Use of and spending in health services by individuals in Argentina in 2005. International comparisons of socio-economic differentials in health

Utilización y gasto en servicios de salud de los individuos en Argentina en 2005. International comparisons of socio-economic differentials in health

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ABSTRACT This paper, a follow-up to a previous national survey (2003), intends to update the health care services use and expenditure patterns by exploring, as in the past, the social bases for such behaviors. The survey included public policy interest in this regard. The results analyzed, from a national population sample of 1,546 persons aged 0 and older, show that -as expected- health expenditure is significant within total household expenditure and that out-of-pocket-expenses in medication are a very important proportion (40%) of this health expenditure. As a fundamental part of this article, there is a special section on health inequality aspects. The possibility of comparing local results using Japan as a parameter is of unquestionable interest to evaluate socioeconomic differentials in this field. The basic method is similar in both studies, relying on logistic regression equations.
KEY WORDS Health Care (Public Health); Health Inequalities; Health Expenditures; Financing, Health; Public Policies.

RESUMEN Este trabajo, continuidad de un relevamiento nacional anterior (2003), intenta actualizar las pautas de utilización y gasto en servicios de salud explorando, como en el pasado, las bases sociales de tales comportamientos. La indagación contempló el interés de políticas públicas en este sentido. Los resultados considerados, surgidos de una muestra nacional a 1.546 personas de 0 años y más, muestran que –dentro de lo esperado– el gasto en salud es relevante dentro del gasto total de los hogares y que el gasto de bolsillo en medicamentos es una proporción muy importante (40%) de ese gasto en salud. Como parte sustantiva del artículo, se agrega un apartado especial referido a aspectos de desigualdad en salud. La posibilidad de comparar resultados locales tomando como parámetro Japón resulta de indudable interés para evaluar los diferenciales socioeconómicos en salud. La metodología básica es similar en ambos estudios, descansando en ecuaciones de regresión logística.
PALABRAS CLAVES Atención a la Salud; Desigualdades en la Salud; Gastos en Salud; Finaciación en Salud; Políticas Públicas.

1. INTRODUCTION

The "Survey on the Use of and Spending in Health Services" conducted in 2005 has provided a new perspective on the use of and spending on health services in Argentina if compared with the first nationwide study conducted in 2003.[1] This new perspective has contributed by analyzing to what extent the behavior related to the use of and spending on health services has varied over time with regard to the crisis that took place at the end of 2001, effects which may have been reflected on the results obtained in 2003.[a]

The aims of said study may be summarized as follows:

→ To become *the second nationwide study on the use of and spending on health services by the population.*
→ To enable the analysis of the social bases for the use of and spending on health services through the collection of extensive socio-demographic data provided by each survey respondent.
→ To further analyze the association between health conditions and socio-demographic variables, inquiring into the socio-economic differentials in health from a comparative perspective.

It is necessary to highlight that the surveys on the use of and spending on health services conducted in 2003 and 2005 are the only statistical studies that, within the methodological strategies for household and population surveys, enable both the conceptual and operative analysis of the population's coverage, and use of and direct spending on health services using the same study unit. As far as we have found, other national censuses and surveys only focus on one of these aspects (either the coverage, the use of or the spending on health services).

This study emphasizes the analysis of the social bases for the use of and spending on health services, rather than the accurate estimates of expenditure on health, attending to the demand for further data observed in the study.[2,3] The survey aims to get closer to a "sociology of health" – or "in health" –[4,5] perspective rather than getting closer to an "economics of health" perspective, always in view of including, in these studies, sociological variables synthesized, for instance, by Donald W. Light.[6]

2. SOME CONCEPTUAL ASPECTS

The central hypothesis postulated by the survey states that there is inequality in the coverage, use of and spending on health services, according to different socio-demographic variables: age, gender, education, occupation (social class), income level, and geographic location.

→ The socio-economic factors that are interrelated impact the use of health services, while establishing differences among the diverse social classes or sectors. The connection between the socio-demographic variables and the health-related behavior is generally accepted, although the extent and form of this association depend on the methodological approaches and the operationalization of the variables involved. To put it more harshly: "Health, or the perception of the health condition, is not distributed in society at random. The socio-graphic and socio-economic variables cause health to be distributed in accordance with certain norms."[7 p. 64]
→ Health insurance membership[b] and out-of-pocket health expenditure affect the family budget differently in terms of social groups/classes. Precedents considered for this study show that health expenditure is significant within the total household direct expenditure, and that, within such expenditure, the amounts spent on medication represent a significant part of the expenditure on health.

On the one hand, it should be noted that, although there may be some coincidence regarding the general conceptual aspects above

in relation to inequality in health and disease, the purpose of this study is to improve the techniques for the specification and measurement of the interrelations among different factors and emergent effects within health. This study seeks to address these issues in that direction, within the limits of this type of approach, which rather emphasizes exploratory-descriptive aspects over others.

On the other hand, not only does this paper briefly introduce the aspects above, but also brings up comparative inquiries on social differentials in health at an international scale, based on a similar study conducted in Japan by Hiroshi Ishida.[8]

Part of the bibliography addressing inequality in health seeks to distinguish the term "inequality" from "inequity,"[4,5,9,10] while, in other cases, discussion is centered on the problematic aspects of the poverty-equality-equity distinction, while remarking that this distinction usually lacks practical advantages or may well bear some academic interest, but never denying its usefulness.[11]

As this issue may bring up a broad discussion, it would be just enough to mention the need to empirically explore inequality in health, while avoiding any potential normative judgment in the process. For such purpose, it is remarked[10] that, as intended in this study, the bibliography addresses the measurement of social class differentials in health as one –and the most common– of the two extensive alternatives to assess inequality in health. The authors refer to their concern about international comparisons, given the differences in the comparability of relevant social classes or variations in the social composition throughout time. [Precautions for aspects of self-perception of health may be found in Zimmer Z, *et al*.].[2] An advantage in facing these concerns is the increasing availability of surveys with a high level of international standardization. In this respect, the survey on which the study conducted in Japan is based is considerably similar to the survey used in Argentina to analyze the variables involved, which offers an unusual opportunity for comparative evaluation in the local context. Furthermore, as Donald Acheson states[12 p.1]:

While it is clearly inappropriate to generalize from the experience of one country in terms of particular policies, the weight of scientific evidence suggests [...] that a socio-economic explanation of health inequalities is likely to be relevant for all countries rich and poor throughout the world.

3. DATA, VARIABLES AND METHODOLOGY

The data used in this study was taken from a national household survey conducted in 2005 – 1,546 cases aged 0 and over – which consisted of a highly structured questionnaire that essentially replicated the questions used in a survey conducted in 2003.[c] The use and expenditure variables are repeatedly described in the different studies published by the National Center for Health Statistics and Information, under the Argentine Ministry of Health (DEIS-MSN), and currently available for consultation, although the direct interpretation of the variables is reasonably clear.[13]

The variables related to the comparative assessment with the Japanese study refer to health conditions. Out of the five health conditions – dependent variables – considered by Ishida, only four are included in the Argentine survey.[d] The first condition refers to the presence of chronic diseases diagnosed by a physician. The second health condition is related to medical consultations (including dentist consultations in the Japanese study) during the past year. The third condition evaluated by Ishida is the presence of pain or malaise, which was removed from the Argentine study. The fourth condition concerns physical abilities of the survey respondents, who were asked if they had had to interrupt activities such as going to work, doing housework or attending school. Finally, the fifth variable refers to the self-perception of health. The worst conditions are codified as 1 and the best, as 0.

For the purpose of showing that, although the dependent variables are interrelated, they measure different conditions, Ishida explains that the correlations among the variables "are not exceptionally high." The results in both countries favor the analysis of each condition (such results are not provided here). As the sample used by Ishida refers to people aged 20 and over, in this part of the study, the analysis of data in Argentina shall be limited to the same age segment (20 years old and over).

With respect to the socio-demographic variables considered in the Japanese study, the social class variable in both studies is categorized according to Erikson, Goldthorpe and Portocarrero (EGP) criteria.[14] This criterion has been applied in different studies conducted, for instance, by Erikson R. and Goldthorpe[15], and, in Argentina, by Jorrat[16]. Ishida uses an EGP classification divided into six categories, which are also applicable to the data collected in Argentina:

1. *Service category:* it comprises higher- and lower-grade professionals, administrators and managers.
2. *Routine non-manual workers:* it includes in-house positions distributed in different areas –administration, commerce and sales, among others.
3. *Petit bourgeois:* it includes small proprietors and craftsmen with employees, and craftsmen with no employees, farm workers excluded.
4. *Farm workers:* it comprises the categories above, including manual farm workers.
5. *Skilled manual workers:* it includes manual supervisors and lower-grade technicians as well as skilled manual workers, who work under labor agreement.
6. *Unskilled manual workers:* it comprises semi-skilled and unskilled manual workers within general manufacturing, excluding farm work.

Based on Ishida's approach, this study considers the highest social class (service category) as a reference group in the logistic regression (this social class is not included in the regression). In both cases, education is measured in terms of the years of education completed. As in the Japanese study, age (age reached) and gender (male = 1, female = 0) are included as control variables. Furthermore, the study considers the size of the cities where each survey respondent lives: in the Argentine case, the cities are classified into large (500 thousand inhabitants or more), medium-sized (from 100 thousand to less than 500 thousand inhabitants) and small/rural (less than 100 thousand inhabitants), the small towns and rural areas acting as reference categories. Finally, in the Japanese case, income is defined as the total family income per year (expressed in millions of yen), while in Argentina the average monthly income per capita declared in the survey is calculated per year. Due to the notable lack of response about income in the survey conducted by Ishida – which is also reflected in the Argentine study – the author introduces a dichotomous variable (=1 income is not declared; =0 other cases) to represent such non-respondents. This procedure shall be further explained in the comparison.

The first part of the study, which is more brief, approaches the calculation of the percentage of use of health services according to socio-demographic segments, and the average expenditure on the diverse health services according to the same segments.[e]

In the second part, Ishida considers different models of binary logistic regression for the diverse health conditions, which is also considered in this comparative study. In general, the dichotomization of variables consists in assigning 1 to the worst condition and 0, to the best condition. The procedure of categorizing dependent variables as 0-1 variables is necessary for using the models of binary logistic regression, in the cases where the dependent variable is dichotomous, and the independent variables are of any type. The binary logistic regression transforms the dependent variable into a variable called *logit*, based on a natural logarithm of probabilities (odds) of dependent variable occurrence. Thus, the logistic regression estimates the probability of occurrence of a certain event. Simply, the notable presence – or not – of regression coefficients of independent variables is taken

into account. It is relevant mentioning the following:

> The logistic regression coefficients simply show the change in the predicted logged odds of experiencing an event or having a characteristic for a one-unit change in the independent variables.[18 p. 19]

A final remark to conclude this idea: when comparing different regression equations for both Argentina and Japan, it has been noticed that, in some equations for Japan, "household assets" is introduced as an independent variable, which is not relevant for the Argentine study. There was doubt whether to use an alternative variable or not, in view of having observed the statistical non-significance of this variable in every equation introduced, excepting those included in Table 7, which has led to consider it redundant. This conclusion is not surprising, since household assets are included in the equation along with income. Consequently, it may be assumed that there is an important positive correlation between these variables, prompting possible multicollinearity problems (high correlations among independent variables that may affect estimations). Eventually, an alternative variable was applied: the relative social status self-perceived, considered in a scale ranging from 1 to 10. While in the Japanese case, the variable would refer to "objective wealth," in the Argentine case, it would refer to "perception of wealth."

4. RESULTS AND DISCUSSION

This section presents the results obtained and the discussion held on the three basic issues covered in this article: a) use of health services, b) spending on such services and a primary assessment of inequality in health ranked in quintiles of income, and finally, c) health conditions and socio-economic differentials in health.

4.1. Use of health services

First, this section provides a synthesis on the health behavior of the Argentine population. The results have shown that, according to a percentage of users, the basic structure of the use of health services seems to have remained invariable in the past two years. In general, it has been noticed that the use of health services has slightly increased, and, most importantly, the number of health insurance members seems to have increased by 8%.

As shown in Table 1, six out of ten individuals are health insurance members, four out of ten have consulted a doctor, less than two individuals have consulted a dentist and

Table 1. Users of different health services, according to socio-demographic variables (Expressed as %). Population aged 0 and over. Argentina, 2005.

Socio-demographic segments	Per capita affiliation expenditure	Doctor	Consultation		Speech Therapist	Used medication	Analysis, treatment, hospital admission
			Dentist	Psicologist			
TOTAL	62.7%	40.6%	15.3%	4.1%	2.7%	69.2%	22.1%
Gender							
Male	61.5%	35.7%	14.0%	3.9%	2.5%	69.0%	18.3%
Female	63.9%	45.6%	16.8%	4.4%	2.9%	69.4%	26.0%
Age							
0-14 years	57.3%	49.5%	11.9%	3.1%	2.9%	59.4%	14.8%
15-64 years	62.8%	35.7%	17.5%	4.7%	2.8%	71.7%	23.5%
65 years and more	84.4%	46.0%	10.7%	3.2%	1.2%	89.0%	40.7%

Table 1. Continued.

Education (18 years and more)							
Completed primary education	52.2%	37.0%	11.7%	2.0%	1.2%	67.2%	20.3%
Secondary education	61.1%	38.6%	14.6%	3.5%	2.3%	67.8%	19.7%
Higher education	80.0%	48.7%	21.8%	8.1%	5.4%	74.2%	28.4%
Social class (EGP)							
Service category (professional/managerial)	87.4%	44.2%	18.9%	7.1%	3.3%	69.4%	31.7%
Routine non-manual workers	81.0%	49.6%	19.4%	7.0%	5.1%	67.8%	22.3%
Petit bourgeois (small employer)	43.8%	35.8%	10.7%	3.3%	2.6%	71.7%	20.6%
Skilled manual workers	57.5%	34.7%	12.5%	2.9%	0.7%	69.9%	19.7%
Unskilled manual workers	46.9%	38.3%	12.9%	0.9%	2.8%	68.2%	17.3%
Unemployed/unspecified	65.0%	40.2%	22.0%	5.0%	-	69.2%	32.0%
Quintile of per capita income (3 groups)							
1+2	42.8%	44.1%	12.3%	2.5%	1.3%	70.4%	23.0%
3+4	74.1%	44.2%	16.0%	4.0%	2.5%	66.5%	19.6%
5	82.9%	39.6%	21.8%	7.9%	6.4%	79.6%	27.4%
Unspecified	66.5%	30.8%	15.1%	4.5%	3.0%	62.9%	20.5%
City size							
Large	62.6%	40.2%	15.7%	6.3%	2.0%	66.7%	21.9%
Medium	57.0%	39.8%	20.2%	1.5%	3.7%	70.9%	23.0%
Small/rural	63.7%	41.0%	14.2%	2.2%	3.2%	71.6%	22.1%
Affiliation							
Yes	-	43.8%	16.5%	5.3%	3.0%	69.3%	23.8%
No	-	32.5%	13.4%	2.1%	2.2%	69.1%	19.1%

Source: own elaboration based on 2005 National Survey, Center for Public Opinion Research of the University of Buenos Aires (CEDOP UBA) and the Department of Health Statistics and Information, Ministry of Health (DEIS-MSN).

slightly more than two individuals have undergone medical examinations, treatments or hospital admissions. Almost seven out of ten survey respondents use medication.

When analyzing the use of health services according to socio-demographic segments for the year 2005, it has been noticed that the level of health insurance *membership* is slightly higher among women, it increases with age, education level and social class, and it is less frequent in medium-sized cities.

In general, there is a greater tendency among women *to consult different health professionals*. While *individuals consulting a physician* predominantly belong to extreme age groups, *individuals consulting a dentist* or a mental health specialist are mainly part of active age groups (15-64 years old), and the number of *individuals consulting a speech therapist* decreases in the old age group. Taking medication and undergoing medical examinations, treatments and hospital admission increase with age. The number of individuals that consult different physicians, take medication and undergo medical examinations, treatments and hospital admissions tends to increase with higher education level.

Regardless of the individuals that take medication – a group that shows practically no social class differences – *the use of health services is higher among the wealthy*. With reference to the income level, in general *the users of health services are the predominant group in the highest quintiles of household income per capita*. It is worth highlighting that the tendency towards the use of medication is just a little more relevant among groups with high income, while medical consultation prevails in the lowest quintiles over the highest quintiles. That is to say: *medical consultation is the only type of use of health services that shows a slightly greater percentage of occurrence in the poorest sectors*.

4.2. Spending on health services

According to this survey, in 2005, the Argentine population incurred a monthly average of AR$37 out-of-pocket expenditure (which drops to AR$29 if the expenditure on any health insurance provider is not considered). This *monthly average expenditure of the whole population* varies according to the type of service used: nearly AR$15 are allocated to medication, while medical consultation accounts for less than AR$2.50.

In Table 2, it can be seen that individuals with higher expenditure on health services are women, elderly people, social classes with high income, sectors with high formal education level, health insurance members and residents of important urban centers.

In percentage terms, the differential share of each type of health service is relevant: the population's average expenditure on medication accounts for 40% of the total expenditure on health services, followed by the expenditure on voluntary health insurance membership (more than 21%), and further by the expenditure on medical examinations, treatments and hospital admission, dentist consultation and other expenditures, each of them representing more than 8%. The expenditure on medical consultation represents the smallest share in the total health expenditure (6.5%).

When comparing years 2003 and 2005, the total average expenditure on health seems to have increased by 30% (Table 3a). Except for the expenditure on dentist

Table 2. Population's average expenditure on health, according to socio-demographic variables (expressed in ARS). Population aged 0 and over. Argentina, 2005.

Socio-demographic segments	Per capita affiliation expenditure	Consultation with			Medication	Analysis, treatment, hospital admission	Other expenditures	Total expenditure without affiliation	Total overall expenditure
		Psychologist	Dentist	Other professional					
Total	7.97	2.44	3.14	2.58	14.82	14.82	3.23	29.30	37.27
Gender									
Male	9.39	1.89	1.88	2.80	11.86	4.54	2.40	25.37	34.75
Female	6.49	3.02	4.46	2.35	17.91	1.85	3.82	33.41	39.90
Age									
0-14 years	2.06	1.86	2.57	1.64	11.94	1.46	2.05	21.51	23.57
15-64 years	9.84	2.62	3.42	3.19	14.33	2.11	3.81	29.49	39.33
65 years and more	16.64	3.31	3.04	1.19	31.69	20.92	1.10	61.26	77.89
Education (18 years and more)									
Completed primary education	4.94	1.29	0.95	0.59	13.88	1.37	1.32	19.40	24.34
Secondary education	6.79	2.31	3.77	1.36	14.04	4.59	3.59	29.66	34.45
Higher education	14.14	4.28	5.23	7.36	17.38	3.67	4.80	42.71	56.86

Table 2. Continued

Social class (EGP)								
Service category (professional/ managerial)	13.33	5.62	5.97	8.31	22.23	5.83	4.19	52.15	65.48
Routine non-manual workers	10.40	3.24	6.20	5.31	20.75	2.14	4.69	42.32	52.72
Petit bourgeois (small employer)	7.76	3.83	1.68	1.28	12.71	3.25	3.40	26.15	33.91
Skilled manual workers	8.25	0.79	1.42	0.15	12.31	5.38	2.06	22.10	30.35
Unskilled manual workers	2.66	1.15	1.42	0.41	9.91	1.01	2.34	16.23	18.89
Unemployed/ unspecified	6.97	1.69	2.31	2.12	10.98	2.45	1.16	20.71	27.69
Quintile of per capita income (3 groups)								
1+2	2.46	1.68	1.22	0.34	13.35	1.08	1.66	19.32	21.78
3+4	6.94	3.32	3.41	0.80	17.29	6.05	5.24	36.10	43.04
5	22.97	2.86	5.27	6.78	18.02	3.60	4.78	41.32	64.29
Unspecified	9.07	2.06	4.92	7.15	10.67	2.20	0.74	27.74	36.81
City size								
Large	7.98	2.89	4.22	4.69	15.55	5.13	3.54	36.02	43.99
Medium	9.56	3.18	2.91	1.07	12.65	3.50	3.17	26.47	36.03
Small/rural	7.70	1.84	2.01	0.57	14.39	1.13	2.60	22.53	30.23
Affiliation								
Yes	-	2.64	3.72	3.78	18.79	2.42	3.07	34.42	47.15
No	-	2.11	2.15	0.58	8.15	4.58	3.14	20.70	20.70
N = total expenditure	289.053.516	88.541.131	113.768.513	93.678.697	537.263.326	116.966.214	112.116.700	1.062.334.582	1.351.388.097

Source: own elaboration based on 2005 National Survey, Center for Public Opinion Research of the University of Buenos Aires (CEDOP UBA) and the Department of Health Statistics and Information, Ministry of Health (DEIS-MSN).

consultation, all the average expenditures increased between 2003 and 2005. The study comparing the expenditure on health with figures drawn from previous studies has been clearly affected by currency fluctuations. Nevertheless, as background information, it may be noted that the doctors' fees increased by less than 8% (it went from AR$6.50 to ARS$7) and the dollar value remained constant (approximately AR$2.90). In turn, the consumer price index for "Medical Care and Health Expenditure" (it includes only Voluntary Health Insurance Membership and Medication, which is the most variable) increased by 12% between 2003 and 2005. In order to avoid questionable data processing and based on the insufficient data about the fluctuations of the indicators already mentioned, a comparison of nominal values appears to be more convenient. However, *what is compared is basically the percentage share in the total expenditure on health services, in addition to the relations of expenditure between the highest quintiles of income with respect to the lowest quintiles.*

From 2003 and 2005, the share of the expenditure on medication in the total expenditure on health has decreased (slightly over 6%, which meant a drop of 14% of its value in 2003). The share of the expenditure on medication in the total expenditure incurred by health insurance members remained invariable (regardless of the amount spent out-of-pocket on voluntary membership), but this share also decreased in the expenditure incurred by non-members (data specifying the members' expenditure is not included here). Medical consultation, in general, has not varied; nonetheless, it has lost ground in health insurance members' total expenditure,

Table 3a. Quotiens between the expediture on health services incurred by the highest income wuintiles and the expenditure bu the lowest income quintiles in 2003 and 2005, and quotients between the quintiles in 2005 and the corresponding quintiles in 2003, including quotients between the total quotient in 2005 and the total quotient in 2003. Population aged 0 and over, Argentina.

Type of expenditure	Quotients					
	Year 2005 5th/1st + 2nd	Year 2003 5th/1st + 2nd	Year 2005 5th / Year 2003 5th	Year 2005 2th+ 3rd / Year 2003 2th+ 3rd	Year 2005 1st / Year 2003 1st	TOTAL Year 2005 / TOTAL Year 2003
Voluntary affiliation	9.34	29.16	1.18	1.46	3.67	1.60
Consultation with doctor	1.70	5.79	0.62	1.41	2.10	1.32
Consultation with dentist	4.32	4.57	0.68	0.86	0.72	0.93
Consultation with other professional	19.94	26.00	1.24	1.11	1.62	1.95
Medication	1.35	1.57	1.16	1.05	1.34	1.12
Analysis, treatment, hospital admission	3.33	6.63	1.04	2.00	2.08	1.84
Other expenditures	2.88	4.52	0.99	1.85	1.55	1.40
Total	2.95	4.11	1.05	1.26	1.46	1.30

Source: Own elaboration based on 2003-2005 National Survey, Center for Public Opinion Research of the University of Buenos Aires (CEDOP UBA) and the Department of Health Statistics and Information, Ministry of Health (DEIS-MSN).

but it has significantly gained ground among non-members.

It has been noted that the total average expenditure on health seems to have increased by 30%. This average would not coincide in every sector, since, while the average expenditure of the highest quintile of income has practically remained invariable, the average expenditure of the middle quintiles of income seems to have increased by 26%, and 46% in the case of the lowest quintiles of income (quintiles 1 + 2). That is to say, the increase of the total expenditure on health would be apparently the result of the increase of expenditure in sectors with middle and low income levels. *Between 2003 and 2005, the expenditure on health may have increased in the low income sectors, followed by sectors with middle income level*. Expenditure on medication is the category that shows the smallest increase in poor sectors (regardless of the decline in the average expenditure on dentist consultation in every sector). The fastest growing categories in the poor sectors are voluntary health insurance membership and medical consultation. The expenditure on consultations – especially medical consultations – in sectors with high income level is the only category that decreased in the biennium analyzed, within a context of global stability for this sector's expenditure on health between 2003 and 2005. A distinctive

improvement has been observed in increased health insurance membership itself and increased expenses incurred to obtain membership, both in sectors with low income level (particularly the health insurance membership in small towns and rural areas). Within this sector, this increasing rate is followed by an increase in the average expenditure on medical consultation (the previous average is doubled) – which is actually a recovery from the low levels observed in 2003.

A primary brief analysis of inequality in health consists in observing the differences in the average health expenditure between the highest quintile of income (5th) and the lowest (1st), both in 2005 and 2003. It should be noted that 17% of the population was excluded from the analysis, since such percentage of respondents refused to report their household income level. In order to compare the data collected in 2003 and 2005, and considering the sample size, three groups are subject to analysis: the 1st and 2nd quintiles grouped together, as well as the 3rd and 4th quintiles, and finally, the 5th quintile analyzed in isolation.

First, with reference to the general population's expenditure, the average expenditure of the group with the highest income level (5th quintile) triples the average expenditure incurred by the group with the lowest income level (1st and 2nd quintiles grouped

together). The greatest difference has been observed in consultations with other medical professionals, (in a few cases) followed by voluntary health insurance membership (the average expenditure of the wealthiest group is 9 times the amount of expenditure incurred by the poorest group) and the dentist consultation (4 times). The expenditure that shows less variation is the average expenditure on medication (the average expenditure of the wealthiest group is 1.35 times the average expenditure incurred by the poorest group) and the expenditure on medical consultations (1.7 times).

Comparing years 2003 and 2005, the quotient between the total average expenditure on health incurred by the wealthiest group and by the poorest group decreased from 4 times to 3 times. This is especially evident due to the drop in the differences observed between these sectors as regards voluntary health insurance membership (the

quotient decreased from 29 times to 9 times) and medical consultation (it decreased from nearly 6 times to less than 2 times). In the group with the lowest income level, the most increasing rates were observed in the share in the expenditure on voluntary health insurance membership, medical consultation and examinations, treatments and hospital admissions, while a decrease has been registered in the share in the expenditure on dentist consultation and medication.

These comparisons lead to suggesting that inequality in health expenditure (which has been analyzed in detail) decreased in 2005. This would be essentially the result of *greater expenditure by groups with the lowest income level* – particularly with reference to their share in health insurance membership and medical consultation (Table 3b), considering the invariable rate of the average expenditure on the different categories incurred by the highest quintiles of income

Table 3b. Percentage of each expense within the total expense of the grouped quintiles of income per capita.

Type of expenditure	Year 2005				Year 2003			
	1st-2nd quintile	3rd-4th quintile	5th quintile	Total	1st-2nd quintile	3rd-4th quintile	5th quintile	Total
Voluntary affiliation	11.3%	16.1%	35.7%	21.4%	4.5%	13.9%	31.9%	17.4%
Consultation with doctor	7.7%	7.7%	4.4%	6.5%	5.4%	6.9%	7.6%	6.4%
Consultation with dentist	5.6%	7.9%	8.2%	8.4%	11.4%	11.7%	12.7%	11.7%
Consultation with other professional	1.6%	1.9%	10.5%	6.9%	1.4%	2.1%	8.9%	4.6%
Medication	61.3%	40.2%	28.0%	39.8%	66.7%	48.3%	25.5%	46.0%
Analysis, treatment, hospital admission	5.0%	14.1%	5.6%	8.7%	3.5%	8.9%	5.6%	6.1%
Other expenditures	7.6%	12.2%	7.4%	8.3%	7.2%	8.3%	7.9%	7.7%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: Own elaboration based on 2003-2005 National Survey, Center for Public Opinion Research of the University of Buenos Aires (CEDOP UBA) and the Department of Health Statistics and Information, Ministry of Health (DEIS-MSN).

during the 2003-2005 period and the drop in the expenditure on both medical and dentist consultations by the highest quintile of income. Interestingly enough, this occurs in categories other than the expenditure on medication category, whose percentage share is almost the only rate that decreased in the total expenditure incurred by the poor groups, excluding the drop in the average expenditure on dentist consultations in every income group (Table 3b).

4.3. Health conditions and socio-economic differentials in health: an international comparison

There is nothing new in associating individuals' socio-economic position with their health condition. Quite a different issue would be the possibility of defining the relation between these variables. As for Japan, Ishida indicates that no studies in which both variables were related have been conducted in the country, while he continues to develop a project on this issue, by making proper use of a research study about health in which the social class variables were considered. The author argues that the lack of this type of study may be due to the fact that health inequality would not present in his country.

It is unquestionable that there is a difference between Japan and Argentina regarding the situation described. In Argentina, there is no universal health insurance coverage, although it must be highlighted that, within the international comparative parameters, the functioning of the Argentine public healthcare services offered plays a reasonable substitutionary role. The possibility of comparing the Argentine results by using the Japanese results as a parameter has proved to be of undoubted interest for the assessment of socio-economic differentials in health.

Within this comparative approach, four hypotheses presented by Ishida shall be analyzed. His selection includes research studies conducted in other countries. Hypothesis 1 considers that "non-manual employees, especially those in the professional-managerial

class, have better health conditions than skilled manual workers, due to the fact that their working conditions are more favorable." Hypothesis 2 postulates that "educational achievements increase the possibility of remaining in good health condition." Hypothesis 3 states that it is expected that "income levels would be affected by results in connection with health-related results." Finally, hypothesis 4 ascertains that "household assets affect health conditions." This last hypothesis is assessed considering self-perception of social status as an alternative, since, in the Argentine study, household assets have not been examined.

In both countries (analyzing a sample composed of people aged 20 and over), slightly more than 40% of the respondents indicated they have at least one chronic disease, and slightly more than 70% have consulted a physician (or a dentist, in Japan) over the last year. In Japan, 10% of the people – 20% in Argentina – stated that they have restrictions in performing tasks at work or at home for having any disease or pain. Regarding self-perception of health as "not good" or "bad," 15% of the respondents in Japan stated that their health condition is poor or not good, while 19% of the respondents in Argentina remarked that it ranges from fair to very bad.

For the purpose of showing that, although the dependent variables are interrelated, they measure different conditions, Ishida reports that the correlations between them "are not exceptionally high." The results obtained in both countries favor the assessment of each of these conditions.

Table 4, which illustrates chronic health conditions, presents the comparative results between three models. Considering the importance given to social classes, Model 1 examines social class using gender and age as control variables. Ishida indicates that there is an extremely high association between the bivariate relation among social classes and the presence of chronic diseases, which is not seen in the Argentine study. When gender and age are considered control variables, said association is not observed in

Table 4. Logistic regression equations to predict chronic health conditions. Population aged 20 or over. Argentina 2005, Japan 2000.

	Model 1		Model 2		Model 3	
	Japan	Argentina	Japan	Argentina	Japan	Argentina
Independent variables						
Male	-0.142	-0.222	-0.140	-0.222	-0.153	-0.261
Age	0.061**	0.055**	0.061**	0.055**	0.061**	0.055**
Service category (professional/managerial)	-	-	-	-	-	-
Routine non-manual workers	-0.141	0.065	-0.167	0.043	-0.161	-0.053
Petit bourgeois (small employer)	0.253	-0.395	0.219	-0.420	0.220	-0.493
Rural work	-0.286	0.793*	-0.410	0.642	-0.407	0.603
Skilled manual workers	0.225	0.150	0.156	0.110	0.181	-0.015
Unskilled manual workers	-0.210	0.000	-0.232	-0.056	-0.225	-0.138
Education (years)	-	-	-0.010	-0.005	-0.009	-0.006
City size						
Large	-	-	-0.211	-0.187	-0.218	-0.072
Medium	-	-	-0.277+	-0.206	-0.282+	-0.194
Income	-	-	-	-	0.002	0.000
Undeclared income	-	-	-	-	-0.027	-0.555*
Household assets/social class	-	-	-	-	-0.039	-0.045
Constant	-3.542**	-2.616**	-3.424**	-2.406**	-3.332**	-2.103**
-2 log-likelihood	1.407.334	1.051.451	1.398.209	1.049.835	1.396.835	1.037.578
Number of cases	1.193	865	1.186	865	1.186	865

Note: ** p < 0.01; * p < 0.05; + p < 0.10

Source: Own elaboration based on 2005 National Survey, Center for Public Opinion Research of the University of Buenos Aires (CEDOP UBA) and the Department of Health Statistics and Information, Ministry of Health (DEIS-MSN); and data for Japan from the National 2000 Omnibus Survey, Central Research Services, Aggregated Health Module.

Japan. Age is highly significant for both equations but, additionally, in Argentina, rural work is significantly connected with chronic diseases (when controlling for gender and age). Ishida even states that rural work is related to chronic diseases, but when the age variable is included, such relationship tends to disappear – since rural workers tend to be older. On the contrary, it is the gender, age and social class variables that causes this association in Argentina.

Model 2 incorporates both education and city size. The results obtained from both equations are similar, with the only significant presence of the age variable, within the parameters expected. As for Japan, despite the low presence of chronic diseases in the country, such presence is less probable in medium-sized cities than in small cities and rural areas. This tendency is not observed in Argentina.

Model 3 includes the income and household assets variables in the case of Japan, and self-perception of social status as for Argen-

tina. The parameters used are fairly similar for both countries. The age effect is dominant and there may be no socio-economic differentials indicating the presence of chronic diseases.

Table 5 illustrates equations that seek to predict medical consultations. It should be highlighted that Ishida uses this variable as a "proxy" to test the availability of or accessibility to health services. The first three models repeat the independent variables previously considered, while Model 4 includes the chronic diseases variable. In every model, age is a determining variable in medical consultations in Japan, while, in Argentina, this is not observed in Models 1 and 4. In the Argentine study, nearly every variable related to social classes in Model 1 is negative and significant, except for the case of routine non-manual employees. Petit bourgeois and skilled manual workers would have fewer chances to consult a physician than those employees at the top of the pyramid (service class). As for Japan, petit bourgeois and farm

Table 5. Logistic regression equations to predict medical consultations. Population aged 20 or over. Argentina 2005, Japan 2000.

	Model 1		Model 2		Model 3		Model 4	
	Japan	Argentina	Japan	Argentina	Japan	Argentina	Japan	Argentina
Independent variables								
Male	-0.249	-0.402*	-0.215	-0.398*	-0.244+	-0.411*	-0.233	-0.368*
Age	0.036**	0.008	0.038**	0.015**	0.037**	0.016*	0.018*	0.005
Service category (professional/managerial)	-	-	-	-	-	-	-	-
Routine non-manual workers	-0.165	-0.385	-0.102	-0.148	-0.095	-0.0303	-0.080	-0.288
Petit bourgeois (small employer)	-0.474+	-1.252**	-0.447+	-0.944*	-0.439+	-1.045**	-0.588*	-0.990*
Rural work	-1.172**	-2.263**	-1.085**	-1.6697**	-1.057**	-1.745**	-1.079**	-1.924**
Skilled manual workers	-0.335	-1.200**	-0.290	-0.733+	-0.274	-0.940*	-0.389	-0.947*
Unskilled manual workers	-0.289	-1.351**	-0.200	-0.826*	-0.186	-0.963*	-0.136	-0.955*
Education (years)	-	-	0.012	0.070**	0.013	0.060*	0.018	0.066*
City size								
Large	-	-	0.144	0.015	0.149	0.199	0.229	0.198
Medium	-	-	0.143	-0.049	0.138	-0.004	0.254	0.021
Income	-	-	-	-	-0.001	0.000	-0.002	0.000
Undeclared income	-	-	-	-	-0.371+	-0.555*	-0.406+	-0.526+
Household assets/social class	-	-	-	-	-0.371+	-0.555*	-0.406+	-0.526+
Chronic conditions	-	-	-	-	0.026	0.041	0.050	0.046
Constant	-0.921**	1.925**	-1.074+	0.608	-1.258*	0.520	-0.065	0.505
-2 log-likelihood	1.310.920	922.724	1.297.226	915.414	1.293.662	902.024	1.162.400	881.381
Number of cases	1.193	865	1.186	865	1.186	865	1.186	865

Note: ** p < 0.01; * p < 0.05; + p < 0.10

Source: own elaboration based on 2005 National Survey, Center for Public Opinion Research of the University of Buenos Aires (CEDOP UBA) and the Department of Health Statistics and Information, Ministry of Health (DEIS-MSN); and data for Japan from the National 2000 Omnibus Survey, Central Research Services, Aggregated Health Module.

workers are the least likely to consult a physician in comparison with those in the service category.[f] As Ishida highlights, these effects remain invariable when education, city size and income are considered as control variables. The difference lies in the fact that, in Argentina, when these control variables are introduced, the age variable is also significant. Furthermore, education makes a positive contribution in Argentina, thus showing, in these cases, that those individuals with higher educational levels have more chances to consult a physician. In contrast, in Japan, the level of education is not associated with medical consultation.

In this way, apart from the persistent effects of the age and social class variables observed in the Japanese study, the Argentine study also includes, apart from the persistent social class variable, the positive significant medical consultation variable determined by age and educational level. In other words, *in the analysis of medical consultation, socio-economic differentials are present in both countries, regardless of some variations*. In Argentina, the difference that may be highlighted is the fact that skilled manual workers have low chances of consulting a physician if compared with the professional-managerial employees, a difference which is not observed in the Japanese study. In Japan, where society has grown particularly old, the age variable is significant in every model, while, in Argentina, it is significant when integrated with education and income. The significance of the age variable disappears when the chronic disease variable is introduced (which is supposed to be closely connected to age). The higher chances that women have to visit a physician are particularly more evident in Argentina than in Japan, in comparison with men.

In the cases where activity restrictions at work due to physical conditions are considered (Table 6), the first four models

Table 6. Logistic regression equations to predict activity restrictions. Population aged 20 or over. Argentina 2005, Japan 2000.

	Model 1		Model 2		Model 3		Model 4		Model 5	
	Japan	Argentina	Japan	Argentina	Japan	Argentina	Japan	Argentina	Japan	Argentina
Independent variables										
Male	-0.220	-0.143	-0.214	-0.147	-0.188	-0.155	-0.176	-0.100	-0.168	-0.082
Age	0.043**	0.025**	0.035**	0.020**	0.033**	0.020**	0.016+	0.010	0.013	0.008
Service category (professional/managerial)	-	-	-	-	-	-	-	-	-	-
Routine non-manual workers	0.371	-0.382	0.175	-0.578+	0.184	-0.644*	0.245	-0.647*	0.246	-0.641
Petit bourgeois (small employer)	0.604+	-0.246	0.334	-0.504	0.351	-0.351	-0.564+	0.281	-0.493	0.366
Rural work	0.041	0.721+	-0.371	0.376	-0.449	0.285	-0.347	0.171	-0.234	0.475
Skilled manual workers	0.871**	0.047	0.480	-0.339	0.418	-0.432	0.401	-0.473	0.468	-0.356
Unskilled manual workers	0.364	-0.241	0.038	-0.						
Education (years)	-	-	-0.127**	-0.054*	-0.102	-0.047+	-0.097	-0.046+	-0.094	-0.057*
City size										
Large	-	-	-0.284	0.204	-0.336	0.269	-0.302	0.282	-0.310	0.232
Medium	-	-	-0.124	0.202	-0.107	0.207	-0.028	0.249	-0.051	0.227
Income	-	-	-	-	-0.002	0.000	-0.003	0.249	-0.051	0.227
Undeclared income	-	-	-	-	-0.142	-0.448+	-0.142	-0.341	-0.106	-0.273
Household assets/social class	-	-	-	-	-0.114+	-0.041	-0.114+	-0.035	-0.126+	-0.045
Chronic conditions	-	-	-	-	-	-	1.348**	0.902**	1.108**	0.803**
Consultation with a doctor	-	-	-	-	-	-	-	-	1.301**	0.929**
Constant	-4.520**	-2.159**	-2.713**	-1.241*	-2.236**	-0.933	-1.468	-1.000	-1.705+	-1.494*
-2 log-likelihood	755.448	901.426	741.209	895.955	735.546	892.250	698.058	867.579	685.230	850.370
Number of cases	1.193	865	1.186	865	1.186	865	1.186	865	1.186	865

Note: ** p < 0.01; * p < 0.05; + p < 0.10

Source: own elaboration based on 2005 National Survey, Center for Public Opinion Research of the University of Buenos Aires (CEDOP UBA) and the Department of Health Statistics and Information, Ministry of Health (DEIS-MSN); and data for Japan from the National 2000 Omnibus Survey, Central Research Services, Aggregated Health Module.

replicate the independent variables related to medical consultation, while Model 5 includes medical consultation as an additional variable, with the idea of establishing the access to or availability of health services as control variables. In the first three models, before including health conditions as independent variables, the age variable is significantly positive in every case, stating that activity restriction is clearly associated with the increase in age. As Ishida indicates, the effects of age practically disappear when the presence of chronic diseases and medical consultation are considered control variables, since they are positively associated with age.

In Model 1, in the case of Japan, petit bourgeois and skilled manual workers are related to activity restrictions, while, in Argentina, it is farm workers who tend to have activity restrictions. These sectors seem to show more restrictions if compared with the professional-managerial sector, controlling for gender and age. When, in Model 2, the education and city size variables are introduced, apart from age, low levels of education are also related to such restrictions, in both countries. As for Argentina, routine non-manual employees seem to be unrelated to these restrictions, but, surprisingly, this slight tendency is actually observed among unskilled manual workers. This behavior is repeated in the different models. In Japan, when education and/or household assets (self-perception of social class in Argentina) are considered control variables, the relevance of the petit bourgeois and the skilled manual workers is not

observed. Instead, in Argentina, the sectors mentioned above gain relevance.

In Model 3 (in which either the income and household assets variables, or the self-perception of social class are considered), the significance of the low levels of education decreases in Argentina and disappears in Japan. Routine non-manual workers show greater significance as regards their negative relation with activity restrictions, while in the case of unskilled manual workers, this negative relation continues to be slightly significant. In Model 4, age is still slightly significant in Japan, but disappears in Argentina. In both samples, the presence of chronic diseases is highly significant at the expense of the age variable. The slight significance of the low education levels is still present in Argentina (the respondents with higher education levels would tend to be less related to activity restrictions). This probably explains, to some extent, a certain negative significance of the classes at both hierarchical extremes in Argentina (excluding the social class at the top – the professional-managerial class), which is not observed in Japan. As it has been noted, the fact that physical restrictions are negatively associated with non-manual middle classes seems to meet the expected standards, while the slight negative association between the lowest social class and the activity restrictions does not seem to.

In Model 5, regardless of the differences in education between routine non-manual workers and unskilled manual workers, in both cases, the strong presence of chronic diseases and medical consultation account for the increase in physical restrictions to work or to do housework. With respect to Japan, the respondents suffering from chronic diseases were nearly three times more likely to have activity restrictions if compared with those respondents who did not suffer from a chronic disease. This figure increased to 3.7 times in the case of individuals who consulted a physician in the past year, in comparison with those who did not. In Argentina, the figures were 3.0 and 2.3 times respectively.[g] There, the presence of chronic diseases is more important than medical consultation, as is the case in Japan.

In a brief analysis of the study in Japan, the author states that, regardless of health conditions (chronic diseases and medical consultation), the only socio-economic factor affecting the chances of having activity restrictions is household assets. As for Argentina, the most relevant factor – except for health conditions – is the low educational levels and the negative significance of the different social classes compared with the professional-managerial class (although only the negative presence of routine non-manual workers is significant). In general,

Table 7. Logistic regression equations to predict self-perception of health. Population aged 20 or over. Argentina 2005, Japan 2000.

	Model 1		Model 2		Model 3		Model 4		Model 5	
	Japan	Argentina	Japan	Argentina	Japan	Argentina	Japan	Argentina	Japan	Argentina
Independent variables										
Male	-0.312+	0.060	-0.350+	0.053	-0.343+	0.065	-0.367+	0.291	-0.356+	0.287
Age	0.038**	0.037**	0.042**	0.021**	0.040**	0.022**	0.016*	-0.002	0.014+	-0.003
Service category (professional/ managerial)	-	-	-	-	-	-	-	-	-	-
Routine non-manual workers	-0.074	1.807**	-0.048	1.144+	-0.036	1.148+	0.036	1.233+	0.047	1.225+
Petit bourgeois (small employer)	0.633*	2.068**	0.719*	1.221+	0.760*	1.193+	0.780*	1.291+	0.882*	1.311*
Rural work	-0.062	3.136**	-0.074	2.095**	-0.164	1.961**	0.006	1.678*	0.108	1.744*
Skilled manual workers	0.613*	2.410**	0.670*	1.187+	0.610+	1.174+	0.658+	1.197+	0.758*	1.216+
Unskilled manual workers	0.404	2.189**	0.513+	0.828	0.421	0.739	0.575+	0.722	0.576+	0.729

Table 7. Continued

Education (years)	-	-	0.054	-0.176**	0.093+	-0.154**	0.122**	-0.166**	0.127*	-0.170**
City size										
Large	-	-	-0.199	0.682**	-0.276	0.677**	-0.256	0.708*	-0.254	0.678**
Medium	-	-	-0.489*	0.309+	-0.490**	0.481+	-0.423+	0.642*	-0.439+	0.626**
Income	-	-	-	-	-0.002	-0.000*	-0.002	0.000**	-0.002	0.008
Undeclared income	-	-	-	-	-0.282	-0.292	-0.292	-0.117	-0.262	-0.087
Household assets/social class	-	-	-	-	-0.719**	-0.031	-0.196**	-0.041	-0.214**	-0.042
Chronic conditions	-	-	-	-	-	-	2.163**	2.314**	1.922**	2.272**
Consultation with a doctor	-	-	-	-	-	-	-	-	1.181**	0.243
Constant	-3.837**	-5.330**	-4.719**	-2.401**	-4.719**	-2.157**	-3.372**	-2.350**	-3.565**	-2.432**
-2 log-likelihood	929.905	737.263	914.706	696.581	899.062	691.127	791.282	589.450	778.201	588.561
Number of cases	1.191	865	1.184	865	1.184	865	1.184	865	1.184	865

Note: ** $p < 0.01$; * $p < 0.05$; + $p < 0.10$

Source: own elaboration based on 2005 National Survey, Center for Public Opinion Research of the University of Buenos Aires (CEDOP UBA) and the Department of Health Statistics and Information, Ministry of Health (DEIS-MSN); and data for Japan from the National 2000 Omnibus Survey, Central Research Services, Aggregated Health Module.

with slight differences, it may be highlighted that the main factors that account for the activity restrictions are the health conditions in both countries, in addition to the fact that, in Japan, household assets favor the non-existence of such restrictions, while, in Argentina, that effect may be observed only among individuals with high education levels and within the highest social class.

Finally, the last variable considered is the respondents' self-perception of health, through the analysis of the factors associated with an unfavorable self-perception of their own health. As for Japan, men are 1.4 times more likely to report a standard or good health condition than women, which tends to be consistent in every model.[8 p.17] In Argentina, (see Table 7), this variable is not significant, since it shows no difference in terms of gender. In both cases, respondents tend to report unfavorable health conditions with the advance of age. In the Japanese sample, this tendency remains invariable, even considering the presence of chronic diseases, while in the Argentine sample, the age variable disappears.

With reference to social class, the effects are important in both cases. In Japan, petit bourgeois and skilled manual workers are more likely to report an unfavorable health condition if compared with the service class (professional-managerial employees). In Argentina, the remaining social classes considered in the study are more likely to report an unfavorable health condition, when compared with the service class. In both cases, these tendencies remain invariable when controlling for health conditions, such as the presence of chronic diseases or medical consultation (according to Ishida, the latter is interpreted as the accessibility to medical services).

With respect to the effects of education, Ishida notes that, contrary to what he expected, education has a positive effect on unfavorable self-perception of health. In the case of Argentina, the results obtained meet the initial expectations of this author, as education is associated with a good self-perception of health. As regards the size of the cities where respondents live, in the case of Japan, individuals living in medium-sized cities tend to perceive a better health condition, in comparison with those living in small cities or rural areas. In Argentina, city life would be associated with a bad self-perception of health. Apparently, in contrast to Japan, the individuals' low income also seems to be related to the perception of their own health condition as unfavorable. The word "apparently" is applied in this case

because household assets are strongly associated with a good self-perception of health in Japan. In this country, the significant presence of both chronic diseases and medical consultations represents an effect of health conditions, while in Argentina, only the presence of chronic diseases is associated with a bad self-perception of health. In other words, in Argentina, medical consultation considered as an accessibility indicator is not associated with a bad perception of health.

5. CONCLUSIONS

The use of health services tends to be higher in wealthy social classes and in sectors with high income levels. However, it is remarkable that the number of medication users is limited within these social classes, while medical consultation is the only type of health services with slightly higher presence within the poorest sectors.

With reference to health expenditures, the average global expenditure on health seems to have increased by 30% between 2003 and 2005. This would not be consistent for all social classes: health expenditure tends to increase in the poorest sectors, followed by the middle classes. In the poorest sectors, expenditure on medication shows the slowest growing rate, while voluntary health insurance membership and medical consultation show a faster growing rate. The average expenditure on medical consultation within the wealthy sectors, especially visits to physicians, is the only decreasing rate during the two-year period under analysis.

With respect to social differentials in health, Ishida remarks that the absence of the effects of socio-economic factors on chronic diseases and activity restrictions is contrary to his original hypothesis. This situation is observed in Argentina only in the case of chronic diseases, under certain influence of socio-economic factors. Ishida states that:

...the onset of chronic diseases and the subsequent restrictions on daily activities are basically triggered by genetic and constitutive factors that may not be related to socio-economic differences.[8 p.18] [own translation]

If this were the case, this trend related to activity restrictions is less noticeable in Argentina. Generally, Ishida postulates that social class and household assets are the most relevant socio-economic factors impacting health conditions, almost independently of the income and education variables. In Argentina, education, together with the income variable, is a relevant factor for a self-reported health condition, regardless of the perception of social status.[h] In both cases, *socio-economic factors remain invariable, even controlling for health conditions such as the presence of chronic diseases and medical consultation.*

Due to the importance given to social class in Ishida's model, he tries to be specific regarding its scope of influence on health services. With reference to medical consultation, it is less frequent among the petit bourgeois and farm workers class than among the service class (professional-managerial employees). As regards farm workers, the medical consultation may be the result of a greater difficulty in the access to such service, while in the case of urban petit bourgeois, the reasons for the low rate of medical consultation are not so clear. With respect to self-perception of health, the Japanese skilled manual workers may tend to perceive their health condition worse than the service class. The most unfavorable working conditions of manual workers may cause greater physical problems and worse self-perception of health.

In the case of Argentina, the rural classes have a stronger tendency to suffer from chronic diseases than the service class. Excluding the routine non-manual employees, the remaining social classes are less likely to consult a physician, if compared with the service class. With reference to

activity restrictions, the routine non-manual middle class shows fewer chances to have activity restrictions than the service class, a tendency which remains unclear. With respect to bad perception of health, every social class is more likely to provide an answer in this regard, if compared with the social class at the top of the pyramid, the professional-managerial class. Ishida's conclusion in this respect is valid for both surveys:

> These findings suggest that the rank in the working class hierarchy has a great impact on the workers' health condition.
> (8 p.20)

From the hypothesis suggested by Ishida, those that associate the middle-upper class and better education levels with better health conditions are applicable to Argentina.[i] Even with their variations in each country – except for the presence of chronic diseases highly associated with age – *social class matters*. In contrast, the hypothesis that associates high income with good health conditions is limited, since it only applies to self-perception of health in Argentina. That is to say: in the presence of the social class variable, the relation between income and health conditions – generally mentioned in the bibliography – does not tend to appear in the equations considered.

END NOTES

a. Both surveys were conducted thanks to grants awarded by the Commission on Health Research Programmes (CONAPRIS) [Comisión Nacional de Programas de Investigación Sanitaria], Argentine Ministry of Health. The Center for Public Opinion Research of the University of Buenos Aires (CEDOP-UBA) [Centro de Estudios de Opinión Pública UBA] carried out the survey. Any request for the instruments and databases may be directed to Jorrat. We are grateful for the very important suggestions and remarks received from the anonymous experts that review articles for the Salud Colectiva journal.

b. Health insurance membership is defined as the enrollment of part of the population in any health insurance carrier that provides and/or finances health services: medical consultation, dentist consultation, admissions to hospitals and laboratory examinations, among others. An "employment-based health insurance" membership refers to health coverage obtained by regular employees and their relatives through mandatory membership, including the statutory health coverage provided for retired and pensioned employees. "Private or union health insurance" membership is a type of health insurance which is characterized by voluntary enrollment and full payment at the expense of the beneficiary. Non-membership means that individuals under this condition are only covered by the health services provided by the Public Health Subsector.

c. The survey is based on the analysis of a sample divided into strata – in accordance with the Index of Unsatisfied Basic Needs (NBI) [Necesidades Básicas Insatisfechas] of each census block – which is multiphase, includes a random selection of respondents in each phase – except for the last phase – and is carried out in terms of gender and age. The specified strata were 26, which were defined in accordance with city size, including the concentrated or scattered farm population. In the case of an initial sample

size of 1,000 adults (18 years old and over), a minor (0 to less than 18 years old), who was selected according to the most recent birthday date, was added to each home where an adult was surveyed. The resulting sample was composed of 1,546 cases, which included individuals of all ages (0 years old and over). In the case of minors between 0 and 18 years old, the respondent was the mother, or any adult if the mother was not alive or easily accessible. Supposing that the simple random sample is composed of 1,546 cases, the sampling error, with a 95% confidence level, would be estimated at +/- 2.5%, if the data used amounted to the total sample. However, in accordance with the DEIS-MSN regulations, surveys should be conducted based on data expanded to the population size provided by the Argentine National Census carried out in 2001. This regulation was observed in this survey, except for the logistic regression model applied in the comparison with Japan. Taking into account relative values or coefficients of variation, figures below 570,000 cases should be cautiously considered. The response rate seems to be estimated approximately at 50%. The field work was carried out from September to December 2005.

d. CHRONIC DISEASES: Have you ever been diagnosed with a disease that extends over time and requires a prolonged medical treatment, such as those mentioned below? MEDICAL CONSULTATION (VISITS): During the last 30 days, have you consulted a physician, either primary care physicians, surgeons, gynecologists, ophthalmologists or others? NO-YES; If the answer is "YES": How many times have you consulted the physician? [Non-consultants within the last 30 days are asked about the time elapsed since the last medical consultation. Consultants within the last year are considered as having consulted the physician]. ACTIVITY RESTRICTIONS: Have you stopped doing any of these activities due to health problems in the last 12 months? a) going to work; b) doing housework; c) going to school, college or university [positive answer to any of the options indicated activity restriction]. SELF-PERCEPTION OF HEALTH: In general, would you con-

sider your present health condition as... 1. Excellent; 2. Very good; 3. Good; 4. Fair; 5. Bad; 6. Very bad. [Number 1 was considered bad health – if the answer was ordinary, not good or bad. On the other hand, the coded number was 0]. [If the answer was fair, bad or very bad – not good – it was codified as 1; otherwise, as 0].

e. Tests on the differences in the median of the population samples are not provided here. The medians are calculated through data extended to the whole population (individuals aged 0 and over). Thus, it would be impossible that a difference – even if it were slight – were not statistically significant. If the medians of expenditure were calculated – prior to being extended to the whole population – in every socio-demographic group, it would require a long and difficult presentation (A versus B, A versus C, and others). In a brief attempt to describe rather than infer the information resulting from the survey, it seems more convenient to avoid any complex presentation, except for recalling discussions on some excess in the considerations about statistical significance.[15]

f. Ishida states that "the reason why the petit bourgeois is less likely to consult a physician is not clear. The most probable answer is long working hours. [...] The urban petit bourgeois may not be able to make time for consulting a physician."[8 p.13].

g. These values have been taken from the exponential functions(b) – corresponding to the coefficient of binary logistic regression, presented in the logistic regression equations. These values have not been presented in the tables prepared by Ishida, which has been also applied in this survey for comparative purposes. Ishida refers to such values in the text.

h. Unfortunately, Ishida does make reference to possible problems of high correlation between household assets and income (multicollinearity), which might affect the joint presence of these two variables in the equation.

i. Regardless of the differences in approaches and measurement of variables, if the social class variable is removed and logistic regression is considered, including, on the one hand, dentist or medical consultation in the last month as dependent variable and, on the other hand, gender (male = 1), age, years of education, home income per capita, non-declared income (= 1 if income is not declared), health insurance membership (= 1 if member), city size (using the small cities and rural areas mentioned in the text as reference), and level of overcrowding (= 1 if 3 or more individuals per room), as independent variables, so as to draw a comparison, the results obtained tend to coincide with a study using a much wider database. This database comprises about 20,000 cases assessed by the Living Standards Measurement Survey (ECV) [Encuesta de Condiciones de Vida] dependent on the System of Information, Evaluation and Monitoring of Social Programmes (SIEMPRO) [Sistema de Información, Monitoreo y Evaluación de Programas Sociales] undertaken in 2001: "The probability of consulting a health professional increases when individuals earn certain family income per capita, reside in the most developed regions of the country, have access to a health insurance coverage, or have a good level of education, and it decreases with the level

of overcrowding at the individual's home."[19 p.17] Although the analysis is different – since no logistic regressions are used – the similarities are of great interest. One of the differences outlined in the Argentine study is the fact that the chances of consulting a physician are higher among women, while city size is not significant (regions were taken into account in the other study). Similar tendencies in this respect seem to arise from a study where self-reported health is considered.[20]

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