries of general practitioners are freed up, but the card fees for patients must be paid to other service providers. This creates a predicament with which GPs do not necessarily identify and, in the absence of adequate communication and dialogue, could lead to GPs leaving the profession. It would be more effective to increase support for practices so that they can be modernised and healthcare professionals can be recruited.
3. Following the example of the health centres that have been established, GPs should be brought together in an accessibility centre. This could be a virtual solution or a ' ' building complex, to be chosen by the operator and GPs.
4. Paramedical professionals should be supported in performing their work according to their competency list, thereby relieving the family doctor of some of their workload so that they can perform work that is appropriate to their medical knowledge and level of competence. This worked perfectly during the pandemic, with the help of teleconsultation for prescribing medication.
5. Similar to screening tests, the results measured by smart devices (e.g. smart scales) are first evaluated by artificial intelligence. Measurement is good because it cannot be manipulated by the patient. Real results are entered into the database, and based on this, the patient's treatment pathway becomes clear. The indicators in the EHCI would also show better values.
6. An effective patient pathway management system should be developed, drawing on the experience of the Healthy Budapest program and the screening program implemented by the Hungarian Maltese Charity Service, which could improve patient referral and access to healthcare.Change is absolutely necessary because certain professional and municipal areas may be left without care.

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List of publications related to the dissertation

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