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World Institute for Development Economics Research

Research Paper No. 2008/57

Intra-Household Arrangements and Health Satisfaction

Evidence from Mexico

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May 2008

Abstract

This paper uses a subjective wellbeing approach to study the role of household arrangements on the health satisfaction of an individual. It also studies the impact of household arrangements on health satisfaction across different income groups, by contrasting two main theories of the family: the altruistic/communitarian theory, which emphasizes altruism within the family, implies that the within-the-household allocation of relevant health satisfaction resources leads towards an egalitarian distribution of health satisfaction, and second, the cooperative bargaining theory according to which the family emerges as the cooperative equilibrium outcome from the unilateral interests of each household member. Thus, each household member takes advantage of their bargaining power to attain an equilibrium that favours their personal interests. According to the latter approach, the intra-household allocation of relevant

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Keywords: health, health satisfaction, subjective wellbeing, intra-household arrangements, Mexico

JEL classification: I10

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This study is a revised version of the paper presented at 29-30 September 2006 UNU-WIDER conference on Advancing Health Equity.

UNU-WIDER gratefully acknowledges the financial contributions to the research programme by the governments of Denmark (Royal Ministry of Foreign Affairs), Finland (Finnish Ministry for Foreign Affairs), Norway (Royal Ministry of Foreign Affairs), Sweden (Swedish International Development Cooperation Agency—Sida) and the United Kingdom (Department for International Development).

ISSN 1810-2611 ISBN 978-92-9230-105-7

health satisfaction resources leads to a distribution of health satisfaction that closely follows the distribution of bargaining power.

Using data from a large survey in Mexico, the paper examines the relevance of these alternative approaches and studies intra-household health distribution. It is argued that the study of health satisfaction—and the subjective wellbeing approach in general—provides additional useful information about household arrangements. Since it is not the same to be ill (an objective condition) as it is to suffer from an illness (a subjective condition), objective health indicators cannot fully capture the richness of how families react to illness and how they subsequently allocate household resources (not only economic ones) to reduce the impact of illness on the wellbeing of the family. Using family status and breadwinner status as proxies for intra-household bargaining power, the paper examines the intra-household distribution of health satisfaction in economically poor families, where an unequal distribution of relevant health-satisfaction resources is expected to be more harmful.

Acknowledgements

This study was financially supported by an unrestricted educational grant from the Merck Company Foundation, the philanthropic arm of Merck and Company Inc., Whitehouse Station, New Jersey, USA.

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Typescript prepared by Liisa Roponen at UNU-WIDER

The views expressed in this publication are those of the author(s). Publication does not imply endorsement by the Institute or the United Nations University, nor by the programme/project sponsors, of any of the views expressed.

1 Introduction

This paper deals with the impact of household arrangements on health satisfaction. The literature on household arrangements is vast. Some authors have proposed that the family is basically a communitarian organization, where all—and not merely economic—household resources are pooled together into a common pot from which all family members can benefit equally. On the other hand, other authors approach the family as a cooperative equilibrium outcome, so that individualistically-motivated adults remain in the group as long as they attain benefits. Under the cooperative bargaining models, the benefits from household resources, e.g., pooling income, emotional support, investment in relational and economic goods, division of household tasks and responsibilities, confidence and trust, and so on, are distributed on the basis of a bargaining process. Extreme situations may include altruistic behaviour, where some members make sacrifices for the benefit of others or a totally individualistic household, where members act as partners, with separate budgets, personal relations and so on.

The literature on intra-household arrangements has stressed that the family is a black box that may entail communitarianism, altruism, cooperation, bargaining and conflict (Bergstrom 1997; Hart 1990; Vogel 2003). This paper argues that the nature of household arrangements within a country is relevant for the study of health satisfaction. Whether a person has equal access to the health benefits from his[1] household resources depends on the nature of the intra-household arrangement. Hence, the intra-household distribution of these resources for satisfactory health is determined by the nature of household arrangements, making the distribution of health satisfaction within the household a relevant area of research. In particular, this paper is interested in studying the household arrangements of low-income families, where an unequal distribution of relevant health satisfaction resources is assumed to be more pernicious for some household members.

The status of an individual within the family and his position as breadwinner are used as proxies for his social and economic power within the family. Under a cooperative bargaining model, the distribution of health satisfaction follows closely the status allocation as breadwinner and family status, while no similar relationship is expected in a communitarian family.

This investigation also examines which income proxy is more relevant in explaining health satisfaction. The explanatory power of alternative income proxies, such as household income, personal income, household per capita income, and household equivalent income, is analysed. In an effort to determine which income proxy is better for explaining the health satisfaction of an individual, we address two relevant issues: (i) whether household economic resources are pooled together to generate health

1 This investigation uses a gender-biased language for simplicity of exposition; there is no intention to offend or marginalize either gender.

satisfaction;[2] and (ii) whether there are family-size depletion effects in utilizing these economic resources to generate health satisfaction.[3]

The investigation follows a subjective wellbeing approach (Headey, Holmstrom and Wearing 1985; Headey and Wearing 1992; Veenhoven 1996; van Praag, Frijters and Ferrer-i-Carbonell 2003; van Praag and Ferrer-i-Carbonell 2004; Rojas 2005, 2006a, 2006b). It is argued that health satisfaction, as declared personally by the individual, provides useful information that cannot be captured fully by objective health indicators alone. Health satisfaction captures information not only on the occurrence of illness, but also about the social and family context within which these illnesses affect wellbeing. For example, the fact of being ill is not enough to assess an individual's wellbeing, since that particular observation overlooks such relevant factors as the existence and nature of family support, the quality of medical attention (human and therapeutic), the role of social stigmas and social expectations, modification of activities by the patient (household chores or recreational pastime), and the existence and support of friends. In other words, being ill is not the same as suffering from an illness. Some variation in suffering is to be expected among those afflicted with the same illness. Thus, health satisfaction encompasses information not only on being ill, but also about related conditions influencing the degree of suffering.

The paper is structured as follows. Section 2 introduces the literature on theories of the family, highlighting the relevance of household arrangements in studying health satisfaction. Section 3 presents the database and discusses the construction of a health satisfaction indicator. Section 4 discusses the income proxies related to health satisfaction, and shows that household income has greater explanatory power than personal income and that no adjustment for family size is required. Section 5 studies the relationship between health satisfaction and an individual's status within the family, while section 6 examines the relationship between health satisfaction and the breadwinner status, with a particular focus on the situation in low-income groups. Section 7 examines the role of intra-household bargaining power in health satisfaction, and section 8 presents the major conclusions of the investigation.

2 Household arrangements and intra-household health satisfaction

Most people live under different family arrangements. They share responsibilities and long-run life projects as well as emotional support and economic resources. They also produce relational and economic goods under an institutional framework known as the family. Family arrangements deal with the intra-family distribution of economic and relational resources that generate life satisfaction and, in particular, health satisfaction, hence they are crucial in the study of the wellbeing of an individual. In his work on the family, Vogel (2003: 393) states that:

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2 If resources are really pooled together, as is expected in a communitarian family, then household income should be a more relevant variable than personal income in explaining health satisfaction.

3 If there are no depletion effects, then household income should be a more relevant variable than household income per capita or household equivalent income in explaining health satisfaction. If this were the case, it could imply that any household member is fully insured by the household group, and that he can have access to all household resources in case of need.

> In the case of the family the principle is reciprocity and an informal contract between family members concerning responsibilities for the welfare of family members. There is a contract between spouses, between parents and their children, between adults and their elderly parents, and between adults and further relatives.

In his pioneer work on the economic approach to the study of the family, Becker (1973, 1974, 1981) assumes that some family members—usually the head of the family—behave altruistically, while others behave selfishly. Thus, Becker combines communitarian and individualistic characteristics within the family. He assumes that altruistic members are concerned with the wellbeing of the rest of the family, although not necessarily as much as they are concerned about their own wellbeing. In consequence, the wellbeing of other members is incorporated in the utility function of altruistic members. Selfish members are concerned just with their own circumstances, and they have no interest in the wellbeing of the rest of the family. The altruistic behaviour of income earners implies that health satisfaction is not closely related to his breadwinner or family status within the household. From an economic point of view, in a perfectly communitarian family (Rojas 2007a), the relationship between health satisfaction and the household-income proxy of an individual should be the same for all household members, regardless of role as breadwinner or status within the family.

Recent studies consider the family as a cooperative arrangement in which members, particularly spouses and adult members, exhibit selfish behaviour; they are concerned only about their own utility and they act unilaterally. Thus, a cooperative equilibrium (a marriage or a family) emerges because it is convenient to all household members. This approach, known as the 'cooperative bargaining models of the family' (Manser and Brown 1980; McElroy 1985, 1990; Lundberg and Pollak 1993, 1996; Pollak 1994 and 2002), explains intra-family decisions as the result of a collective-choice process that takes place on the basis of selfish and unilateral interests, leading to cooperative household equilibriums. Hence, family members remain in the household as long as the arrangement is to their advantage.

According to cooperative bargaining models, the distribution of bargaining power within the family influences the kind of cooperative equilibrium that emerges as well as its corresponding intra-household distribution of gains (Binmore 1987). Asymmetries in the access to household income develop from the differences in the bargaining power of family members. For example, Lundberg, Pollak and Wales (1997) find that an increase in a person's income raises his decisionmaking power within the family. Thus, according to cooperative bargaining models, these asymmetries should be reflected in the intra-household distribution of health satisfaction.

The present investigation tests on the basis of a person's breadwinner and family status whether an asymmetric arrangement in health satisfaction exists in Mexico.[4] Being the main or a secondary breadwinner within the family should provide more bargaining power, which the person could transform into cooperative equilibrium that raises his

4 The investigation restricts itself to the health domain. It is possible that in cooperative bargaining families, bargaining power asymmetries make an impact in other life domains, e.g., the economic or consumption domain, but not in the health domain. Thus, the paper studies the existence of communitarian or cooperative bargaining families with respect to the allocation of resources for health satisfaction only.

health satisfaction relative to other family members. Status within the family is another important variable associated with bargaining power because of the advantage of influencing the internal division of labour at the household level. This means that a person, e.g., the mother or grandparent, who may not be earning income, could hold substantial bargaining power as a consequence of his place within the family's division of labour. Hence, if family arrangements are based on cooperative bargaining models, then family members with greater bargaining power should also enjoy greater health satisfaction.

Rojas (2007a) makes a distinction between communitarian and individualistic families on the basis of the altruistic and cooperative bargaining models. In a perfectly communitarian family, subjective wellbeing of the individual should depend on his household income, but still be independent of his breadwinning role and family status. Likewise, earning a large share of the household's income or no share at all should not matter for a person's wellbeing in communitarian/altruistic household. On the contrary, in an individualistic family, which develops because cooperative equilibrium is convenient for each member, an individual's breadwinning and family status should affect his relative wellbeing. Family members with greater bargaining power should have greater wellbeing benefits from a given endowment of household resources (household income and other relevant resources). Furthermore, in an individualistic family, access to resources that contribute to wellbeing is expected to be strongly related to a person's share in generating household income. This paper focuses on health satisfaction, and uses the subjective wellbeing approach to explore how household arrangements influence the relationship between health satisfaction and household income.[5]

It is clear that household arrangements have important implications for health satisfaction. Substantial intra-household asymmetries in the access to relevant resources for health satisfaction suggest that there may be relatively healthy persons in low-income families as well as relatively unhealthy persons in high-income families. If this is the case, then household income is not a good proxy for the health satisfaction of each household member. On the other hand, if family arrangements are basically communitarian, then household income becomes a good proxy for every household member's health satisfaction.

3 The database

3.1 The survey

A survey was conducted in five states of central and south Mexico, as well as in the Federal District (Mexico City) during October and November of 2001.[6] A stratified-random sample was balanced by household income, gender and urban-rural areas. As

5 A vast literature has used the so-called objective indicators to study household arrangements and intra-household allocation of resources. See Lazear and Michael (1988), Carlin (1991), Bourguignon et al. (1994), Thomas (1990, 1993, 1997), and Haddad, Hoddinott and Alderman (1997). These studies are not based on self-reported satisfaction measures and are basically interested in standards of living.

6 The author expresses his gratitude to CONACYT, Mexico, for a grant that supported this survey.

1,540 questionnaires were properly completed, the sample size was considered acceptable for inference in central Mexico. It is important to note that only adult people were interviewed, and so the health satisfaction of children and teenagers (less than 18 years old) in the family was not considered in this investigation. Furthermore, the unit of study in the survey was the individual, not the family. It would have been preferable to interview all adult members in a household, but financial constraints did not allow constructing such a database.

3.2 The variables

The survey collected information on the following quantitative and qualitative variables:

Demographic and social variables: education, age, gender, marital status, household composition (age and number of household-income dependent persons), family status (father, mother, daughter or son, grandparent, other), and breadwinning status (main breadwinner, secondary breadwinner, marginal breadwinner, no breadwinner)

Economic variables: current household income and current personal income.

Health satisfaction: the question asked was: 'How satisfied are you with your current health?' The verbal answer had a seven-option scale, ranging from extremely unsatisfied to extremely satisfied. Health satisfaction was considered as an ordinal variable. Table 1 presents the frequency for the health satisfaction variable.

Table 1
Frequency for health satisfaction variable

	Health satisfaction
Extremely unsatisfied	0.20
Very unsatisfied	0.98
Unsatisfied	8.74
Neither satisfied nor unsatisfied	7.50
Satisfied	52.51
Very satisfied	24.46
Extremely satisfied	5.61
Total	100.00

4 What income proxy to use?

Studies on the relationship between health satisfaction and income must take into consideration that income is merely a proxy of the capacity to purchase goods and services in order to satisfy one's health needs. Therefore, it must first be decided what constitutes the best income proxy for approximating a person's command over resources that satisfy his health needs. A relevant characteristic of a household arrangement is the size of the group and its demographic structure, and the common practice is to adjust income by family size and the age structure of its members.[7] Thus, the following income proxies were considered: household income, personal income, and

7 See Rojas (2007b) for an in-depth study of equivalence scales.

family-size adjusted income measures (household per capita income and household equivalent income calculated with the OECD equivalence scale).

Household income can constitute a good proxy for a person's command over the resources useful for satisfying one's health needs if the family is basically communitarian and there are no family-size depletion effects. Personal income, on the other hand, is an individualistic proxy of the command over resources and can be a good proxy in an individualistic family, but not in a communitarian family in which a person may have access to resources even without being an income earner. Household income per capita and household equivalent income adjust to the number (and sometimes the age structure) of family members,[8] making them relevant proxies in communitarian families and if family-size depletion effects exist.

Simple regressions were run with health satisfaction as the explained variable and the logarithm of different incomes proxies[9] as the explanatory variable to determine which income proxy has the greatest explanatory power on health satisfaction. Table 2 shows the goodness of fit for each regression, as well as the estimated coefficient and its significance test.

According to Table 2, indicators that stress personal command over economic resources (such as personal income) are not good explanatory variables of health satisfaction. Thus, health satisfaction of an individual is strongly related to his household command over economic resources, rather than to personal command over economic resources. In addition, results from Table 2 also indicate that family size adjusted indicators (such as household income per capita and household equivalent income) do not provide greater explanatory power than the non-adjusted household income indicator.

Thus, it seems that Mexican families, in utilizing their economic resources to satisfy health needs, do not behave in an extreme 'housemate way'. Furthermore, family-size depletion effects seem to be small. Consequently, the present investigation uses household income as proxy for a person's command over economic resources to satisfy his health requirements.

Table 2
Statistics from simple regression analyses:
health satisfaction as explained variable, different income proxies as explanatory variables;
results from ordered-probit regressions

Explanatory variable	Pseudo R-squared*	Coefficient	Significance
Ln household income	0.035	0.211	0.00
Ln personal income	0.012	0.039	0.00
Ln household per capita income	0.029	0.167	0.00
Ln household equivalent income-OECD scale	0.033	0.198	0.00

Note: * Refers to Cox and Snell pseudo R-squared.

8 Household income per capita does not take into consideration the fact that economies of scale may exist at the household level. It also presumes equal weights for all household members, regardless of their age. Household equivalent income measures, on the other hand, assume arbitrarily-defined weights and scale economies.

9 Income is measured in Mexican pesos. One peso was added to each figure in order to avoid zero-value incomes, which would be problematic for logarithm calculations.

Three income groups were constructed on the basis of household income of the individual. These are shown in Table 3 as well as the frequency of observations in each group. The low-income group refers to families with a daily household income of approximately US$12. The middle-income group refers to families with daily household income ranging between US$12-25 while household income exceeding approximately US$25 constitutes high-income families. The sample is distributed more or less uniformly across the income groups.

Table 3
Income groups* and frequency of observations

Income group	Range in monthly income Mexican pesos**	Frequency in percentage
Low	3350 ≥ Y ≥ 0	30.0
Middle	7000≥ Y >3350	33.8
High	Y > 7000	36.2

Notes: * On the basis of household income.
** Exchange rate in 2001: 9.30 Mexican pesos equivalent to approximately US$1.

5 Family status and health satisfaction

5.1 Family statuses

Family status is an intra-family feature and it constitutes a proxy for a person's bargaining power within the family. Cultural factors have established a family hierarchy within which the father and mother are expected to have more decisionmking power. However, in some cultures, grandparents are highly respected and they have decision power, while in other cultures children have attained great bargaining power. Six categories for family status were distinguished: father, mother, son, daughter, grandparent, and other. Table 4 shows the distribution of household members in the sample according to their family status.

Table 4
Family status frequency and corresponding average health satisfaction

Family status	Percentage in sample	Average health satisfaction
Father	31.6	58.6
Mother	27.6	55.3
Son	18.8	62.1
Daughter	15.6	60.0
Grandparent	2.0	48.6
Other	4.4	57.1
Total number of observations	1535	

5.2 Role of family status in health satisfaction

As is observed in Table 4, there are substantial differences in average health satisfaction based on family status. Health satisfaction is greater for son, daughter and father. Being a mother, grandparent or other is associated with lower health satisfaction. These

differences could be a reflection of the family status or other sociodemographic and economic characteristics that are correlated with the person's family status. Hence, the following regression was conducted to study the role of a person's family status on his health satisfaction after controlling for other relevant characteristics. Father was the category of reference.

$$HS = \beta_0 + \beta_1 FS_{mother} + \beta_2 FS_{son} + \beta_3 FS_{daughter} + \beta_4 FS_{grandpa} + \beta_5 FS_{other} + \beta_6 \ln Y + \phi X_{control} + \mu \quad (1)$$

where:

HS refers to *health* satisfaction, a categorical variable;

FS_{mother} is a dichotomous variable with the value of 1 if the person has the status of *mother* within the family, and 0 otherwise;

FS_{son} is a dichotomous variable with value of 1 if the person has the status of *son* within the family, and a value of 0 otherwise;

$FS_{daughter}$ is a dichotomous variable with value of 1 if the person has the status of a *daughter* within the family, and 0 otherwise;

$FS_{grandpa}$ is a dichotomous variable with value of 1 if the person has a *grandparent* status within the family, and a value of 0 otherwise;

FS_{other} is a dichotomous variable with value of 1 if the person has *other* family status within the family, and a value of 0 otherwise;

$\ln Y$ refers to the logarithm of household income;

$X_{control}$ is a vector of the following control variables (ϕ is a vector of parameters):

Education: education in levels;

Age: age in years;

Marital status: vector of dichotomous variables about marital status, *single* was the category of reference.

The existence of substantial intra-household disparities in health satisfaction in low-income families is the main focus of this investigation. It has been argued that large disparities can be a reflection of the fact that some household members are being marginalized from access to household resources, and that this marginalization in low-income families could have pernicious effects for health satisfaction. Regression (1) was run for each income-group subsample (defined in section 4). Table 5 shows the results from the exercise by income group and for the whole sample.

Results from Table 5 indicate that there are important differences in the relationship between breadwinner status and health satisfaction across income groups. In low-income families, sons and fathers have very similar health satisfaction levels. Mothers enjoy slightly lower health satisfaction than fathers and sons, although the difference is not statistically significant. There is some suggestion that daughters have much lower health satisfaction than fathers or sons. Hence, it seems that daughters of low-income families have a greater probability than other family members of having poor health satisfaction. Their situation is of great concern: their health satisfaction is at risk not only because of their low household income, but also because of their family status.

Table 5
Health satisfaction and family status
by income group, ordered-profit regression

	Low income		Middle income		High income		Whole sample	
	Coefficient	Signif.	Coefficient	Signif.	Coefficient	Signif.	Coefficient	Signif.
Mother	**-0.117**	0.36	**-0.287**	0.03	**-0.381**	0.00	-0.256	0.00
Daughter	**-0.353**	0.18	**-0.339**	0.21	**-0.118**	0.68	-0.259	0.09
Son	**-0.058**	0.83	**-0.433**	0.10	**-0.030**	0.91	-0.177	0.23
Grandparent	**0.164**	0.62	**-0.381**	0.29	**-0.340**	0.56	-0.161	0.47
Other	**-0.246**	0.40	**-0.323**	0.30	**-0.003**	0.99	-0.208	0.25
Ln*Y*	-0.068	0.33	0.255	0.34	-0.056	0.54	**0.087**	**0.01**
Age	-0.015	0.00	-0.015	0.00	-0.012	0.02	-0.014	0.00
Education	0.093	0.05	0.103	0.01	0.114	0.00	0.114	0.00
Married	0.022	0.91	-0.253	0.29	0.168	0.52	-0.021	0.87
Stable partner	-0.210	0.44	-0.504	0.12	-0.076	0.82	-0.259	0.14
Separated	0.064	0.84	-0.439	0.20	0.157	0.65	-0.053	0.78
Divorced	-0.003	0.99	0.369	0.39	0.283	0.43	0.264	0.24
Widowed	-0.333	0.23	0.517	0.16	0.119	0.81	0.011	0.96
Cox and Snell Pseudo R^2	0.084		0.082		0.056		0.097	

It is interesting to compare the situation of low-income families with that of high-income households. High-income family mothers have significantly less health satisfaction than fathers. Health satisfaction of the daughters and sons does not substantially differ from that of the fathers in low-income families.

The observed relationship between family status and health satisfaction can perhaps be explained by cultural patterns regarding the role of women (mothers and daughters) and men (fathers and sons). These cultural roles vary across income groups.

As Table 5 indicates, education has a positive impact on the probability of having excellent health satisfaction, and that health satisfaction declines with age. These findings are evident across all income groups. Marital status does not seem to make a big difference in health satisfaction, with a likely exception for individuals in a stable relationship or the divorced. On the basis of the results from the whole sample, it is clear that health satisfaction increases with income.

6 Breadwinner status and health satisfaction

6.1 Breadwinning status

The survey gathered information on individual self-reported breadwinner status, which is another relevant intra-household characteristic. Four categories were used: main breadwinner, secondary breadwinner, marginal breadwinner, and no breadwinner. This variable provides information on a person's status with respect to his role in generating household income. Table 6 gives the breakdown according to breadwinning status and the corresponding average health satisfaction.

Table 6
Breadwinning status frequency and corresponding average health satisfaction

Breadwinner status	Percentage in sample	Average health satisfaction
Main breadwinner	46.5	58.5
Secondary breadwinner	22.9	59.9
Marginal breadwinner	18.0	56.3
No breadwinner	12.6	57.7
Total number of observations	1535	

6.2 Role of breadwinning status in health satisfaction

As is observed in Table 6, differences in average health satisfaction across breadwinning status are relatively small. These differences—or their absence—could emerge because of the status itself or because of other sociodemographic and economic characteristics that are correlated to a person's breadwinner status. Hence, the following regression was carried out to study the role of the breadwinner status on health satisfaction.

$$HS = \beta_0 + \beta_1 S_B + \beta_2 M_B + \beta_3 N_B + \beta_4 \ln Y + \phi X_{control} + \mu \quad (2)$$

where:

HS refers to *health* satisfaction, a categorical variable;

S_B is a dichotomous variable, with a value of 1 if the person is a secondary breadwinner, and a value of 0 otherwise;

M_B is a dichotomous variable, with a value of 1 if the person is a marginal breadwinner, and a value of 0 otherwise;

N_B is a dichotomous variable, with a value of 1 if the person is no breadwinner, and a value of 0 otherwise;

$\ln Y$ refers to the logarithm of household income;

$X_{control}$ is a vector of the following control variables (ϕ is a vector of parameters):

Education: education in levels;

Age: age in years;

Marital status: vector of dichotomous variables about marital status, *single* was category of reference;

Gender: with a value of 1 for males and 0 for females.

The category of reference corresponds to *main* breadwinner.

The existence of substantial intra-household disparities in the health satisfaction of low-income families is a main concern of this investigation. It has been argued that large disparities could reflect that some household members are being marginalized from the access to household resources, and that this marginalization could have pernicious effects for health satisfaction if household income is low.

If there are substantial intra-household disparities in health satisfaction in low-income (economically poor) families, then wellbeing inferences made on the basis of a household income would be inaccurate.[10]

Regression (2) is run for each income group subsample to further explore the relevance of the breadwinning status in the relationship between household income and individual health satisfaction.[11] Table 7 shows the results from the ordered-probit econometric exercise for each income group as well as for the whole sample. It is noted that secondary and marginal breadwinners have a lower probability of being satisfied with their health with respect to the main breadwinner in low-income families. Secondary breadwinners have similar health satisfaction with respect to the main breadwinner in middle- and high-income families.

These findings indicate the possible existence of cooperative bargaining arrangements in low-income families. Section 7 explores further the relationship between an individual's contribution to the household income and his health satisfaction.

Table 7
Health satisfaction and breadwinning status, according to income groups
Ordered-profit regression, main breadwinner as reference category

	Low income		Middle income		High income		Whole sample	
	Coefficient	Signif.	Coefficient	Signif.	Coefficient	Signif.	Coefficient	Signif.
Secondary breadwinner	**-0.280**	**0.09**	**-0.049**	**0.72**	**-0.056**	**0.67**	-0.070	0.38
Marginal breadwinner	**-0.243**	**0.08**	**-0.234**	**0.15**	**-0.314**	**0.05**	-0.235	0.01
No breadwinner	**-0.180**	**0.31**	**-0.353**	**0.03**	**-0.307**	**0.12**	-0.290	0.00
LnY	-0.067	0.34	0.239	0.38	-0.050	0.58	**0.083**	**0.02**
Gender	0.029	0.80	0.130	0.25	0.189	0.08	0.125	0.05
Age	-0.015	0.00	-0.016	0.00	-0.015	0.01	-0.014	0.00
Education	0.086	0.06	0.099	0.01	0.111	0.01	0.114	0.00
Married	0.123	0.34	-0.071	0.57	0.001	0.99	0.017	0.81
Stable partner	-0.127	0.58	-0.308	0.23	-0.295	0.25	-0.223	0.11
Separated	0.128	0.66	-0.347	0.27	-0.020	0.95	-0.071	0.69
Divorced	0.012	0.98	0.502	0.19	0.105	0.76	0.232	0.28
Widowed	-0.204	0.39	0.622	0.07	0.100	0.82	0.035	0.84
Cox and Snell Pseudo R^2	0.088		0.090		0.061		0.104	

10 The low goodness of fit of regressions between health satisfaction and income indicates that income does not provide a good approximation of a person's subjective health situation, even if no inequality exists in the intra-household allocation of resources for health satisfaction. However, this investigation focuses on the intra-household distribution of health satisfaction at different income levels; it does not stress the issue of low goodness-of-fit coefficients and the possibility that the average relationship between health satisfaction and income could not be representative for all persons.

11 A further economic analysis would hypothesize that allocating household resources to the pursuit of greater health satisfaction for main and secondary breadwinners could be a rational household decision since their health is more valuable in economic (income generating) terms for all household members. According to an alternative explanation, persons who are ill or in poor health are less likely to participate actively in the labour force and are consequently less likely to be main or secondary breadwinners. This explanation introduces endogeneity to the analysis, and necessitates a panel data to address the issue.

Results in Table 7 also show that the impact of gender becomes more relevant as household income increases. Women enjoy similar health satisfaction as men in low-income families, but this is not the case in middle- or in high-income families, in particular.

7 Share in the household income

Section 6 used the self-reported breadwinning status to explore whether there is a difference in the relationship between health satisfaction and household income on the basis of a person's breadwinning role. The same issue can be addressed on the basis of the individual's share in the household income. Let the share be defined as the ratio of the individual's personal income (Y_{per}) over household income (Y_H):

$$S_{per/H} = \left(\frac{Y_{per}}{Y_H} \right) * 100 \tag{3}$$

Table 8 provides some basic statistics for $S_{per/H}$. As can be observed, the mean value for the share of a person's income in the household income is 58 per cent. Twenty per cent of people in the survey have a nil share, meaning that they make no contribution to their household income. On the other hand, 37 per cent of the people in the survey have a 100 per cent share, indicating that they earn the totality of the household income.

Table 8
Descriptive statistics: share of personal income in household income

Range	Percentage
$S_{per/H} = 0$	19.7
$50.0 \geq S_{per/H} > 0$	24.7
$100 > S_{per/H} > 50.0$	18.5
$S_{per/H} = 100$	37.1
Mean value for $S_{per/H}$	58.0

Based on the cooperative bargaining family models, an individual's greater share in income generation is associated with greater bargaining power within the household and subsequently in attaining a cooperative equilibrium that is a more favourable to him individually. Thus, if the breadwinner status is of importance, then health satisfaction of the individual should rise as his share of personal income increases in the household income.

The following regression was run to determine whether health satisfaction is related to an individual's share in the generation of household income:

$$HS = \varphi_0 + \varphi_1 \ln Y + \varphi_2 S_{per/H} + \omega X_{control} + \mu \tag{4}$$

All the variables in regression (4) have already been defined. Table 9 shows the estimated parameters by income group as well as for the whole sample.

A person's share in the generation of his household income does have a significant impact in middle-income families, and probability of that individual enjoying high health satisfaction rises with his share. The relationship between a person's share in the generation of household income and his health satisfaction is slightly significant in low-income families. There is no relationship at all between these two variables in high-income families.

Hence, results in Table 9 indicate that some cooperative bargaining elements with respect to the allocation of relevant resources for health satisfaction could be presented in low- and middle-income families.

Table 9
Health satisfaction and share in household income generation
by income groups, ordered-probit regression

	Low income		Middle income		High income		Whole sample	
	Coefficient	Signif.	Coefficient	Signif.	Coefficient	Signif.	Coefficient	Signif.
Share in household income	**0.002**	**0.10**	**0.004**	**0.01**	**0.000**	**0.84**	0.002	0.04
Ln*Y*	-0.152	0.13	0.294	0.28	-0.077	0.41	**0.101**	**0.01**
Gender	0.094	0.40	0.105	0.34	0.240	0.02	0.151	0.01
Age	-0.013	0.00	-0.016	0.00	-0.013	0.02	-0.014	0.00
Education	0.085	0.06	0.089	0.02	0.110	0.01	0.105	0.00
Married	0.153	0.25	-0.090	0.47	0.092	0.47	0.041	0.57
Stable partner	-0.096	0.67	-0.331	0.20	-0.165	0.52	-0.199	0.15
Separated	0.143	0.62	-0.300	0.34	0.107	0.73	-0.024	0.89
Divorced	0.055	0.89	0.451	0.24	0.247	0.48	0.262	0.22
Widowed	-0.210	0.38	0.696	0.05	-0.255	0.58	0.040	0.82
Cox and Snell Pseudo R^2	0.081		0.096		0.052		0.096	

8 Conclusion

This investigation addressed the issue of the kinds of intra-household arrangements that prevail in Mexico with respect to health satisfaction. It has been argued that health satisfaction provides useful information about a person's health, since it is not the same to be ill as it is to suffer from an illness. Family arrangements matter not only for the likelihood of a person becoming ill but also on the effect the illness has on an individual's satisfaction. Subjective wellbeing places the health status of an individual within his particular personal circumstances.

The intra-household distribution of health satisfaction is studied on the basis of testing the health satisfaction implications of alternative theories of the family, i.e., communitarian or cooperative-bargaining theories. Family status (being a father, mother, son, daughter, grandparent or other) and breadwinning status (main, secondary, marginal, and no-breadwinner) are used as proxies for a person's bargaining power within the household. Then, it is possible to test the communitarian versus cooperative bargaining theory of the family on the basis of whether the distribution of

health satisfaction follows its expected pattern according to the individual's bargaining power.

The main findings from the investigation are: household income has a larger explanatory capability than personal income in health satisfaction. This result hints that Mexican families do not exhibit extreme partnership arrangements with respect to allocating resources for health satisfaction.

Household income has larger explanatory power than household income per capita or household equivalent income. Thus, family-size depletion effects seem to be small in income having the capacity to generate health satisfaction. What matters for the health satisfaction of an individual is the household income, not the family-size adjusted proxy. Consequently, it seems that there is some pooling of household resources within Mexican households, and that this pool of resources is available to everybody within the household as needed.

However, there are some disparities in health satisfaction within the family that could be associated with either cultural patterns or to the intra-household distribution of power. Gender is noted to make a difference in health satisfaction, with women enjoying lower health satisfaction than men. In low-income families, daughters enjoy lower health satisfaction than fathers or sons, while mothers have lower health satisfaction in high-income families. This gender disparity could be explained by cultural patterns in the intra-household distribution of roles.

There are also some disparities in health satisfaction on the basis of the breadwinning status of the individual and on the basis of his contribution to household income. These could indicate that some cooperative bargaining elements are present in low- and middle-income families in Mexico.

This investigation has shown that income-based poverty measures are very limited in serving as proxy for some relevant wellbeing aspects, such as health satisfaction. The limitations of income-based poverty measures with respect to health satisfaction are many: first, these measures usually rely on household income per capita, while it has been shown that the relevant variable for health satisfaction is household income. Second, health satisfaction is not distributed uniformly within a household; thus, for a given household income, there are important intra-household disparities. Third, these intra-household disparities in health satisfaction can be explained by cultural patterns that discriminate against women, and the cooperative bargaining elements present in family arrangements. However, the nature and intensity of these disparities vary across income groups.

The family is a fundamental institution in any society, but its nature varies across and within nations. Some nations may have more communitarian—and even altruistic—family arrangements while in others, the more individualistic family arrangements based on cooperative bargaining equilibrium are common. The nature of these household arrangements does matter for the study of health.

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