

The Effect of Public Health Spending on Health Outcomes: Evidence from Spain Based on Self-Reported Health Status

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ABSTRACT

In this article, we analyse the relationship between public health spending and other biological, sociodemographic, lifestyle and health service use determinants on self-reported health status (SRHS). The study is based on individual SRHS data from the 2017 Spanish National Health Survey and public health expenditure in each of the Autonomous Communities in Spain, and is controlled through a series of separate determinants known to affect the health of individuals. The findings indicate that, increased public health expenditure results in a limited but statistically significant reduction in the possibility of reporting good health statuses. But when we consider the Moulton problem, this relationship is not statistically significant. All other individual health determinants are statistically significant.

Keywords: self-reported health status, public health expenditure, determinants of health status, diminishing returns, JEL Classification Codes: H51, I10, I18

INTRODUCTION

The relationship of public health expenditure on health status is a topic that has been of interest to health economists for decades. This is a matter of great relevance since modern welfare states allocate significant amounts of their budgets to their health systems to improve citizens' health status.

From a theoretical perspective, an increase in public health expenditure is expected to have a positive influence on better health status. This effect has been widely studied, with results that are not always conclusive. In an analysis of panel data from 15 European countries between 1980 and 1995, Nixon and Ulmann (2006) find that increased public health expenditure is significantly related to improvements in infant mortality rates, but only slightly with life expectancy. In a systematic review of the topic, Singh (2014) concludes from the analysis of 17 papers that financial investments in health often have the potential to improve the health of the community, although the complexity of the provision of public health services makes it hard to demonstrate definitive associations between expenditure and outcomes. Kuen and Lane (2013) analyse a 17 OECD cross-country panel data, using a mixed-effect model, with data collected between 1973 and 2000. They find that higher government spending on medical goods and

services can be shown to provide better overall health results for individuals, both infant mortality rate and life expectancy at birth.

Even in developing countries, where it is common to find evidences of a strong positive association between public health expenditure and a reduction in mortality rates and an increase in life expectancy (Richardson et al., 2017; Novignon and Lawanson, 2017; Grigoli and Kapsoli, 2017), in some cases, this relationship is not so clear and may be related to the quality of governance in each analysed country (Sunil and Swaroop, 2009), or the inefficiency in the allocation of resources, the shortage of health professionals or the shortage of medicines (Mica et al, 2020).

Most studies on this topic share a common characteristic: the health outcomes used as a dependent variable are usually measured through the life expectancy at birth or the different mortality rates. However, these two variables can have limitations. That is to say, both variables cannot capture changes in the individuals' health status, and also have a low capacity to capture the actual individuals' health status at the time of the study. In some manner, these variables do not consider the individuals' health status at the time of the analysis.

Self-reported health status (SRHS) is another measure of health outcomes, which main feature is the analysis of the health of individuals while alive. The measure usually consists of asking the respondent how they would define their health status within a given period (normally, 12 months), where the individual can report five different statuses (Excellent, Good, Fair, Poor, Very poor). This measure has been shown to be significant in explaining different health aspects, such as health issues (Greiner et al., 1999; Maguire et al., 2016), the use of health services (Smith et al., 2010), changes in functional status (Pietilainen, 2011), mortality rate (Sargent et al., 2010) or the sociodemographic characteristics of respondents (Banerjee et al., 2010).

Concerning the objective of this study, the authors have only found three previous studies that use SRHS as a dependent variable to analyse the global relationship between health status and public health expenditure. The first of these (Rivera, 2001) analyses, as does this study, the relationship existing between both variables in the case of Spain, although it does not consider Moulton problem. With data from 1997, and controlled through different variables, the author finds a positive and statistically significant relationship between public health expenditure and health status. The second of these (Piérard, 2016), conducted an analytical strategy slightly different from that employed in the present study, with data from Canada between 1994 and 2010, finds a limited but positive effect of public health expenditure on health status. The third of these (Ivankova et al., 2019) analyses the relationship between both variables for aggregated panel data from 16 countries member of the Organisation for Economic Co-operation and Development (OECD), and with an empirical strategy different from that used in the present study, finds a small, positive, and statistically significant relationship.

The effect of health insurance on SRHS, a non-similar but related approach, has been analysed by other authors, generally finding a relationship between lack of insurance and worse SRHS (Franks et al., 1993; Han et al., 2015; Lipton, 2019), although the conditions of the health system of the analysed countries differ from those of Spain.

In this study, we analyse the relationship between a 7-year period regional public health expenditure and health status measured by SRHS as a dependent variable.

Spain has a Beveridge-type health system, with funding from public budgets. Administratively, Spain is divided into 17 Autonomous Communities, with a high degree of decentralisation, where each is directly responsible for both the expenditure and the management of the health systems in its region. The Ministry of Health establishes a basic portfolio of common services for all the Autonomous Communities (AACC); but each of them has the power to set additional services in its portfolio, as well as to choose the organisational model that they consider most appropriate, always within the limits set under the laws of the Spanish state. 99.1% of the Spanish population has free public health coverage, and there is also a private health sector that accounts for 30% of total health spending.

Public health spending in Spain in the period analysed in this paper shows significant differences between the different AACC (see table 1 in the appendix) with a range between 1,143 and 1,606 euros (on average), indicating appreciable differences in regional health care costs. Those differences obey to the autonomous policy making of Spanish AACC.

The objective of this study is to capture the influence that the public health expenditure made between 2008 and 2015 has on the citizens' SRHS in the case of Spain, considering different biological, sociodemographic, health service use and lifestyle factors, which have demonstrated their influence on the individuals' health status (Norstrom et al., 2014).

MATERIALS AND METHODS

The health, sociodemographic, biological and lifestyle data used in this study have been taken from the adult module (over 15 years) of the 2017 Spanish National Health Survey (SNHS 2017) and the data on public health expenditure have been obtained from the Spanish Ministry of Health. The SNHS is a national cross-sectional study. The data used in this study correspond to the survey conducted throughout 2017 in a total of 23,860 households and collects health information regarding the Spanish resident population. The econometric analysis was carried out using an ordered probit model, as it has proven the most suitable statistical method for the analysis of ordinal qualitative dependent variables (Greene, 2018). The dependent variable is the SRHS, which is a proxy of the individuals' health status, and consists of a five-point ordinal categorical variable. The variable responds to the question asked to the respondents: In the last 12 months, how would you say your health has been? and which response possibilities include five options: Very poor, Poor, Fair, Good and Excellent. In this study, the variable has been recoded (in the original version, 1 indicates "Excellent health" and 5 indicates "Very poor"), to standardise the results with the international usual practice in this scale.

The main independent variable, public health expenditure, has been taken as the average of the public expenditure per capita for each of the 17 Spanish Autonomous Communities where the individual resides, within the period between 2008 and 2015. Thus, the lagged effects of public health spending on the current health status are collected, assuming that in a sector such as healthcare, where investment in infrastructure and technology has an essential weight, and expenditures on healthcare personnel are strongly consolidated in public budgets, the healthcare activity carried out and its results at the time of analysis should be strongly influenced by investment and spending decisions made in previous years. Also, the assumption

that public health expenditure is exogenous to the model is made. Other individual variables that have been shown to be relevant in previous studies are taken as control variables. These variables are grouped into sociodemographic (age, gender, cohabitation with a partner, job, type of studies completed), health service use (visits to the general practitioner, hospitalisations), lifestyle (exercise, alcohol consumption, tobacco consumption) and biological (physical limitations). The definition of each of them can be seen in Table 1. The descriptive analysis of the variables is found in Table 2. There aren't high levels of correlation between variables (table II, appendix). The model was carried out with R software, through `oglmx` command for the ordered probit model, and the command `margin. oglmx` for the marginal effects. The model has been tested with the Gretl software to confirm the regression parameters, obtaining the same results.

Table 1. Variables.

Variable	Definition
Self-Rep. Health Status	Self-reported health status, on a five-point scale (1=worst, 5=best)
AvPublicHealthexp	Average per capita of public health expenditure in a region (2008–2015)
Age	Years, above 15
Gender	1=male
Cohabitation	1=do not live alone
Smoker	1=current smoker
Worker	1=have a job
No studies	1=have no qualifications
Graduate	1=have a university degree
Alcoholconsump.	1=take alcohol at least 1 time per week
physicalexerc.	1=take physical exercise in leisure time
physicallimit.	Limitations in the last 6 months due to a health problem, on a three-point scale (0=no limitation, 2=serious limitation)
MDvisits	Number of visits to the general practitioner in the last 4 weeks
Hospitalisation	1=had at least one hospital admission in the last 12 months

Table 2. Descriptive statistics.

Variable	Mean	St. Dev.	Min.	Max.
Self-Rep. Health Status	3.72	0.920	1	5
AvPublicHealthexp	1346.63	130.38	1143	1606
Age	53.58	18.88	15	103
Gender	0.460	0.498	0	1
Cohabitation	0.542	0.498	0	1
Worker	0.43	0.495	0	1
No studies	0.118	0.323	0	1
Graduate	0.181	0.385	0	1
Alcoholconsump.	0.364	0.481	0	1
Smoker	0.233	0.422	0	1
physicalexerc.	0.223	0.416	0	1
physicallimit.	0.351	0.584	0	2
MDvisits	0.481	0.834	0	24
Hospitalisation	0.089	0.285	0	1

RESULTS

As it is known, the values of the coefficients of the ordered probit model are not relevant; in this case, their sign (positive or negative) has to be taken into account, being necessary the calculation of the marginal effects to be able to analyse the data; and both results (their sign and the marginal effects) must be analysed separately.

For the sensitivity analysis, estimates of the model parameters have been made for two subgroups of the sample population: individuals over 74 years, and individuals whose highest academic degree is primary school; obtaining for the coefficients of the principal independent variable, public health expenditure, the same signs as those obtained for the total sample (in the second group, without statistical significance), being indicative of the robustness of the results obtained in the study model.

According to the results of the regression analysis using the ordered probit model (see Table 3), SRHS has a statistically significant negative coefficient with respect to the average public health expenditure over the previous seven years; so that when the expenditure is relatively high, the individuals are more likely to assess their health in worse statuses.

As regards the rest of the variables, they all have statistical significance. The individuals are more likely to assess their health positively if they are male, have a job at the time of the survey, have a university degree, take physical exercise and consume (at least weekly) alcohol. However, health status is more likely to be assessed negatively if the individuals live with a partner, have no formal education of any kind, have mobility limitations, and have made use of primary care or have been hospitalised. Additionally, the likelihood of reporting poorer health statuses increases with age.

Table 3. Estimation results of the ordered probit model.

Variable	Estimate	Std. Err.	t-value	Signif.
AvPublicHealthexp	-0.0001	0.00005	-2.962	**
Age	-0.0137	0.00052	-27.49	***
Gender	0.1047	0.01577	6.619	***
Cohabitation	-0.0643	0.01553	-4.186	***
Worker	0.0809	0.01766	4.602	***
No studies	-0.0879	0.02552	-3.488	***
Graduate	0.2135	0.02058	10.31	***
Smoker	-0.1061	0.01842	-5.776	***
Alcoholconsump.	0.0443	0.01657	2.664	***
physicalexerc.	0.2301	0.01950	11.86	***
physicallimit.	-11.315	0.01657	-71.75	***
MDvisits	-0.1410	0.01301	-15.73	***
Hospitalisation	-0.4711	0.02850	-17.67	***
N. Observ.	22553			
McFadden's pseudo R2	0.21			
Log-Likelihood	-22.850.218			

Significance codes: $p < 0$ '***'; $p < 0.01$ '**'

As previously indicated, the coefficients of the ordered probit model do not provide relevant information beyond their sign; so in order to obtain more precise information, we must consider the marginal effects that indicate, for quantitative variables, the increase (or decrease) in the probability of observing the individual change in the rating of individuals' health status when faced with a change of one unit in the regressor. For binary variables, the marginal effect is the change in the predicted probability based on whether a respondent falls into that category or not. The results are shown in Table 4.

Considering the marginal effects and controlled through the different health determinants used in the model, we observe that increased public health expenditure reduces, although in a limited manner, the likelihood of reporting good health statuses, and increases the likelihood of reporting intermediate and lower health statuses, all cases being statistically significant. Thus, as public health expenditure increases, the likelihood that individuals report better health statuses (Very good and Excellent) decreases, which are similar conclusions to those obtained in the regression model.

Similarly, marginal effects indicate that age, tobacco consumption, lack of formal education, cohabitation with a partner, physical limitations, hospitalisation and the number of visits to the general practitioner increase the likelihood that individuals report poorer health statuses. However, being male, having a job, having a university degree, consuming alcohol (with a very limited effect) and taking regular exercise correlate with an increased likelihood to report optimal health conditions.

Table 4. Marginal effects for each health status.

Variable	Very Poor		Poor		Fair		Good		Excellent	
Av Public Health exp	8.28E-07	**	1.17E-05	**	5.12E-05	**	-3.02E-05	**	-3.35E-05	**
Age	6.26E-05	***	8.84E-04	***	3.87E-03	***	-2.28E-03	***	-2.54E-03	***
Gender	-4.74E-04	***	-6.70E-03	***	-2.95E-02	***	1.72E-02	***	1.95E-02	***
Cohabitation	2.92E-04	***	4.13E-03	***	1.82E-02	***	-1.07E-02	***	-1.95E-02	***
Worker	-3.65E-04	***	-5.18E-03	***	-2.87E-02	***	1.33E-02	***	1.51E-02	***
No studies	4.50E-04	**	6.09E-03	***	252E-02	***	-1.60E-02	**	-1.58E-02	***
Graduate	-8.06E-04	***	-1.22E-02	***	-5.92E-02	***	2.93E-02	***	4.29E-02	***
Alcohol consumption	-1.99E-04	**	-2.83E-03	**	-1.25E-02	**	7.27E-03	**	8.26E-03	**
Smoker	5.29E-04	***	7.20E-03	***	3.01E-02	***	-1.89E-02	***	-1.89E-02	***
physicalexerc.	-8.82E-04	***	-1.33E-02	***	-6.38E-02	***	3.20E-02	***	4.60E-02	***
physicallimit.	5.16E-03	***	7.29E-02	***	3.19E-01	***	-1.88E-01	***	-2.01E-01	***
MDvisits	6.44E-04	***	9.09E-03	***	3.98E-02	***	-2.35E-02	***	-2.61E-02	***
Hospitalisation	4.00E-03	***	4.26E-02	***	1.31E-01	***	-1.10E-01	***	-6.79E-02	***

Significance codes: $p < 0$ '***'; $p < 0.01$ '**'

Moulton Problem

The study carried out could imply problems of significance testing, as it is sensitive to the Moulton problem (Moulton, 1990). The Moulton problem appears when variables of analysis of a sectorial type (or regional, country, etc.) are added to the units of observation, people, in our case. In our study, such variable is the public health expenditure. In these cases, the units that belong to an aggregation group (in our case, Spanish regions) can be related to variables

not considered in the study, which will cause a correlated disturbance within each group. The existence of this correlation implies that the standard deviations of the parameters can be incorrectly calculated, which will affect the contrasts in significance testing. To correct this effect, we have computed the calculations of the model corrected with the Moulton variable, as defined by Herrarte et al (2007); where an estimation of the probit model by Least Square Regression (instead of by likelihood) is made first, and then the Moulton transformation is applied to the model obtained. In this way, new and more accurate standard deviations are obtained. Results are shown in Table 5.

Table 5. Analysis corrected with the Moulton variable.

Variable	Estimate	Std. Err.	t-value	Signif.
AvPublicHealthexp	-0.00008	0.00022	-0.39	
Age	-0.07951	0.00351	-22.60	***
Gender	0.06280	0.00979	66.179	***
Cohabitation	-0.32839	0.00961	-41.957	***
Worker	0.05121	0.01216	46.112	***
No studies	-0.06633	0.02598	-35.255	**
Graduate	0.12512	0.01533	103.032	***
Smoker	-0.06061	0.01149	-57.780	***
Alcoholconsump.	0.34420	0.01440	26.674	**
physicalexerc.	0.12885	0.01528	118.511	***
physicallimit.	-0.76466	0.01090	-717.542	***
MDvisits	-0.09336	0.00653	-157.380	***
Hospitalisation	-0.31872	0.01698	-176.661	***
N. Observ.	22553			
R2 adjusted	0.4477			
Significance codes: p< 0 '***'; p< 0.01 '**'				

On the one hand, once the Moulton correction is applied, the public health expenditure variable is not significant. On the other hand, the variables that measure the different determinants studied at an individual level are all still significant and follow the expected trends. This applies to socioeconomic level, health service use, lifestyle, and biological determinants, and confirm the results obtained in the analysis with the ordered probit model.

DISCUSSION

We have analysed the effect of public health expenditure (averaged over the previous seven years) and other individual health determinants on the SRHS assessed in the regions of Spain during 2017. The main finding of this analysis indicates that increased public health expenditure does not have a positive effect on the likelihood of reporting better health but does have a positive effect on those who report worse health statuses, although in both cases the effect is limited.

In most of the previous studies that measured the relationship between public health expenditure and health outcomes, either or both the mortality rates and the life expectancy were used as health variables. In the analytical strategy of the present study, the health outcome has been measured through the SRHS, which offers the advantage of having a measure of the health status of individuals while alive, and which includes the health aspects that directly have an influence on the perception of the individuals when surveyed.

The lack of effect of increased public health expenditures on better SRHS differ from those indicated in other studies carried out under a similar model (Rivera, 2001; Pierard, 2016), as well as from a part of the literature that considered other variables as health outcomes.

Based on the data here analysed performed with the Moulton correction, it can be inferred that increased public health expenditure is not a determinant in the perception of a "Good" or "Excellent" health status, this possibility being more directly influenced by other variables of a sociodemographic and biological nature, such as being male, being in active employment, having a university degree and taking physical exercise.

Previous literature (Nixon and Ulman (2006); Murphy and Topel (2003); Rodríguez and Sobrino (2015)) found evidence of the existence of decreasing returns on public health expenditure in relation to health outcomes. The findings of our study may be initially compatible with this idea, although when the analysis is performed with the Moulton problem in mind, the relationship is not significant. By contrast, in line with other previous research, we found that limitations in functional status as well as a higher age are related to the likelihood of reporting worse health statuses, *ceteris paribus*, and in all cases with a comparatively higher effect than the rest of the variables.

The strong association between reporting worse physical functionality and greater probability of reporting worse SRHS is of special interest for analysis. Physical limitation, a good proxy of functional status, is also strongly related with chronic health problems. In this way, in developed societies, such as Spain, the problems with the greatest impact on SRHS may be "non-curable" or chronic conditions, which have a large impact both on people's quality of life and on health care systems and their sustainability. This aspect is essential for future planning the health services, since current public health spending and consumption of health resources is mainly aimed at solving already existing health problems (in 2019, in Spain, 62.15 % of public health spending was on hospital and specialized services), however, chronic health problems have the greatest impact on people's self-perceived health.

Educational level is a good predictor of health status, increasing the likelihood of reporting good health statuses in those strata of the population with greater academic level. Men are also more likely to report good health statuses.

In relation to lifestyles, tobacco consumption is associated with the likelihood of reporting worse health statuses, but not alcohol consumption. All results have statistical significance. Regarding the negative association between tobacco consumption and improved health outcomes, our findings are compatible with those of previous research (Berger and Messer (2002); Cremieux et al (2005)). As for the positive association found in the present study between alcohol consumption and the likelihood of reporting better health statuses, the findings of previous literature are inconclusive, reporting both positive (Berger and Messer (2002)) and negative associations (Cochrane et al (1978); Mostofsky et al (2016)).

Regarding to visits to the general practitioner and hospitalisations, these variables are related to the likelihood of reporting worse health statuses too. In order to evaluate the possible endogeneity of these two variables, we have tested the model excluding both, obtaining similar results to the analysis carried out in this work.

Self-reported health status is related with having a chronic disease (Banerjee et al, 2010) and with morbidity and early mortality risk (Sargent-Cox et al, 2010; McGee et al, 1999). Our findings reflect the complexities of health, perceptions of health and its relationship with social, psychological and physiological determinants. It is relevant to indicate the effects that age, tobacco consumption, lower education of formal education, cohabitation with a partner, physical limitations, have on SRHS. Those are factors that may be actionable for health promotion and wellbeing improvement. Remarkably, also higher use of health care both in the likelihood of hospitalizations or in GP visits are factors associated with lower SRHS while having regular exercise correlate with an increased likelihood to report optimal health conditions.

Although the type of data here analysed and the design of this work impedes to make any causal relationship between the variables analysed, regional public health expenditures and SRHS, these results are in line with the growing body of evidence that is showing the benefit of non-clinical interventions leading to a range of positive health and wellbeing outcomes. Those are interventions broadly defined as “social prescribing” or “community referral” enable health professionals to refer people to a range of local, non-clinical services based on a bio-psycho-social model of illness encourages healthcare practitioners to address the non-medical causes of ill health with non-medical interventions.

CONCLUSIONS

This study broadly confirms the results obtained in the previous literature, which use mostly mortality rate or life expectancy as a dependent variable, regarding the sociodemographic, biological, health service use and lifestyle determinants. However, albeit with limited effect, we find a negative effect of increased public health expenditure on the likelihood of reporting the best health statuses, which is not significant when controlled by the Moulton problem. This leads us to ask if, in developed societies, beyond a certain point public health expenditure has less effect, comparatively speaking, on health status than other determinants that affect health; and shows diminishing returns as it increases or lack of significance.

The results obtained in this research indicate that there is insufficient empirical evidence on the effect of public health expenditure on individuals' self-reported health status, although a number of other individual health determinants do have a significant effect.

Especially, the positive relationship between education and better health statuses or health promotion on health is evidenced in this study. This leads us to question the possible existence of an opportunity cost of public health expenditure that could be derived to other areas of public expenditure, such as social prescribing, which could have a greater positive effect on the health of individual citizens.

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Appendix

Table I. Spanish Autonomous Communities Public Health Expenditure in Euros, 2008-2015.

Region / Year	2008	2009	2010	2011	2012	2013	2014	2015
Comunidad Autónoma de Andalucía	1270	1251	1209	1133	1101	1050	1042	1090
Comunidad Autónoma de Aragón	1432	1528	1481	1525	1521	1237	1427	1469
Comunidad Autónoma del Principado de Asturias	1448	1624	1553	1599	1541	1424	1433	1526
Comunidad Autónoma de las Illes Balears	1258	1333	1549	1451	1175	1151	1194	1281
Comunidad Autónoma de Canarias	1433	1478	1395	1323	1208	1213	1232	1291
Comunidad Autónoma de Cantabria	1339	1389	1459	1298	1766	1358	1365	1413
Comunidad de Castilla y León	1425	1389	1420	1309	1362	1347	1268	1445
Comunidad Autónoma de Castilla-La Mancha	1413	1533	1537	1461	1241	1196	1213	1295
Comunidad Autónoma de Cataluña	1350	1417	1432	1351	1262	1238	1241	1331
Comunitat Valenciana	1245	1358	1390	1348	1209	1140	1195	1308
Comunidad Autónoma de Extremadura	1523	1598	1574	1536	1409	1401	1448	1501
Comunidad Autónoma de Galicia	1381	1469	1420	1323	1274	1288	1293	1393
Comunidad de Madrid	1196	1271	1155	1317	1193	1154	1164	1243
Comunidad Autónoma de la Región de Murcia	1502	1566	1541	1553	1444	1427	1419	1475
Comunidad Foral de Navarra	1486	1604	1577	1550	1435	1396	1435	1510
Comunidad Autónoma del País Vasco	1547	1659	1654	1634	1579	1559	1582	1631
Comunidad Autónoma de La Rioja	1487	1463	1459	1440	1305	1302	1330	1384

Table II. Partial correlations.

	(1)		(2)		(3)		(4)		(5)		(6)		(7)
SRHS (1)	1												
AvPublicHealthexp (2)	-0.02	**	1										
Age (3)	-0.40	***	0.05	***	1								
Gender (4)	0.10	***	-0.01		-0.07	***	1						
Cohabitation (5)	0.01	*	-0.01		0.06	***	0.11	***	1				
Worker (6)	0.27	***	0.01		-0.41	***	0.12	***	0.14	***	1		
No studies (7)	-0.25	***	-0.06	***	0.38	***	-0.07	***	-0.08	***	-0.27	***	1
Graduate (8)	0.16	***	-0.01	*	-0.14	***	-0.03	***	0.05	***	0.26	***	-0.17
physicallimit (9)	-0.62	***	-0.01		0.35	***	-0.08	***	-0.05	***	-0.26	***	0.26
Alcoholconsump (10)	0.10	***	0.01		0.01		0.28	***	0.10	***	0.13	***	-0.11
Smoker (11)	0.05	***	-0.01		-0.19	***	0.08	***	-0.02	***	0.13	***	-0.11
physicalexerc (12)	0.22	***	-0.03	***	-0.29	***	0.11	***	-0.03	***	0.17	***	-0.16
Mdvisits (13)	-0.22	***	-0.03	***	0.10	***	-0.03	***	0.00		-0.08	***	0.08
Hospitalisation (14)	-0.27	***	0.00		0.14	***	0.00		-0.01		-0.10	***	0.08

SRHS (1)		(8)		(9)		(10)		(11)		(12)		(13)		(14)
AvPublicHealthexp (2)														
Age (3)														
Gender (4)														
Cohabitation (5)														
Worker (6)														
No studies (7)														
Graduate (8)														
physicallimit (9)	***	1												
Alcoholconsump (10)	***	-0.12	***	1										
Smoker (11)	***	0.10	***	- 0.11	***	1.00								
physicalexerc (12)	***	-0.05	***	- 0.07	***	0.13	***	1						
Mdvisits (13)	***	0.17	***	- 0.17	***	0.09	***	-0.03	***	1				
Hospitalisation (14)	***	-0.05	***	0.20	***	-0.05	***	-0.03	***	- 0.05	***	1		
SRHS (1)	***	-0.04	***	0.26	***	-0.05	***	-0.04	***	- 0.07	***	0.12	***	1