

## Inequalities in health status and inequity in the delivery of health care in Hungary

**OBJECTIVE** The objective of our study was to measure quality of the Hungarian general population and to identify the relationship between key socio-economic variables and quality of life (QoL). **METHOD** Surveys including the EQ-5D instrument and other questions about socio-economic status were conducted on representative samples of adults at 2 typical cities in Hungary and 3 typical districts of the capital of Hungary in 1996. Data were pooled from the five data sets. The overall sample size was 4,083. Mean QoL values were calculated in various socio-economic groups. Differences in quality-adjusted life expectancy were calculated by combining life expectancy data of the Central Statistical Office and QoL values from the current data set. The Le Grand method was used to measure inequity in the delivery of health care. This index was based on levels of concentration of physician visits and concentration of ill health in different income groups. Ill health was defined as 1-the EQ-5D index. **RESULTS** Main risk factors for having lower QoL were age, low income, being divorced or widow, having low education, and being female. People between the age of 15 and 24 had a mean EQ-5D index of 0.97 compared to people over 85 with a mean value of 0.50. Mean QoL values in the four income groups were 0.73, 0.84, 0.95, 0.93, respectively. Income had surprisingly strong influence on QoL within each age group. People who were divorced or widows had lower QoL than people being single or married, 0.72 versus 0.86 respectively. People with low or lower-middle education level had lower QoL compared to people with high or higher-middle education level, 0.76 versus 0.87 respectively. Apart from the youngest age group, women had consistently lower QoL values than men. Overall mean values were 0.86 versus 0.79 respectively. Due to a larger difference in life expectancy (74.7 versus 66.1 years), quality adjusted life expectancy results still favoured women. The difference, however, got smaller, 64.2 versus 60.6 quality adjusted life expectancy. Data indicates that the level of concentration of ill health among the poor is higher than the concentration of health care consumption. Small but positive value of the Le Grand index of 0.06455 indicates a system that slightly favours the rich. **CONCLUSIONS** Our results showed that substantial socio-economic differences exist in quality of life within the Hungarian population. Data implied that health promotion should focus on lengthening life in the case of men while it should focus on improving quality of life in the case of women. Reduction in inequalities in health status can not be achieved without tackling income inequalities.

The issues of inequalities in the health status of the population and equity in health care have been important both in the evaluation of different health care systems and for health policy making in individual countries. Ac-

ording to WHO documents, the most important interpretation of equity is achieving equality in health status. Kunst and Machenbach specify that "socio-economic inequalities in health can be defined as differences in the

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Ανισότητες στην κατάσταση υγείας και στην παροχή υπηρεσιών στην Ουγγαρία

Περίληψη στο τέλος του άρθρου

### Key words

EQ-5D  
Health inequalities  
Hungary  
Illness concentration  
Le Grand method

prevalence and incidence of health problems between individual people of higher and lower socio-economic status". The reason for reducing inequalities is not only because these inequalities are "unfair" but also because "reducing the burden of health problems in disadvantaged groups offers great potential for improving the average health status of the population as a whole".<sup>1</sup>

In the WHO Health for All Strategy, Target 1 is achieving equity in health: "By the year 2000, the differences in health status between countries and between groups within countries should be reduced by at least 25%, by improving the health of disadvantaged nations and groups."

In the last decade, Hungary has been undergoing a transition period from being a socialist country towards a market economy. This process has involved major changes in the society and the issue of inequalities has been a major concern of the public. Despite its importance, little evidence has been gathered relating to inequalities in health.

Traditionally, mortality and morbidity data have been extensively used in the measurement of health status. However, today in addition to these indices, there is an increasing interest in describing the quality of life of the population.

The objective of this paper was to analyse socio-economic inequalities in the health status of the population and inequity in the delivery of health care in Hungary by analysing a data-set which used the EQ-5D instrument.

## MATERIAL AND METHOD

### Data collection and variables

Five interview surveys which included the EuroQol instrument and questions about socio-economic status were conducted on representative samples of adults in 2 typical cities in Hungary and 3 typical districts of the capital of Hungary in 1996. The two cities were Vac and Dorog and the three dis-

tricts of Budapest were districts IV, VI, and XIII. Data from the five data-sets were pooled. The overall sample size was 4,083. The population of these places belongs neither to the wealthy nor to the poorer groups in Hungary but represent a typical, mixed population. Although this sample is not truly representative of the overall population of Hungary (for example, women are overrepresented), this is the only large data-set available for the purposes of the study. The data were collected by SocioMed Institute, Hungary. Table 1 summarizes some characteristics of the pooled population.

Health status was measured as health related quality of life, using the EQ-5D instrument. The EQ-5D questionnaire is a widely used, internationally developed and extensively validated instrument based on questions in five dimensions which influence quality of life most importantly (according to the opinion of the developers): mobility, self-care, usual activities, anxiety/depression, pain/discomfort. The EQ-5D health index is a single index measurement with a maximum value of 1, indicating full health, whereas the value of zero indicates the state of death. As no Hungarian preference values have yet been elicited, this study used the so called York preference values which were derived from a UK general population survey using the Time Trade-Off (TTO) method.<sup>2</sup>

Demographic and socio-economic variables included age, gender, income level, marital status, educational level, and economic status.

Income level was measured by a categorical variable. Respondents had to define to which of the four income groups they belonged, based on their net monthly income.

Categories of marital status were: single, married, divorced, and widow/er. Due to the similar pattern in quality of life, two categories were finally created: single or married and divorced or widow/er.

There were five categories for educational level: less than primary school, low education, lower-middle education, higher-middle education, and high education level. A dummy variable was constructed with a value of 1 if someone had high or higher-middle education level and had a value of 0 otherwise.

Categories of economic status were: active, unemployed, housewife, pensioner, other.

Utilisation of health care was measured as number of physician visits in the last year. This question was included in two

**Table 1.** Characteristics of the pooled study population (n=4,083).

Age in years	Characteristics					
	Female %	Single %	Married %	Divorced %	Higher middle and high education %	Lowest income group %
Under 40	61	30	58	12	61	31
40-59	59	4	69	27	56	34
60 and over	67	3	44	53	33	55

of the five surveys (districts VI and XIII of Budapest) giving an overall sample size of 1922 for health care utilisation.

Ill health was measured as 1 minus the EuroQol weighted health status index. This variable had a minimum value of zero (in the case of full health) and had values larger than 1 in the case of people who had a negative EuroQol weighted index. This ill health variable was necessary in order to construct illness concentration curves.

*Comparing mean health status across various socio-economic groups.* Mean quality of life values were calculated in various socio-economic groups. To account for the confounding effect of age, these values were calculated in different age groups. Quality adjusted life expectancy (QALE) was calculated by multiplying life expectancy data of the Central Statistical Office by quality of life values from the current data-set. QALE values were calculated for people at birth, and for people at the ages of 40, 50, and 60 years as these were the data available from the statistical office. The Sullivan method could not be used due to lack of detailed survival tables. The ANOVA method was used to test statistical significance.

*Regression analysis and correlation matrix.* A regression model was developed to identify key socio-economic variables that influence health status.

*Illness concentration curve and illness concentration index.* An illness concentration curve was constructed and the illness concentration index was calculated with respect to income level. The concentration index was compared with other international results.

### Measuring inequity in the delivery of health care

The Le Grand method was used to measure inequity in the delivery of health care.

According to Le Grand,<sup>3</sup> the level of medical care received by an income group or socio-economic group (SEG) should be compared to the share of health care needs of that particular income group. Based on this idea, the illness concentration curve and the level of receipt of health care services (i.e. expenditure on those services) can be considered.

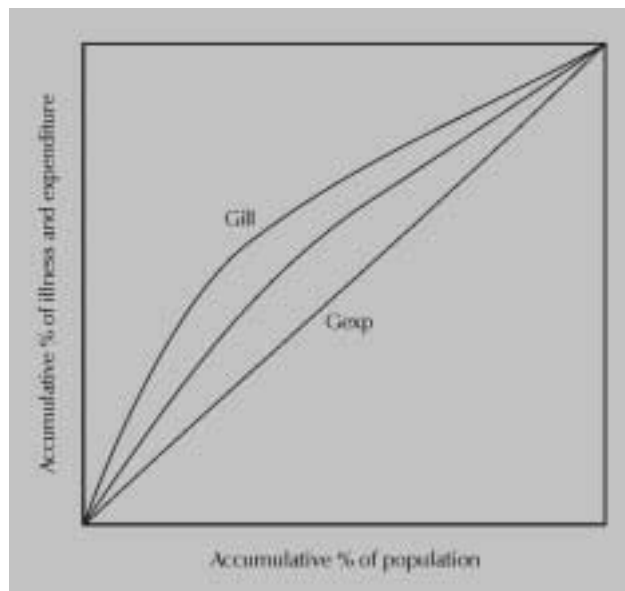
Figure 1 illustrates a possible illness concentration and an expenditure concentration curve.

It shows a case where there is inequality in the distribution of illnesses (favoring the rich) and inequality in the delivery of health care (favoring the poor). The level of inequalities is, however, not proportional in the illustrated case: health care is not delivered in proportion to illness.

The Le Grand index quantifies the relationship between illness concentration and the concentration of the delivery of health care:

$$HI\ lg = Gexp - Gill$$

Any positive value indicates a system favoring the rich and any negative value indicates a system favoring the poor. The theoretical maximum value of the index is 2 (the poorest person suffers from all the illnesses and the richest gets all health care). The theoretical minimum value is -2 (the richest person



**Figure 1.** Illustration of the Le Grand method.

suffers from all the illnesses and the poorest gets all health care).

Doorslaer et al<sup>4</sup> emphasise that the Le Grand index has merit as a single and comparable index of inequalities but the following problems are also associated with it:

- It can be shown that this index contains an inbuilt bias towards the detection of inequity favoring the rich, as a result of its implicit assumption that non-sick people do not receive care. This is a more serious problem if a health system is such that non-sick people still receive a lot of health care services.
- The other problem might be that the rich and the poor have different demographic characteristics which are reflected by the allocation of health care.

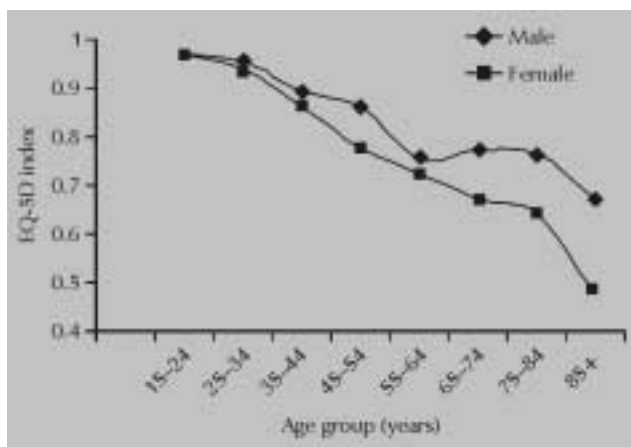
Doorslaer et al<sup>4</sup> suggested alternative methods for measuring inequity in the delivery of health care, such as the method for testing inequalities and the use of standardised expenditure curves. This paper, however, applied the Le Grand method for easier international comparison.

## RESULTS

### Health related quality of life of the general population with respect to age and gender

Weighted health status indices were calculated by gender for each age group in ten-year intervals. Figure 2 illustrates quality of life values of men and women.

Table 2 summarizes mean EuroQol weighted health status in each age group by gender and the total number of people in the sample in different age groups.



**Figure 2.** Health status of the general population with respect to age and gender.

It can be seen from figure 2 and table 2 that age is a very important determinant of quality of life. While people between the age of 15 and 24 years had a mean index of 0.97, people over 85 had a mean value of 0.50.

The data also show a consistent difference between the quality of life of males and females. Apart from the age group of people between 15 and 24 years, men have consistently higher quality of life. The average values for men and women were 0.86 and 0.79, respectively ( $P < 0.0001$ ). The difference between men and women increases over age. There seems to be a strong cohort effect in men between the ages of 55 and 64 years. This means that those men who survive this high mortality period are healthier than those who did not survive. This leads to an increasing quality of life value in the two following age groups, 65–74 and 75–84 years.

The EuroQol profile analysis showed that women consistently reported slightly more problems than men in each of the five dimensions but they reported proportionally a much higher rate of problems in the case of depression/anxiety, 31% vs 21% ( $P < 0.0001$ ).

### Quality adjusted life expectancy

While these data indicate that males have higher quality of life than females, it is well known from life expectan-

cy statistics that women live longer. Therefore, the calculation of QALE values is particularly interesting in the case of the Hungarian population.

The calculation of differences in QALE values was based on combining life expectancy data of the Central Statistical Office in Hungary and quality of life values from the current data-set.

QALE data were calculated for four groups. These were people at birth and people at the ages of 40, 50, and 60 years. QALE values were obtained by multiplying life expectancy by the quality of life in which people live through out their life. Graphically, QALE expectancy is represented by the area under the quality of life curve during the remaining life expectancy.\* Table 4 summarises mean QALE values in the four age groups considered.

The data in table 3 and table 4 show that women have longer life expectancy than men (74.7 vs 66.1 years at birth) but due to their lower quality of life the difference in QALE between women and men gets smaller (64.2 vs 60.6 years).

Therefore, the data suggest that even after adjusting life expectancy values for quality of life, women are still better off in terms of QALE value.

### Self-reported health status by level of problem and by age group

Figure 3 illustrates self-reported health status according to the level of problem. It can be seen that more than 36% of the overall population suffer from some pain or discomfort. Clearly, pain or discomfort is the most important cause of reduced quality of life followed by depression or anxiety.

Figure 4 shows reported health status according to the age group. It can be seen that more than half of the elderly people and more than third of the middle aged

\* Obviously, this method assumes that the pattern of quality of life by aging (as life expectancy) does not change over time

**Table 2.** Mean weighted health status indices in each age group.

Sex	Age group (years)							
	15-24	24-34	35-44	45-54	55-64	65-74	75-84	85+
Male	0.968	0.957	0.894	0.861	0.754	0.774	0.764	0.670
Female	0.972	0.939	0.862	0.777	0.724	0.671	0.639	0.467
Total	0.970	0.946	0.875	0.813	0.736	0.705	0.675	0.503
n	320	567	866	781	573	634	272	44
SD	0.08	0.13	0.24	0.28	0.31	0.32	0.31	0.42

**Table 3.** Life expectancy of males and females in Hungary in 1996.

Sex	Life expectancy			
	At birth	At 40 years	At 50 years	At 60 years
Male	66.1	28.8	21.3	14.9
Female	74.7	36.6	27.7	19.4

Source: Central Statistical Office database, 1999

**Table 4.** Quality adjusted life expectancy of QALE males and females in Hungary in 1996.

Sex	QALE			
	At birth	At 40 years	At 50 years	At 60 years
Male	60.6	23.6	16.7	11.4
Female	64.2	26.6	19.5	13.1

people suffer from pain, while depression or anxiety is the most common problem of the younger age group.

Quality of life and marital status

Marital status had a significant impact on quality of life. People who were single or married had higher average quality of life value than those who were divorced or widowed, 0.86 vs 0.72 ( $P < 0.0001$ ).

Quality of life and educational level

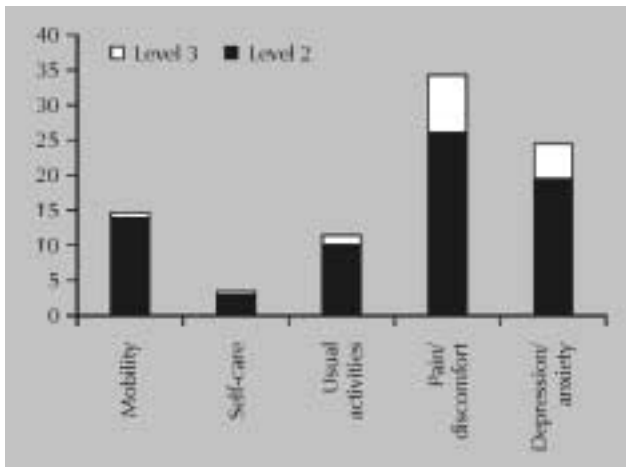
People with a high or higher middle educational level had higher mean quality of life values than people with a low or lower-middle educational level, 0.87 vs 0.76 ( $P < 0.0001$ ). Figure 5 shows mean quality of life values according to education level.

No statistically significant relationship could be shown between quality of life and economic status of the respondents.

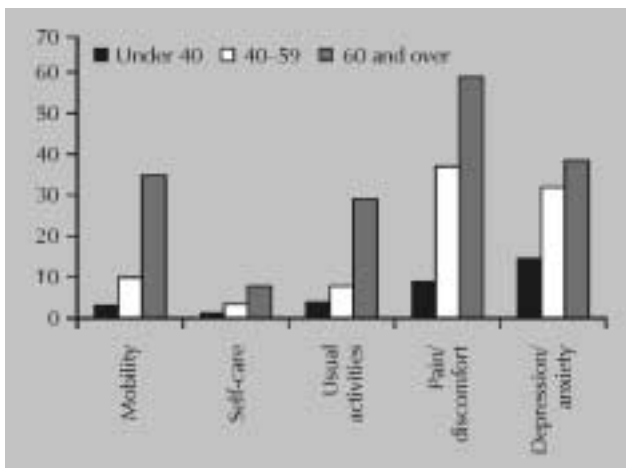
Income related inequalities in health status

Due to a very rapidly changing society, no standard social class classification is applicable in Hungary. Income, however, is one of the strongest predictors of socio-economic status. For this reason income was used, and was one of the most important explanatory variables in this study.

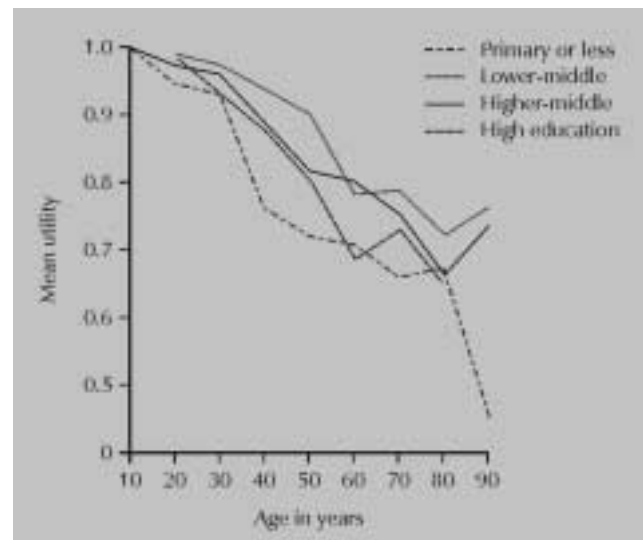
Respondents had to classify themselves into four income groups. People in the lowest income group ( $n = 1,593$ ) earned HUF 0–15,000 per month. The other three income groups were HUF 15,001–30,000 ( $n = 1,440$ ), HUF 30,001–50,000 ( $n = 368$ ), and above HUF 50,000 ( $n = 269$ ). Figure 6 illustrates the mean weighted Euro-



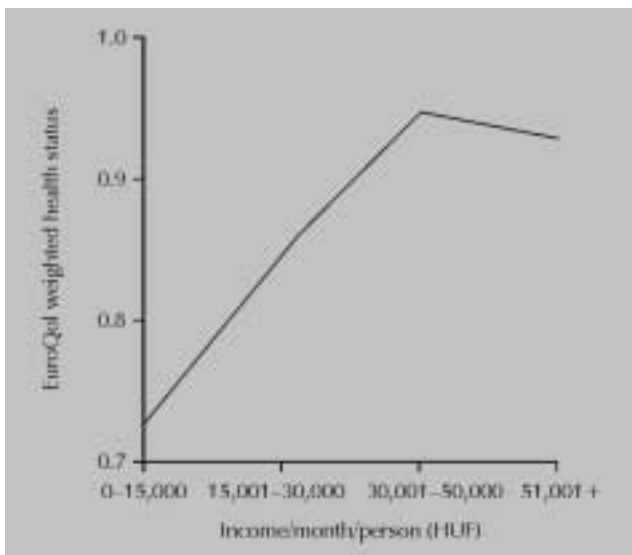
**Figure 3.** Self-reported health status by level of health problem.



**Figure 4.** Self-reported health status by age group.



**Figure 5.** Quality of life with respect to education level.



**Figure 6.** Quality of life and income level.

QoL health status indices in the four groups. Mean quality of life values in the four income groups were 0.73, 0.84, 0.95, 0.93, respectively ( $P < 0.0001$ ).

The evidence shown in figure 6 implies that income has a substantial impact on health related quality of life. Upper middle income people have the highest quality of life values and that these values decrease slightly for the richest income group.

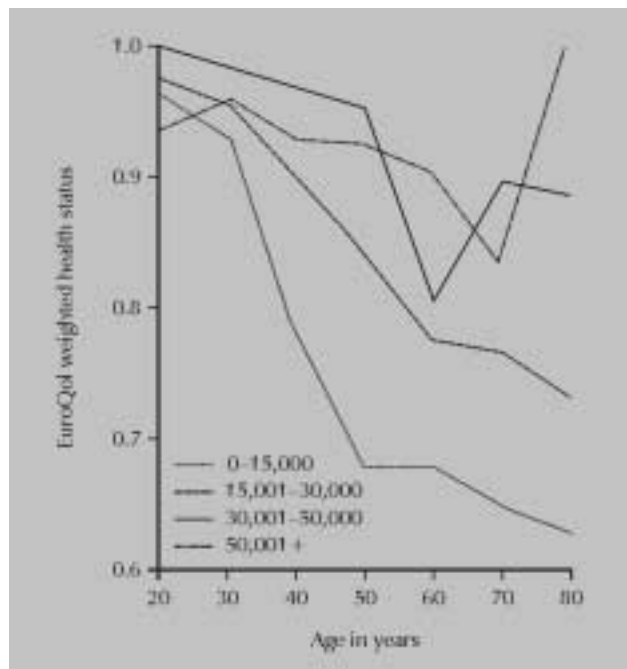
To account for the confounding effect of age on income, health status was examined in each age group separately. From figure 7, it can be seen that income has a substantial influence on quality of life in each age group separately.

The EQ-5D profile analysis (fig. 8) showed that the decrease in quality of life value in the richest group was due to increased anxiety/depression in the 40–59 years age group particularly. This group also reported and increased pain/discomfort.

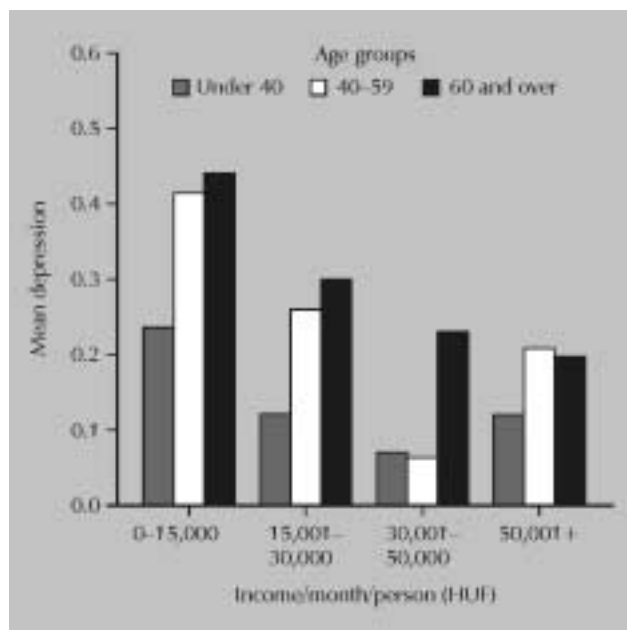
**The illness concentration curve and concentration index**

The construction of the illness concentration curve and the calculation of the concentration index was based on mean values of illness in the different income groups. Table 5 summarises the distribution of people and the distribution of illness among the four income groups.

The illness concentration index can be calculated as double the size between the curve of cumulative % of illness and the diagonal:



**Figure 7.** Quality of life and income by age.



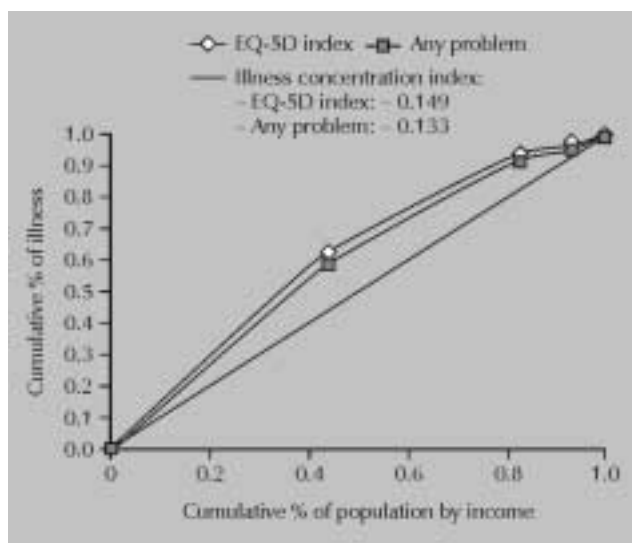
**Figure 8.** Profile analysis of mean anxiety/depression by income level and by age groups.

$$(0.62-0.44) \times 0.44 + [(0.62-0.44) + (0.94-0.83)] \times (0.83-0.44) + [(0.94-0.83) + (0.97-0.93)] \times (0.93-0.83) + (0.97-0.93) \times (1-0.93)$$

Figure 9 illustrates graphically the illness concentration curve of the study population.

**Table 5.** Distribution of people and illness among income groups.

Income group	Cumulative % of patients	Cumulative % of illness	n
Lowest income group	0.44	0.62	1,593
Lower middle income group	0.83	0.94	1,440
Higher middle income group	0.93	0.97	368
Highest income group	1.00	1.00	269
Total	1.00	1.00	3,670



**Figure 9.** Illness concentration curve.

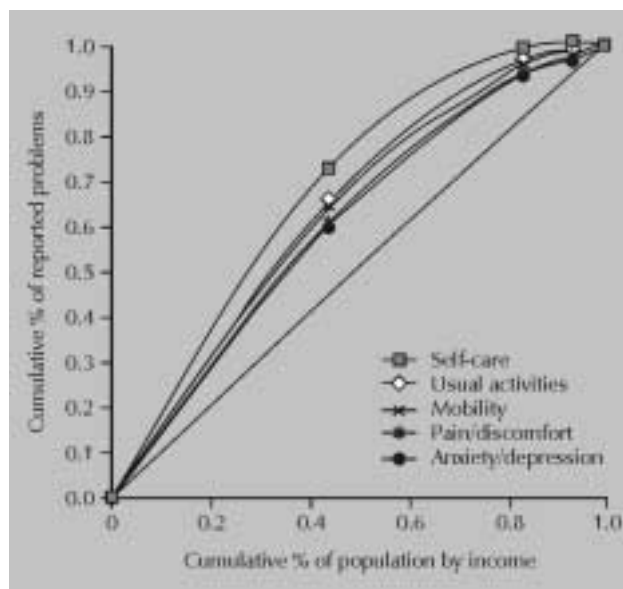
The illness concentration index was  $-0.1494$ , indicating a distribution of illnesses that favors the rich. A similar result was found by looking at the concentration of those reporting any problem.

It can be seen from the figure that the illness concentration curve is convex until it reaches the highest income group. For example, 44% of the whole population falls in the lowest income group but this 44% of people suffers from 62% of the total illnesses. The concentration curve gets slightly concave in the case of the highest income group indicating that the marginal impact of income on health gets a negative value.

Figure 10 illustrates income-related differences in reported problems according to the five dimensions of the EQ-5D instrument.

From the profile analysis it can be seen that problems with self-care are concentrated among the people in the lower income group while anxiety/depression is the least concentrated health problem being spread over all income groups.

In terms of the magnitude of problems, however, pain/discomfort was the most important determinant of health



**Figure 10.** Concentration of reported problems according to the EuroQol profile analysis.

status: 36.4% of the overall population reported suffering from pain/discomfort.

Measuring inequity in the delivery of health care

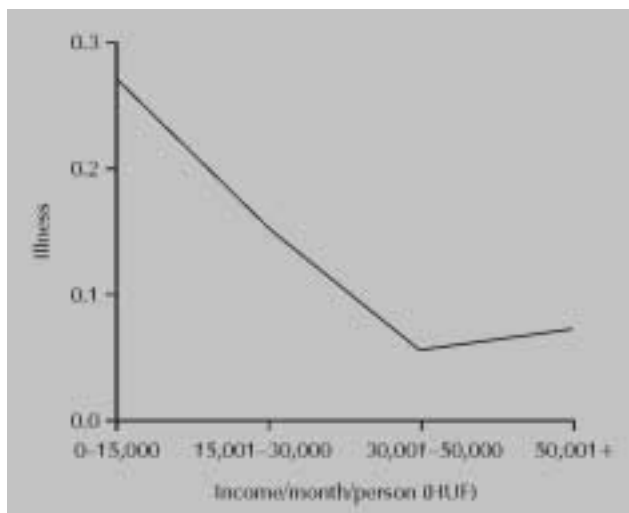
To measure inequity in the delivery of health care the Le Grand method was used. To measure health needs, illness was defined as 1 minus the EuroQol health status. To estimate the utilisation of health care, the annual numbers of physician visits were calculated.

Figure 11 and figure 12 illustrate respectively mean illness values and mean number of physician visits by the four income groups.

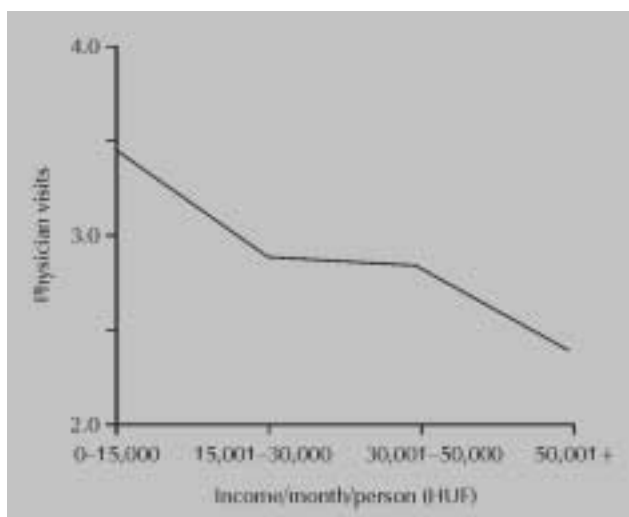
It can be seen from figures 11 and 12 that the higher income people have less illness and they use health care less than the lower income people.

Figure 13 shows the concentration of the illnesses and health care consumption by different income groups, providing the Le Grand index.

The data indicated that the level of concentration of ill health among the poor is higher than the concentration



**Figure 11.** Illness according to income groups.



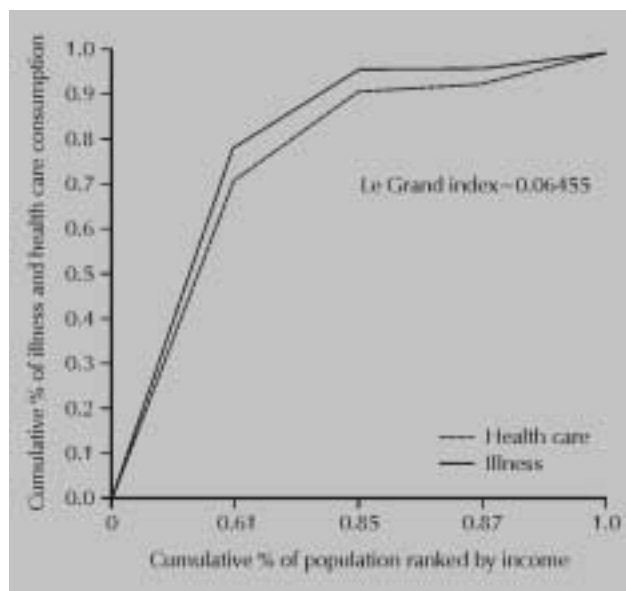
**Figure 12.** Physician visits according to income groups.

of health care consumption. The small but positive value of the Le Grand index of 0.06455 indicates a system that slightly favors the rich.

## DISCUSSION

Results of this study show that substantial socio-economic differences exist in health status within the Hungarian population and that there is evidence of inequity in the delivery of health care, favoring the rich.

Apart from age, income had the most important impact on quality of life. The difference in health related quality of life between the poorest and the middle high income group was equivalent to that between the age



**Figure 13.** The Le Grand index.

group 25–34 and the age group 55–64 years. At the upper income level there was a decreasing marginal impact of income on quality of life and, in fact, HRQoL started to decrease in the case of the highest income group. According to the profile analysis, this decrease in quality of life was mainly due to increased anxiety/depression and pain/discomfort reported by middle aged and older people.

This strong relationship between health status and income has at least two policy implications and two methodological implications.

It appears that the policy objective of reducing inequalities in health status largely falls outside the scope of the health care system and cannot be pursued without tackling income inequalities.

From the methodological view point, this study is important as it was the first study to explore the relationship between income and EQ-5D health status data. The results suggest that income is a very important explanatory variable and therefore it should be included in more general population-based studies. On the other hand, further research is needed to identify the mechanism through which income influences people's quality of life.

The profile analysis showed that income-related inequalities are derived from a general reduction of quality of life and are not due to disadvantage in a specific dimension of health related quality of life. Therefore, the implication for health promotion policies is that the over-



all improvement of health status should be the primary aim. To reach this objective pain/discomfort management policies should be implemented as this dimension was far the most important dimension of the low quality of life of the overall population.

Regarding international comparisons, the most important study on income-related inequalities in health status was that of Doorslaer et al.<sup>2</sup> Their findings in those of 9 OECD countries and this study of Hungary are summarized in table 6.

From table 6, it can be seen that Hungary represents the highest inequality index among all OECD countries, including the United States.

It will need further research to elucidate whether the marked income-related inequalities are due to the transition period through which Hungary is going at present and to large inequalities in the society according to the assumption of Wilkinson<sup>3</sup> or are simply due to methodological differences between studies. As this was the first study using the EuroQol instrument in calculating concentration indices, it is difficult to say whether the EuroQol, as a more sophisticated instrument, results in higher indices than surveys based on simple self-assessed questions.

The study showed that the quality of life of women was lower than that of men. The average difference was 0.07 on the EuroQol weighted index scale. This difference was due to slightly more problems reported by women in each of the five dimensions of the EuroQol questionnaire and markedly more reported problems of anxiety/depression. The regression model suggested that the difference between men and women had an average value of 0.02 only. The reason for the difference between the two results could be the existence of confounding variables. The correlation analysis showed that the most important confounding variables were income and marital status.

**Table 6.** Illness concentration indices in selected OECD countries.

Country	Illness concentration index
Sweden	0.0347
East Germany	0.0436
Finland	0.0566
West Germany	0.0571
The Netherland	0.0660
Switzerland	0.0696
Spain	0.0732
United Kingdom	0.1148
United States	0.1360
Hungary	0.1494

As this was the first study using the EuroQol instrument in a general population survey, no comparable results exist within Hungary. However, Czimbalmos et al used the SF-36 generic questionnaire in a general population survey of 3,907 Hungarian people.<sup>6</sup> Their results were similar to those reported here in the sense that women had consistently lower scores than men throughout the whole SF-36 profile.

In international comparison, however, Kind et al reported no consistent differences between males and females in EuroQol health status in the United Kingdom.<sup>5</sup>

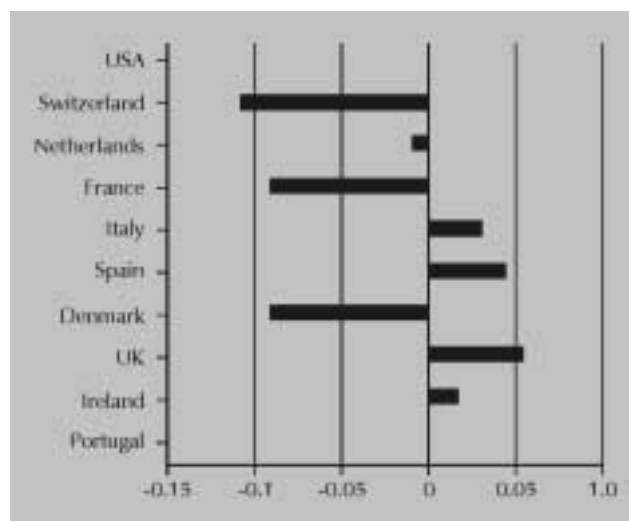
The construction of the QALE table for the Hungarian data-set was interesting particularly because women had longer life expectancy while men had higher quality of life. The combined QALE was higher for women.

From the methodological view point, to our knowledge this was the first QALE table based on the EuroQol quality of life values. The possible methodological and policy implications of using such new statistics, however, should be addressed in future research.

The obvious policy implication which can be drawn from the results is that health promotion should focus on lengthening life in the case of men while it should focus on improving quality of life in the case of women in Hungary.

### Inequity in the delivery of health care

Evidence was provided that, despite rich people using less health care than the poor, their use of health care is proportionally too high compared to their level of ill



**Figure 14.** Le Grand indices in selected OECD countries.

health. This was reflected by a small but positive value of the Le Grand index of 0.06455.

Figure 14 illustrates the values of the Le Grand index from the Wagstaff and Doorslaer study in ten OECD countries.

From the figure it can be seen that none of the selected OECD countries had such a high Le Grand index as Hungary.

It is acknowledged, however, that the data on health care utilisation was restricted to two districts of Budapest only and therefore results can not be generalised for the whole country. Also, although the number of physician visits is a good proxy for health care utilisation, it is far from covering the whole picture of health care consumption. Due to these limitations in data collection and the fact that there is an in-built bias in the Le Grand method towards favoring the rich, these results should be confirmed by further studies.

In addition these results also suggest that there is a need for research on anti-equity provider incentives in the Hungarian health care system.

In conclusion, this study represented the first general population based health survey to include the EQ-5D instrument in Hungary and one of the first studies which included income data and the EQ-5D instrument in the same study worldwide.

Due to limitations in data collection the results of this study should be further tested on more representative samples.

From the methodological point of view, however, it is more important that evidence has been provided so that concentration indices can be derived from EQ-5D population surveys, enabling the construction of aggregate indicators which measure the distribution of health across the population.

## ΠΕΡΙΛΗΨΗ

### Ανισότητες στην κατάσταση υγείας και στην παροχή υπηρεσιών στην Ουγγαρία

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**ΣΚΟΠΟΣ** Στόχος της μελέτης μας ήταν η μέτρηση της ποιότητας ζωής του ουγγρικού πληθυσμού και η διερεύνηση της σχέσης μεταξύ ποιότητας ζωής και κοινωνικο-οικονομικών μεταβλητών. **ΥΛΙΚΟ-ΜΕΘΟΔΟΣ** Το 1996 διενεργήθηκαν έρευνες πεδίου, που συμπεριελάμβαναν το «εργαλείο» EQ-5D για τη μέτρηση της ποιότητας ζωής, καθώς και άλλες ερωτήσεις για την κοινωνικο-οικονομική κατάσταση. Επιλέχθηκαν 2 αντιπροσωπευτικές πόλεις στην Ουγγαρία και 3 περιοχές από τη Βουδαπέστη. Τα δεδομένα αποτέλεσαν μια ενιαία πηγή των 5 επιμέρους ερευνών και το συνολικό δείγμα ανήλθε σε 4.083 άτομα. Εκτιμήθηκαν οι μέσοι όροι για την ποιότητα ζωής των διαφόρων κοινωνικο-οικονομικών κατηγοριών. Διαφορές στη σταθμισμένη ποιοτικά επιβίωση μελετήθηκαν με το συνδυασμό των στοιχείων που προήλθαν από τη Στατιστική Υπηρεσία και την παρούσα μελέτη. Η μέθοδος του Le Grand εφαρμόστηκε για τη μέτρηση της ανισότητας στην παροχή της υγειονομικής περίθαλψης. Ο δείκτης ανισότητας Le Grand εκτιμήθηκε για τον αριθμό των επισκέψεων στους γιατρούς και για την κατάσταση υγείας, όπως καταγράφηκε στις διαφορετικές εισοδηματικές κατηγορίες. Η κατάσταση υγείας μετρήθηκε με το δείκτη ποιότητας EQ-5D. **ΑΠΟΤΕΛΕΣΜΑΤΑ** Τα αποτελέσματα της έρευνας έδειξαν ότι οι κύριοι παράγοντες κινδύνου για τη χαμηλή ποιότητα ζωής σχετίζονταν με την ηλικία, το χαμηλό εισόδημα, το να είναι διαζευγμένος (η), τη χαμηλή εκπαίδευση και το γυναικείο φύλο. Οι άνθρωποι με ηλικία από 15–24 έτη είχαν μέση τιμή του δείκτη EQ-5D 0,97, συγκρινόμενοι προς τους ηλικίας άνω των 85 ετών, οι οποίοι είχαν μέση τιμή EQ-5D 0,50. Η μέση αξία ποιότητα ζωής για τις εισοδηματικές ομάδες ήταν 0,73, 0,84, 0,95, 0,93, αντίστοιχα. Το εισόδημα επηρέαζε πολύ έντονα την ποιότητα ζωής κάθε ηλικιακής ομάδας. Οι διαζευγμένοι ή οι χήροι είχαν χαμηλότερη ποιότητα ζωής από ό,τι αυτοί που ζούσαν μόνοι ή ήταν παντρεμένοι, 0,72 έναντι 0,86, αντίστοιχα. Τα άτομα με χαμηλό ή

με μικρότερο του μέσου επίπεδο εκπαίδευσης είχαν χαμηλότερη ποιότητα ζωής, συγκρινόμενα προς εκείνα με ανώτερο ή με ανώτερο του μέσου επίπεδο εκπαίδευσης, 0,76 έναντι 0,87, αντίστοιχα. Εκτός από τις περισσότερες νέες ηλικιακές ομάδες, οι γυναίκες είχαν σταθερά χαμηλότερες τιμές ποιότητας ζωής από ό,τι οι άνδρες. Οι παραπάνω μέσες αξίες ήταν 0,86 έναντι 0,79, αντίστοιχα. Σύμφωνα με μια μεγαλύτερη διαφοροποίηση στο προσδόκιμο ζωής (74,7 έναντι 66,1 χρόνια), η ποιότητα του προσδοκώμενου χρόνου ζωής προσαρμόστηκε στα αποτελέσματα ακόμη και για τις ευνοημένες γυναίκες. Η διαφορά, ωστόσο, γίνεται μικρότερη, 64,2 έναντι 60,6, ποσοτικά προσαρμοσμένη στο προσδόκιμο ζωής. Τα στοιχεία δείχνουν ότι η ανισότητα στην κατάσταση υγείας είναι μεγαλύτερη από την ανισότητα στην κατανάλωση υπηρεσιών υγείας. Ο δείκτης Le Grand εκτιμήθηκε ότι είναι 0,06455, παρουσιάζοντας ένα σύστημα υγείας που ωφελεί τους πλούσιους. **ΣΥΜΠΕΡΑΣΜΑΤΑ** Τα αποτελέσματά μας δείχνουν ότι οι ουσιαστικότερες κοινωνικο-οικονομικές διαφορές υπάρχουν στην ποιότητα ζωής εντός του πληθυσμού της Ουγγαρίας. Τα στοιχεία υπονοούν ότι η προώθηση της υγείας θα πρέπει να επικεντρωθεί στην επιμήκυνση της ζωής στην περίπτωση των ανδρών και στη βελτίωση της ποιότητας της ζωής στην περίπτωση των γυναικών. Μείωση στις ανισότητες στον τομέα της υγείας δεν μπορούν να επιτευχθούν χωρίς τακτοποίηση των ανισοτήτων στο εισόδημα.

**Λέξεις ευρητηρίου:** EQ-SD Ανισότητες Υγείας, Ανικανότητα στην ασθένεια, Η μέθοδος Le Grand, Ουγγαρία

## References

1. KUNST B, MACKENBACH M *Measuring socio-economic inequalities in health*. WHO Regional Office for Europe, 1996
2. DOORSLAER E, WAGSTAFF A, RUTTEN F. *Equity in the finance and delivery of health care*. Oxford University Press, 1993
3. WILKINSON R *Unhealthy Societies. The Afflictions of Inequality*. Routledge, 1996
4. DOORSLAER E, WAGSTAFF A. Income-related inequalities in health: Some international comparisons. *J Health Econ* 1997, 6:93-112
5. KIND P, DOLAN P, GUDEX C, WILLIAMS A. Variations in population health status: results from a United Kingdom national questionnaire. *Br Med J* 1998, 316:736-741
6. CZIMBALMOS A, NAGY A, VARGA Z, HUSZTIK B. Páciens megelegedettsegi vizsgalat SF-36 kerdoivvel, a magyarorszagi normalertek meghatarozasa. *Hungarian Journal of Public Health*, 1999

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