

Socioeconomic inequalities in women's access to health care: has Ecuadorian health reform succeeded?

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Abstract

Background: Over the last twelve years, Ecuador has implemented a comprehensive health sector reform to ensure equitable access to health care services according to health needs. While there have been important achievements in terms of health care coverage, the effects of these reforms on socioeconomic inequalities in health care have not been analysed. This study assessed whether the health care reform implemented in the 2007 - 2017 decade contributed to reducing the socioeconomic inequalities in women's health care access.

Methods: This study was based on two waves of the Living Standards Measurement Survey conducted in Ecuador in 2006 and 2014. Data from women of reproductive age (15 to 49 years) was analysed to evaluate health care coverage in three indicators: skilled birth attendance, cervical cancer screening and the use of modern contraceptives. Absolute risk differences were calculated between the health care indicators and the socioeconomic variables using binomial regression analysis for each time period. The Slope Index of Inequality (SII) was also calculated for each socioeconomic variable and period. A multiplicative interaction term between the socioeconomic variables and period was included to assess the changes in socioeconomic inequalities in health care over time.

Results: Access to health care increased in the three studied outcomes during the health sector reform. Significant inequality reductions in skilled birth attendance were observed in all socioeconomic variables except in the occupational class. Cervical cancer screening inequalities increased according to education and occupation, but decreased by wealth. Only a decrease by education was observed for modern contraceptive use.

Conclusions: While most socioeconomic inequalities in skilled birth attendance decreased during the reform, this was not the case for inequalities in cervical cancer screening or the use of modern contraceptives. Further work is needed to address the social determinants of these health inequalities.

Background

Universal Health Coverage (UHC), defined as ensuring equitable access to health services to improve a population's health, is proposed as a global policy by the United Nations [1]. The main components of UHC are (i) the delivery of quality essential health services according to need, and (ii) the financial protection of users from hardship, including possible impoverishment due to out-of-pocket payments [2]. Additionally, UHC means an investment in human capital to promote sustainable economic growth, development and well-being [3].

To achieve UHC, a country is required to implement relevant changes and to delineate strategies based on human rights and equity within its political processes. Interventions including a more effective health system, increased decentralisation, a high and effective social engagement, and the strengthening of regulatory frameworks have been advocated [4]. Additionally, enhanced and expanded social protection coverage must be based on affordable and available health care services, including primary health care. Decision-makers should simultaneously address the social determinants of health to reduce poverty and inequalities [3].

Following these strategies, many countries in the Latin America and the Caribbean region (LAC) have implemented various social policies and programs to achieve UHC in the last decade [5]. In several of these countries, the introduction of welfare reforms targeted to empower the poorest people, and particularly women, via conditional cash transfer schemes to reduce poverty, have resulted in an increase in access and use of maternal and child health care services [6]. Similarly, increases in the level of public health care financing have contributed to expanding coverage in socially disadvantaged groups, and reducing maternal and infant mortality. Experiences from Brazil, Costa Rica and Mexico have shown that providing financial risk protection can reduce catastrophic health expenditure among the poorest populations [4, 7]. Overall, while countries in LAC have improved coverage in health care over time, they are still far from achieving full UHC [8]. LAC remains one of the most inequitable regions worldwide, and governments face huge challenges related to fragmentation, delivery and the unsustainable financing of health systems to protect their citizens [9].

Ecuador is an upper-middle income country, with high income inequality (Gini index 44.7 in 2017) and an ethnically diverse population. The majority are mestizos (a mixture between Spanish and indigenous people) but 28% belong to ethnic minorities, including indigenous, Afro-Ecuadorian descendants and Montubios [10]. Between 1993 and 2006, Ecuador had eight different governments and experienced administrative instability, corruption, and social violence. Simultaneously, health care funding was slashed, and the government's role in health care decreased significantly. In 2007, however, a new political proposal to reduce poverty and socioeconomic inequalities resulted in a stable government for the following 10 years, that carried out comprehensive social and health reforms based on equity. These reforms incorporated ambitious changes to guarantee the right to health and UHC for all in Ecuador [11] [12].

During the decade of reform, several relevant social indicators were moving in a positive direction. Poverty levels dropped, employment and wages went up, the literacy rate increased, and the income inequality gap diminished [13]. The Ministry of Health (MoH) introduced comprehensive health insurance policies to reduce cost sharing and fees; and all MoH health services gradually became free of charge. The share of the public health expenditure in the gross domestic product increased from 2.2% in 2004 to 4.2% in 2015. This striking increase was invested mostly in medicines and supplies, vaccines, ambulances, new facilities and health care equipment. New services were introduced, particularly in rural areas and for vulnerable groups, such as home visits, and more than 4,000 physicians were contracted. A legal framework of governance was also implemented to improve the relationship of the MoH with social insurance and the private sector [14, 15]. Critics, however, have also noted that the cost recovery mechanisms established between the public and private sector mainly benefited large private sector hospitals, and the opportunity to establish a single health system was gradually fading [16]. During this period, social movements continued to call for a more egalitarian and participatory society [17].

Monitoring and evaluating progress towards UHC is fundamental to improving health policy decisions and promoting an equitable health system [18]. Moreover, evaluations must incorporate all social subgroups and disaggregate for geographical levels, since national averages can mask inequalities in most disadvantaged groups.

Overall, few studies have assessed the impact of the Ecuadorian health care reform on the population's health. The literature has been mainly descriptive and focused on achievements in terms of coverage [15, 19]. A recent study has reported significant reductions in income inequalities in health care utilisation [20], however, no study has paid attention to the potential impact of the reform on different socioeconomic groups or specific health care outcomes.

The aim of this study was therefore to assess whether the health care reform had any impact on progress towards UHC in Ecuador; and specifically, whether the reform contributed to decreasing socioeconomic inequalities in three indicators of health care access among women.

Methods

Study Design

Publicly available data from the Living Standards Measurement Surveys 2006 and 2014 was used for secondary analysis [13, 21]. These were nationwide cross-sectional surveys carried out by the National Institute of Statistics and Census (INEC) (Instituto Nacional de Estadísticas y Censos). The sample selection was probabilistic, stratified and proportional to the population size. Primary sampling units were defined based on the grouping of census sectors in a first stage, and households in a second stage. The houses were randomly selected from a complete and updated list of occupied households and population by assigning the same selection probability to all houses [13]. The surveys had the same set of questions in the two periods, and included a total of 55,000 households in 2006 and 109,000 in 2014.

Study Population

A sub-sample of women of reproductive age (15 to 49 years) was selected from the total number of women recruited in 2006 (28,113) and in 2014 (55,397), and so the analytical sample included 13,781 women in 2006 and 26,767 women in 2014.

Data Collection

Information was collected using face-to-face interviews by a group of properly trained pollsters from the same area and using a questionnaire designed to compile data from all members of the household. Data was collected during November 2005 to October 2006 (before the reform) and from November 2013 to October 2014 (during the reform). The interviewers made as many visits as necessary to obtain information from the selected households.

The surveys contained specific information on housing, ethnicity, education, economic activity, health care usage and coverage.

Dependent Variables

Two indicators that represented promotion and prevention services were selected: cervical cancer screening and modern contraceptive use. A third indicator, skilled birth attendance, was selected to represent treatment coverage [22]. These three outcomes have been previously used to indicate progress towards UHC [23].

, Answers to the question "Who assisted you in your last delivery?" were used to capture skilled birth attendance (SBA). We defined assistance by a skilled professional if the answer was a physician, gynaecologist, nurse or obstetrician.

Coverage of cervical cancer screening (CCS) was captured by the question "Have you ever had a Pap smear test?", with yes or no options.

Modern contraceptive use (MCU), was assessed by asking two questions. "Are you using any contraceptive method?" was assessed via yes or no options. Those who responded positively were then asked "What methods are you using to stop you getting pregnant?"; and answers reporting female sterilisation (tubal ligation), implant, contraceptive injection, birth control pill, any type of intrauterine device, or condom (female or male condom), were considered to be using a modern contraceptive while answering other or a natural method were classified as non-modern methods.

Socioeconomic Variables

Place of residence was defined as living in either an urban or a rural area. Towns with less than 5,000 inhabitants were considered rural. Ethnicity was based on self-identification, however, for data analysis only two groups were used: non-indigenous people, including white, mestizos, Afro-Ecuadorians and Montubios; and indigenous people. This division was chosen due to the small sample of some ethnic groups [24].

Education level was categorised as incomplete primary (includes illiterate; literate but no formal education; and initial education categories), primary, secondary (middle secondary and technical) and higher education (undergraduate and postgraduate). We divided occupational class into five categories

according to the woman's current occupation: managers, clerical support workers, farmers, plant and machine operators, and elementary occupations based on the international occupational classification [25]. A wealth index was generated using principal component analysis (PCA) based on household characteristics and assets (household entrance paving, roof, wall and floor material, type of house, cooking facility, cooking fuel, type of toilet, water source, lighting source, land line telephone, home internet, satellite TV, and household waste disposal). PCA was run separately for 2006 and 2014, and for each period it was divided into quintiles, with the first representing the richest one.

Data analysis

The population characteristics were summarised with descriptive statistics calculating the prevalence for each variable in 2006 and 2014. Statistical differences between the two periods of the three health outcomes were determined using chi-square tests. Absolute risk differences (ARD) were calculated between the health care indicators and the socioeconomic variables by binomial regression analysis for each one of the periods. The slope index of inequality (SII) was then calculated to measure the extent of socioeconomic inequalities. The SII is a weighted measure of inequality that represents the absolute difference in the estimated values of a health indicator between the most advantaged and the most disadvantaged, while taking into consideration all the other subgroups – using an appropriate regression model [1]. The index is the slope of the resulting regression line, and represents the absolute difference expressed as percentage points between the fitted value of the outcome in the most- and less-advantaged on the socioeconomic scale. If there is no inequality, SII takes the value zero. Greater absolute values indicate higher levels of inequality. In this study, positive values indicate higher coverage in the advantaged subgroups and negative values indicate higher coverage in the disadvantaged subgroups. A multiplicative interaction term between the socioeconomic variables and time period was included to assess the changes in socioeconomic inequalities in health care over time. Sample weights were applied to all analyses and 95% confidence intervals for significance were calculated. All analyses were conducted using the Stata 15.1 statistical software.

Results

Population characteristics

Table 1 shows the characteristics of the study population in the two periods. One third lived in rural areas and the proportion who identified as indigenous was the same over time. Nearly 40% had primary education or less in 2006, and an increase in the proportion with the lowest level of education was observed in 2014 compared to 2006. One-fifth of participants belonged to the lowest occupational class (elementary occupations) in 2006, and fewer clerical support workers but more farmers and elementary occupations were represented in the second period.

The coverage of all three health care outcomes increased significantly over time. The proportion of women attended by a skilled professional during childbirth increased from 85.6% in 2006 to 93.7% in 2014 (p-value: $0 < 0.01$), the coverage of cervical cancer screening from 51.3% to 59.8% (p-value: < 0.01); and the coverage of modern contraceptives use from 40.7% to 48.4% in the same period (p-value: < 0.01).

Variable	2006		2014	
	n	(%)	n	(%)
Residence				
Urban	9355	(67.88)	18888	(70.56)
Rural	4426	(32.12)	7879	(29.44)
Ethnicity				
Whites/mestizos/afro	12869	(93.38)	24863	(92.88)
Indigenous	912	(6.62)	1904	(7.12)
Education				
Higher (highest)	2959	(21.47)	5596	(20.91)
Secondary	5560	(40.34)	11995	(44.81)
Primary	4392	(31.87)	6200	(23.16)
Incomplete primary (lowest)	870	(6.31)	2976	(11.12)
Occupational class				
Managers (highest)	763	(13.95)	2730	(16.52)
Clerical support workers	2699	(49.36)	6085	(36.81)
Farmers	198	(3.63)	1677	(10.15)
Plants and machine operators	671	(12.28)	1392	(8.42)
Elementary occupations (lowest)	1136	(20.78)	4646	(28.10)
Household wealth index				
1st quintile (richest)	2971	(21.69)	8325	(31.26)
2nd quintile	2950	(21.54)	6170	(23.17)
3rd quintile	2958	(21.59)	5221	(19.60)
4th quintile	2485	(18.14)	3945	(14.81)
5th quintile (poorest)	2334	(17.04)	2974	(11.17)
*Sample weights were applied to calculate the prevalence.				

Table 1
Socioeconomic characteristics of Ecuadorian women of reproductive age in 2006 and 2014*.

Socioeconomic inequalities in health

Table 2 presents the absolute risk differences and slope index of inequality for skilled birth attendance. The SII was statistically significantly positive in 2006 for residence, ethnicity, education and wealth, indicating higher coverage in the socially advantaged subgroups; however, the SII was not statistically significant for occupational class. Between 2006 and 2014, statistically significant reductions in socioeconomic inequalities were observed in terms of place of residence (SII Difference= -28.11; 95% CI: -32.69 to -23.53), ethnicity (SII Difference = -27.41; 95% CI: -38.05 to -16.78), education (SII Difference = -20.04; 95% CI: -22.49 to -17.59) and wealth (SII Difference = -3.96; 95% CI: -4.47 to -3.45). In contrast, there was a significant but small increase in inequality by occupational class (SII Difference = 3.53; 95% CI: 2.75 to 4.31).

	Prevalence		Absolute risk difference (ARD)		Slope index of inequality (SII) difference
	2006	2014	2006	2014	(2006–2014)
Residence					
Urban	95.96	98.39	Ref	Ref	
Rural	67.46	83.94	28.50 (26.37,30.62)	14.44 (13.19,15.69)	
SII			57.00 (52.75,61.25)	28.88 (26.38,31.39)	- 28.11 (- 32.69,- 23.53)
Ethnicity					
Whites/mestizos/afro	89.79	96.79	Ref	Ref	
Indigenous	37.87	58.58	51.91 (47.40,56.42)	38.20 (34.92, 41.49)	
SII			103.83 (94.81,112.85)	76.41 (69.85,82.98)	- 27.41 (- 38.05, - 16.78)
Education					
Higher (highest)	99.37	99.61	Ref	Ref	
Secondary	94.77	96.95	4.60 (3.56,5.64)	2.65 (2.09,3.20)	
Primary	73.03	85.62	26.34 (24.40,28.28)	13.98 (12.68,15.29)	
Incomplete primary (lowest)	53.25	88.62	46.12 (39.64,52.60)	10.98 (8.90,13.06)	
SII			36.06 (34.06,38.06)	16.09 (14.74,17.29)	- 20.04 (- 22.49, - 17.59)
Occupational class					
Managers (highest)	92.08	99.53	Ref	Ref	
Clerical support workers	92.13	98.03	-0.04 (3.63,3.55)	1.49 (0.78,2.21)	
Farmers	98.61	76.08	- 6.52 (- 10.64, - 2.41)	23.45 (20.57,26.32)	
Plants and machine operators	95.67	94.90	- 3.58 (- 7.73,0.56)	4.63 (2.76,6.49)	
Elementary occupations (lowest)	89.01	85.73	3.07 (- 1.30,7.44)	13.80 (12.17,15.43)	
SII			0.41 (- 0.44,1.26)	3.94 (3.59,4.30)	3.53 (2.75,4.31)
Household wealth					
1st quintile (highest)	99.49	99.39	Ref	Ref	
2nd quintile	97.08	98.30	2.40 (1.31,3.49)	1.09 (0.49,1.68)	
3rd quintile	92.62	95.52	6.86 (5.32,8.41)	3.86 (2.98,4.75)	
4th quintile	82.09	90.22	17.39 (15.12,19.66)	9.17 (7.77,10.58)	
5th quintile (lowest)	61.89	78.19	37.60 (34.87,40.32)	21.20 (19.11,23.29)	
SII			7.39 (6.91,7.87)	3.43 (3.16,3.71)	- 3.96 (- 4.47, - 3.45)

Table 2
Prevalence of coverage, absolute risk differences and slope index of inequality for skilled birth attendance.

The results for the cervical cancer screening inequalities are presented in Table 3. The SII for cervical cancer screening was also statistically significantly positive for residence, ethnicity, education and wealth in 2006, but not significant for occupational class. No significant differences by residence (SII Difference= -1.96; 95% CI: -4.05, 0.13) or ethnicity (SII Difference= -0.86; 95% CI: -4.48, 2.75) were observed between the periods. Significant increases in inequality by education (SII Difference= 6.69; 95% CI: 3.15, 10.22) and occupation class (SII Difference= 3.37; 95% CI: 2.45, 4.28) were observed. The only significant observed reduction was in inequality by wealth (SII Difference= -1.76; 95% CI: -2.47, -1.06).

	Prevalence		Absolute risk difference (ARD)		Slope index of inequality (SII) difference
	2006	2014	2006	2014	(2006–2014)
Residence					
Urban	55.53	63.13	Ref	Ref	
Rural	42.33	51.89	13.20 (11.43,14.97)	11.23 (9.93,12.53)	
SII			26.40 (22.86,29.94)	22.47 (19.87,25.07)	- 3.92 (- 8.11, 0.26)
Ethnicity					
Whites/mestizos/afro	52.93	61.53	Ref	Ref	
Indigenous	28.17	37.63	24.76 (21.72,27.80)	23.89 (21.64,26.15)	
SII			49.52 (43.44,55.61)	47.79 (43.28,52.31)	- 1.73 (- 8.97,5.51)
Education					
Higher (highest)	56.34	68.09	Ref	Ref	
Secondary	52.28	58.85	4.05 (1.83, 6.27)	9.24 (7.73,10.74)	
Primary	51.99	71.66	4.35 (2.03,6.66)	- 3.56 (- 5.22, - 1.91)	
Incomplete primary (lowest)	24.26	23.57	32.08 (28.71,35.44)	44.51 (42.56,46.47)	
SII			16.84 (13.75,19.93)	23.53 (21.43,25.64)	6.69 (3.15, 10.22)
Occupational class					
Managers (highest)	56.92	80.36	Ref	Ref	
Clerical support workers	60.58	69.78	- 3.65 (- 7.62, - 0.31)	10.58 (8.69,12.46)	
Farmers	56.41	65.93	0.51 (- 7.23,8.25)	14.43 (11.72,17.14)	
Plants and machine operators	67.78	72.29	- 10.85 (- 15.84, -5.87)	8.07 (5.29,10.85)	
Elementary occupations (lowest)	55.40	61.75	1.52 (- 3.02,6.07)	18.60 (16.56,20.65)	
SII			0.22 (- 0.70,1.15)	3.59 (3.12,4.06)	3.37 (2.45, 4.28)
Household wealth					
1st quintile (highest)	58.79	63.14	Ref	Ref	
2nd quintile	56.06	64.63	2.72 (0.21,5.24)	- 1.48 (- 3.06,0.09)	
3rd quintile	52.29	59.14	6.49 (3.97,9.02)	3.99 (2.30,5.68)	
4th quintile	48.44	55.51	10.35 (7.70,12.99)	7.63 (5.76,9.49)	
5th quintile (lowest)	37.23	47.66	21.55 (18.91,24.20)	15.48 (13.40,17.55)	
SII			5.27 (4.66,5.87)	3.50 (3.07,3.93)	- 1.76 (- 2.47, -1.05)

Table 3

Prevalence of coverage, absolute risk differences and slope index of inequality for cervical cancer screening.

Patterns of social inequalities in the use of modern contraceptives for family planning were more diverse (Table 4). In 2006, the socially advantaged groups were not more prevalent except in terms of ethnicity. Between 2006 and 2014, a non-significant change in inequality by residence was observed, where coverage was higher among the rural population in 2014 (SII Difference= 3.45; 95% CI: -7.99, 10.78). No significant reductions in inequality by ethnicity were observed (SII Difference= - 1.53; 95% CI: - 10.50, 7.43). Significant reductions in terms of education (SII Difference= 6.91; 95% CI: 3.10, 10.72) were observed over time. Inequalities by occupation class (SII Difference= -1.88; 95% CI: -2.87, -0.08) and wealth (SII Difference= - 1.79; 95% CI: -2.55, -1.02), had small significant increases.

	Prevalence		Absolute risk difference (ARD)		Slope index of inequality (SII) difference
	2006	2014	2006	2014	(2006–2014)
Residence					
Urban	40.07	47.45	Ref	Ref	
Rural	42.07	51.17	- 1.99 (- 3.90, 0.08)	- 3.72 (- 0.51,- 2.31)	
SII			- 3.99 (- 7.80,- 0.01)	- 7.44 (- 10.27,- 4.62)	3.45 (- 7.99,10.78)
Ethnicity					
Whites/mestizos/afro	40.98	48.86	Ref	Ref	
Indigenous	34.17	42.82	6.81 (2.84,10.78)	6.04 (3.42,8.65)	
SII			13.62 (5.68,21.56)	12.08 (6.85,17.31)	- 1.53 (- 10.50,7.43)
Education					
Higher (highest)	33.25	42.97	Ref	Ref	
Secondary	39.94	47.32	-6.69 (-8.87, -4.50)	- 4.35 (-5.99, - 2.71)	
Primary	49.20	62.57	-15.94 (-18.30,13.58)	- 19.60 (- 2.14, - 17.74)	
Incomplete primary (lowest)	28.74	32.71	4.50 (0.48,8.51)	10.26 (7.90, 12.61)	
SII			- 15.84 (-19.07, 12.62)	- 8.93 (- 11.28, - 6.58)	6.91 (3.10,10.72)
Occupational class					
Managers (highest)	42.91	43.43	Ref	Ref	
Clerical support workers	44.78	50.59	- 1.87 (- 5.98,2.24)	- 7.15 (- 9.48, - 4.83)	
Farmers	29.97	61.23	12.93 (5.48,20.38)	- 17.80 (- 20.96, - 14.64)	
Plants and machine operators	36.23	56.41	6.67 (1.49,11.86)	- 12.97 (- 16.32, - 9.63)	
Elementary occupations (lowest)	44.89	50.79	- 1.97 (- 6.70,2.74)	- 7.36 (- 9.81, - 4.90)	
SII			0.49 (- 0.47, 1.47)	- 1.38 (- 1.91,- 0.84)	- 1.88 (- 2.87,- 0.08)
Household wealth					
1st quintile (highest)	36.56	41.09	Ref	Ref	
2nd quintile	39.43	49.14	- 2.86 (- 5.42, - 0.31)	- 8.04 (- 9.75, - 6.33)	
3rd quintile	41.31	51.70	- 4.74 (- 7.31, - 2.17)	- 10.60 (- 12.41, - 8.79)	
4th quintile	43.93	53.50	- 7.36 (- 10.10, - 4.62)	- 12.40 (- 14.40, - 10.40)	
5th quintile (lowest)	44.04	56.94	- 7.48 (- 10.38, - 4.57)	- 15.84 (- 18.11, - 13.58)	
SII			- 2.14 (- 2.79, - 1.48)	- 3.93 (- 4.40, - 3.46)	- 1.79 (- 2.55,-1.02)

Table 4
Prevalence of coverage, absolute risk differences and slope index of inequality for modern contraceptives use.

Discussion

This study assessed the socioeconomic inequalities in Ecuadorian women's health care access in the context of comprehensive social reforms based on equity, and a primary health care oriented health sector reform. The results show that during the period 2006 to 2014 access to health care increased and health inequalities across certain social groups were reduced. Despite this, some social inequalities in health care have remained or even increased over time.

Skilled birth attendance

Several factors can explain the moderate increase in coverage (from an already high level) observed in skilled birth attendance, such as the rise in the number of health care facilities with maternity services, the expansion of the health workforce, particularly into rural areas, the thorough implementation of the free maternity program (Ley de Maternidad Gratuita) in place since 2005, as well as the increase in enrolment on the national health insurance scheme (by public employees and farmers), which includes free maternal and child care [15, 20, 28].

Large reductions in inequalities were observed for rural, indigenous and the lowest education groups, though inequalities remained high in 2014. To improve intercultural health care, the MoH incorporated guidelines for traditional practices in all governmental health care services in 2008 [29], however, several national studies have demonstrated inconsistent levels of integration of traditional practices during pregnancy and childbirth [30, 31]. Similarly, several barriers have been observed to indigenous women accessing health services [32], and research has shown that indigenous women tend to be less aware of obstetric warning signs, as well as the use of health services, than mestizas in the country [33].

Studies from Latin America have demonstrated that the integration of traditional birth attendants within the formal health system increases skilled birth attendance and the use of sexual and reproductive health services [34, 35], however, this strategy was abandoned during the period of the reform [36], although public health policies to improve the articulation between traditional birth attendances (TBAs) and the formal health system were recently announced [37].

Cervical cancer screening

Cervical cancer is the third cause of death in women in Ecuador [38], however, the proportion of women screened for cervical cancer was low in all socioeconomic groups in both periods. As with skilled birth attendance, high inequalities were observed in relation to place of residence, ethnicity and education; but conversely, little inequality reduction was achieved between periods.

A pap test (cytology) is the basis for cervical cancer screening, and is provided free of charge in all public health care facilities. The promotion of testing is also offered during visits to health care services. Although access to health facilities improved significantly over time, a weak application of health promotion policies and persisting barriers to the access and uptake of the screening could explain both the low coverage and inequalities (39). Studies from Latin America have identified various obstacles related to the accessibility of these preventive services, such as feelings of shame, negative perceptions of health workers, worry about the test results, fear about the procedure or previous negative experiences [40, 41]. In the same way, low education, poverty, lack of access to health insurance, and limited use of health services have been reported as barriers to this screening in countries in the Americas region. [42, 43, 44, 45, 46]. Similarly, high ethnic disparities in Ecuador have been observed between indigenous and mestizo women regarding preventive knowledge about breast and cervical cancer and sexual transmitted infections [47].

Comprehensive cancer management has traditionally been one of the weakest public health strategies in the country, with high fragmentation between the preventive and curative components in the health system. In an attempt to strengthen this area, the MoH developed a national strategy for cancer care in 2017 to ensure equitable access along the care continuum [48], which will hopefully contribute to increasing access and decreasing inequalities in the future.

Modern Contraceptive Use

The coverage of modern contraceptive use increased from 40.7% to 48.4%, which is lower than the average coverage reported in the Americas region (68%) [49]. The increase is modest in relation to the huge investment in the purchase and supply of modern contraceptives in primary care and access to female sterilisation (ligation) at the secondary level of care, especially after childbirth. In 2013 the MoH issued new guidelines to guarantee the availability of family planning methods and the promotion of sexual and reproductive health at primary care level nationally [50], which hopefully will have contributed to increasing the coverage more recently.

The socioeconomic inequalities in coverage were surprisingly concentrated in disadvantaged groups, except among indigenous women for the two periods. A study of rural Ecuadorian women has shown how they moved from biomedical to traditional care to accessing family planning due to the inconsistent availability of contraceptive methods in public health services [51]. Similarly, programs that do not respond to community needs or lack cultural adaptation have impeded access even when contraceptives are widely available [52, 53, 54].

Studies have also demonstrated how bureaucratic barriers in contexts of the free choice of methods can also limit the use of health services; and that the attitudes and behaviours of maternal health care providers in interactions with clients can also be a barrier to the use of contraceptives [55]. There are, however, positive experiences in the country that have overcome some of these barriers. A recent study among women from low resource communities in Ecuador showed how increasing economic opportunities, preventing gender-based violence and valuing their community role contributed to empowerment in the use of contraceptive methods [56].

Methodological considerations

The strengths of the present study include a large population-based random sample and the national representation of different socioeconomic groups, precluding the possibility of selection bias. The application of the same questionnaires in the two studied periods and the inclusion of several socioeconomic variables are also strong assets of the study.

Given that this is a population-based study, there could be response and recall bias. Although the institution responsible for conducting the surveys carried out a rigorous training of the interviewers, the extent of these biases is difficult to determine. Therefore, although changes in socioeconomic inequalities in health have been attributed to the health reform here, there might have been other factors influencing those changes that could not be considered, meaning that the causal inference of these results should be interpreted with caution. Finally, though the period of health reform assessed in this study was 2007 – 2017, the available surveys include years 2004 (pre-reform) and 2014 (during). It is possible that at the end of the reform period, the results could have been different. This will be possible to assess when the next round of the national survey becomes available.

Conclusions

Overall, the results are positive regarding the direction taken to achieve UHC. The reforms in Ecuador have allowed a successful increase in access to health care services but the decrease in socioeconomic inequalities in the examined health indicators has been limited. Most of the socioeconomic inequalities in skilled birth attendance decreased, but only small decreases were observed in cervical cancer screening and modern contraceptive use. Several interventions would be required to address the persistence of health inequalities for indigenous and rural women, such as cultural competency training for health workers and the implementation of intercultural health policies at the primary health care level, which incorporate the strong involvement of indigenous organisations. Government efforts are also needed to affect the social determinants of these health inequalities.

Abbreviations

UHC: Universal Health Coverage; LAC: Latin America and the Caribbean; MoH: Ministry of Health; INEC: Instituto Nacional de Estadísticas y Censos; SBA: Skilled Birth Attendance; CCS: Cervical Cancer Screening; MCU: Modern Contraceptive Use; PCA: Principal Component Analysis; ARD: Absolute Risk Differences; SII: Slope Index of Inequality.

Declarations

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Availability of data and materials

Data used in this study are publicly available and can be retrieved from <https://www.ecuadorencifras.gob.ec/institucional/home/>.

Disclaimer

All authors declare no conflict of interest.

Authors' contributions

EQ proposed the main idea for the research. EQ and MSS conceived of the study and analysed data. ET and AMP reviewed the results and discussion. All authors collaboratively developed drafted the manuscript, and approved its final version.

Ethics approval and consent to participate

Not applicable.

Consent for publication

Not applicable.

Competing interests

The authors declare that they have no competing interests.

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