Socio-economic differences in health and access to health care

by

Louckx F., Vanroelen C., Beck M.

———

Abstract

This paper discusses the socio-economic differences in health and health care accessibility, based on the data of the first Belgian Health Survey (1997). Self-rated health, the average number of disorders, mental health, and social health are successively analysed by means of four socio-economic and demographic indicators (equivalent income, educational attainment, household type, and activity status). The "difficulties in paying for health care" variable is also analysed against these four fixed indicators. The analyses were carried out by means of a Multiple Classification Analysis. Besides this empirical section, the article provides a comparison of the Belgian findings against the health variations in the Netherlands and England, as well as some explanations for the socio-economic health differences and the accessibility problems in the Belgian Health Service. The main conclusion is that individuals with a higher income or higher level of education are more likely to have a better self-rated, physical, mental, and social health, and are less likely to have difficulty in paying for health care expenses. Women are often in worse health than men. Finally, it is possible to identify three subgroups which, generally speaking, are in a more precarious position, i.e. single women, the unemployed (men), and sick or disabled people.

———

Corresponding author: Fred Louckx, Medical Sociology Department, Free University of Brussels (VUB), Laarbeeklaan 103, 1090 Brussel. Tel: + 32.2.477.47.20. – Fax: + 32.2.477.47.11. – E-mail: flouckx@gesg.vub.ac.be

Keywords

1. Introduction

Are there any socio-economic differences in health in Belgium? Are there any problems regarding the financial accessibility to the Belgian Health Service? The Belgian Health Survey of 1997[1] for the first time enables us to provide a conclusive answer to these questions. This is a major step towards decreasing the gap between Belgium and other countries in terms of the data collection on social gradients in health. This article includes figures on the socio-economic inequalities as revealed in the Health Survey. The first part of the study will focus on the socio-economic differences in various aspects of health. The data will be placed in a broader international context, combined with a discussion of the various explanatory models for social gradients in health. The second part of the paper deals with the financial accessibility to the Belgian Health Service. We shall examine whether there are social gradients in the financial accessibility, whereas an attempt will be made to provide explanations for the findings.

2. Methodology

The data of the Belgian Health Survey were analysed by means of Multiple Classification Analysis (MCA). Multiple classification analysis is a multivariate technique thanks to which it is possible to establish causal relationships between a metric (or dummy) dependent variable and several non-metric and/or metric independent variables. An analysis of vari-

---

[1] The 1997 Belgian Health Survey was organized and executed under the supervision of the Scientific Institute of Public Health – Louis Pasteur. The Department for Medical Sociology at the University of Brussels (VUB) was commissioned by the de Federal Department for Scientific, Technical and Cultural Affairs to analyse the socio-economic health differences in the Health Survey.

ance is performed to test whether the predicted scores deviate significantly from chance fluctuations. In addition, MCA calculates the mean for each category of factors (independent variables). These mean values can be controlled for the other independent variables in the model. At the same time, the technique also provides an idea as to the strength of the relationships under examination. This is shown by the beta correlation ratio. The beta correlation ratio can easily be interpreted; a beta with the value "0" (naught) would mean that there is no relationship between the independent and dependent variables, whereas a beta with the value "1" implies a complete determination of the dependent variable by the independent variable. The degree of each relationship lies between these two extremes. A correlation ratio of "0.1" or higher may be considered as "relatively strong" in this context.

This technique has two significant advantages: results can be controlled for age and socio-economic status, and – when working with dummy variables – the means can be presented by easy-to-interpret percentages (1).

Only subjects aged 18 and over were included in the analyses of the Belgian Health Survey. The total respondent population amounted to 8,647 individuals.

The dependent variables in the analyses were always confronted with the same four independent variables, i.e. equivalent income, level of education, household type, and activity status. The equivalent income was measured at the household level. All revenues of a given household were added up. The total income was then weighted[2] to the number of people within the household. As a result, the same value was assigned to each member of the household. The indicators for educational attainment and activity status were measured as individual features. Students were not included in these analyses. The household type was measured as a feature of the household.

The relationship between the four independent variables and the dependent variables was always controlled for the "age" factor, as well as for the three components within the socio-economic status (SES) – i.e. the equivalent income, educational attainment, and occupation categories. Due to a lack of significance after controlling, the occupational category variable will not be discussed in this paper.

---

[2] Weighting: 1 (first adult) + 0.5 (for each subsequent adult) + (0.3) (for each child).

3. Socio-economic differences in health

3.1. Results

3.1.1. Socio-economic differences in self-rated health

The measure for self-rated health, used in this analysis, provides very general information on the state of health and general well – being of an individual. It is an important measure in the evaluation of the health status and the quality of live (2). The self-rated health encompasses physical, psychological, as well as social facets. On the other hand, the notion of "being healthy" is perceived differently by everybody. Certain groups apply a more strict definition of health than others.

In the Belgian health questionnaire, self-rated health was enquired about as follows: "What is your general health condition?" For the purpose of these analyses, the answers were grouped in the categories "very good to good", and "fair to very bad".

Twenty-two per cent of the total population returned a fair to very bad self-rated health. Men have a better self-rated health than women: 19 per cent of men reported a less good self-rated health, whereas in women this figure is 26 per cent.

The table below shows the percentages of people with a "fair to very bad" self-rated health for each category. The percentages appear in three columns, with those for the entire population being followed by those for men, and women.The degree of the relationship between an independent variable and the dependent variable is always represented by the beta correlation ratio. A raised symbol next to the beta correlation ratio refers to the legend at the bottom of the table. This is an indicator for the extent to which a relationship is significant. Correlation ratios that are not accompanied by a symbol may be considered indicators of significant relationships (at the 0.01 – level).

Individuals with a lower equivalent income are more likely to have a less good self-rated health (table 1). The three lowest income groups show a proportion which is higher than that of the population mean. The lowest income group, "– 20 000", has the highest proportion of people with a less good self-rated health. Within the "+ 60 000" income groups, respondents are only half as likely to have a less good self-rated health. The fact that men have a better self-rated health than women again becomes apparent. At the same time, the differences between the categories are similar for both sexes (i.e. the beta values are about the same).

TABLE 1
*Less good self-rated health according to equivalent income, educational attainment,
household type and activity status (percentages)*

	Total population		Men		Women	
Equivalent income						
< 20 000	29		25		32	
20 000 – 30 000	27		24		30	
30 001 – 40 000	24		21		26	
40 001 – 60 000	20		17		24	
> 60 000	15		13		18	
Beta		.097		.097		.093
Educational attainment						
No/primary education	35		30		39	
Lower secondary	26		22		29	
Higher secondary	18		15		20	
HOKT[2]	18		15		20	
HOLT/HUO[3]	16		14		19	
Beta		.160		.144		.177
Household type						
Single	27		24		32	
Single with children	30		19		33	
Couple	24		19		29	
Couple with children	20		17		23	
Complex household	21		20		21	
Beta		.069		.052[1]		.097
Activity status						
Illness or disability	80		78		84	
Retired	26		26		26	
Active	18		15		24	
Unemployed	26		20		32	
Housewife or – husband	23		39		21	
Beta		.275		.320		.251

Variables controlled for age, equivalent income, educational attainment, and occupational
categories.

[1]   Not significant at 0.01 – level.
[2]   HND, i.e. Higher (non-university) short-course education (two/three years).
[3]   Higher long-course and university education (two academic cycles, with a minimum course
of study of four years).

The relationship with educational attainment results in even greater
differences, with an overall correlation ratio of 0.160. The proportion of
people stating a less good self-rated health is markedly higher in the low-
est educational attainment category. The percentages of the categories
"higher secondary education" to "Higher Non-University Degree course/
University education" are very close to each another. In women, the level
of education results in larger differences in self-rated health than it does
in men. This is especially true for the two lowest educational attainment
categories.

The "household type" variable makes clear above all else that the women's self-rated health is more influenced by their family situation. Couples with children are less likely to have a less good self-rated health than childless couples. Single people are more likely to have a less good self-rated health than non-singles; this is true for both men and women. Amongst single women with children there is a slightly higher proportion with a less good self – rated health than amongst women without children. This difference is not found in the male population.

Unsurprisingly, ill and disabled people perform very badly within the activity status indicator. What is striking however is the distinct contrast between working people and the unemployed. This is a clear sign that unemployment is linked to a feeling of ill ease. People who are active in the job market are least likely to have a less good self-rated health.

3.1.2. Socio-economic differences in the average number of disorders

To assess the average number of disorders the Dutch "VOEG – questionnaire" was used. It contains 23 different items concerning stomach complaints, nervous and fatigue – related disorders, motor disorders, allergies, complaints regarding the (upper) respiratory tract, and headaches. For each respondent, these 23 items were subsequently aggregated to a composite variable which could be used as an indicator for the average number of health disorders.

The mean of the entire sample population was 5.65. The mean for the male subgroup equalled 4.97, as opposed to 6.33 for women. Across the board, women are thus more than one unit worse.

Significant gradients were obtained for the SES components "equivalent income" and "education". Individuals with a lower income or lower level of education on average have a wider variety of disorders than high earners or the highly qualified.

Respondents from the lowest income group (6.27) on average have one more disorder than those in the highest income category (5.07) (table 2). This is true for both men and women, although the correlation ratio of the male subgroup is somewhat greater.

Here, too, the level of education is the strongest SES component. So, the range between the lowest and highest categories is wider here. Men in the "no/only primary education" category are on average afflicted by 6 out of the 23 disorders mentioned, as opposed to 7 for women. For

respondents with university or higher (non-university) long-course education degrees, the average is 4.49 for men and 5.44 for women.

If a distinction is made according to household type, it becomes apparent that single people on average have more disorders than couples or members of complex households. The difference is particularly noticeable within the female subgroup. Single women (without children) have the worst scores (7.17). Men with a partner and child(ren) on average have the lowest number of disorders (4.76). The differences for men are not significant according to the 0.05 – significance standard.

TABLE 2
Average number of disorders according to equivalent income, educational attainment, household type and activity status

	Total	Men	Women
Equivalent income			
< 20 000	6.27	5.84	6.64
20 000 – 30 000	6.11	5.45	6.66
30 001 – 40 000	5.84	5.19	6.44
40 001 – 60 000	5.40	4.63	6.31
> 60 000	5.07	4.63	5.53
Beta	.081	.090	.072[1]
Educational attainment			
No/primary education	6.55	6.03	7.04
Lower secondary	5.99	5.27	6.77
Higher secondary	5.45	4.68	6.28
HOKT	5.08	4.26	5.63
HOLT/HUO	4.88	4.49	5.44
Beta	.117	.132	.112
Household type			
Single	6.72	5.38	7.17
Single with children	7.00	5.32	7.10
Couple	5.65	5.08	6.32
Couple with children	5,50	4.76	6.21
Complex household	5.40	4.91	5.92
Beta	.067	.047[2]	.082
Activity status			
Retired	5.46	4.48	6.30
Active	5.27	4.74	6.11
Unemployed	6.83	5.85	7.55
Housewife or – husband	5.65	5.92	5.62
Beta	.094	.080	.105

Variables controlled for age, equivalent income, educational attainment, and occupational categories.

[1] Not significant at 0.01 – level.
[2] Not significant at 0.05 – level.

When differentiating in terms of activity status, it becomes clear that working people on average have the lowest number of disorders, whereas the unemployed have the highest. Leaving aside gender distinctions, the unemployed have nearly 7 of the 23 disorders. The rest of the population hovers between 5-6 disorders out of a total of 23. For unemployed women, this mean is slightly higher. In general, the differences between the categories are greater in women.

3.1.3. Socio-economic differences in mental health

In order to chart mental health variations, an indicator based on the General Health Questionnaire (GHQ) was used. Twelve response items were used to obtain information on symptoms respondents experienced more or less in the two weeks prior to filling out the questionnaire. The Health Survey uses three dimensions from the GHQ indicator for mental health, i.e. anxiety and insomnia, social dysfunctioning and depressive moods (3). A fourth dimension of the original GHQ – indicator, hypochondria, is not used in this analysis.

The answers to the various items were dichotomized according to the categories "(much) worse than usual" and "better than usual, or the same". The scores for the 12 items from the GHQ were subsequently aggregated, resulting in a general measure for the mental health status. As a measure for psychiatric morbidity the cut – off point "1/2" is used (4). In other words: a person scoring at least two times "(much) worse than usual", is considered as having psychiatric problems at the moment of the interview.

It should be pointed out that this indicator only shows an evolution in the mental health condition at the time of the interview in comparison with his/her usual condition. Consequently it does not directly indicate who is mentally ill or healthy. Apart from the cut – off point this may be another explanation for the high number of respondents in the "worse" category (31 per cent). Individuals who have seen their mental health deteriorate do not all necessarily experience mental health problems.

When it comes to mental health, men are again healthier than women, with proportions of, respectively, 27 and 36 per cent.

The table below lists the percentages of respondents in each category who reported a worse-than-usual mental health (table 3).

Save for the lowest income categories, the equivalent income gradient is quite consistent. Individuals in the lower income categories more often

noticed a deterioration in their mental health than those in the higher income groups. The "20 000 – 30 000" category performs least well (35 per cent), whereas the highest income groups perform best (28 per cent). Within the female subgroup, only the two highest income categories clearly deviate from the other groups.

The differences are slightly more salient for the education variable. This variable also has the highest correlation ratio (0.085). The gap is again situated between "no/primary education" and the other education categories. In the male subgroup, 32 per cent of those in the lowest edu-

TABLE 3
Mental health (much) worse than usual according to equivalent income,
educational attainment, household type and activity status (percentages)

	Total	Men	Women
Equivalent income			
< 20 000	33	30	36
20 000 – 30 000	35	30	39
30 001 – 40 000	33	27	38
40 001 – 60 000	28	24	34
> 60 000	28	28	28
Beta	.057	.058[1]	.069[1]
Educational attainment			
No/primary education	37	32	43
Lower secondary	31	28	34
Higher secondary	27	23	32
HOKT	28	21	32
HOLT/HUO	31	28	36
Beta	.085	.089	.088
Household type			
Single	36	34	38
Single with children	36	13	44
Couple	29	25	32
Couple with children	31	27	36
Complex household	30	25	35
Beta	.051	.071	.056[1]
Activity status			
Retired	28	20	34
Active	29	26	35
Unemployed	41	40	42
Housewife or – husband	29	41	28
Beta	.075	.111	.081

Variables controlled for age, equivalent income, educational attainment, and occupational categories.
[1]   Not significant at 0.01 – level.

cational attainment category complained of a "worse than usual" mental health. In the female subpopulation, the proportion for the corresponding category is 43 per cent. After "higher secondary education", the number of individuals with a "worse-than-usual" mental health generally increases again.

When a distinction is made according to household type, single people with children reach a high percentage. This is entirely attributable to the score of single mothers with children, with 44 per cent of the individuals in this group experiencing a deteriorating mental health. This category is followed by single people without children. The scores for this category are above the population mean for both men and women. Couples without children are least likely to experience a downward trend in their mental health (total = 29 per cent). The values for couples with children and those for complex households are quite similar.

When a distinction is made according to activity status, it becomes apparent that it is again the unemployed that have the lowest score; 40 per cent of the male, and 42 per cent of the female unemployed report on a deteriorating mental health. For men in particular this is a negative result, in comparison with the other categories. The small group of house-husbands has a similar score to that of the unemployed. The percentage for housewives is much lower, with 28 per cent – the lowest score of the entire female population – reporting on a worsening of their mental health. In general, retired and active people reach about the same level; retired males, however, perform better than professionally active men. Within the group of retired men, 20 out of 100 individuals have a mental health that is worse than usual. This is in fact the lowest percentage of all categories (men and women combined). Additional analyses also reveal that older unemployed people are less likely to feel mentally unhealthy than younger unemployed people. Within the working population, the converse is true.

3.1.4. Socio-economic differences in social health

The World Health Organization has added a third dimension to its concept of health. In addition to physical and mental health, social health is currently also considered a full-fledged component for the total health picture. The notion of "social health" denotes the quality of the interaction between individuals and their social environment. Yet, both the enlargement of the health concept and the suggestion that it may be compared with the other dimensions are still highly controversial (5).

This item is based on the following question: "How do you rate your social contacts?" The answers were amalgamated to a dichotomous variable with the categories "high" (very satisfactory to fairly satisfactory) and "low" (fairly unsatisfactory to very unsatisfactory).

Nearly 94 per cent of the respondents rated their social relations as "satisfactory", with similar averages for the male and female subpopulations.

Below, the proportions of the respondents with a satisfactory social health are discussed for each category (table 4).

The differences established between the categories of the SES determinants are not very large.

Ninety-one per cent of the individuals who are part of a household in the lowest income group give a high rating to their social relations; 95 per cent of those in the highest equivalent income category consider their social contacts satisfactory. The differences according to equivalent income are slightly greater in men.

The number of individuals with satisfactory social contacts rises as the level of education increases – at least as far as men are concerned. It is only in the highest educational attainment category that there is another drop, with the figure even falling to the level of that of the lowest category. Is this because better-qualified individuals have a more critical attitude towards the quality of their social life? As far as the female subgroup is concerned, there do not appear to be any differences according to the level of education. Consequently, the results for women are not significant.

As an indicator for the appraisal of social contacts, the household type is relevant only for the male respondents (the results for women are not significant). For men, the household indicator is highly explanatory (beta = 0.110). It is especially the category of "single men" which has a strong downward deviation; only 87 per cent are satisfied with their social contacts. The results for single women do not deviate from the rest of the population. Conversely, the small category of single men with children is largely satisfied. The scores for the other categories are – even for men – situated on the same level and are quite close to the population mean.

The differences in terms of the activity status are also more revealing among men than they are among women. It is again the unemployed group which causes the larger deviations within the male subgroup; only 87 per cent of unemployed men are satisfied with their social contacts.

TABLE 4

Appraisal of social contacts according to equivalent income, educational attainment, household type and activity status. (percentages)

		Total	Men	Women
Equivalent income				
< 20 000		91	92	90
20 000 – 30 000		92	90	93
30 001 – 40 000		94	93	94
40 001 – 60 000		96	96	95
> 60 000		95	95	94
	Beta	.067	.091	.053[1]
Educational attainment				
No/primary education		93	91	94
Lower secondary		94	94	94
Higher secondary		94	95	93
HOKT		96	97	95
HOLT/HUO		92	91	94
	Beta	.052[1]	.089	.048[2]
Household type				
Single		90	87	93
Single with children		95	98	93
Couple		95	94	94
Couple with children		94	94	94
Complex household		95	96	95
	Beta	.063	.110	.024[2]
Activity status				
Retired		94	92	94
Active		96	96	95
Unemployed		89	87	91
Housewife or – husband		93	98	93
	Beta	.081	.112	.063[1]

Variables controlled for age, equivalent income, educational attainment, and occupational categories.

[1] Not significant at 0.01 – level.
[2] Not significant at 0.1 – level.

Retired men (92 per cent) do slightly worse than men who are active in the job market (96 percent). Unemployed women (91 per cent) also perform less well than the rest of the population, but the differences are smaller.

3.2. Discussion

3.2.1. International context

The Belgian results reveal clear social gradients in the population's health. In this respect, it is, of course, interesting to compare these gradi-

ents with those found in other countries. For this purpose, we selected two countries with a long tradition in the gathering of health-related information, namely the Netherlands and England. However in view of the differences in the indicators used, it is impossible to draw up a detailed comparison. Nevertheless, it is still worthwhile to take a closer look at the figures of these countries. The data are based on publications related to the Health Interview Survey for England (6), and the POLS (7-8) study for the Netherlands. In English publications, income and occupational categories are by far the most frequently used SES indicators, whereas in the Dutch literature it is predominantly education.

As far as "self-rated health" is concerned, the three health surveys use the same indicator. In England, the percentage of men rating their health as being "not good" amounts to 44% in the lowest income quintile, and 13% in the highest. This gradient is clearly noticeable in women, too, even though the difference is less pronounced (38% and 14%, respectively – table 5). For Belgian men, the figures amount to 25% in the lowest income category, and 13% in the highest. The scores for women are, respectively, 32% en 18% (table 1). This shows that there is a clear income gradient for both sexes in both countries.

TABLE 5
Social health differences in England, 1997, age standardized figures

	Men Income quintile		Women Income quintile	
	Lowest	Highest	Lowest	Highest
Self-rated health not good	44%	13%	38%	14%
Mental health problems	20%	9%	21%	17%
Serious lack of social support	25%	11%	19%	7%

Source: The Stationary Office, 1999. Health Survey for England 1998. London.

The Belgian gradient appears to be smaller than that in England, especially in men. However, this is a rather distorted picture since the Belgian figures have been controlled for other SES variables, which reduces the discrepancies between the lowest and the highest income categories. If the Belgian findings are controlled only for age – as is the case for the English data – then the gradient increases, but remains clearly below the English score, at least as far as the men are concerned. Indeed, by controlling for age only, we find that in the lowest income category 26% of the male respondents consider themselves to be less healthy, as opposed to 9% in the highest (table not shown). So, even if the same control variables are used, the difference between men in the lowest and the highest income

categories is still smaller in Belgium than it is in England. Moreover, the Belgian lowest and highest income categories are wider apart than the English categories. The figures in the English publications are those of the lowest and highest income quintiles. Conversely, in the Belgian data the lowest income category is made up of the 6% lowest incomes, while the highest category consists of the 14% highest incomes. In other words, the Belgian research compares the figures of the bottom 6% and the top 14% earners, whereas in England the comparison is between the bottom and top 20% of the income scale. So, if there is a smaller difference between these income categories on both ends of the scale, this is *in spite of* the larger distance between the categories compared. We may therefore conclude that the men's self-rated health income gradient is effectively smaller in Belgium than in England. To put it differently, in England the difference in self-rated health between men in the low and high income categories is greater than it is in Belgium.

For women, the differences between Belgium and England are less pronounced. When controlling the Belgian data only for age, we find that there are 35% less healthy respondents in the lowest income category, and 13% in the highest. However, it should again be pointed out that these figures refer to income categories that are wider apart than are the quintiles used in England. Finally, it may be remarked that in both Belgium and England women's self-rated health is often worse than that of men.

In the Netherlands, there is also a gradient in self-rated health. Here, 36% of individuals in the lowest educational attainment category rate their health as being "not good", as opposed to 12% in the highest educational attainment category (table 6). In Belgium, the figures are, respectively, 35% and 16% (table 6). If we control the figures only for age and sex, as is the case for the Dutch data, then the Belgian results are modified slightly to 39% and 14% (table not shown). These figures are in keeping with those found in the Netherlands, albeit a little higher. But again, it is difficult to compare the results of both countries since the educational categories are not quite the same.

As far as the number of health disorders is concerned, the same indicator (VOEG) is used in both the Netherlands and Belgium. Both countries reveal a clear gradient. In the Netherlands, the individuals in the lowest educational attainment category have on average 4.6 health disorders, as opposed to 3.4 in the highest category (table 6). In Belgium, these figures are somewhat higher, namely 6.7 and 4.9, respectively, if they are controlled only for age and sex (table not shown). We have not been able to find an explanation for the fact that these values are higher in Belgium. At the same time, it should be remarked that the gradient itself is very similar.

TABLE 6
Socio-economic health differences in the Netherlands, 1997/1998,
figures standardized for age and sex

	Lowest educational attainment category	Highest educational attainment category
Self-rated health not good ('97) **	36%	12%
Number of disorders (VOEG) ('97/'98) *	4.6	3.4
Psychosocial health problems ('97)**	18%	9%

Source:
* CBS, 1999. Vademecum Gezondheidsstatistiek 1999 (Health Statistics 1999), Ministerie van Volksgezondheid, Welzijn en Sport, Voorburg/Heerlen/The Hague.
** CBS, 1999. De leefsituatie van de Nederlandse bevolking 1997: deel 1: gezondheid en kwaliteit van de arbeid ("The living conditions of the Dutch population 1997: part I: health and quality of labour"), CBS, Voorburg/Heerlen.

Although for mental health the Belgian and English questionnaires are similar (GHQ12), the problem here involves differences in coding. In England, the cut-off point for establishing mental disorders is higher than it is in the Belgian survey. It is hardly surprising therefore that the English figures are significantly lower than those for Belgium. As a result it is not possible to draw an in-depth comparison of the strength of the gradient.

Finally, in terms of social health, the Belgian indicator is not comparable with that used in the English survey. In the Netherlands, on the other hand, the indicator used is one for psychosocial health in its entirety (ABS). So, although a social gradient has been found for each of the three countries, it is not possible to compare the gradients in view of the large differences between the indicators.

3.2.2. Explanation of the gradients found

The question that needs to be addressed, of course, is how the above-mentioned association between socio-economic status and health can be explained. In theory, there are four possibilities: [1] the association is predicated solely on methodological deficiencies and is in actual fact non-existent, [2] health has an influence on SES, [3] SES impacts on health, and [4] a combination of the above. It stands to reason that a one-off health survey like that of Belgium makes it impossible to pass judgement on the validity of the various possible explanations. Fortunately, the international literature is far more advanced in this respect, and various hypotheses have been examined in great detail. Longitudinal studies, in particular, have played a highly important role.

Nowadays, few researchers attach any credence to the so-called **"artefact explanations"**, in which the association is wholly ascribed to deficiencies in the data collection and processing. Firstly, over the past decades, a huge amount of information has been gathered consistently revealing clear social gradients for numerous aspects of health in various countries (9-10). Meanwhile, various large-scale studies including clinical measurements have also found clear social gradients in health (e.g. the English health surveys). It is clear that in these cases distortions resulting from the use of questionnaires are excluded. Finally, it has also been shown that flaws in the methodology do not always lead to an overestimation of social gradients in health. Indeed, there are indications that social gradients in health can sometimes be *under*estimated (11).

Naturally, this does not mean that one should ignore the possibility of data distortions, or methodological obstacles. However, it is clear today that the link between socio-economic status and health cannot be refuted on the grounds of methodological errors (12).

Explanations which are predicated on the assumption that the association between SES and health is due to the fact that the former is influenced by the latter are called **"selection explanations"**. The underlying reasoning is that less good health leads to downward social mobility, as a result of which less healthy individuals end up in lower social categories. Socio-economic health variations are thus explained through the influence of health on SES. Longitudinal studies have been able to prove the existence of such selection mechanisms (13-15). On the other hand, there seems to be a general consensus that selection processes in no way constitute a conclusive explanation for the existence and the extent of socio-economic health variations (16-17).

The third category is that of **"causal explanations"**, in which socio-economic status is considered a determining factor for health. SES does not have a direct impact on health; rather, its influence appears through a number of intermediary variables. For instance, a worse SES often results in less favourable living conditions: worse housing, working conditions, etc. These worsened living conditions, in turn, increase the likelihood of health problems. Lifestyle is a second major intermediary factor. Individuals from lower social classes often have an unhealthy lifestyle. For instance, there is a higher incidence of smoking in these categories. Some of the health differences between socio-economic categories may thus have their origins in differences in lifestyle. Today, there is ample data available showing that SES has an impact on health through these kinds of intermediary factors (17).

Meanwhile, there seems to be a consensus on the fact that both selection and causal mechanisms partly explain socio-economic health differences, but that the explanatory value of causation is clearly greater than that of selection (18-20). As a result, we may assume that the socio-economic health differences found in the Belgian Health Survey are mainly due to the influence of socio-economic living conditions on health, but that health, in turn, is also a determining factor in the socio-economic status.

4. Socio-economic differences in financial accessibility to health care

It is often said that the Belgian Health Service ensures that all sections of the population enjoy a high-quality health care. But is this actually true? Despite the fact that almost everyone has insurance, health care is by no means free. Indeed, for each service extended by a doctor, for each care received, and each day in hospital, the patient has to pay part of the bill, i.e. the so-called "out-of-pocket amount". Various small-scale studies have shown that because of this system in the Belgian Health Service a number of people experience financial difficulties (21-22). Thanks to the1997 Belgian Health Survey it has become possible for the first time to test a representative sample of the Belgian population.

4.1. Results

This indicator charts the distribution of the number of people who find it hard or impossible to pay their health care bills. Hence, it is a self-rated estimation on the part of the respondent as to the feasibility of the health care expenses in the total household budget.

At this stage, there will no longer be a separate representation of the differences for men and women next to the overall results. The reason for this is that the questions on health care affordability and accessibility in the Health Survey were recorded at the household level. As a result, it is impossible to make a distinction between individuals belonging to the same household. There will only be a separate representation of the "household type" variable: for single people, the male-female differences are still relevant.

Thirty-two per cent of the respondents report that they have difficulty in paying their health care services. It should be pointed out that this per-

centage must be interpreted as a "self-rated figure"; it is not because some-one claims to experience difficulties that he/she is unable to pay the health bill, or that cuts actually have to be made in other areas of the budget.

It will not come as a surprise that the differences for this variable are the greatest when making a distinction according to equivalent income, where the correlation ratio equals 0.338 (table 7). In the lowest income group, 70% are finding it difficult to pay the health care bills of the house-hold. The percentage of respondents with payment difficulties gradually decreases as the income scale increases: the highest income group counts 11 per cent of people who find it difficult to meet their bills.

Within the educational attainment indicator, it is first and foremost the category with the lowest level of education that reveals a deviating score: 39 per cent of individuals within this category are experiencing payment difficulties. There is less of a difference between the other educational attainment groups; the percentage of people with payment difficulties varies between 33 and 29 per cent. Only people in the "HOLT/HUO" category (higher non-university long-course education/university education) stick out in the positive sense, as only 26 per cent of them report a difficulty in defraying health care expenses.

TABLE 7
*Difficulty in paying for health care services according to equivalent income,
educational attainment and activity status (percentages)*

		Total	
Equivalent income	< 20 000	70	
	20 000 – 30 000	47	
	30 001 – 40 000	40	
	40 001 – 60 000	21	
	> 60 000	11	
	Beta		.338
Educational attainment	No/primary education.	39	
	Lower secondary	33	
	Higher secundary	29	
	HOKT	30	
	HOLT/HUO	26	
	Beta		.087
Activity status	Sick/disabled	54	
	Retired	39	
	Active	27	
	Unemployed	39	
	Housewife or – husband	33	
	Beta		.144

Variables controlled for age, equivalent income, educational attainment, and occupation categories.

Equally unsurprising is that the sick/disabled category counts the largest number of respondents reporting payment difficulties. Unemployed and retired individuals are having a more difficult time than outworkers. Those who are active in the labour market are least likely to report payment difficulties.

The group of singles with children drops to the bottom when a distinction is made according to the repondent's household type (total = 44 per cent) (table 8). Single men without children seem to have fewer problems paying their bills, and their score of 27 per cent puts them ahead of men with a partner (with or without children). Single women without children, on the other hand, have a much higher score (42 per cent), which brings them very close to the "single women with children" category (46 per cent).

TABLE 8
Difficulty in paying for health care services according to household type (percentages)

		Total	Men	Women
Household type	Single	34	27	42
	Single with children	44	43	46
	Couple	33	32	34
	Couple with children	31	30	32
	Complex household	29	25	33
	Beta	.061	.073	.080

Variables controlled for age, equivalent income, educational attainment, and occupational categories.

4.2. Discussion

There is a very strong social gradient in the financial accessibility to the Belgian Health Service. People from low-income categories have far more difficulty in paying their health care expenses. The explanation lies in the high out-of-pocket amounts and ineffectual social compensatory measures.

When visiting a GP, dentist, or specialist Belgian patients have to pay the doctor's full fee at the time of the consultation. Afterwards, a large part of this is reimbursed by the Sickness Fund under the compulsory insurance scheme. The remaining sum is the patient's contribution, which has to be paid, in spite of the compulsory insurance. For most patients, the out-of-pocket amount payable for a visit to a GP amounts to 4.41 Euro. For each day in hospital, their contribution equals 11.60 Euro, added with

a further 37.20 Euro for the first day. Despite the health insurance, the out-of-pocket amounts can be quite high[3]. Furthermore, the fact that for an ordinary doctor's visit, patients have to pay the doctor's full fee and are refunded in part afterwards, constitutes an additional obstacle for people in low-income categories[4].

Why is it that the patient's share in the cost of health care services is so high? In the course of the 1990s, the government dramatically increased the out-of-pocket amounts as part of a series of cost-cutting measures. According to the National Union of Christian Sickness Funds, Belgian patients paid between 248 and 273 million Euro more out of their own pockets in 1997 than they did in 1993 (23). In order to offset the increase in patient cost sharing, a number of social compensatory measures have been introduced since 1994 in order to assist the poorest of the population. This was done to ensure financial accessibility for all, despite the increase in out-of-pocket amounts. The most important of these compensatory measures are the social and fiscal deductibles.

Under the social deductible measure, the maximum out-of-pocket payment for some social categories of the population is fixed at 372 Euro per year. Expenses over and above this out-of-pocket maximum are immediately refunded in full.

This social deductible measure is afflicted with two problems. First, the terms of eligibility are very strict. People not only have to comply with stringent income conditions, but also have to belong to certain social categories. As a result, only part of the low-income categories are entitled to the social deductible. Second, a number of substantial expenses are not included in the social deductible measure. For instance, the patient's share in the cost of medicines is not taken into account. And so, people who supposedly have to pay only 372 Euro are in fact faced with much higher bills.

Those patients who are not entitled to the social deductible in the Belgian Health Service, fall under the fiscal deductible scheme, which also sets a ceiling for the out-of-pocket amounts payable by the patient. The ceiling depends on the income, but can never exceed 1,240 Euro. The

---

[3] Some people are entitled to a reduction of the out-of-pocket amount. However, the eligibility criteria are quite stringent, as a result of which the scheme is not accessible to everyone experiencing financial difficulties.

[4] Certain low-income social categories may be exempt from this. In practice, however, very few exemptions are actually granted.

main problem with the fiscal deductible is that it excludes even more health care disbursements than the social deductible. For instance, the out-of-pocket amounts payable for hospital admission are not taken into account. Moreover, patients have to wait for two years before receiving refunds under the fiscal deductible scheme.

In light of these problems, Peers (24) stated that "… there is insufficient access to health care for individuals and families that have to live on a limited income and are not entitled to **…** the social deductible". However, for social deductible patients, too, the costs can be a very heavy burden (25). The social compensatory measures that were introduced to offset the negative effects of the increased out-of-pocket amounts, are clearly not effective. Hence, it is untrue to say that the Belgian Health Service is financially accessible by all sections of the population. As a result, the high degree of social inequality in financial accessibility revealed by the figures of the Health Survey is not that surprising.

The Belgian government is currently working on a new social compensatory measure. The system of social and fiscal deductibles is to be replaced by a "Maximum Health Care Invoice", in which a number of the shortcomings of the present system will be eliminated. Naturally, it remains to be seen whether sufficient funds have been allocated in order to tackle the problems related to the social and fiscal deductible. Furthermore, the new scheme includes very few changes to the high out-of-pocket amounts. The future will tell whether the Maximum Health Care Invoice will *fundamentally* improve accessibility to the Belgian Health Service for all categories of the population.

5. Conclusion

Individuals with a higher income, or a higher level of education are more likely to have a better self-rated, physical, mental, and social health. Furthermore, they are less likely to experience difficulty in paying health care expenses. Generally speaking, the level of education has a greater impact on the health variables than income. It is only in the case of payment difficulties that income becomes more important as an explanation. The health of women is worse than that of men. In general, single people are in poorer health and encounter payment difficulties more often than people who have a partner. Individuals who are active in the job market also perform better on the whole.

The results of the Belgian Health Survey have been compared against the Dutch and English data on socio-economic health variations. Strictly speaking, however, it is very difficult to draw a comparison between the various countries. As far as self-rated health is concerned, it is clear that the gradient in England is higher – especially for men – than it is in Belgium. The Belgian and Dutch results are quite similar. Belgian respondents have a higher average number of health disorders (VOEG) than their Dutch counterparts, although the course of the gradient is more or less the same. Mental and social health are measured differently in each country, which again precludes any comparison between them.

A one-off survey makes it difficult to pass judgement on the validity of the various possible explanations. Nevertheless, international studies reveal that the causal explanations play a huge role in the explanation of health differences. Selection mechanisms are also involved, but to a lesser extent. International research also shows that the artefact explanation is of minor importance.

The analyses in this article reveal that the number of individuals who are experiencing difficulty in paying their health care bills is quite high (*ca* one-third of the population). This may partly be explained by the fact that a subjective variable was used. However, this cannot be the only reason. Indeed, the Nineties saw a dramatic rise in the patients' individual contributions to health care expenses (out-of-pocket amounts), and the compensatory measures that were introduced to cushion the blow for the vulnerable groups in society proved to be ineffective. As a result, there is no doubt whatsoever that patients' individual health care expenditures have increased within the Belgian Health Service.

It is possible to observe three subcategories of individuals who are generally in a more precarious situation. The first category is that of single women, and especially single women with children. They are more likely to have a bad self-rated health, mental health, as well as payment difficulties. The second category is made up of the unemployed in general, and unemployed men in particular. The unemployed are more likely to have a bad self-rated health, and, on average, report more health disorders, a worse mental health, and are more likely to have difficulty in paying their health care bills. Unemployed men, for their part, are also more likely to have a bad social health. The final category is that of the sick and disabled, who more often find it difficult to pay their necessary health care expenses. While this seems logical, it does nevertheless provide food for thought: if this category often experiences payment difficulties, there is a concomitant increase in the delay/cancellation of necessary medical care, which, in turn, may have a negative impact on their health.

Samenvatting

In dit artikel worden socio-economische verschillen in gezondheid en de toegankelijkheid van de gezondheidszorg besproken. Er wordt hiervoor gebruik gemaakt van de data uit de eerste Belgische gezondheidsenquête, die in 1997 werd uitgevoerd. Achtereenvolgens worden verschillen in de subjectieve gezondheid, het gemiddeld aantal gezondheidsklachten, de mentale gezondheid en de sociale gezondheid geanalyseerd aan de hand van vier vaste sociaal-economische en demografische indicatoren (equivalent inkomen, opleidingsniveau, huishoudtype en activiteitsstatus). Ook de variabele „moeilijkheden om de gezondheidszorgkosten te betalen" wordt geanalyseerd aan de hand van deze vier vaste indicatoren. Voor de analyses wordt gebruik gemaakt van een Multiple Classification Analysis. Naast dit empirisch gedeelte geeft dit artikel ook een vergelijking van de Belgische bevindingen met de gezondheidsverschillen in Nederland en Engeland. Er worden eveneens een aantal verklaringen voor de socio-economische gezondheidsverschillen en de toegankelijkheidproblemen in de Belgische gezondheidszorg aangehaald. De belangrijkste conclusie is dat personen met een hoger inkomen of een hoger opleidingsniveau een grotere kans hebben op een betere subjectieve, fysieke, mentale en sociale gezondheid en daarenboven minder kans hebben op moeilijkheden om gezondheidszorgkosten te betalen. Vrouwen hebben vaak een slechtere gezondheid dan mannen. Tenslotte kunnen nog drie subgroepen worden aangeduid, die over het algemeen in een precaire situatie zitten, namelijk alleenstaande vrouwen, werkloze(n) (mannen) en zieken of gehandicapten.

Résumé

Cet article traite des disparités socio-économiques face à la santé et à l'accès aux soins de santé. On utilise, à cet effet, les données de la première enquête belge sur le sujet, celle de 1997. L'analyse porte successivement sur les disparités concernant la santé subjective, la moyenne des plaintes, la santé mentale et la santé sociale, à partir de quatre indicateurs socio-économiques et démographiques stables (équivalence des revenus, niveau de formation, type de ménage et genre d'activité). Les mêmes indicateurs servent à l'analyse de la variable «difficultés à payer les soins de santé». L'outil d'analyse est le «Multiple Classification Analysis». Outre cette partie empirique, les données belges sont comparées à celles des Pays-Bas et de l'Angleterre. Quelques pistes sont proposées pour expliquer les disparités socio-économiques face à la santé et à l'accessibilité aux soins de santé dans le système belge. Une conclusion s'impose: il y a corrélation positive entre revenus ou formation et santé subjective, physique, mentale et sociale et corrélation négative entre revenus ou formation et problèmes de paiement des soins de santé. La santé des femmes est souvent moins bonne que celle des hommes. Il faut enfin mentionner trois sous-groupes en situation précaire, à savoir les femmes seules, les chômeurs masculins et les personnes malades ou handicapées.

References

1. VANROELEN C., 2001, Sociaal-economische verschillen in gezondheidsfactoren en toegankelijkheidsproblemen in de Belgische gezondheidszorg: Een analyse van de

Belgische Gezondheidsenquête van 1997. (Socio economic differences in health and problems with the accessibilty to the Belgian health care system: an analysis of the Belgian Health Survey of 1997.), Onderzoeksrapport, VUB, Brussels, p.5.

2. NMWR, 1996, Factors associated with self –perceived excellent and very good health among blacks – Kansas, 1995, 45, p. 906-911.

3. FURER JW, KÖNIG-ZAHN C, AND TAX B., 1995. Het meten van de gezondheidstoestand: Beschrijving en evaluatie van vragenlijsten: deel 3 psychische gezondheid. Hoofdstuk 11, pp. 104-118 (Measuring health: description and evaluation of questionnaires. Part 3 Mental health. Chapter 11), Van Gorcum, Assen.

4. KÖNIG-ZAHN C, FURER JW, AND TAX B., 1995. Het meten van de gezondheidstoestand: Beschrijving en evaluatie van vragenlijsten: deel 2: Lichamelijke gezondheid, sociale gezondheid. ("Measuring health. Description and evaluation of questionnaires. Part 2: physical health, social health") Van Gorcum, Assen.

5. WIV – Louis Pasteur, 1998, Gezondheidsenquête België, 1997: Manual 2, WIV – Louis Pasteur, Brussels, p. 110.

6. The Stationary Office, 1999, Health Survey for England 1998, London.

7. CBS, 1999, Vademecum Gezondheidsstatistiek 1999 (Health Statistics 1999), Ministerie van Volksgezondheid, Welzijn en Sport, Voorburg/Heerlen/The Hague.

8. CBS, 1999, De leefsituatie van de Nederlandse bevolking 1997: deel 1: gezondheid en kwaliteit van de arbeid ("The living conditions of the Dutch population 1997: part I: health and quality of labour"), CBS, Voorburg/Heerlen.

9. DREVER F AND WHITEHEAD M., 1997. Health inequalities. Office for National Statistics Series DS, no 15. The Stationery Office, London.

10. CAVELAARS A., 1998. Cross-national comparisons of socio-economic differences in health indicators. Erasmus Universiteit Rotterdam.

11. BLOOR M, SAMPHIER M, AND PRIOR L., 1987. Artefact explanations of inequalities in health: an assessment of the evidence. Sociology of Health and Illness, vol. 9, p. 231-264.

12. VAN DE MHEEN D., 1998. Inequalities in Health, to be continued? A life-course perspective on socio-economic inequalities in health. Proefschrift ter verkrijging van de graad van doctor, Erasmus Universiteit Rotterdam.

13. STRONKS K, VAN DE MHEEN H, VAN DEN BOS J, AND MACKENBACH JP., 1997. The interrelationship between income, health and employment status. International Journal of Epidemiology, vol. 26 (3), pp. 592-600.

14. VAN DE MHEEN H, STRONKS K, LOOMAN CW, AND MACKENBACH JP., 1998. Role of childhood health in the explanation of socioeconomic inequalities in early adult health. Journal of Epidemiology and Community Health, vol. 52 (1), pp. 15-19.

15. VAN DE MHEEN H, STRONKS K, SCHRIJVERS CT, AND MACKENBACH JP., 1999. The influence of adult ill health on occupational class mobility and mobility out of and into employment in The Netherlands, Social Science and Medicine, vol.49 (4), p. 509-518.

16. POWER C, MATTHEWS S, AND MANOR O., 1996. Inequalities in self rated health in the 1958 birth cohort: lifetime circumstances or social mobility? British Medical Journal, vol. 313, pp. 449-453.

17. PEERSMAN W., 2000. Gezondheid. In: Jan Vranken et al. (eds.): Armoede en sociale uitsluiting: jaarboek 2000, (Poverty and social exclusion: Yearbook 2000) pp. 205-216. Acco, Leuven.

18. MARMOT M., 1999. Introduction. In: M. Marmot en R. Wilkinson (eds.): Social Determinants of Health. Oxford University Press, Oxford, p. 1-16.

19. BLANE D, DAVEY SMITH G, AND BARTLEY M., 1993. Social selection: what does it contribute to social class differences in health? Sociology of Health and Illness, vol. 15, p. 1-15.

20. WILKINSON RG., 1996. Unhealthy societies. The afflictions of inequality. Routledge, London.
21. NVSM (Nationaal Verbond van Socialistische Mutualiteiten) Studiedienst, 1999. Resultaten enquête chronisch zieken (Results of the study on chronically ill patients), Brussels.
22. BECK M., 2000. De financiële problematiek van kankerpatiënten: een data-analyse ("The financial difficulties of cancer patients: data analysis"). Vakgroep Medische Sociologie, VUB, Brussels.
23. Belgische Senaat, zitting 1998-1999. De toegang tot de gezondheidszorg voor patiën-ten met zware pathologische verschijnselen en chronische aandoeningen. Verslag over de hoorzitting namens de Landsbond der Christelijke Mutualiteiten uitgebracht door de heer Jean Hermesse ("Belgian Senate, 1998-1999 session. Health care access by patients with severe pathological disorders and chronic illnesses. Report on the hear-ing by Mr Jean Hermesse on behalf of the National Union of Christian Sickness Funds"), 10 November 1998, Brussels.
24. PEERS J., 1999. Gezondheidszorg in België. Uitdagingen en opportuniteiten. ("Health care in Belgium. Challenges and opportunities") Ministerie van Sociale Zaken, Brussels.
25. BECK M., 2001. De "harde kern" van de sociale franchise. Een analyse van de patiën-ten die gedurende drie opeenvolgende jaren een uitkering hebben ontvangen in het kader van de sociale franchise regeling. ("The "hard core" of the social deductible. An analysis of patients who have received benefits within the social deductible scheme for three consecutive years") Vakgroep Medische Sociologie, VUB, Brussels.