Comparing Health Indicators: Colombia and the OECD

By Oscar Bernal, Diana Zamora, Carlos Grijalba & Anna Spector

University of Andes, Colombia

Abstract- Colombia has shown its intention to enter the OECD and during this process, it is important to compare its health indicators with the OCDE´s countries, taking in account not only the average results, but the differences according to regions, sex, ethnicity and income.

The methodology uses has been based on the OECD framework with a broad view of public health, including health status, non-medical determinants of health, health workforce, health care, quality of care, access to care, health expenditure, ageing and long-term care.

The main achievements of Colombia are universal coverage and low out-of-pocket payments. Colombia has some opportunities to show better health indicators due to a younger population, lower rates of diabetes and overweight and a low suicide rate compared with OECD countries.

Keywords: health indicators, OECD, colombia, morbility.

GJMR-K Classification: NLMC Code: W 84

COMPARINGHEALTHINDICATORCOLOMBIAANDTHEOECD

Strictly as per the compliance and regulations of:

Comparing Health Indicators: Colombia and the OECD

Oscar Bernal [α], Diana Zamora [σ], Carlos Grijalba [ρ] & Anna Spector [ω]

Abstract- Colombia has shown its intention to enter the OECD and during this process, it is important to compare its health indicators with the OCDE´s countries, taking in account not only the average results, but the differences according to regions, sex, ethnicity and income.

The methodology uses has been based on the OECD framework with a broad view of public health, including health status, non-medical determinants of health, health workforce, health care, quality of care, access to care, health expenditure, ageing and long-term care.

The main achievements of Colombia are universal coverage and low out-of-pocket payments. Colombia has some opportunities to show better health indicators due to a younger population, lower rates of diabetes and overweight and a low suicide rate compared with OECD countries. Colombia needs to improve on equality by region, education and income, access and quality of care, mental health services, plus needs to reduce preventable mortality due to violence.

Keywords: health indicators, OECD, colombia, morbility.

I. Introduction

The Organization for Cooperation and Economic Development (OECD) is comprised of 34 countries around the world. Since 2010 Colombia has shown its intention to enter the OECD, with a formal request by President Santos and followed by a visit to the OECD. Admission to the OECD will allow the country to benefit from the work and experience in the formulation of public policy of the leading economies in the world (Ministerio Hacienda, 2012).

The Colombian Government will also have the opportunity to influence the design and adjustments of key instruments and initiatives to improve the functioning of the global economy and global governance (Gurria, 2013). OECD believes that the inclusion of Colombia is more a process than an event (OCDE, 2012) and as part of the process; the OECD will evaluate the application by Colombia of policies, practices and the legal instruments of the organization.

The OECD's report, Health at Glance, 2013, showed improvement in life expectancy and infant mortality, however inequalities in wealth, education and other social indicators still have a significant impact on health status (OCDE, 2013).

Author α σ ρ : Universidad de los Andes.
e-mails: obernal@uniandes.edu.co, dc.zamora35@uniandes.edu.co, ca.grijalba961@uniandes.edu.co
Author ω : Pontificia Universidad Javeriana.
e-mail: aspector@javeriana.edu.co

Colombia and the OECD countries share common challenges such as the ageing of the population, an increase of non-communicable diseases, users who expect better treatments, and the exponential increase of health technology and pharmaceuticals. In some indicators Colombia has a lot to learn and work on to reach the average OECD level and in others Colombia has lessons learned to share with the OECD.

The goal of this analysis is to compare Colombian and OECD indicators, taking in account not only the average results, but the differences according to regions, ethnicity and income. Some of the data from the individual report providing health services has a 50% of under-reporting (ONS, 2014).

II. Methodology

We use the oecd framework with a broad view of public health including determinants of health and the OECD health care quality indicators project (kelley, 2006).

we follow the same components of the OECD health analysis (OCDE, 2013), including health status, non-medical determinants of health, health workforce, health care, quality of care, access to care, health expenditure, ageing and long-term care.

The figures and data from the oecd were taken from its public data base (OCDE, 2015). the colombian indicators were taken from official government data from the ministry of health, the national health institute and the national statistics department. the oecd and colombian average data is un-weighted, unless otherwise specified. also, we used data from international institutions such as the world bank, cepal, and the international development bank. some definitions have been taken from the world bank such as, middle-income economies described as those with a gni per capita of more than $1,045 but less than $12,746 (world bank, 2015).

Indicators were evaluated according to methodology and scope in order to determine comparability with the indicators presented by the oecd report. we selected indicators including variables such as income and gender, using the free access databases of the OECD, attributing copyright ownership and adding colombian official data. most of the indicators used were from 2011 or the closest available year.

Some of the OECD indicators have no corresponding official data from colombia but in each of

the areas it has been possible to identify some indicators.

III. Results

a) Health Status

OECD and colombia have been showing a tendency to increase the life expectancy, but the methodology used to measure it varies between countries. life expectancy has a tendency to rise in both the OECD countries and colombia; however the methodology varies between countries. Women in all countries had a higher life expectancy than men. women showed better results all the countries.

Life expectancy in colombia has increased from 64.7 (men) and 71.51 (women) in 1985 to 72.1 (men), 78.5 (women) in 2015. (ministerio de salud , 2013.) life expectancy in colombia is 4.2 years less than the average oecd countries. The life expectancy is 6 to 8 years higher among women though the difference between men and women could be reduced by 4 to 5 years by reducing deaths due to violence (ons, 2014). colombia has one of the highest homicide rate in the world 42.5 per 100 000 people in 2009, but is reducing compare with 65.8 in 1999, meanwhile salvador is increasing from 44,9 in 1999 to 62,9 in 2009 (ons, 2014).
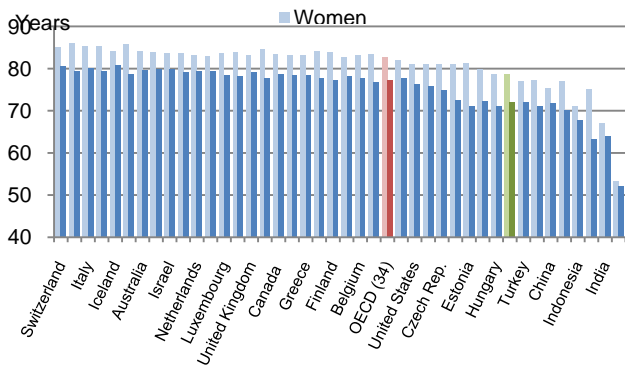

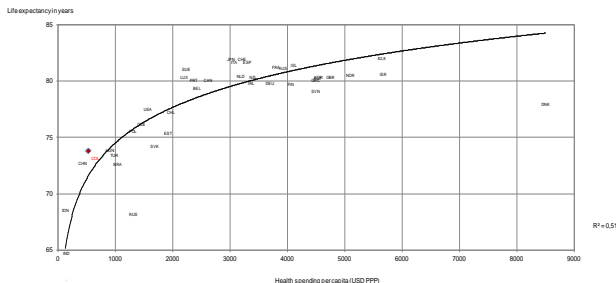*Figure 1 :* Life expectancy at birth by sex, 2011 (or nearest year)

Figure 2 : Life expectancy Vs heath expenditure (USD PPP).

Colombia has important difference in life expectancy between regions being the highest in the capital (75.94 for men and 80.19 for women, and the lowest life expectancies concentrated in eight regions

where life expectancy is less than 70 years: Chocó, Caquetá, Putumayo, Arauca, Casanare, Cauca, Meta and Amazonia) (Ministerio de Salud, 2013). There is no information relating life expectancy to level of education in Colombia.

Colombia has higher infant mortality rate compared with the OECD average (12.8 Vs 4.1), similar to China (12.6) and lower than Brazil (13.9). Many countries have reduced infant mortality in the past decades; Mexico reduced infant mortality from 77 in 1970 to 17 in 2010 and Colombia from 40 to 12.8 in the same period. In some large non-member countries (India, South Africa and Indonesia), infant mortality rates remain above 20 deaths per 1,000 live births (OECD, 2013).

Figure 3 : Infant mortality Rates by country, 2011
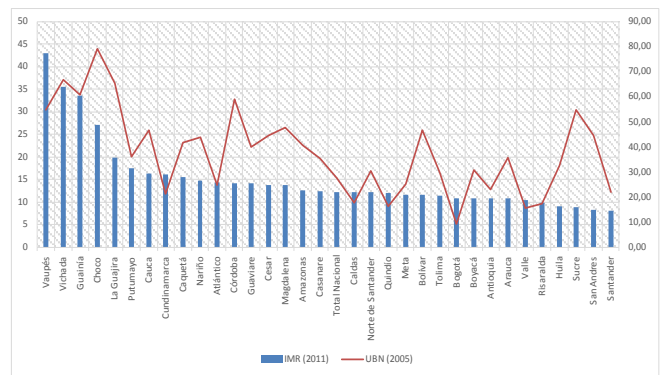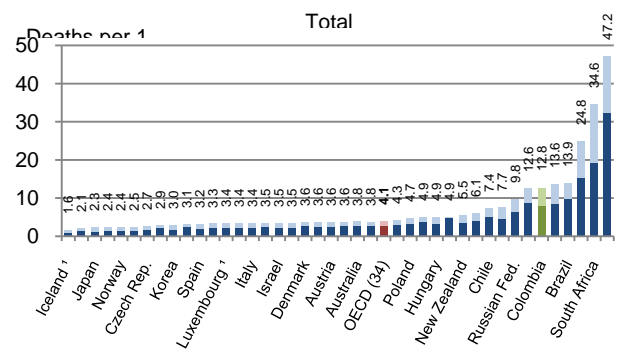

Figure 4 : Infant Mortality Rates and Unsatisfied Basic Needs by regions in Colombia 2011

In Colombia, between 2005 and 2011, the main causes of death in the general population were circulatory system diseases, though there has been a decline of this cause (from an adjusted rate of 166.43 to 146.16 deaths per 100,000 habitants). Cancer and external causes were the second and third cause of death, accounting for 17.42% (237,930) and 17.33% (236,679) of total deaths respectively from this period (Minsalud, 2013).

Mortality due to circulatory system diseases was 132.2 per 100000 inhabitants, ischemic disease, 263.7 per 100000 inhabitants, and cerebrovascular disease was 130.0 per 100000 inhabitants (PAHO,

22

2010). This mortality is higher than the OECD average (122), similar to Iceland (133), lower than Hungary (309) and higher than Chile (70).

The average cancer mortality rate across OECD countries was 211 per 100,000 population in 2011, and the most recent data in Colombia, from 2009, was 120 per 100,000 population, lower than Mexico 138.1 and Brazil 2011, however the WHO has been estimated an under-reporting of 24% (PAHO, 2011) which would bring this rate to approximately 149 per 100,000 population.

Suicide rates were 5.0 deaths per 100, 000 inhabitants in Colombia (PAHO, 2010), similar to Greece, Turkey, Mexico, Brazil and Italy. In Korea, Hungary, the Russian Federation and Japan, suicide is responsible for more than 20 deaths per 100,000 people.

Fatalities due to car accidents in Colombia were 13,2 deaths per 100,000 lower than Mexico and Chile or Brazil and higher than Sweden, the United Kingdom and Denmark with four deaths or less per 100,000 people (Cendex, 2008).

6.8% of all newborns weighed less than 2,500 grams at birth. The proportion of low-weight births was the lowest in Nordic countries and Estonia, with less than 5% of live births defined as low birth weight. Colombia is showing an increasing tendency in the number of low-weight births, reaching 9,1 in 2010 (INS, 2014).

In almost all OECD countries, a majority of the adult population report their health as good. According to the health survey in Colombia, 72.2% reported their health as good (Rodriguez 2009).

In Colombia diabetes affects 5.2% of the population (Vargas 2011). Diabetes affected an average 6.9% of the OECD population aged 20-79 years, in Mexico, more than 15% of adults have diabetes, but only 5% of adults suffer from diabetes in Belgium, Iceland, Luxembourg, Norway and Sweden.

b) Non-medical Determinants of Health

In Colombia, current smoking in teenagers between the ages of 11 and 18 (prevalence in the last month) is 9.78%. Smoking among teenagers was 25% in Austria, the Czech Republic, and Hungary and less than 10% in Canada, Iceland, Norway, and the United States. (Cumsille, 2011)

Drunkenness is reported to have been experienced at least twice by more than 40% of 15-year-olds in the Czech Republic, Denmark, Estonia, Finland, Hungary, Slovenia and the United Kingdom. In Colombia, 40% students between the ages of 11 and 18 year- old reported alcohol consumption in the past month, but no data about Drunkenness was found. (Cumsille, 2011)

Overweight (including obesity) rates are approximately 23% for boys and 21% for girls, on average, in OECD countries. In Colombia it is 20.2% for overweight and 5.2% for obesity for boys and girls (Fonseca, 2011). Daily vegetable consumption was reported to be around 33% in girls and 25% in boys on OECD countries and only 13.5% in Colombia for boys and girls.

In OECD countries, less than 25% of the children reported regular training with moderate-to-vigorous exercise. Austria, Ireland, Spain, and Finland stand out as strong performers with over 30% of children reporting exercising for at least 60 minutes per day over the past week. In Colombia this figure was only 15% (Piñeros, 2010).

Vegetable consumption were less than 15% in India, South Africa, and Brazil. In Colombia 12,8%, similar to Sweden, Iceland and the United States and lower than the average OECD consumption (20%) (Rodriguez, 2009)

Alcohol consumption, as measured by annual sales, stands on average at 9.4 liters per adult per year across OECD countries and Colombia is 6,3 liters per adult per year higher than Costa Rica (3,9), Peru (3,7) y El Salvador (2,6) and lower than Mexico (8.9) (Sojo, 2012).

52.6% of the adult population in the OECD countries are reported as being overweight or obese. In Colombia 34.6% is overweight, including 16.5% obese (Fonseca, 2011). Obesity rates meanwhile vary widely in OECD countries from 4% in Japan and Korea, to over 32% in Mexico and the United States. The average vegetable intake across OECD countries was 64% for men and 73% for women while in Colombia it was only 19.6% per day (Fonseca, 2011).

c) Health workforce

The rate of doctors per 1 000 inhabitants in Colombia is 2, similar to Korea and lower than Greece with 6.1 doctors per 1 000 Inhabitants. Colombia has 13 obstetricians per 100 000 people (Cendex, 2008), lower than all the OECD countries. There are 3 psychiatrists per 100,000 (Rosselli, 2001), compared with 15.6 psychiatrists per 100 000 inhabitants on average across OECD countries, so Colombia has a lower number of mental health professionals.

There were two specialists for every generalist on average across the OECD countries in 2011. The slow growth in, or reduction of, the number of generalists raises concerns about access to primary care. In Colombia there is 1 specialist for every 10 generalists (Cendex, 2008), which would be impressive if it were not for the lack of empowerment of generalists to resolve most primary healthcare issues. The healthcare model continues to be based on specialists with poor implementation of primary health care.

Health care activity

The number of appointments per person ranged from over 13 in Korea and Japan, and over 11 in Hungary, the Czech Republic and the Slovak

Republic, to three or fewer in Mexico, Sweden, South Africa and Brazil. In Colombia 71% of the population had at least one appointment in 2011, and the average was 1.5 appointments per person (ONS, 2011).

Japan and Korea had over nine hospital beds per 1000 people in 2011 while the average in OECD countries is 5. Colombia has 1.5 beds per 1,000 inhabitants (World Bank, 2012). The hospital stay was on average 4.5 days in OECD countries and in Colombia 3.3 (Ministry of Health, 2005).

In 2011, caesarean section rates were lowest in Nordic countries and the Netherlands, with rates ranging from 15% to 17% of all live births. Caesarean section rates were highest in Mexico and Turkey (over 45%), followed by Chile, Italy, Portugal and Korea (with rates ranging between 35% and 38%). Colombia had a dramatic increase in the number of Caesarean sections with 4.9% in 1998 soaring to 45.7% in 2013 (Rubio, 2014).

In Portugal, the generic market grew from virtually zero in 2000 to 30% in volume in 2011 and in Spain it grew up to 34%. In Colombia generics represented 17% in 2010 and has not shown a significant increase from 14% in 2007. (Econometría, 2011)

d) Quality of Care

Acute myocardial infarction mortality was low in Denmark (3%) while the highest rate is in Mexico (27%). In Colombia the mortality was 6,7% in 2005 (SILVA, 2006). Colombia reported an IMM rate of 60.9 per 100,000 in women and 93.4 per 100.000 in men showing a small reduction in comparison with 67.1 and 89.1 in 1990 respectively. (Revista Colombiana de Cardiología, 2010)

Across OECD countries, 8.5% of patients died within 30 days in the same hospital in which the initial admission for ischemic stroke occurred. The case-fatality rates were highest in Mexico (19.6%), Slovenia (12.8%) and Turkey (11.8%). Rates were less than 5% in Japan, Korea, Denmark and the United States. In Colombia this rate was 14%. (Zarruk, 2007)

Screening rates for cervical cancer range from 15.5% in Turkey to 85.0% in the United States. Austria, Germany, Sweden, Norway and New Zealand also achieved coverage above 75%. In Colombia 76,5% of the women are screened for cervical cancer. (Piñeros, 2007)

On average, in the OECD countries, 96% of children receive the recommended DTP vaccination and 94% receive measles vaccinations. Rates for DTP and/or measles vaccinations are below 90% only in Austria, Denmark, France, and South Africa. In Colombia the coverage is 93.5% (Minsalud, 2013), but some regions like San Andres have 62% coverage and Caldas 64% coverage, again exposing great differences by zone. The Human Papiloma Virus vaccine had 92% coverage for the second doses (Minsalud, 2013).

e) Access to care

Two OECD countries do not have universal health coverage. Mexico had 90% of the population covered and in the USA, 53% of the population is covered. Colombia reported 96% coverage in 2013; however this is not necessary equivalent to access to care. (Minsalud, 2014)

The number of doctors per capita varies widely across regions within the same country. A common feature in many countries is the trend for physicians to concentrate in capital cities. In Colombia, in cities with populations less than 20 000 don't reach 0.4 doctors per 10,000 inhabitants while in large cities it is 10 per 10,000. The use of medical services in Colombia is lower among the poor population, at 34%, compared with 47% among the non-poor (Profamilia, 2010).

In Colombia, the risk factors for the omission of cervical cancer screening include no insurance, affiliation to the subsidized healthcare regimen and low educational level. (Piñeros 2007) In breast cancer the risk factors were similar (De Charry, 2008). Income-related inequalities in cervical cancer screening are significant in 15 of the 16 countries in the OECD.

f) Health expenditure and financing

Colombia had the lowest expenditure compared with the OECD, with $466 USD Purchasing power parity (PPPs) compared with $ 3322 USD on average in the OECD, lower than Mexico ($977) or South Africa ($942). This expenditure is decreasing in countries such as Greece (-11.1) or Ireland (-6.6) and is increasing in countries such as Chile (9.3) and Colombia (World Bank, 2013).

In Colombia, total healthcare expenditure expressed as a percentage with respect to the GDP represents 6.5% for 2011, with a range from 5.4% in 2004 to 7.0% in 2009. The government's general expenditure as a percentage of GDP represents an average of 4.7%, Private expenditure as a percentage of GDP represents an average of 1.7% and the out-of-pocket expenditure 1.1%, representing 17% of the expenditures (Minsalud, 2014). Healthcare spending accounted for 9.3% of the GDP on average across OECD countries in 2011, compared with 9.4% in 2010.

g) Ageing and long-term care

On average across OECD countries, 4% of the population was 80 years old and over in 2010. By 2050, the percentage will increase to 10%. In Colombia, this population represented 1.4% of the total population in 2011 and will increase up to 1.5 % in 2020.

In Finland, France, Germany, Greece and Spain, only 35% to 40% of people aged 65 years and over rate their health as good. In Colombia 53.2% of people between 55 to 69 reported their health to be good (Profamilia, 2010).

France, Italy, Switzerland, Spain, Sweden and Norway had the highest prevalence rate of dementia,

with 6.3% to 6.5% of the population aged 60 years. In Colombia 1.8% of 65 years old and 3.4% of 75 years old suffer of dementia.

On average across OECD countries, over 15% of people aged 50 and over provided care for a dependent relative or friend in 2010. Colombia has not comparable data, but 10.1% the population is define as disabled and among them 97% has been taken care by one member of the family (Urquieta, 2008).

IV. Discussion

The main achievements of Colombia compared with OECD countries are universal coverage and low out-of-pocket payments. Colombia has some opportunities to show better health indicators due to a younger population, lower rates of diabetes and overweight and a low suicide rate compared with OECD countries. Colombia needs to improve on equality by region, education and income, plus needs to reduce preventable mortality due to violence.

Similar studies were performed in some Latin American countries, such as as Chile and Mexico now members of the OECD. In one study from 2013, a comparison was taken from the health indicators in Chile with regard to those countries members of OECD; these studies yielded comparative data with higher indices in diabetes, obesity and suicide in comparison to countries from OECD being 6.9, 17.6 and 12.4 respectively. In addition, a greater out-of-pocket expenditure in health with 4.6% compared with the general average located at 2,86% (Ministerio de Salud Chile, 2013). Studies conducted in Mexico also demonstrate that diseases like diabetes have a higher prevalence, 10.8, compared with countries from the OECD which have 6.5, and with regard to obesity, countries from the OECD have rates of 16.9% while Mexico is 30%. With regard to total health expenditure, the country uses 6.4 % of PIB, well below countries from the OECD with 9.6 (Universidad de Mexico, 2013).

Comparing health expenditure by GDP, countries like Colombia and Mexico are situated at an intermediate level with 500 to 900 dollars per capita annually and Brazil, Costa Rica and Chile in the superior level, with more than one thousand dollars per capita annually (Castro, 2012). Latin American countries with incomes similar to Colombia; like Peru, a country with a per capita income of 6,661.6 (Banco Mundial, 2013-2014), showed the health expenditure per capita for Colombia was a little higher (617.89) than Peru 496.16 according to the Center for National Development Planning of Peru,. With regard to external resources (services offered by international organizations) Colombia received 09% in 2011 while Peru almost doubled that amount with 1.5% (Ceplan, 2014).

Some limitations to be considered in this work may be the result of not utilizing the same tools to measure indicators as well as the absence of data. In addition there is significant under-reporting especially from certain regions of Colombia. Finally, after assembling information regarding the health situation in Colombia, we suggest it is important to advance in quality topics and health service access, in addition to the use of family members as caregivers for the elderly. Last of all, health inequality in the different areas of the country is to be highlighted.

References Références Referencias

1. Banco Mundial. PIB. (2014, January 1). Retrieved February 28, 2015, Fromhttp://Datos.Bancomundial. Org/Indicador/NY.GDP.PCAP.CD

2. Castro, C. (2012, July 1). Salud Y Seguridad Social: Un Breve Comparativo De Cinco Países De América Latina. Retrieved February 27, 2015, Fromhttp://Library.Fes.De/Pdf-Files/Bueros/Kolumbien/09229.Pdf

3. Cendex. (2008). Carga De Enfermedad Colombia 2005: Resultados Alcanzados. Bogotá: Pontificia Universidad Javeriana.

4. Centro Nacional De Planeamiento Estratégico (Ceplan). (2014, January 1). El Perù En Los Indicadres Mundiales. Retrievedfebruary 27, 2015, From Http://Www.Ceplan.Gob.Pe/Documentos/Pe-ru-Indicadores-Mundiales

5. De Charry, L., Carrasquilla, G., & Roca, S. (2008). Equidad En La Detección Del Cáncer De Seno En Colombia. Revista Salud Pública, 571-582.

6. Econometria. Diagnóstico De La Situación Actual Del Acceso, Uso Racional Y Calidad De Medicamentos. (2011) Tomado De Http://Www. Minsalud.Gov.Co/Politicas%20Farmaceuticas/Pol% C3%Adtica%20farmac%C3%A9utica/Documentos% 20soporte/Diagnostico%20Situaci%C3%B3n%20Far mac%C3%A9utica%20Nacional%202011.Pdf

7. Fonseca, Z., Heredia, A., Ocampo, P., Forero, Y., Sarmiento, O., Álvarez, M., . . . Rodríguez, M. (2011). Encuesta Nacional De La Situación Nutricional En Colombia 2010 ENSIN. Bogotá: Da Vinci Editores & CÍA.

8. Gurria A. Secretary-General - OECD. Lanzamiento Del Proceso De Adhesión De Colombia A La OCDE. Retrieved March 10, 2015, From Http://Www. Oecd.Org/About/Secretary-General/Lanzamiento-Del-Proceso-De-Adhesion-De-Colombia-A-La-Ocde.Htm

9. Instituto Nacional De Salud (INS). Bajo Peso Al Nacer A Término. (2014, June 11). Retrieved March

4, 2015, From Http://Www.Ins.Gov.Co/Lineas-De-Accion/Subdireccion-Vigilancia/Sivigila/Protocolos SIVIGILA/PRO Bajo Peso Al Nacer A Termino.Pdf

10. Kelley, E., & Hurst, J. (2006). Health Care Quality Indicators Project. Retrieved From Http://Www.Oecd-Ilibrary.Org/Content/Workingpaper/440134737301

11. Ministerio De Salud. (2013) ASIS 24022014.Pdf. (N.D.). Retrieved March 10, 2015, From Http://Www.Minsalud.Gov.Co/Sites/Rid/Lists/Bibliotecadigital/RIDE/VS/ED/PSP/ASIS%2024022014.Pdf

12. Ministerio De Salud. Política Nacional De Prestación De Servicios. (2005) Tomado De Http://Www.Minsalud.Gov.Co/Ministerio/Documents/ Politica%20Nacional%20de%20Prestaci%C3%B3n%20de%20Servicios%20de%20Salud.Pdf

13. Ministerio De Salud De Chile. Panorama De Salud 2013. (2013, January 1). Retrievedmarch 4, 2015, From Http://Web.Minsal.Cl/Sites/Default/ Files/INFORME OCDE_2013_21 11_Final.PDF

14. Minsalud. (2014). Cifras Financieras Del Sector Salud: Gasto En Salud De Colombia: 2004-2011. Bogotá: Minsalud.

15. Ministerio Hacienda. DECRETO 1192 DE 05-JUNIO-2012.Pdf. (N.D.). Retrieved From Http://Www.Minhacienda.Gov.Co/Portal/Page/ Portal/Homeminhacienda/Elministerio/Normativaminhacienda/2012/DECRETO%201192%20DE%2005-JUNIO-2012.Pdf

16. OECD. Ocde Establece Hoja De Ruta Para Adhesión De Colombia. (N.D.). (2013) Retrieved March 10, 2015, From Http://Www.Portafolio.Co/Economia/Ocde-Establece-Parametros-Ingreso-Colombia

17. OECD Statistics. (N.D.). Retrieved March 10, 2015, From Http://Stats.Oecd.Org/Index.Aspx

18. OECD. (2013). Health At A Glance 2013. OECD Publishing. Retrieved From Http://Www.Oecd-Ilibrary.Org/Social-Issues-Migration-Health/Health-At-A-Glance-2013_Health_Glance-2013-En

19. ONS. Aspectos Relacionados Con La Frecuencia De Uso De Los Servicios De Salud, Mortalidad Y Discapacidad En Colombia, 2011. Tomado De: Http://Www.Ins.Gov.Co/Lineas-De-Accion/Ons/Siteassets/Paginas/Publicaciones/Informe-Final%20ONS.Pdf

20. ONS. Violencia Homicida En Colombia. (2014, January 1). Tomado De: Http://Www.Ins. Gov.Co/Lineas-De-Accion/Ons/Siteassets/Paginas/Publicaciones/Informe4to-ONS-Fe25.Pdf

21. PAHO. (2010). Indicadores Básicos 2010: Situación De Salud En Colombia. Bogotá: Ministerio De La Protección Social.

22. PAHO.(2011) Mortalidad Según Condiciones De Vida. . Retrieved March 10, 2015, From Http:// Www.Col.Ops-Oms.Org/Sivigila/Mortalidad/Indice.Htm

23. Piñeros, M., & Pardo, C. (2010). Actividad Física En Adolescentes De Cinco Ciudades Colombianas: Resultados De La Encuesta Mundial De Salud A Escolares. Rev. Salud Pública, 903-914.

24. Piñeros, M., Cendales, R., Murillo, R., Weisner, C., & Tovar, S. (2007). Cobertura De La Citología De Cuello Uterino Y Factores Relacionados En Colombia, 2005. Revista Salud Pública , 327-341

25. Profamilia. ENCUESTA NACIONAL DE DEMOGRAFÍA Y SALUD 2010. Tomado De Http://Www.Pro familia.Org.Co/Encuestas/Profamilia/Profamilia/Index.Php?Option=Com_Content&View=Article&Id=62&Itemid=9

26. Revista Colombiana De Cardiología. Guías Colombianas De Cardiología Síndrome Coronario Agudo Con Elevación Del St. (2010). Revista Colombiana De Cardiología, 17(0120-5633).

27. Rodriguez, J., Ruíz, F., Peñaloza, E., Eslava, J., Gómez, L., Sánchez, H., . . . Bolivia, Y. (2009). Encuesta Nacional De Salud 2007: Resultados Nacionales. Bogotá: Fundación Cultural Javeriana De Artes Gráficas.

28. Rosselli, D., Otero, A., Heller, D., Calderón, C., Moreno, S., & Pérez, A. (2001). Estimación De Laoferta De Médicos Especialistas En Colombia Con El Método De Captura-Recaptura. Revista Panamericana De Salud Pública, 393-398.

29. Rubio-Romero, J. A., Fonseca-Pérez, J. E., Molina, S., Buitrago Leal, M., Zuleta, J. J., Ángel-Müller, E., … Others. (2014). Racionalización Del Uso De La Cesárea En Colombia. Consenso De La Federación Colombiana De Obstetricia Y Ginecología (FECOLSOG) Y La Federación Colombiana De Perinatología (FECOPEN). Bogotá, 2014. Rev. Colomb. Obstet. Ginecol, 65(2), 139–151.

30. SILVA, Federico A Et Al. Enfermedad Cerebrovascular En Colombia. Rev. Col. Cardiol. [Online]. 2006, Vol.13, N.2 [Cited 2015-03-10], Pp. 85-89 . Available From: <Http://Www.Scielo.Org.Co/Scielo.Php?Script=Sci_Arttext&Pid=S0120-56332006000500008&Lng=En&Nrm=Iso>.ISSN0120-5633

31. Sojo, C. (2012). Patrones De Consumo De Alcohol En América Latina. Análisis Comparado De 9 Países. Flacso Costa Rica. Retrieved From Http://Biblioteca.Icap.Ac.Cr/BLIVI/COLECCION_UNPAN/BOL_JUNIO_2012_51/FLACSO/Carlos_Sojo.Pdf

32. Universidad Nacional Autónoma De México La Salud En Mexico En Perpectiva Comparada. (2013,

January 1). Retrievedmarch 3, 2015, From Http://Biblio.Juridicas.Unam.Mx/Libros/7/3274/5.Pdf

33. Urquieta-Salomón, J. E., Figueroa, J. L., & Hernández-Prado, B. (2008). El Gasto En Salud Relacionado Con La Condición De Discapacidad: Un Análisis En Población Pobre De México. Salud Pública De México, 50(2), 136–146.

34. Vargas, H. (2011). Epidemiología De La Diabetes Mellitus. En A. C. Endocrinología, Fascículos De Endocrinología: Fascículos Diabetes (Págs. 22-27). Bogotá: Comité Editorial Fascículo Diabetes.

35. World Bank. Country And Lending Groups | Data. (N.D.). Retrieved March 10, 2015, From Http://Data.Worldbank.Org/About/Country-And-Lending-Groups

36. Zarruk, J. G., Silva, F. A., Camacho López, P., Arenas Borda, W., Restrepo, J., Bernal, O., … Córdoba, A. (2007). Factors Associated To Mortality Alter 30 Days, In A Group Of Patients With Cerebro-Vascular Ischemic Disease (Stroke). Acta Medica Colombiana, 32(1), 2–8.

37. Cumsille, F., Fagua, J., & Scopetta, O. (2011). Estudio nacional de consumo de sustancias psicoactivas en población escolar. Bogotá: Oficina de las Naciones Unidas contra la Droga y el Delito en Colombia.

Author's Participation

The Authors Have Been Involved In The Data Collection, Analysis, Writing And Correction Of This Paper.

Conflict Of Interest Statement

The authors certify that they have no affiliations with or involvement in any organization or entity with any financial interest, or non-financial interest the subject matter or materials discussed in this manuscript.

Funding

The article analysis has no external funding.

Ethical Consideration

This article use secondary data and does not imply any kind of intervention with people and according to the helsinki declaration has no risk.

V.   Acknowledgements