Health Expenditure based on Insurance type and age prior to Implementation of universal health coverage in Bolivia

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Ms. Editor:

We would like to present a brief study report of the health expenditure based on insurance type and age prior to implementation of universal health coverage in Bolivia. This study will help us to understand better the health expenditure of the Bolivian population continue investigations, and take actions in order to improve the current health system.

Introduction

In February 2019, the Bolivian government approved the universal health coverage with the goal of providing coverage to uninsured population (62,1%). Although there is literature available, which evaluates and describes the health system, there is no information on demographic distribution of improved health care services[1].

Assessment on the out of pocket payment amount or the relationship it has with, level of care, considering newly approved health policies like "the familiar, communitarian and intercultural" (SAFCI) program, benefits expansion and creation of elderly government-based insurance, and law 405 of health as a human right[2]. International organizations have tried to assess the differences in other countries of the region[3,4], but this research is presented through cases and fails to assess the health systems as a whole[5]. It is for this reason that will assess the distribution of health expenditure against health insurance in Bolivia and its relation to all insured and uninsured.

Material and methods

The Dataset analyzed is granted from the National Institute of Statistic (INE) of the Plurinational Government of Bolivia and public information, it includes the information of 35,693 households. The Bolivian currency was converted into american dollars for the study purposes. The survey was performed from November 21 to December 13, 2013. The methodology of the survey was face to face interview.

Chi-Square was used to see variations between our groups of interest using SPSS. Multivariate analysis evaluating the associations between the insurance type of the persons interviewed and the self-reported percentage of expenses in relation to income provided.

Results

Health expenditure is defined as the percentage of income spent as household. The results show majority of respondents do not have health insurance 59,2% (Table 1), regardless of age, followed by Social Security 22%, Public 17,1%, Private 1,5%, and Others 0,2%. Majority of respondents spent less than 10% of their income on health and came from the 5-18 years old age group. Those who spent >160% had no insurance (Table 2).

Discussion

The data shows the public insurance has some success in mitigating the expenses in people less than 5 and more than 61 years old. This could be due to prevalent diseases according to age in both groups, which can be shown in future research. In other groups the expenses are high even in the insured, especially the social security insurance. This category has shown to have half the expenses when compared to the uninsured group after we adjust for age.

The number of uninsured people remains considerably high and even as the health expenditure of self-reported out of pocket payments is small, this does not take in to account the need of services, the question remaining open if the lower

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Table 1. Descriptive table for Sex, Age and Insurance type

		Count	Column N %
Sex	Men	17474	49.0%
	Women	18219	51.0%
	Total	35693	100.0%
Age	<5	4259	11.9%
	5 - 18	9430	26.4%
	19 - 30	7229	20.3%
	31 - 60	11440	32.1%
	>61	3335	9.3%
	Total	35693	100.0%
Insurance type	Public	6101	17.1%
	Private	553	1.5%
	Social Security	7843	22.0%
	Others	66	0.2%
	None	21130	59.2%
	Total	35693	100.0%

income segments of the population are not being able to afford services they require or need.

Further exploration on the conditionings that shape health are still necessary to draw definitive conclusions.

Keywords: Out of pocket health expenditure, health insurance, health expenditure

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Table 2. Cross-tabulation of, Age, Type of Insurance, and Expenditure

Expenditure				Public	Private	Social S	Others	None	Total
						Type of Insurance			Total
<10%	Age	<5	Count	1814	62	768	6	1609	4259
			% within Age	42.6%	1.5%	18.0%	0.1%	37.8%	100.0%
		5-18	Count	1057	124	1727	34	6384	9326
			% within Age	11.3%	1.3%	18.5%	0.4%	68.5%	100.0%
		19-30	Count	838	122	1386	5	4610	6961
			% within Age	12.0%	1.8%	19.9%	0.1%	66.2%	100.0%
		31-60	Count	1073	190	2733	11	6648	10655
			% within Age	10.1%	1.8%	25.6%	0.1%	62.4%	100.0%
		>61	Count	951	24	799	8	791	2573
			% within Age	37.0%	0.9%	31.1%	0.3%	30.7%	100.0%
	Total		Count	5733	522	7413	64	20042	33774
			% within Age	17.0%	1.5%	21.9%	0.2%	59.3%	100.0%
11-20%	Age	5-18	Count	2	1	1	0	19	23
			% within Age	8.7%	4.3%	4.3%	0.0%	82.6%	100.0%
		19-30	Count	9	3	31	0	78	121
			% within Age	7.4%	2.5%	25.6%	0.0%	64.5%	100.0%
		31-60	Count	27	7	70	0	212	316
			% within Age	8.5%	2.2%	22.2%	0.0%	67.1%	100.0%
		>61	Count	96	2	76	1	88	263
			% within Age	36.5%	0.8%	28.9%	0.4%	33.5%	100.0%
	Total		Count	134	13	178	1	397	723
			% within Age	18.5%	1.8%	24.6%	0.1%	54.9%	100.0%
21-40%	Age	5-18	Count	2	0	5		18	25
			% within Age	8.0%	0.0%	20.0%		72.0%	100.0%
		19-30	Count	6	1	10		44	61
			% within Age	9.8%	1.6%	16.4%		72.1%	100.0%
		31-60	Count	9	1	35		132	177
			% within Age	5.1%	0.6%	19.8%		74.6%	100.0%
		>61	Count	67	2	53		66	188
			% within Age	35.6%	1.1%	28.2%		35.1%	100.0%
	Total		Count	84	4	103		260	451
			% within Age	18.6%	0.9%	22.8%		57.6%	100.0%
41-80%	Age	5-18	Count	0	0	4	0	9	13
			% within Age	0.0%	0.0%	30.8%	0.0%	69.2%	100.0%
		19-30	Count	2	4	9	0	26	41
			% within Age	4.9%	9.8%	22.0%	0.0%	63.4%	100.0%
		31-60	Count	9	1	15	1	82	108
			% within Age	8.3%	0.9%	13.9%	0.9%	75.9%	100.0%
		>61	Count	39	1	41	0	44	125
			% within Age	31.2%	0.8%	32.8%	0.0%	35.2%	100.0%
	Total		Count	50	6	69	1	161	287
			% within Age	17.4%	2.1%	24.0%	0.3%	56.1%	100.0%
81-160%	Age	5-18	Count	1	0	4		6	11
			% within Age	9.1%	0.0%	36.4%		54.5%	100.0%
		19-30	Count	1	0	3		10	14
			% within Age	7.1%	0.0%	21.4%		71.4%	100.0%
		31-60	Count	6	1	8		32	47
			% within Age	12.8%	2.1%	17.0%		68.1%	100.0%
		>61	Count	24	4	13		26	67
			% within Age	35.8%	6.0%	19.4%		38.8%	100.0%
	Total		Count	32	5	28		74	139
			% within Age	23.0%	3.6%	20.1%		53.2%	100.0%
>160%	Age	5-18	Count	0		6		20	26
			% within Age	0.0%		23.1%		76.9%	100.0%
		19-30	Count	2		1		5	8
			% within Age	25.0%		12.5%		62.5%	100.0%
		31-60	Count	3		5		45	53
			% within Age	5.7%		9.4%		84.9%	100.0%
		>61	Count	26		16		29	71
			% within Age	36.6%		22.5%		40.8%	100.0%
	Total		Count	31		28		99	158
			% within Age	19.6%		17.7%		62.7%	100.0%
Total	Age	<5	Count	1814	62	768	6	1609	4259
			% within Age	42.6%	1.5%	18.0%	0.1%	37.8%	100.0%
		5-18	Count	1062	125	1747	34	6456	9424
			% within Age	11.3%	1.3%	18.5%	0.4%	68.5%	100.0%
		19-30	Count	858	130	1440	5	4773	7206
			% within Age	11.9%	1.8%	20.0%	0.1%	66.2%	100.0%
		31-60	Count	1127	200	2866	12	7151	11356
			% within Age	9.9%	1.8%	25.2%	0.1%	63.0%	100.0%
		>61	Count	1203	33	998	9	1044	3287
			% within Age	36.6%	1.0%	30.4%	0.3%	31.8%	100.0%
	Total		Count	6064	550	7819	66	21033	35532
			% within Age	17.1%	1.5%	22.0%	0.2%	59.2%	100.0%