

Resident doctors' motivation for specialisation choice and working in rural areas

PhD thesis

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Introduction

Healthcare professionals are of vital importance for the operation and performance of healthcare systems. For the health care workers and the relevant discipline, the “*Human Resources for Health*” (HRH) term is used by the international academic literature. This resource is fundamental not only for the healthcare systems’ performance and output, but also for the input factors of the healthcare system: in several countries two-third of the total health budget is spent on personnel expenses.

HRH is one of the biggest concerns for keeping healthcare systems operational and sustainable. One of the numerous challenges is the demographic issue. The ageing global population and ageing healthcare professionals mean that there is no sufficient number of new entrants to the system to replace those who leave, while the ageing population has increasing healthcare needs, hence more healthcare professionals are needed. Further related issues are the lack of attractiveness of these healthcare and public health related jobs to the new generations, and also health professionals’ migration within and outside the EU. Moreover, unequal distribution of health professionals by speciality and by geographical areas is associated with these, which leads to serious number of missing healthcare professionals in certain areas - while in comparison of overall numbers no severe deficits may appear.

Hungary faces more and more significant problems in human resources for health crisis: shortage of health professionals, and the unequal distribution of health professionals between geographical and professional areas (specialisations). These problems endanger

the sustainability of the Hungarian healthcare system and increase the inequality of accessibility of healthcare services.

Objectives

The present thesis aims to examine and explain the motivations of young – resident – medical doctors' regarding speciality choice and working in rural areas. The objective is to provide a scientific analysis, which may be considered as a novelty in Hungary, because these issues have not been investigated within a similar range of scientific data and analysis since two monographs published in the early eighties.

Additional objective of the thesis, beyond the scientific results, is to provide a reliable and valid basis or support for the health policy decision makers in HRH specific issues on the incentives of the young medical doctors' speciality and workplace choice. The aim is to understand the major motivational forces influencing the young medical doctors' speciality and job choice. As many countries struggle with these problems, the results of the analysis may be of interest not only in Hungary but also in a more widespread and international level. In conclusion, the aims of my thesis are:

- To explore the young medical doctors' speciality choice motivation.
- To explore the resident doctors' motivation in choosing workplace/job.
- With the explanation of these issues to provide deeper understanding on the drivers of the motiva-

tions, in order to support healthcare decision making in decreasing of inequality regarding professional and geographical areas, and in this way also the inequality in the access of the healthcare.

In connection with the research objectives, the following main hypotheses were examined:

- Besides pure professional interests in medical specialty choice, other, non-professional but lifestyle related factors (nature of work, schedules, income) play an important role.
- It is assumed that the resident doctors demographic, social and economic characteristics relate to lifestyle characteristic of speciality choice.
- The vast majority of resident doctors would like to work in larger cities and in high-level healthcare institutions, where the lack of health professionals appears in a lower volume.
- In the incentive to work in rural areas there are significant role of the personal experiences of working in rural areas and lifestyle.
- The choice of workplace is a complex phenomenon, therefore the resident doctors might be influenced to work in rural areas by only complex, comprehensive incentives.

Methods

Quantitative and qualitative methodology was applied in the present study. As quantitative method, a self-administered survey, as qualitative method, focus-group interviews were conducted. These two methodological approaches complement each other well, as the survey is able to collect large amounts of, but less in-depth information, and the focus group interviews can collect fewer respondents, but deeper information shedding light on some of the motivational background in the viewpoint of individual career plans and perspective. Using both methods simultaneously makes up for what each lack, therefore increase the validity of the study by facilitating the usability of results in the health policy decision making.

As qualitative method the self-administered survey was applied. With this method large amounts of comprehensive information can be obtained about the residents' socio-demographic background and motivational patterns. Through the large number of respondents, we may have accurate overview about the residents' specialization and job choice, and the surrounding motivational force field.

The questionnaire was based on national and international literature, as well as the experience of interview study on this topic. The questionnaire consists of several chapter on career/specialty choice and choice of workplace. There is no internationally accepted and validated questionnaire which could have been used to measure medical career choice, specialty choice or workplace choice, thus, we developed our own measurement tool. The thesis presents the findings based on the annual national survey from 2008.

The sample consisted of 713 respondents. All respondents graduated as general medical doctors. The survey was implemented on the examination of mandatory training courses for residents at each of the four Hungarian medical universities. So the study population were residents who were present on these courses and examinations, and not pure resident classes.

For the analysis of the survey data simple, bivariate and multivariate statistical analysis methods were used. Maximum Likelihood factors (ML) were composed of the variables on medical career and the specialisation choice; the specialities were divided into two categories by the factor controllable lifestyle (CL) and non-controllable lifestyle (NCL). The specialisation choice ML factors and the factors influencing were investigated by linear regression analysis.

In the case of rural employment intentions residents were asked which town they have lived in and which town do they intend to work in. The rural – other than a university city – employment intentions were also examined using the binomial regression model, where the dependent variable was whether they planned to work in such a city or not.

Regression models were built up on the sequence of the explanatory variables corresponding to the individual lifecycle. In this way individual life events can be modelled due to their impacts.

In addition to the quantitative data collection, focus group interviews were conducted, so we can get better understanding of the motivational patterns, and other additional information can be obtained about the questions which are difficult to access by questionnaires.

Focus group interviews were organized at each of the four Hungarian medical universities. There were 3-7 participants in each group. The total number of focus group participants was 32 persons. The information obtained with the focus group method, was a supplement data - completing the survey data. The reason using focus-group interview method was to explore deeper motivational patterns, and the influencing attitudes, and other valuable information behind survey questions that is difficult to access by quantitative tools.

The guide of the focus group interviews were elaborated based on literature and previous observations. Observations were obtained from survey results and, additionally, findings of previously conducted structured interviews. The main topics of the focus group guide were: medical career choice, specialisation choice, job choice, assessment of healthcare workers' status and related health policy arrangements.

Duration of the focus groups interviews were 70-90 minutes. The interviews were recorded (with participants' permission) and the transcriptions of these records gave the basis of the analysis. We managed to examine 2-2 groups in Budapest, Debrecen and Szeged, in Pécs 1 group was managed to recruit. There were 3-7 people participating in the groups, in average 4-5 participants.

The focus groups were not expected to use representative sampling, but rather to enlighten more detailed results on the topic.

Results – Survey

Specialisation choice

The highest average value¹ of specialty choice was personal interest (4.35), followed by the professional challenges (3.94) and the relationship with the patients. On the opposite end of the scale salary, family influence and informal payment were presence with average value below 2.

The specialisations were divided into two categories according to the literature recommendations. Previous studies suggest that it is worth to distinguish whether the chosen specialty counts as controllable lifestyle or not, whether the medical doctors working in such specialty where they are able to divide their working hours or if they had to be on continuous on call. For the purpose of the analysis a binomial variable was divided into two categories: controllable and non-controllable lifestyle specialty.

In the specialisation breakdown, it can be seen that personal interest, gratitude money, social prestige and relationship with the patients are assessed higher. Possibility to work abroad, and innovation possibility were assessed less by the residents on NCL specialty. So the residents on NCL lifestyle specialty can be observed the professional awareness. Different motivational patterns can be followed in the two groups.

The model had excellent values, namely, the extracted eigenvalue of the two ML factors achieved higher value than 4, and 43.5% of variance was high enough – 24.7% the first factor and 18.8% the second factor - so the factor analysis is statistically satisfactory. The first factor included the following items: prestige within the profession, gratitude money, possibility to work abroad, lifestyle, salary,

¹ using 5-point Likert scales

social prestige and good employment opportunities, so this is factor “lifestyle and income”. Personal interest, professional challenges and “is occurred” played a role in the second factor - the last one with significant negative value - so it means awareness. This factor was called “professional interest and awareness”.

Hereinafter we used these ML factors in the multivariate explanation models. There was no significant difference in the lifestyle and income factor between the two specialty groups (CL and NCL), but the professional interest and awareness factors were significantly higher in those residents who were working in NCL specialty.

For the explanation of medical specialization choice linear regression models were employed. In the analyses, regression models were built up in a way that the sequence of the explanatory variables corresponds to the individual lifecycle. In this way the impacts of individual life events can be modelled. As the first step, the socio-demographic variables were included in the model (gender, place of childhood, age). Following this the parents’ qualifications stepped in, which is modelling the socialisation effects of the family, then the medical career choice motivational factors stepped in. As next step we involved the number of children and the settlement type of workplace – mostly university cities. The last step was to build the specialization choice motivational factors model of the specialisation type (CL or NCL).

Lifestyle and income specialization choice factor

First, the lifestyle and income specialisation choice factor explanation model is presented. In the first model gender had signifi-

cant explanatory effect. The direction of the relationship is converse, in the case of women the lifestyle motivational factor reached lower value (R-square = 2.3%).

In the second phase of the model, the effect of gender was the only one significant factor, further the mother's qualification almost reached the necessary significance level. In the third phase medical career choice motivations were included in the model and both had significant explanation level. The medical career choice factor which contained the income, job opportunity and social prestige had stronger explanation level - beta value was above 0.5. So the early – influencing the medical career choice – lifestyle factor has influence later, and it evolves the similar motivation at the specialization choice. Here the residents' persistent motivation can be seen. The relation with the professional altruism motivation was weaker but significant, and the direction of correspondence positive. The R-square in this phase was 37.4%, which showed notable increase comparing to the earlier phase. In other words, it shows that this model is stable and robust.

Explanation of professional interest and awareness factor

Another specialisation motivational factor investigated in the thesis was the professional interest and awareness. Similarly to abovementioned – according to the personal lifecycle – more steps linear regression model was built up. In this case, the model had significant explanation level only from the third step – from the stepping in of the medical career choice motivation –, and it belonged to the professional altruistic motivation only (R-square =

5,1%). The beta value of medical career choice professional altruistic factor is 0.236, which means positive relationship with the dependent variable of professional interest and awareness factor. No other variables had significant effects. Consistent phenomenon could be detected regarding the professional interest and awareness factor. Contrary to the explanation of the lifestyle factor, the lifestyle medical career choice factor has no significant connection.

In summary, while the lifestyle and income - both of two medical career choice motivations - influenced the independent variable, the professional interest and awareness was only influenced by the medical career choice professional altruistic factor. Only the awareness and consistency of professional motivations could be seen, while the lifestyle showed a more complex picture, that is, a more complex phenomenon.

Explanation model for choice of specialization type

For the explanation of specialization type choice binomial logistic regression was built up. The dependent variable of the model was the lifestyle of the chosen specialty. Due to the values of the dependent variable, the model was able to respond which factor had significant influence to direction of NCL specialties - the construction of model similar to abovementioned.

More steps were tested, the last one had significant relationship, which contains both the medical career choice factors, and the specialization choice factors. It is instructive, that the previous models have no significant explanatory level. The R-square of the final model - containing the most independent variables - was quite low

(6.6%), and only one variable had significant influence, the professional interest and awareness specialization choice factor. The odd-ratio indicated that professional interest had higher importance in specialization choice; further, specialization type had greater probability to be non-controllable specialty.

Working in rural areas

Other important topic of the thesis was the issue of working in rural areas. However, the quantitative analysis can be focused on the main points in this issue, it was investigated in-depth in the focus group interviews. Here the basic statistics are presented on the survey results.

One third of the respondent residents intend to work in the capital Budapest, nearly 60% of them want to work in county capital, and only 6.5% said they wanted to work in a smaller town.

In addition, we examined the population of target cities. 55% wanted to work in a town of more than 50 000 inhabitants - this number does not contain that one-third residents, who intend to work in Budapest! Regarding counties, counties with medical universities have higher density.

For the investigation of employment in rural areas, binomial logistic regression model was built up, similar to abovementioned. Dichotom independent variable was used in the analysis, namely the intention or the lack of intention to work in a city with medical university.

Already first phase of the model explained significant part of the complexity? of the dependent variable. The city of origin also

had significant effect: if the city of origin was university city, it decreased the probability of working in non-university city. Not surprisingly, residents are more likely to insist their city of origin.

In the third phase of the model, the medical career choice motivation of lifestyle showed positive relation with the independent variable. So the residents having higher point on this factor - more than 44% - would rather choose a workplace in city without medical university. The next two steps showed that the specialization choice motivations and the number of children have no influence on the dependent value. In the last phase the present, residency workplace had the strongest effect on the workplace related decision. The R-square is nearly 35% that shows a high acceptability of the model. Working in smaller towns or in a county capital seems to result in increased likelihood on work intention in a non-university city.

Results – Focus group interviews

Specialization choice

The specialization choice motivation of resident doctors' was investigated through focus group interviews. The most important finding in this topic is the personal interest. Beyond different specialization intentions the specificity of different fields emerged, such as being manual and operative profession, having special knowledge of one sub-area (e.g. ophthalmology) or providing comprehensive picture about the human body (internal medicine), using the newest technology (radiology) or having not direct doctor-patient relationship (radiology). These factors played remarkable role in the most

important viewpoints. The schedule of the specialties has to be emphasized.

There is no calculable, predictable career model in this fields, thus residents do not have clear image of their future, and do not know their opportunities for professional progression, or financial progression for the next years.

Choice of employment, motivations

Very important issue of residents, young medical doctors how they choose workplace. All of the participants had intention to work at a university clinic, or another hospital in the summit of the progressive healthcare. This phenomenon also appeared in the survey results. Young medical doctors choose workplace with consideration of the following factors: salary, professional standards, working conditions, burden of duty, larger city, and of course the professional community. Nevertheless, the lifestyle factors are particularly emphasized and underlined in the workplace choice.

The professional standard means the skilled and prepared colleagues also equipment of the hospital. Residents would like to care and cure serious cases, and these cases necessarily occur in higher level hospitals according to the progressive care principle that is strongly related to the professional development opportunities.

The Hungarian healthcare is inpatient care centred, and this can be seen on the residents' plans. Those ones, who would like to work in outpatient care, do not explain it with the professional development opportunities, but the lifestyle factors.

The working conditions and burden of work also contribute to the lifestyle issue. The low amount of duty is important for the residents, or significantly much more duty may be readily undertaken for significantly more money.

Moving or commuting is the possible way to work in rural areas, but needs serious incentives. The residents talked about service apartment, discount home loan, working opportunity for spouses and appropriate placement for children (instructional nursery, school). In general - not surprisingly - the much higher salary gained highly emphasized importance. The residents stressed about the Hungarian housing practice that makes difficult to move.

Residents insist on the lifestyle in big cities – regardless of their origin – which they got used to during their university studies. The big city life means not only the workplace, but also cultural or infrastructural opportunities (high level schools theatres etc.), and the closeness of further training programmes. The residents plan their future in family, the opportunities for families are important, on which appropriate family life and children’s future might be based.

Conclusions

Specialty choice

The most important conclusion regarding the specialization choice is the decisive role of perceived lifestyle in this process. It can be overwritten by the professional and awareness motivation factor, and the role of lifestyle is also present in this issue. This phenomenon should be considered by health policy, teachers and organizations taking part in the education and educational practices. The

lifestyle means not only income, but prestige, schedule and burden of duty. Therefore these fields - where no immediate change occurs - need to be handled at strategical level. Long years of systematic work, planning and a well-functioning healthcare system may bring the results together, so there won't be significant differences in the lifestyle of different specialties, and young doctors may decide only based on professional interest and commitment.

Choice of workplace

This chapter of the study provides more specific conclusion. The inequality in the geographical distribution of medical doctors is highly prioritised issue in Hungary recently. Based on this study, if the choice of workplace occurred with the indicated background motivations in the future, namely, the vast majority of young medical doctors imagine their future in big cities, it could cause several problems. Residents in general are not attracted to those places with lacking professionals, that is, the problematic areas. Without effective incentives this issue cannot be solved.

According to the international literature review and the present study, the motivations influence the choice of workplace that cannot be simplified for one or two factors. This is a complex issue; indeed this decision basically determines the person's life. The following factors are remarkably important: professional factors relating aspects, such as burden of duty, working conditions, and income. Other important aspects are hardly or not at all concerning professional factors: place of work - the chosen job is in larger city where

the proper infrastructure available for proper family life, namely, cultural and educational opportunities, and job for spouses.

The role of education is also dominant in this topic. During the medical education, medical students spend their clinical practices in university clinics or high level hospitals. Therefore, practice spent in different places than clinics could be a right incentive during the graduate education. It still does not expected that large number of young medical doctors will be going to work in countryside, but perhaps some of them come gain practice and experience in working in rural areas and they might consider rural areas as options. This point, the socialising role of education must be underlined.

Another indirect socialisation effect is worth to consider hereby: medical students spend at least six year in big city environment, because the medical education take place in big cities. It does not only mean the professional work, but more private life related issues, like cultural and educational opportunities.

In summary, we can conclude that workplace choice is a complex phenomenon, which is influenced by professional and private-life related factors. Young medical doctors should be encouraged to work in countryside by comprehensive strategical incentives. Young medical doctors have to be motivated by both professional and private-life related factors. The education must response to this need; moreover the government should improve the status and infrastructure of rural healthcare institutions.

The most important conclusion can be stated, there is a huge need for human resources for health strategy, which would include predictable career model, which would ensure professional development, and sufficient amount of time for private life, and proper pro-

fessional and non-professional infrastructure. By these arrangements young medical doctors would not leave Hungary, and the absence of some specializations and geographical inequalities may be decreased. The listed recommendations also need comprehensive intersectorial cooperation (sectors of rural development, education, transport etc.).

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