University of West Hungary

Faculty of Economics

NATIONAL ECONOMICAL SIGNIFICANCE OF CARDIAC REHABILITATION

Proposals for improving cost effectiveness

Thesis of the Doctoral Dissertation (PhD)

Dr. Éva Simon MSc

Sopron

2011

Doctoral School: István Széchényi Management and Organisation Sciences Doctoral School

Head of Doctoral School: Prof. Dr. Csaba Székely DSc

Program: Community Management of Economics

Head of Program: Dr. Adél Andrássy CSc

Supervisor: Prof. Dr. József Dézsy

……

Supporting signature of project leader

THE BACKGROUND OF THE RESEARCH

The author works already for more decades in the Sopron Rehabilitation Institute, respectively in its predecessor in title that has considerable traditions in the field of medical rehabilitation. She, as physician-cardiologist and rehabilitation expert carries on rehabilitation activity in a medical rehabilitation institute that has nation-wide authority. As a physician-economist her interest has turned forward the social significance of rehabilitation beyond the curing activity. During her clinical practice, until now, she had chance to obtain direct experience in medical work and to do study tours in several countries of the European Union (Sweden, Finland, Austria). She has participated actively in the evolution and the development of cardiac rehabilitation during the last 30 years. Her experience in the daily curing work by the side of patients' bed and in the connecting organisation tasks motivated her for preparation of this paper. During her medical activity she is engaged with patients' group suffering of heart and cardiovascular diseases. These illnesses are still the leading death causes in Hungary. After surviving the acute event, patients are treated in medical institutes, afterwards in outpatient cardiac rehabilitation that has been forming in the latter few years.

The author in her paper attempts to set the Hungarian data against those of countries economically more developed, that followed different historical and economical routs and those of the neighbouring countries, the Visegrád ones: Czech Republic, Poland, Slovakia with similar historical and economical backgrounds as Hungary.

THE CONTENT OF THE RESEARCH, HYPOTHESES

1. The great challenge stands in front of the medical systems of the EU to harmonise the consequences of the aging population, the growing demands and the technical development. These all call for future solutions. One of the heaviest burdens of medical systems of the developed countries comes from the large number of treated chronic patients that has considerable effects for – beyond the patients – the whole society. The epidemiological data of non-communicable diseases reveal the high rates of cardiovascular diseases, the medical attendance of that is a considerable challenge for all medical systems. The expected average of life years is growing year by year, as well as the expected life years at birth. Among the examined European countries Hungary shows the highest death rates of men under 64 year, as well as of women. These data warn us that it is necessary to analyse the problem in details by public health aspects and to find the proper solutions. This is connected with those increased risk factors that are impacting the Hungarian population.

2. As a result of the explosion-like development in acute cardiology the death rate of acute cardiovascular diseases has fallen down considerably. The necessity of the further effective treatment of the saved patients called into being the base of a new discipline, the cardiac rehabilitation. Earlier the possibilities of cardiac curing reached to the patients' mobilisation to the armchair. The development of the pharmaceutical and technical treatments of the last years made also possible to keep the quality of life on the original level. The rehabilitation approach, the way of evaluation have been changed and head to provide proper motivation for the neces-

sary life style changes for the polymorbid patient who has cumulative risk factors, by the mean of multidisciplinar and multiprofessional cardiac rehabilitation.

3. Without taking personal responsibility it is impossible to reach good outcomes in rehabilitation. One can find those instruments in rehabilitation with that the patients can be motivated and their accidental and non-conscious knowledge can be systematized, so they will be able to identify their self responsibility in their own life as a result of diminishing their risk factors. Analysing of surveys based on self-made questionnaires:

- survey of life style of patients obtaining cardiac rehabilitation;
- appraise of patients with diabetes suffering of cardiovascular disease

4. The professional frames of the cardiac rehabilitation and their necessary phases have been set but they work inconsistently. Not all of the patients are directed to cardiac rehabilitation, as to our present information only 30 % of them. There are several reasons of that, which can be eliminated after exploration. The author analyses the post-institutional outpatient rehabilitation or the outpatient rehabilitation that replaces the institutional one among given objective circumstances.

5. After continuous changes and modifications of law, presently the Act No. LXXXIV. of 2007. is in force referring to the rehabilitation supply. Contrary to the earlier legal issues it examines not the extent of the failure in health, but the existing level of capability and focuses on the mainstream of development of the latter together with the reactivation on the labour market. But the application of the law is not consequent. The frames among that it could work sufficiently are missing. Economical and social contexts stipulate its applicability. Where available jobs are in

lack the patients escape to the protecting healthcare network from the nightmare and stigma of joblessness. The reactivation of patients in working age and rehabilitated successfully in medical point of view are not resolved. Neither patients with capability of work and in good condition can take a job, so they are forced to disability pension or they ask for the same themselves.

6. Collecting health statistical data is difficult. Comparing data of the countries in the survey is difficult or even impossible. To bring the aims of the sector policy and of the professional organisations into effect to harmonise the databases is inevitable. The systematisation of indicators is imperfect. In the same time the harmonised collection and processing of those provide huge potential in validating economical aspects during strategic planning.

METHOD OF DISCOURSE

Comparing significant public health statistical data of certain countries.

Present the social and economical environment and their alteration in the last decades. Review the difficulties in adaptation of social changes that could lead to aggregation of morbidity, so the adaptation and advocating capacity of the individuals decreases in consequence of relative economical underdevelopment.

Exposing the development and alteration of the new discipline, the cardiac rehabilitation, that is still looking for its position in Hungary. With this aid, a group of patients particularly in danger receives chance for social reactivation after an acute illness.

Inspecting the possibility of rehabilitation of even wider range of patients in a way that does not mean heavier social burden, moreover it should have social proceeds when the patients' group in working age conserves its quality of life and returns to work.

Calling attention for the difficulties of the present practice of cardiac rehabilitation. The crucial condition of successful rehabilitation is the inevitable application of prevention approach. This must penetrate the thinking of the individual and as well as the society in every fiel.

Making proposals for implementation of European best and cost effective practices and for spreading the information technical applications (e-Health).

Applied instruments:

- Collection and analyse of literature data. Studying the available Health Statistical Yearbook, the Demographic Yearbook, the Statistical Yearbook of the National Health Insurance Fund and other databases.
- Collecting and analysing secondary statistical data and drawing the respective conclusions.
- Collecting primary data by the help of own surveys within the range of preliminarily set cardiovascular patients' group participating in cardiac rehabilitation.
- Making calculations on national economical benefits of comprehensive rehabilitation of patients having survived heart attack and possessing work capability.

JUSTIFICATION OF THE SELECTED TOPICS

No researches have been made yet in Hungary on analysis of significance of social economy of cardiac rehabilitation. International data demonstrate that the prevention and rehabilitation cannot be separated each from other, so the most important aim is to shape a united and overall approach.

Everyday practice demands to review those activities we expect outcomes from. We must put up the costs of the elements (methods, activities) applied in complex rehabilitation day by day, being that one of the determining elements of institutional management.

There are indispensable expenditures, that are fastened to the basic attendance of the patients and there are activities making the rehabilitation successful and socially useful (physical training that cures, dietetic consultancy, presentations, stress management). All of these have costs too, but their financing is presently narrowed and not sufficient. Because of economical reasons these expenses are diminished in practice.

The most important target of the present dissertation is that parallel with analyses of professional considerations, new aspects should be drawn into the improvement and explanation process where redefinition and review of system and effectiveness of rehabilitation are not only professional questions but are socio-economical interest as well.

NEW AND NOVEL RESEARCH RESULTS

1. Chronic disease burden, shocking data of Hungary

In the countries of the survey (Austria, Czech Republic, Finland, Hungary, Sweden, Slovakia, Slovenia) the life years expected at birth are growing year by year, by an average of 2 years between 2000 and 2008. But the backlog of Hungary does not decrease in comparison. The healthy life years are considerably lower too. The premature vascular diseases causing death in Hungary figure out the double of the EU average among women and men as well. The triple number of men dies because of vascular diseases premature – under 65 years – then women. In international comparison the population's perspective is rather unfavourable as to the expected life years, the healthy life years and the death rates caused by certain diseases.

2. The new discipline the cardiac rehabilitation

During the last ten years the death rates of acute heart attack and cardiac failure have fallen back to its tierce. The demand of the survivors of acute episodes generated the cardiac rehabilitation. Significant changes can be experienced in the rehabilitation bed numbers, within this mainly in the number of beds of cardiac care. Between 2005 and 2009 the latter has been increased by 500. University faculties have been established in Debrecen and Pécs for coordination of the professional process. This means today not only the physical therapy and the medication, but means the complex influencing of the risk factors with the extension of the preventive approach and the motivation of the patients forward the healthy life style too.

3. Outcomes of the self-developed survey

The benefit of the information and education activity influencing the rehabilitated patients' life is significant. According to my questionnaire surveys affecting to two different target groups, the knowledge of the patients are incidental, but can be improved.

During the evaluation process it became clear that work made in order to prevent the cardiovascular diseases and the activities built in the rehabilitation work affecting life style are not sufficiently effective. Essential developments are explicitly needed in the field of prevention as well as rehabilitation.

With its multi-professional and multidisciplinary approach, the cardiac rehabilitation must continuously comply with demands. Today we already know that the clue of the successful cardiac rehabilitation is – near the physical training put earlier into the front – the motivation for life style changing and the favourable alteration of psychosocial status. The supporting psychical treatments must be enhanced during the rehabilitation of the patients, because one of the strongest risk factors is the cumulative stress-caused exhaust and the diminishing in stress toleration ability. Hence the development and education of stress managing techniques must be placed into forefront. Those methods are already exist which help to make knowledge conscious. By the mean of these the outcomes can be improved, but this is a time consuming and professionalism needed task.

4. Contradicting practice and uneven access

The professional frames have been established, but they contradict. The earlier rehabilitation practice, that leads to the armchair only has been followed by shaping and applying of complex rehabilitation programmes. Considerable development can be observed in this field, but the development is uneven in the different regions of the country. Some of the regions are able to provide only too limited access. Presently the outpatient cardiac rehabilitation is still not worked out in Hungary properly and it is especially not coordinated centrally. Local, sporadic initiatives exist, but the National Insurance Fund does not finance this care provision till today.

Analysing the data of the National Insurance Fund we can find out that the inpatient cardiac rehabilitation departments, respectively units do their job based on not the same standards. Significant differences can be experienced in respect of nursing period and death rates that are play important roles as quality indicators.

5. Reactivation of rehabilitated patients on the labour market

One of the main problems of the labour market is that after the disintegration of the social centralised industry of the' 90s, the population of changed working ability became losers of the large economical changes. Because of the numerous losses of jobs, they were helped into disability pension, the political power did not undertake this socio-economic problem, but it shifted that over on the healthcare system. By the present financing system the rehabilitated patient is better interested in applying for disability pension, then reactivation in the labour market.

On the other hand, the former employer – in lack of sufficient health care knowledge – is afraid of re-hiring the person with changed working abilities. Despite of the present rehabilitation capacity that works – as to the professional medical aspects – properly as a whole, the actual socio-economic environment makes effect considerably on the rate of those receiving disability pension and supply. So the individual as the society come off very badly, because, instead of paying contribution, one receives continuously supply and falls out from the active population at work forever. The grey and black economy is going on flowering that is interest of no one.

The author proves by her own calculations, that with conscious organisation work, more of the patients of active age who received post heart attack rehabilitation treatment can be reactivated in the labour market as before. As to her measurement, the national budget can put surplus on account, because there is no need to pay disability pension to the reactivated person on the one hand, and in the same time he/she pays taxes and contributions after his/her salary on the other hand.

The measurement of the author is referred to the potential of a certain patients' group. This calculation may also be valid in respect of more target groups. That most important value cannot be defined in Forints and materially enough explicitly, what the quality of life, the self respect, the social positioning of the individual can mean.

6. Data collection, coherent operation of indicator systems

It is clear that data of certain countries can be not or very difficultly compared with each other. Different statistical data can be obtained, but the objective comparison is

not possible. The Hungarian Presidency of the EU considers surpassingly important the topic of electrical health care (e-Health). But it does not operate in practise yet.

The author proposes and offers to introduce such a system consisting of biological, life style, care providing system and social indicators, with the help of that the prevention, treatment and measurement of efficiency and cost effectiveness of cardiovascular rehabilitation becomes feasible.

CONCLUSIONS AND RECOMMENDATIONS

- The overall phasing in the preventive approach in Hungary is inevitable. The public health pursuit of Finland known as North-Karelian Program can serve as an example that set grandiose outcomes forth with its program for change in life style.
- To establish the preventive approach as a public health purpose is crucial, because this can ensure the more favourable results. It would be useful to introduce a so-called health pocketbook and to reward those healthy people with it as bonus, who participate regularly in screening examinations and follow the prevention advices. This intention can be traced already in the form of programs during the last 20 years. But program financing keeps on using the leftover principle in the last decades. In favour of the aim this practice must be altered.
- The outpatient and inpatient cardiac rehabilitations are such professional instruments that are built on each other and the pillars of them are well elaborated. The cooperation of the acute and rehabilitation beds may hide as considerable economical benefit based on mutual advantages, as the patient is immediately placed on the level he/she really needs instead of the very expensive acute bed. But in Hungary the access to cardiac rehabilitation is still uneven. In certain regions there is a lack of available capacity even if the 1670 bed nationally, in total would be sufficient.
- Presently in Hungary the outpatient cardiac rehabilitation is organised incorrectly. There are local, sporadic initiatives, but this important activity is not financed con-

sistently by the National Insurance Fund till today. Samples of other countries represent that the two types of rehabilitation can work correctly each by other.

- The problem of the labour market is that after the disintegration of the social centralised industry and the large economical crisis of the ’90s the population of changed working ability became losers of the large economical changes. Because of the several ceased workplaces they were helped into disability pension for the sake of the social peace. The reactivation of the rehabilitated patients in working age is not solved.
- The Act No. LXXXIV of 2007, refers to the rehabilitation supply, may facilitate positive changes if it is applied consequently.
- The rehabilitated patient prefers the even lower disability pension, but arriving steadily in every month. Parallel with that he/she can put his/her working power up for sale in grey-black labour market, so the individual cannot be integrated into the society in these circumstances.
- We must look for the opportunity to rehabilitate the patients in the widest possible circle while this does not cause heavier social burden, moreover it should have demonstrable social proceeds by the mean of their reactivation in the labour market. Analysing population data after surviving heart attack proves that this effort has socio-economical benefit.
- Employers must be made interested in re-hiring employees with changed working abilities. Instead of the presently operating work health care, it would be necessary to introduce the complex work health management. In workplaces the

cooperation of the management, health care provider and trade union representatives would be the most effective.

- It would be prospective to use the knowledge of persons with considerable previous professional experience in the labour market, who are rehabilitated successfully. Hiring them in fewer working hours and in easier working processes can be also realised. Generating rehabilitation jobs can be promoted by tax preferences and aids.
- Promoting programs aiming healthier life style in a wider circle of population can also help to diminish cardiovascular morbidity in an indirect way.
- It is necessary to build more vivid connections with the rehabilitation institutes during the professional trainings of family practitioners.
- The author makes proposals on data analysing method for improvement of cost effectiveness with the aid of biological, life style, health care system and social indicators. Comparing data of population of given sample groups with the same number of patients receiving different care provision can lead to socio-economically useful conclusions.
- The countries that ratified the European Charta took obligation to harmonise their databases on the level of the European Union. Hungary has also ratified that. The professional organisations are ready to keep on further cooperation in order to that the forthcoming professional decisions should serve the increase in healthy life years and improve the shocking statistical data. Changes in health policy are needed to putting these all to reality.

Essays, publications, lectures connected to the topic of dissertation

List of Hungarian essays and publications

Simon É.: The importance of the cardiological rehabilitation in national economy – proposals to improve the cost-effectiveness. University of West Hungary Faculty of Economics Health Management Competition (Dézsy Award) winner in the 2010/11 semester, Sopron 07.09.2011.

Berényi I., Czuriga I., Simon A., Simon É., Szász K., Veress G.: The rehabilitation of ischemic heart patients. Cardiological Professional College. Cardiological Guide, Handbook of Clinical Guideline, Medition Publisher, ISSN:0133-5596; 2010. pp. 99–108.

Simon É.: The intensions in healthcare in Sweden, during the half year of EU presidency. Scientific article. Health Economy Review. ISSN:0013-2276; 2010; 48.5:33–38.

Simon É., Bakai J.: The theory and the practice of cardiological rehabilitation in the beginning of XXI. century. Rehabilitation. Technical paper. ORFMMT Scientific Periodical. ISSN:0866-479X; 2009; 19 (4): 257–268.

Simon É.: The rule of teaching patients in the cardiological rehabilitation. Technical paper. Cardiovascular Prevention and Rehabilitation Scientific Periodical ISSN: 2060-4238; 2009; II.(4): 9–18.

Bálint B., Kóródi T., Simon A., Simon É.: Cardological rehabilitation note. REHABILITATION BOOKLETS series, ISSN 0866-479X; Budapest 2009.

Berényi I., Czuriga I., Simon A., Simon É., Szász K., Veress G.: Ischemic heart patient's rehabilitation. Cardiological Professional College. Cardiological Guideline ISSN:0133-5596;. Medition Publisher, Budakeszi, 2008. pp. 67–78

Simon É.: State examination paper. University of West Hungary Faculty of Economics. Doctor-economist field. The state of cardiological rehabilitation in Hungary, solution possibilities. Sopron, January 2008.

Simon É.: State examination paper. University of West Hungary Faculty of EconomicsWHU. Healthcare manager field. The specialities of swedish healthcare system. Sopron, January 2008.

Simon É.: The experiences from Finnland during the HOPE Exchange Program. Report paper. Hungarian Hospital Association, Budapest, 24. June 1999.

Simon É, Domján Gy.: Complex examination of risk factors in patients after myocardial infarct, Orvosi Hetilap / Medical Weekly Paper /, ISSN 0030-6002; 24. Jan. 1993. 134. 4. pp.171–175.

Simon É., Domján Gy.: The significance of examining the serum lipid peroxid levels at hearth-infarct patients. „The Adorján Ferenc award and medallion" Foundation's Board has found the compatition work worthy of winning the foundation medallion and award in 1991. Budapest, 28 March 1991.

Lectures and publication in English and German

K. Szalay, E. Simon, E. Princz: The changing of the cognitive functions of the patients in the early fase after ACBG operation. EuroPRevent ISSN: 0195-668X; 2008. Paris, 1–3. May 2008

E. Simon É., GY.Domján, J. Kovács: Significance of serum lipid peroxide level examinations of heart-infarct patients. Internationales Symposium " Role of free Radicals in biologicals systems. Balatonaliga, 11–13. May 1991.

E. Simon: Der Lipidperoxid-Serumspiegel bei Infarctpatienten und deren klinisch Bedeitung. Internationales Symposium. Die Bedeutung klinischer, molekularbiologischer und genetischer Undersuchungen für die Rehabilitation. Saalfelten/Österreich, 19-20. Okt. 1990

E. Simon: Der Lipidperoxid-Serumspiegel bei Infarctpatienten und deren klinisch Bedeitung. Internationales Symposium. Die Bedeutung klinischer, molekularbiologischer und genetischer Undersuchungen für die Rehabilitation. Saalfelten/Österreich, 19-20. Okt. 1990.

Varga L., Altmann H., Simon É., Domján Gy.: Determinations of malondyalehyd / MDA using native and H2O2 pretreated serum of patiens with risk faktors for heart diseases. Internationales Symposium Sopron–Seibersdorf–Balf, 1987. szept. 24.

Lectures in Hungarian

Simon É.: The importance of rehabilitation, expecially for treating the eldery inhabitants. Western-Hungarian University. 8th International Discussion-forum, Budapest, 02. December 2011.

Simon É.: The improvement of life-quality during the cardiological rehabilitation. Hungarian Hearthsurgery Association. XVIII. Congress, Budapest, 3-5. Nov. 2011.

Simon É.: The future of cardiological rehabilitation. Cardiological Days in Sopron. Sopron 4-5. February 2011.

Simon É., Hanusz K.: The life-style examination of cardiovascular rehabilitation patients. Medical Rehabilitation and Physical medicina hungarian Society. XXIX. Regional meeting. Mátraháza, 16. October 2010.

Simon É.: The healthcheck of diabetic patients, the significance of teaching them and the results during a cardiological clinical rehabilitation. ORFMMT: XXVIII. Professional meeting, Kaposvár, 29. August 2009.

Simon É.: How could we improve the life-quality of hearth patients? The need of multidisciplinary coorperation. Congress of Hungarian Cardiologist Society, Professional Symposium, Balatonfüred, 9-12. May 2007.

Simon É.: I was a doctor in Sweden…Review of the 3 years experience. Hungarian Cardiovascular Rehabilitation Society's Congress, Debrecen 20-21. oct. 2006.

Huszáros B., Simon É.: The dietotheraphy of diabetic pateints, who are treated with insulin after a hearth surgery at the State Sanatorium Sopron, No.1. Cardiological Rehabilitation Department. Hungarian Cardiovascular Rehabilitaion Society Congress. Debrecen, 20-21. October 2006.

Nyáguly I., Simon É., Belényessy I.: The importance of pshychical riskfactors in the rehabilitation of cardiovascular patients. Medical Rehabilitation and Physical medicina hungarian Society XXIV. Regional meeting. Debrecen, 15–17. Sept. 2005.

Simon É.: HOPE Exchange Program in practice. The annual congress of Hungarian Hospital Association, Tihany, 15–17. March 2002.

Simon É., Varga L., Ács F.: Early modern cardiological rehabilitation. Meeting of doctors and chemists employed in the county Győr-Sopron, Győr, 15-16. Nov. 1985.