MODESTUM

Original Article

Inequality in the distribution of resources and health care in the poverty quintiles: Evidence from Peruvian comprehensive health insurance 2018-2019

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ARTICLE INFO	ABSTRACT
	Introduction: In many regions of the world, healthcare is inequitable and limited, affecting poor populations who need greater health opportunities. Given that Peru's comprehensive health insurance (SIS) seeks to enhance its coverage for the entire population, it is important to know if its coverage benefits the poorest populations. **Objectives:** To determine the allocation of SIS resources and care to the poorest quintile during 2018 and 2019 in Peru. **Methods:** We conducted a secondary analysis of data from five Peruvian technical institutions. In 39,8207 Peruvian households, we analyzed the per capita budget assigned to the population affiliated with SIS in microregions of quintile 1 and quintile 2 (poor), and quintile 4 and quintile 5 (non-poor), health coverage, and the level of poverty considering the human development index (HDI) and the regional competitiveness index (RCI). **Results:** The poorest regions are inversely correlated with HDI and RCI and have an average service of 25.0% affiliates. In poor areas, the allocated budget was lower (approximately \$303,000 to \$2.2 million), but the proportion of members requiring care was higher (>70.0%). The budget allocated to health was unfair (p<0.05) between poor areas (maximum resources from \$96.28 to \$108.14) and non-poor areas (maximum resources from \$150.00 to \$172.43). Low budget allocations and low household per capita income contributed to poverty in quintile 1 and quintile 2 (p<0.01). **Conclusions:** the poorest regions have greater inequity and the majority of affiliates do not use or do not have access to SIS services, but they have a greater need for health care. In addition, poor regions have a high amount of population without SIS coverage, and low allocated budgets, which affects competitiveness and regional development. **Keywords:** inequity in health, healthcare, poverty, resources, Peru

INTRODUCTION

In Latin America, the development of the health sector encompasses at least three types of threats. First, there are large inequalities in health within countries (regardless of their level of economic and social development) because the benefits of these social advancements are unevenly distributed. Second, there are still large inequalities in health among the countries of the Region of the Americas, and, finally, the rate of improvement in health has slowed in some countries and has even reversed in some areas [1].

Peru, a middle-income country with a population of 33 million, has a fragmented health system that is overseen by more than four ministries responsible for disease prevention and control policies. This fragmentation is further compounded by the existence of multiple insurance policies with varying degrees of coverage, resulting in a complex healthcare landscape [2]. Comprehensive health insurance, known as seguro integral de salud (SIS) in Spanish, was established primarily for the most vulnerable individuals in Peru who lack health insurance. SIS budget allocated to each microregion must cover more than 80.0% of the country's prevalent health problems to ensure effective access to health services and to remove poverty as a barrier to healthcare. SIS prioritizes those belonging to poverty quintile 1 and quintile 2; however, there is presently a discrepancy between the intended beneficiaries and the actual affiliates. This is because some individuals belonging to quintile 4, and even quintile 5, the highest economic income group, are also registered [3].

Nearly half (48.0%) of the Peruvian population lacks health insurance, with those uninsured or enrolled in SIS exhibiting

lower educational attainment and quality of life compared to those with private medical or social insurance [4]. This unfortunate reality often results in SIS-insured individuals being unable to receive care for serious illnesses, which can worsen without timely attention, ultimately requiring more complex and expensive treatments in the future. Moreover, it has been highlighted the inefficiency and discontinuity in the Peruvian health system, contributing to a significant lag behind the US health systems [5]. In the study [6], eight health directorates (direcciones de salud–DISA) in Peru were analyzed, revealing the concentration of the worst health and poverty indicators in the country, and highlighting the existing inequality in the distribution of resources across regions. The study suggests the adoption of transfer mechanisms for payment of health services provided to insured individuals. The 2018 national household survey (ENAHO) indicates that 21.8% of the population in Peru does not have any form of health insurance.

In this study, we determined the distribution of SIS resources and care in the quintiles of poverty during 2018 and 2019, identifying the micro-networks (health centers with municipal coverage) with greater or lesser inequality concerning health coverage and the assigned budget. The importance of this study is based on the analysis of the budget assigned to health in the provinces of Peru since, although SIS affiliations increased (as well as the number of resources executed), there are fewer cares, especially in vulnerable populations. For this reason, knowing how the execution of the global SIS budget is distributed in each municipality will allow us to reduce the con-centration of spending in quintile 4 and quintile 5, which are the beneficiaries with the highest income, and to shift that spending to quintile 1 and quintile 2.

MATERIALS & METHODS

Study Design & Peruvian Technical Organizations

We carried out a secondary analysis of the data, collected from national technical organizations such as SIS, the Ministry of Economy (MEF), the Cooperation Fund for Social Development (Fondo de Cooperación para el Desarrollo Social–FONCODES), the Peruvian Institute of Economics (IPE), as well as the Institute National Statistics and Information Technology (INEI) through ENAHO 2018 and 2019.

ENAHO is the main multi-stage survey conducted by INEI since 1995 to under-stand the indicators of the living conditions of the Peruvian population and to conduct regular stratified monitoring of the Peruvian population at the sectoral and urban-rural levels [7]. MEF's system of integrated financial administration (SIAF) is a system for recording budget performance with strict reference to the budget frame-work and its tables [8]. IPE's INCORE quantifies the relative position of the 25 regions through six pillars of competitiveness: economic environment, infrastructure, health, education, labor, and institutions. The six pillars comprise a total of 40 indicators, which are built from the latest data available from official sources [9].

FONCODES is a national program of the Ministry of Development and Social Inclusion (MIDIS). MIDIS generate sustainable economic opportunities for rural house-holds in extreme poverty and facilitates the articulation between private actors in the demand and supply of the goods and services that are required to strengthen their enterprises, reducing the exclusion processes that make these families unable to articulate in the markets [10].

Population & Variables

The study population was made up of the scope of ENAHO survey that covers the entire population of Peru [1]. The sample of the population included all the dwellings and their members at the national level.

The main variables were, as follows:

(1) the per capita budget assigned to the population affiliated with SIS of the micro-regions of quintiles 1, 2, and 4,

(2) health coverage (% of SIS services) according to the micro-region to which each unit of the study population belongs, and

(3) the level of poverty considering the human development index (HDI) and the regional competitiveness index (RCI), where poverty quintile 1 and quintile 2 will be indices close to zero.

Data Gathering & Analysis

This study used information from SIS, SIAF, FONCODES, INCORE, and INEI-ENAHO databases. We decided to replace SIS data with the estimates made by INEI due to inconsistencies between the number of affiliates and the number of inhabitants in some regions. Regarding the number of affiliated bodies and the number of SIS participants, it should be noted that the data provided by SIS are not compatible with those estimated by INEI-ENAHO. For example, in the Amazon Region in 2018, SIS counted 250,225 affiliates, while INEI counted 317,784 affiliates.

These differences caused that in some provinces the number of affiliates was higher than the number of inhabitants, for this reason the estimates provided by INEI were chosen. Concerning the budget that the Government assigns to each micro-region, data was obtained from SIAF. However, for the present study, the glob-al budget was not used, but rather the budget per member in each region and micro-region.

For its calculation, for example, in the case of the Amazonas Region in 2018, the amount transferred was 133, 511,517 soles (3,4233,722.3 USD). In that year, there were 189,501 "infiltrators" (pregnant women and children under five years who are not poor, population deprived of liberty and in shelters, firefighters and other non-poor are considered "infiltrators") to SIS plus the 128,283 poor with coverage of SIS, then the budget per member would be, as follows:

$$\text{SIS coverage per year} = \frac{133,511,517}{189,501+128,283} = 420.10 \text{ soles}$$

FONCODES and INCORE databases were used to determine the poverty quintiles in the micro-networks. INEI data were used to determine total and extreme monetary poverty, and SIAF database was used to determine the budget allocated to health, specifically SIS. Finally, the "infiltrators" treated in SIS are the patients who do not qualify as poor according to MIDIS household targeting system. Budgets are reported in soles (S/.) and the US dollars (USD) at an exchange rate of S/1=$0.25.

Data analysis was performed in STATA v16.0 (StataCorp, Texas, US) for Windows. We determined the distribution of the data using the Kolmogorov-Smirnov test. The comparison between the budgets of the non-poor groups (quintile 4 and quintile 5) versus the poor groups (quintile 1 and quintile 2) was
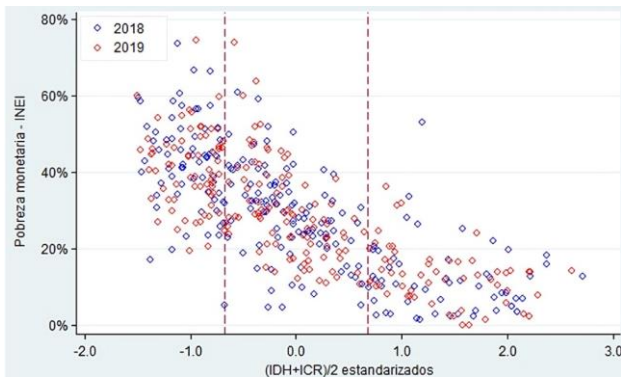
Figure 1. Distribution of monetary poverty compared to HDI/RCI in Peru during years 2018 and 2019: Two vertical red lines determine poverty quintile 1 & quintile 2 (left) & quintile 4 and quintile 5 (right) (Source: Authors' own elaboration)

made with the Mann-Whitney U test, and to determine the level of inequity in a micro-region, a logistic regression model was ap-plied. In all inference tests, a significance level of 0.05 and a 95% confidence interval were used.

RESULTS

Our analysis of 39,8207 Peruvian households (INEI 2020) shows that poverty is a function of HDI and RCI in 2018 (r=0.872, p=0.021) and 2019 (r=0.858, p=0.026). For each microregion, it is observed that high values in RCI correspond to high values in HDI, and vice versa. For this reason, it was decided to calculate the average of both, but previously both indices were standardized so that they are compatible. This gives the poverty quintiles: Poor quintile 1 and quintile 2 with a standardized mean of -0.675; and non-poor quintile 4 and quintile 5 with a mean of 0.675 or higher.

Our results show that the eight most impoverished regions are: Huancavelica (poorest), Cajamarca, Apurimac, Huánuco, Amazonas, Puno, Loreto, and Ayacucho. In addition, the least poor regions were Piura, La Libertad, Lambayeque, Tumbes, Madre de Dios, Ica, Tacna, Arequipa, Moquegua, Callao and Lima (the least poor). In the rural area of La Libertad, the rate of extreme poverty soared (25.9%) in 2019. Cajamarca remains the region with the highest rates of extreme poverty, especially in rural areas, at 17.3%. The regions of Cajamarca, Huancavelica, Loreto, Ayacucho, Huánuco, Ama-zonas and Puno are poor (1st quintile and 2nd quintile) based on HDI and RCI.

There is an inversely proportional correlation between monetary poverty (%) and poverty based on development. **Figure 1** shows that micro-regions, where there are very low percentages of monetary poverty have high standardized HDI and RCI averages, and vice versa.

Of the total, 76.0% had a fixed feeding schedule and 24.0% did not. In addition, 52.0% of the children eat breakfast and lunch at the local nursery and another 48.0% eat at home. Of these, 76.0% experienced symptoms such as loss of appetite, bloated stomach, and nausea, and 24.0% did not experience symptoms of stomach upset (**Figure 1**). Finally, 80.0%, 16.0%, and 4.0% of parents from Ica, Lima, and Ucayali (Peruvian amazon), respectively.

In 2019, only the Apurímac and Ayacucho regions served more than 25.0% of SIS affiliates, although, in 2018, Moquegua

Table 1. Budgets assigned according to poverty quintiles (data in soles [USD])

Year	M-R	Mean	SD*	CI 95%		p-value
2018						
NP	71	593.6 (150.2)	854.3 (216.1)	391.4 (99.0)	to 795.8 (201.3)	0.021
P	84	380.6 (96.3)	168.5 (42.7)	344.0 (87.0)	to 417.2 (105.5)	0.021
2019						
NP	71	681.0 (172.3)	1,056.3 (267.2)	431.0 (109.0)	to 931.1 (235.5)	0.026
P	84	427.4 (108.1)	275.9 (69.8)	367.5 (92.9)	487.2 (123.2)	0.026

Note. M-R: Micro-region; SD: Standard deviation; CI 95%: Confidence interval 95%; NP: Not poor; & P: Poor

and Pasco were also present. This indicates that the vast majority of affiliates do not use or cannot use SIS services. The situation is aggravated if one considers that "infiltrators" to SIS are included in the care. The regions, where members made little use of this health service during 2019 were: Tacna, Cusco, Piura, Loreto, La Libertad, and Puno. This result indicates that, in particular, the poor regions of Loreto and Puno do not have easy access to the health services offered by SIS, and in the case of the other regions, this may be due to the fact that their affiliates opt for private services.

We observe that in the "non-poor" regions (Arequipa, Ica, Lambayeque, Madre de Dios, Moquegua, Tumbes, and Ucayali), there is a large percentage of "infiltrators": more than 80.0% of affiliates for both the year 2018 as in 2019.

Table 1 shows that the budget allocated to health is inequitable between poor and non-poor areas. That is, on average, an affiliate from a "non-poor" region has a maxi-mum resource of 593.60 soles (150.00 USD) per year for your health (year 2018) and 681.60 soles (172.43 USD) for 2019. However, a "poor" affiliate is only assigned 380.6 soles (96.28 USD) for the year 2018, and 427.46 soles (108.14 USD) for the year 2019, these differences being significant (p=0.021 and p=0.026, respectively). These results suggest that non-poor regions have high percentages of "infiltrators" and high budgets for the health of SIS affiliates. In contrast, poor regions have high percentages without SIS coverage and low allocated budgets, thus revealing inequity in the distribution of re-sources.

The impact of other factors such as per capita household income, monetary poverty, and extreme poverty on this inequality was also analyzed. Thus, in 2018, low budget allocation was a factor that defined or contributed to a region's un-der-resourced status (p=0.019). Low per capita household income was also a factor as-sociated with poor areas (quintile 1 and quintile 2, p<0.0001). **Figure 2** shows the inequality of fiscal distribution, with a higher proportion of monetary poverty and a lower allocated budget (light blue). For example, Ica, Arequipa, Moquegua and Tacna (coastal municipalities) have little poverty, but very high budgets for health. The reverse happens with Loreto and San Martín (Municipalities of the jungle).

The percentage of extremely poor and rural poor also defines a poor region. Likewise, the high percentage of people who attended SIS is associated with a poor region. In other words, the poor have a greater need to be cared for in such health services.
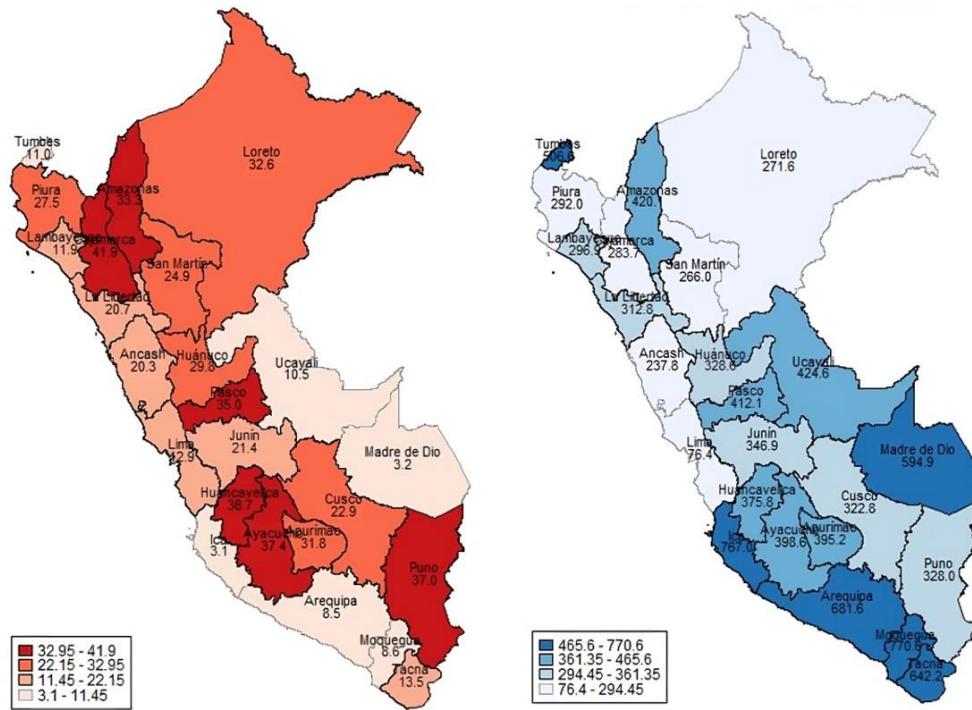
Figure 2. Distribution of monetary poverty (%) & budget (turned) to health (price in soles) during 2018: Exchange rate of one soles=0.25 USD (INEI-ENAHO data). Monetary poverty for 2018 (left in red), lower allocated budget for 2018 (right in blue) (Source: Authors' own elaboration)
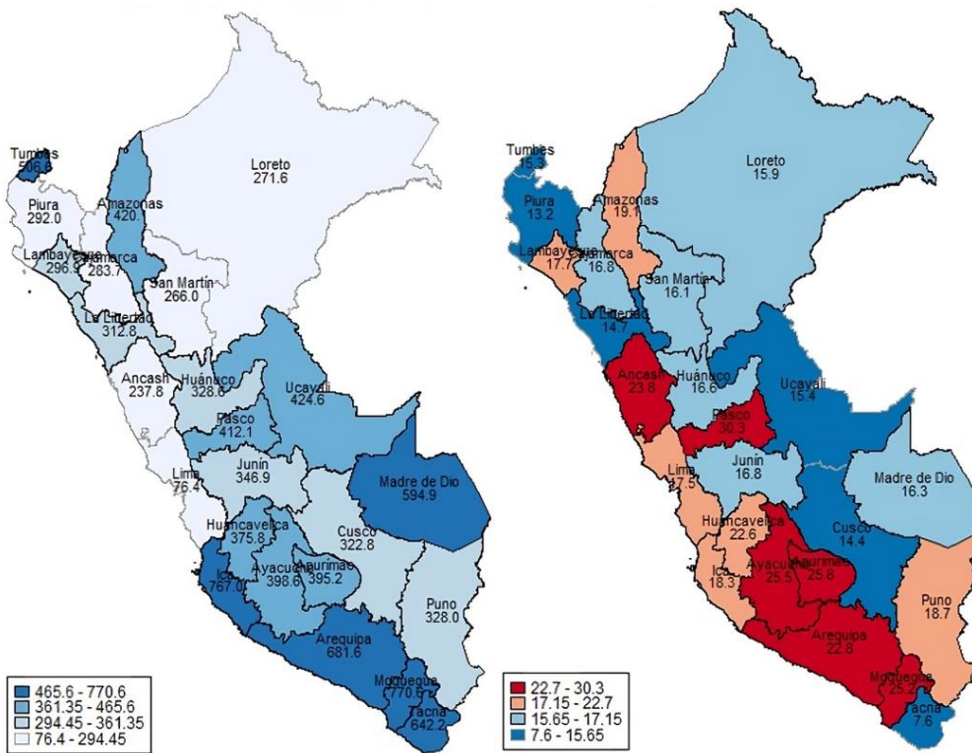
Figure 3. Distribution of health budget & affiliates attended to by SIS (%) during 2018: Exchange rate of one soles=0.25 USD (INEI-ENAHO data). Lower allocated budget for 2018 (left in blue), Insurance members served (right in colors) (Source: Authors' own elaboration)

We determined the budget allocated to each region and the percentage of affiliates served separately, and when correlating these two variables, found a negative correlation for both in 2018 (r=-0.391) and for the year 2019 (r=-0.405), highly significant (both p<0.0001). This result shows that for the small amount allocated to the region (1.2 million to 8.9 million soles–approximately $303,000 to $2.2 million), the percentage of affiliates of SIS services is high: more than 70.0%. On the other hand, for high assigned amounts (65.6 million soles or more–16.5 million USD) the percentage of affiliates is low, and this is true for both years of study (**Figure 3**).

Table 2. Microregions with greatest inequality in Peru during study period

Province	Region	Index*
2018		
Santa Cruz	Cajamarca	0.749
Chucuito	Puno	0.750
Victor Fajardo	Ayacucho	0.751
Condorcanqui	Amazonas	0.755
Otuzco	La Libertad	0.757
San Pablo	Cajamarca	0.760
Huancane	Puno	0.762
Cajatambo	Lima	0.788
Moho	Puno	0.789
Celendin	Cajamarca	0.789
Cutervo	Cajamarca	0.790
Antonio Raimondi	Ancash	0.803
Huacaybamba	Huánuco	0.805
Pallasca	Ancash	0.811
Sihuas	Ancash	0.823
2019		
Chota	Cajamarca	0.713
Moho	Puno	0.720
Contumaza	Cajamarca	0.720
Huancabamba	Piura	0.723
Celendin	Cajamarca	0.726
San Pablo	Cajamarca	0.732
Huanca Sancos	Ayacucho	0.733
Corongo	Ancash	0.738
Sanchez Carrion	La Libertad	0.749
Sihuas	Ancash	0.751
Otuzco	La Libertad	0.752
Cajabamba	Cajamarca	0.754
Cangallo	Ayacucho	0.762
Julcan	La Libertad	0.762
Santiago de Chuco	La Libertad	0.776

Note. Inequality index fluctuates in a range from zero to one, where values close to one indicate greater inequality & values close to zero indicate less inequality, according to logistic model

Table 2 presents 15 micro-regions with greatest inequality (indices close to one), Province of Sihuas in Ancash Region being most vulnerable (year 2018). It is observed that almost all provinces with the greatest inequality belong to poor regions.

DISCUSSION

In this study, we found greater inequality in the poorest regions, with a majority of affiliates in the poorest quintile not using or not having access to SIS services, but with a greater need for health care. Poor regions have a high amount of population without SIS coverage and low allocated budgets (one-third less than in non-poor regions), thus revealing the inequity in the distribution of resources that affects regional competitiveness and development. In addition, the low budget allocated, the low per capita family income, and the percentage of extreme poor and rural poor were factors that contributed to the poverty of a region, since the higher the monetary poverty, the lower the budget allocated. The main strength of the study is the analysis of a data set from Peruvian technical organizations for the years 2018-2019. Previous reports [4, 11, 12] that have analyzed secondary data in Peru have been limited to the analysis of health insurance and have not considered other economic variables. In this study, we also included the analysis of the budget per affiliate, the real estimate of affiliates of INEI, and the inclusion of "infiltrators" assisted in SIS in the analysis model.

Health inequity is the unfair and avoidable differences in health and social security with respect to access to health services that cause disparities in the conditions of human development [13]. Inequities in the distribution of resources in the health sec-tor must be urgently and explicitly addressed by decision-makers in the health sector since as our results show, there are dramatic differences in coverage, access, and health care in the poorer regions. In Mexico, it has been reported that the population in the worst economic situation reported a worse level of self-assessed health and presented the greatest physical limitations [14]. These results are consistent with our findings that not only are the provinces with the highest levels of inequality classified as poor regions, but also that higher levels of monetary poverty are associated with poorer development and regional competitiveness.

Our results are supported by a previous study on health insurance, which showed that the poor were less well-being and less educated than those with private health insurance [4]. Also, an analysis of ENAHO 2019 on health coverage has shown that there are dramatically higher SIS affiliates in rural areas compared to urban areas (80.0% vs. 39.0%). Furthermore, this secondary analysis shows that despite this coverage, the poor are forced to pay out-of-pocket costs because SIS is not comprehensive and does not provide full-service coverage (i.e., medicines) [15]. Taken together, these studies mark a roadmap with no improvement over the last ten years, and our results scrutinize their reports and highlight some explanations for the lack of health insurance in the poorest regions of Peru. The effectiveness of health insurance programs in reducing out-of-pocket costs varies widely across countries, depending on the strength of their health insurance systems. For instance, in Indonesia, two large existing health insurance programs have significantly decreased household out-of-pocket costs by 34.0% and 55.0%, respectively, owing to well-designed benefit packages and co-payment policies [16]. However, the degree of response of health insurance programs differs between countries, and the success of such programs is contingent on the functionality of their health insurance systems. In India, the decentralization of the health sector to the village level in Karnataka is at risk due to a lack of coordination between the political and programmatic branches of the government, which poses a challenge to the effective implementation of health insurance programs [17].

The budget allocated to health is not equitable and poor regions receive one third less of budget than non-poor regions. For this reason, for 2018, inequity in distribution of resources was present in the poorest regions, with low HDI and RCI, whose percentages of "infiltrators", poor without coverage, and extreme poverty were following, respectively: Cajamarca (49.0%, 16.2%, and 11.2%), Huancavelica (57.0%, 17.6%, and 8.9%), Loreto (60.7%, 18.7%, and 8.1%), Ayacucho (55.9%, 14.6%, and 6.4 %), Huánuco (63.4%, 13.7%, and 6.4%), Puno (49.6%, 19%, and 6.3%), Amazonas (59.6%, 15.4%, and 6.2%), and Pasco (52.5%, 16.7%, and 5%). For the year 2019, they were the same regions, except for Pasco, which was replaced by the La Libertad region, which had 58.6% "infiltrators", 12.4% poor without coverage, and 6.2% extreme poverty. Given recent research showing that health insurance programs in low- and middle-income countries (LMICs) fail to cover underserved populations, this break-through is critical for understanding the dynamics of regional health insurance errors in Peru [18].

The issue of inequality in health insurance enrollment and coverage is a global problem that affects many countries. The present study reveals that there is a significant disparity in the distribution of health resources at both regional and micro-regional (provincial) levels, which corroborates previous research findings [18, 19]. As income inequality is a critical factor contributing to disparities in healthcare services across countries [20], our findings imply that individuals with lower socioeconomic status, characterized by higher levels of monetary poverty and limited budget, are more in need of healthcare services. Consequently, such individuals are more likely to experience greater inequalities in healthcare access, which perpetuates the cycle of poverty and ill-health.

Studies from various countries have shown that certain populations, such as the unemployed or those in poverty, have a lower likelihood of enrolling in health insurance and may face higher out-of-pocket costs for healthcare. For example, a study in Ghana found that individuals aged 56 to 65 and without employment were less likely to enroll in health insurance, with nearly half of participants paying for membership out of pocket [21]. Similarly, in Korea, a large number of households subscribed to private health insurance, but very few received reimbursements for medical costs or services [22]. These findings underscore the need for policies and interventions to address disparities in health insurance enrollment and coverage. While research on management and public health in Peru has been increasing [23], there are still gaps in health coverage that disproportionately affect rural and indigenous populations, leading to financial strain for users. For the year 2018, the five micro-regions with the greatest inequality were: Cutervo (0.790, Cajamarca), Huacaybamba (0.805, Huánuco), Antonio Raimondi (0.803), Pallasca (0.811), and Sihuas (0.823), all from the Ancash region (Peruvian mountains). For 2019, the five micro-regions with the greatest inequality were: Santiago de Chuco (0.776, La Libertad), Julcán (0.762, La Libertad), Cangallo (0.762, Ayacucho), Cajabamba (0.754, Cajamarca), and Otuzco (0.752, La Libertad). It is important to continue examining and addressing issues of inequality in health insurance to ensure equitable access to healthcare services.

The findings of this study underscore the existence of inequality in the distribution of allocated health resources, as regions with greater demand for care and inadequate health facility supply should receive a larger budget [24]. Furthermore, the term "greater percentage attended" fails to consider the quality of care provided, with many members often required to pay for medicines and supplies out of pocket due to SIS Pharmacy shortages [18]. This situation is further compounded by the inclusion of "infiltrated" members in the percentage of those served. To address these issues, social protection and poverty reduction strategies must be refined through coordinated efforts involving the health sector and user representation, responding to the lack of purchasing power and representativeness of users. Such efforts will facilitate the decentralization of healthcare and promote synergy between major public policies such as nutrition, education, health, and other ministries [13, 25, 26].

Migration can exacerbate the issue of inequality in health insurance coverage for individuals in Peru. A study in Barcelona found that premature mortality increased in disadvantaged neighborhoods, where migrants settled, regardless of gender [27]. The potential epidemiological effects and challenges for health services due to the influx of Venezuelan and Haitian migrants have also been highlighted in Peru [28]. Therefore, it is crucial for future research to consider this framework to understand the impact of migration on insured rates and the redirection of healthcare spending towards coverage of the migrant population.

This study had limitations. First, analysis time may be a limitation. This analysis includes the reports for the years 2018 and 2019, however, the study variables may vary in recent years and may be subject to the political, economic, and social reality of Peru. Hence, this analysis must be continued and mainly carried out after the years of lockdown due to COVID-19 since the budgets, the care of affiliates, the economic changes and the budgets assigned to counteract this disease [29], the political and social problems [30], changes in the regulation of SIS and inequality may have had a drastic change post-conflict [31]. Another limitation is that the analysis did not differentiate by sex or age group. It is important that these variables be evaluated in future studies since there are differences in the distribution of SIS by demographic variables (i.e., 60.0% of people <18 years of age have SIS compared to 42.0% of adults [18]) and over the years this proportion of affiliates may vary [32]. Despite these limitations, the results of this study represent a further effort to quantify health care inequities in LMICs and highlight the role of some unexamined econometric variables [33].

In conclusion, this study shows that between 2018 and 2019, inequality in health care was higher among the poor in Peru. In this framework, the low budget allocated, the low per capita family income, and the percentage of extremely poor and rural poor were factors that contributed to the link between poverty and the health budget. The poor populations of quintile 1 and quintile 2 are those that need the most health care and are deprived of SIS coverage. This complex set of factors contributes to low levels of regional competitiveness and human development.

The distribution of financial resources of SIS must be oriented to eliminate the existing inequities in the regions and micro-regions, through the design and implementation of payment modalities that consider poverty and the real access to health of the populations. Furthermore, for a more equitable distribution of funds, coordination is required with MEF, which must include in its multi-year plans specific strategies to eliminate existing inequalities in different micro-regions. Thus, it will be possible to favor the micro-regions that for years have been affected by this inequity and that are worsening access to health and the possibilities of human development.

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