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Poverty and inequality in access to sexual and reproductive health care for Peruvian women

Pobreza y desigualdad en el acceso a la salud sexual y reproductiva de las mujeres peruanas

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ABSTRACT

Objective: To determine the influence of poverty on sociogeographic inequality in the access to sexual and reproductive health of Peruvian women. **Methods:** An observational, analytical and ecological study with aggregate data corresponding to Metropolitan Lima, Constitutional Province of Callao and 24 departments of Peru registered for the year 2021 by the National Institute of Statistics and Informatics of Peru. The analysis included correlation tests, simple linear regression and the calculation of Kuznets indices, inequality concentration index (ICI) and slope inequality index (SII). **Results:** The proportion of women not using modern contraceptive methods was associated with the proportion of population in monetary poverty (r=0.448; p=0.022) with an absolute inequality gap of 6.92% and relative inequality gap of 1.16 (ICI =0.034; SII=7.875). The proportion of pregnant women without prenatal care by qualified health personnel and the proportion of deliveries without assistance from skilled health workers were associated with the proportion of the population in nonmonetary poverty. The absolute and relative inequality gaps were 5.29% and 8.90 (ICI=0.526; SII=5.270) for prenatal care, and 11.33% and 11.03 (ICI=0.453; SII=12,440) for delivery care. **Conclusions:** Non-monetary poverty would explain the inequality gaps observed in the proportion of pregnant women without prenatal care by qualified health personnel and the proportion of deliveries without the assistance of skilled health personnel in Peruvian women.
Key words: Gender equity, Women's health, Poverty, Reproductive health

RESUMEN

Objetivo. Determinar la influencia de la pobreza en la desigualdad sociogeográfica del acceso a la salud sexual y reproductiva de mujeres peruanas. **Métodos.** Estudio observacional, analítico y ecológico con los datos agregados correspondientes a Lima Metropolitana, Provincia Constitucional del Callao y 24 departamentos del Perú registrados para el año 2021 por el Instituto Nacional de Estadística e Informática del Perú. El análisis incluyó pruebas de correlación, regresión lineal simple y el cálculo de los índices de Kuznets, índice de concentración de la desigualdad (ICD) y el índice de desigualdad de la pendiente (IDP). **Resultados.** La proporción de mujeres que no usaban métodos anticonceptivos modernos se asoció con la proporción de población en pobreza monetaria (r=0,448; p=0,022) con una brecha de desigualdad absoluta de 6,92% y relativa de 1,16 (ICD=0,034; IDP=7,875). La proporción de gestantes sin atención prenatal por personal de salud calificado y la proporción de partos sin asistencia de personal de salud calificado se asociaron con la proporción de población en pobreza no monetaria. Las brechas de desigualdad absoluta y relativa fueron 5,29% y 8,90 (ICD=0,526; IDP=5,270) para la atención prenatal, mientras que en la atención del parto llegó a 11,33% y 11,03 (ICP=0,453; IDP=12,440). **Conclusiones:** La pobreza no monetaria explicaría las brechas de desigualdad observadas en la proporción de gestantes sin atención prenatal por personal de salud calificado y la proporción de partos sin asistencia de personal de salud calificado en mujeres peruanas.
Palabras clave. Equidad de género, Salud de la mujer, Pobreza, Salud reproductiva

INTRODUCTION

Sexual and reproductive health is a state of physical, emotional, mental and social well-being related to sexuality (maternal and neonatal care, family planning, childbirth care, among others[1]. It is internationally recognized as a fundamental human right that allows all people access to information, services and the means to make informed decisions about their sexual and reproductive health, including family planning, free of

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coercion, discrimination and violence[2]. However, it is well known that women have inequality in the exercise of this right, due to customs or cultural norms, ideological and political factors, deficient health infrastructure, as well as the presence of discriminatory laws or inefficient application of those designed for their protection. This situation is worse when women live in extreme poverty, are oppressed or have few civil rights[3].

Different international studies have shown this problem. Hall et al.[4] showed the existing inequalities in the use of reproductive health services among U.S. women, particularly among younger and socially disadvantaged women. Gutierrez et al.[5] showed inequity in the distribution of home births, the specific fertility rate in women aged 15-49 years and the maternal mortality ratio, which affected the poorest populations. Alammeh et al[6] and Ogundele et al[7] also observed inequalities in the use of reproductive health care services to the detriment of the poorest sub-Saharan African population. A study in Nigeria[8] found that uneducated adolescents and those from lower social groups used less contraceptives compared with their wealthier and higher status counterparts.

Although 78.1% of unmarried Peruvian women of childbearing age had access to contraceptive methods in 2021, only 57.0% used modern methods and it did not vary significantly in 2022. This situation mainly affects women in the rural highlands, with primary education or less, and those belonging to the lowest quintile[9]. This population also has less access to prenatal care and institutional childbirth, which would be evidence of gaps in access to sexual and reproductive health, although a recent study did not find substantial inequality in the use of modern contraceptives[10].

The scarce evidence of existing inequality in women's access to sexual and reproductive health has motivated the development of the present study with the objective of determining the influence of poverty on sociogeographic inequality in access to sexual and reproductive health among Peruvian women.

Methods

An observational, analytical, ecological study was conducted based on the secondary analysis of aggregate data corresponding to Metropoli-

tan Lima, Constitutional Province of Callao and 24 departments of Peru reported for the year 2021 by the National Institute of Statistics and Informatics (INEI) of Peru.

The dependent variable was women's sexual and reproductive health measured through gender inequality indicators referring to reproductive health calculated by INEI[11] and which are part of the results indicators of budgetary programs. These include: adolescents between 15-19 years old who were mothers or pregnant, unmarried women between 15-49 years old who used contraceptive methods (total and modern), pregnant women who received prenatal care from qualified health personnel, and births attended by qualified health personnel[9]. For a better understanding and uniformity of the analysis, positive indicators were converted into negative indicators. Likewise, the population sizes by department for the year 2021 were obtained from the Repositorio Único de Información Nacional en Salud[12].

The independent variable was poverty, measured through two methods: non-monetary poverty (unsatisfied basic needs)[13] and monetary poverty[14]. The first method groups variables that characterize households according to basic structural needs such as households in housing with inadequate physical characteristics, with overcrowding and/or without sewage, as well as households with children who do not attend school and/or with high economic dependency; they provide specific information on the poverty situation according to social characteristics[15]. The second method uses expenditure to assess welfare through purchases, self-consumption, self-supply, in-kind payments, transfers from other households and public donations[16].

The data were entered into a database created in MS Excel® for processing and analysis using the free software R Commander.

The bivariate analysis included Pearson's rho and linear regression statistical tests. Simple linear regression was used to identify the indicators of the dependent variables that were significantly explained ($p<0.05$; ANOVA) -with absence of autocorrelation ($p>0.05$; Durbin-Watson) by the poverty observed in the subnational governments.

Socio-geographical inequality was determined when the indicator assessed was explained by poverty through the inequality gap and inequality gradient; the absolute and relative gap through the Kuznets indices; the absolute and relative inequality gradients through the slope inequality index and the inequality concentration index, respectively. These were calculated following the methodology proposed by the Pan American Health Organization[17,18].

The study did not require authorization of an Ethics Committee since it was carried out with data provided by the National Institute of Statistics and Informatics of Peru and available to the general public. Artificial intelligence was not used in the design, development, analysis or writing of the research results.

RESULTS

Monetary poverty was significantly correlated only with the proportion of women using modern contraceptive methods (r=0.448; p=0.022), while non-monetary poverty was related to the proportion of adolescent mothers or pregnant women (r=0.641; p=0.000), the proportion of pregnant women without prenatal care by skilled health personnel (r=0.771; p=0.000) as well as the proportion of deliveries without the assistance of skilled health personnel (r=0.783; p=0.000). In the simple linear regression analysis, monetary poverty was configured as the variable that explained 20.1% of the variance in the proportion of women using modern contraceptive methods [(F=6.021; p=0.022); (D-W=2.137; p=0.890)]. Likewise, non-monetary

poverty explained 59.5% of the variance in the proportion of pregnant women without prenatal care by skilled health personnel [(F=35.250; p=0.000); (D-W=1.706; p=0.425) and 61.4% of the proportion of women whose deliveries were not attended by skilled health personnel [(F=38.150; p=0.000); (D-W=1.971; p=0.908). This variable also explained 41.1% of the proportion of adolescent mothers or pregnant women; however, the data presented autocorrelation [(F=16.770; p=0.000); (D-W=1.238; p=0.039) (Table 1).

Figure 1a shows that the higher the proportion of monetary poverty, the higher the proportion of women who do not use modern contraceptive methods. This proportion is higher in the poorest quintile (47.9%) -in monetary terms- compared to the richest quintile (41.0%). The absolute inequality gap was 6.9% while the relative gap was 1.2 (Figure 1b). The concentration curve based on the proportion of women not using modern contraceptive methods presents diagonalization (inequality concentration index [ICI]=0.034), with a slight excess of prevalence equivalent to 7.875 along the gradient determined by monetary poverty (Figures 1c and 1d).

Figure 2a shows the correlation between the proportion of pregnant women without prenatal care by skilled health personnel and monetary poverty. This negative health indicator is higher in the quintile with the highest non-monetary poverty (5.9%) compared to the least poor quintile (0.7%) (Figure 2b). The absolute inequality gap was 5.3% while the relative gap was 8.9. The concentration curve based on the proportion of pregnant women without prenatal care by skilled

TABLE 1. BIVARIATE ANALYSIS OF GENDER GAP INDICATORS ACCORDING TO POVERTY TYPE.

Variables	Correlation		Simple linear regression				
	rho	p	R2	F	p	D-W	p
Monetary poverty							
Adolescent (15-19 years old) mothers or pregnant women	-0.053	0.798					
Women who do not use contraceptive methods	-0.125	0.543					
Women who do not use modern contraceptive methods	0.448	0.022	0.201	6.021	0.022	2.137	0.890
Pregnant women without prenatal care by skilled health personnel	0.183	0.370					
Unattended births by skilled health personnel	0.235	0.249					
Non-monetary poverty							
Adolescent (15-19 years old) mothers or pregnant women	0.641	0.000	0.411	16.770	0.000	1.238	0.039
Women who do not use contraceptive methods	0.290	0.215					
Women who do not use modern contraceptive methods	0.076	0.758					
Pregnant women without prenatal care by skilled health personnel	0.771	0.000	0.595	35.250	0.000	1.706	0.425
Deliveries without the assistance of skilled health personnel	0.783	0.000	0.614	38.150	0.000	1.971	0.908

rho=Pearson correlation coefficient, p=significance, R2=coefficient of determination, F=ANOVA, D-W=Durbin-Watson (autocorrelation)

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FIGURE 1. ANALYSIS OF INEQUALITY OF ACCESS TO MODERN CONTRACEPTIVE METHODS ACCORDING TO MONETARY POVERTY.
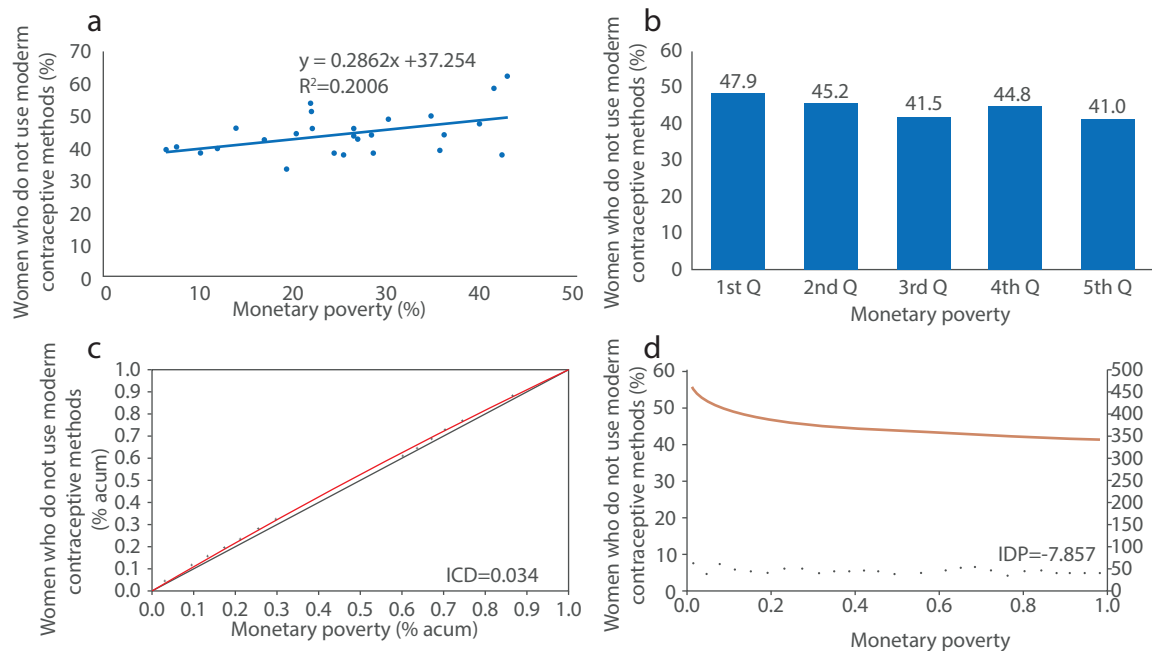
a: linear regression, b: inequality gap, c: concentration curve, d: regression slope

health personnel is located above the diagonal (ICI=0.526), with an excess prevalence equivalent to 5.270 along the gradient determined by non-monetary poverty (Figures 2c and 2d).

Similarly, Figure 3a evidences the direct correlation between the proportion of births without the assistance of skilled health personnel and non-monetary poverty; thus, this negative health outcome is higher in the quintile with more non-monetary poverty (12.5%) compared to the quintile with less non-monetary poverty (1.1%). The absolute inequality gap was 11.3% while the relative gap was 11.0 (Figure 3b). The concentration curve based on the proportion of births unassisted by skilled health personnel lies above the diagonal (ICI=0.453), with an excess prevalence equal to 12.440 along the gradient determined by non-cash poverty (Figures 3c and 3d).

DISCUSSION

Our study revealed that, in general terms, poverty is no longer one of the variables limiting women's use of modern contraceptive methods. Non-monetary poverty was not associated and monetary poverty, despite being an explanatory variable for sociogeographic inequality in access to modern contraceptive methods affecting the poorest women, was of low magnitude. The limi-

tation of access could be related to the supply chain and public provision coupled with the high number of users of short-acting contraceptive methods[19].

The same did not occur when analyzing access to prenatal care and childbirth -in both cases by skilled personnel- since women with higher levels of non-monetary poverty had less access to these two types of care, which evidences the existing marginal exclusion. Studies prior to the COVID 19 pandemic had already found existing inequalities in access to prenatal check-ups, in quantity and quality[20,21], as well as to delivery care by skilled personnel[22], which affected populations with higher poverty rates. However, the results of the present study suggest that these gaps may have increased after the COVID-19 pandemic.

The findings advise that, to reduce the slope of the gradient, universal interventions should be delivered with intensity and scale proportional to the degree of social disadvantage[23-25]. In other words, interventions aimed at reducing inequality gaps in access to prenatal care, childbirth and skilled care should be universal, but with an emphasis on women with unmet basic needs, especially in those departments with higher rates of non-monetary poverty and those who are the recipients of the greatest impact of poverty.
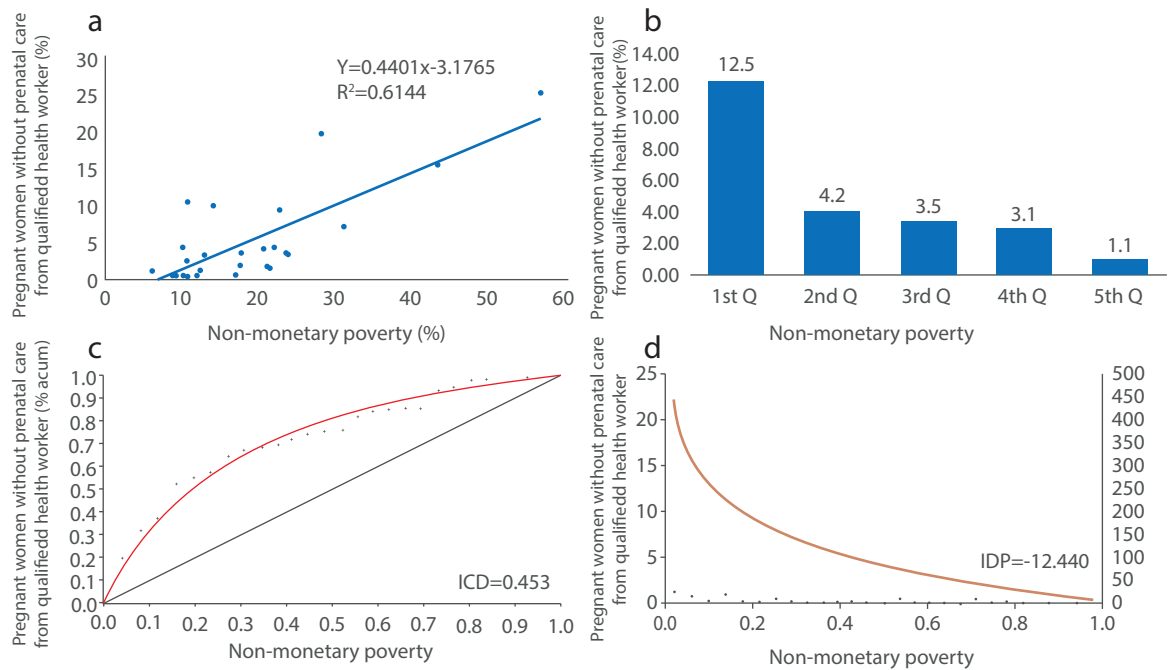
FIGURE 2. ANALYSIS OF INEQUALITY OF ACCESS TO PRENATAL CARE BY SKILLED HEALTH PERSONNEL ACCORDING TO NON-MONETARY POVERTY.
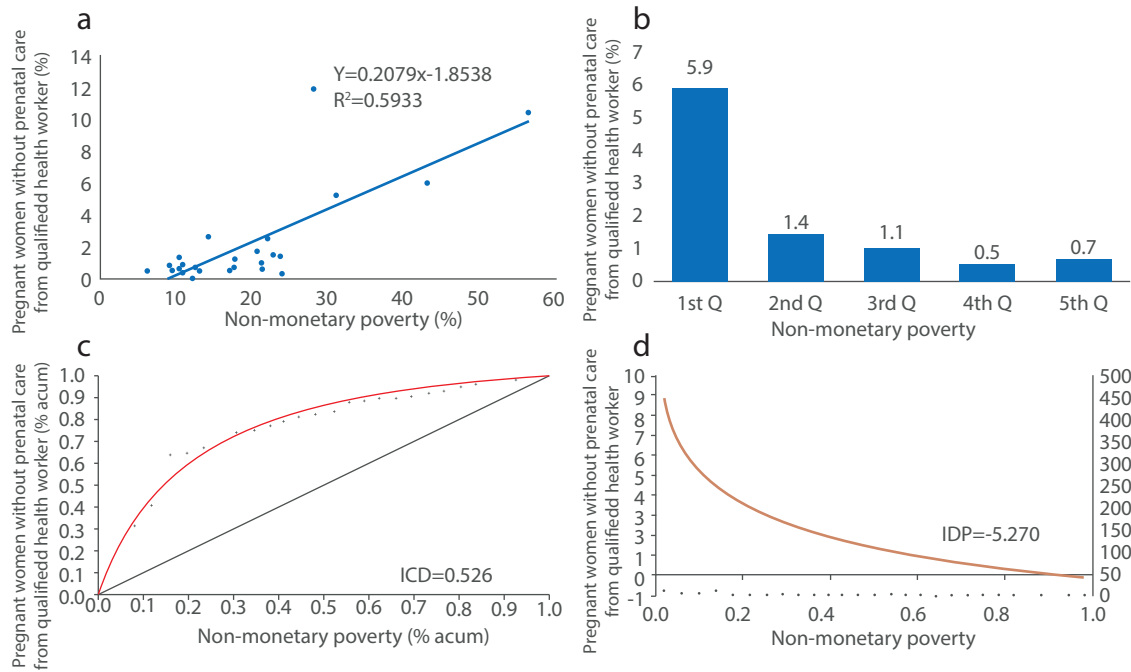
a: linear regression, b: inequality gap, c: concentration curve, d: regression slope

FIGURE 3. ANALYSIS OF INEQUALITY OF ACCESS TO BIRTHS ATTENDED BY SKILLED HEALTH PERSONNEL ACCORDING TO NON-MONETARY POVERTY.

a: linear regression, b: inequality gap, c: concentration curve, d: regression slope

In this sense, public policies are required to improve the socioeconomic situation of historically affected groups, measures to guarantee the availability and accessibility of women of childbearing age to culturally appropriate high quality health services, research to identify the specific determinants that generate inequality in access to sexual and reproductive health, as well as intersectoral measures to improve these determinants, among others.

The limitations of this study include the fact that the aggregate data do not allow for individual assertions, the units of analysis used could distort the results, and therefore studies with more disaggregated units of analysis are required. Likewise, there may be other variables that influence the results evaluated that have not been considered.

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