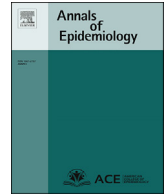




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## Commentary

## Epidemiologic Patterns of COVID-19 Incidence in the Province of Lima

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**Purpose**

Lima is one of the most populous metropolitan areas in Latin America while Peru is nowadays, the country with the higher mortality rate in the world despite the early quarantine. We analyzed sociodemographic variables associated to COVID-19 incidence and its increase in Lima.

**Methods**

We conducted a secondary data review of COVID-19 obtained from the platform [datosabiertos.gob.pe](https://datosabiertos.gob.pe) (as August 23th) and from the INEI. Variables included COVID-19 cases detected with serological/molecular tests (in two periods: May\_21th–August\_21th, 2020); number of inhabitants, gender, age, and poverty ranking for each of the 43 districts of the Province of Lima. COVID-19 incidence (per 1000 inhabitants) was estimated for each district. We estimated also the fold change of incidence (FCI=Incidence as August\_21th/Incidence as May\_21th). Correlation between incidences and FCI with sociodemographic data were estimated with a stepwise regression model.

**Results**

As August\_21th, 248,849 Covid-19 cases were reported. The highest incidence per 1000 was observed in the districts of Jesus María, and Lima-center (126.4 and 86.6). The lowest incidences were observed in Punta Hermosa and Santa Rosa and (6.7 and 7.9) (Figure 1A). There was a direct correlation between the 15–64 years age group and COVID-19 incidence ( $P=0.001$ ). The FCI had direct correlation with primary and secondary education ( $P=0.002$  and  $P=0.020$ ) and inverse correlation with higher education ( $P=0.011$ ) (Figure 1B).

**Conclusion**

Despite the limitations due to disparities in Covid-19 testing between districts, a higher FCI is correlated to lower education, while a higher incidence is correlated with a higher proportion of population aged 15–64 years.

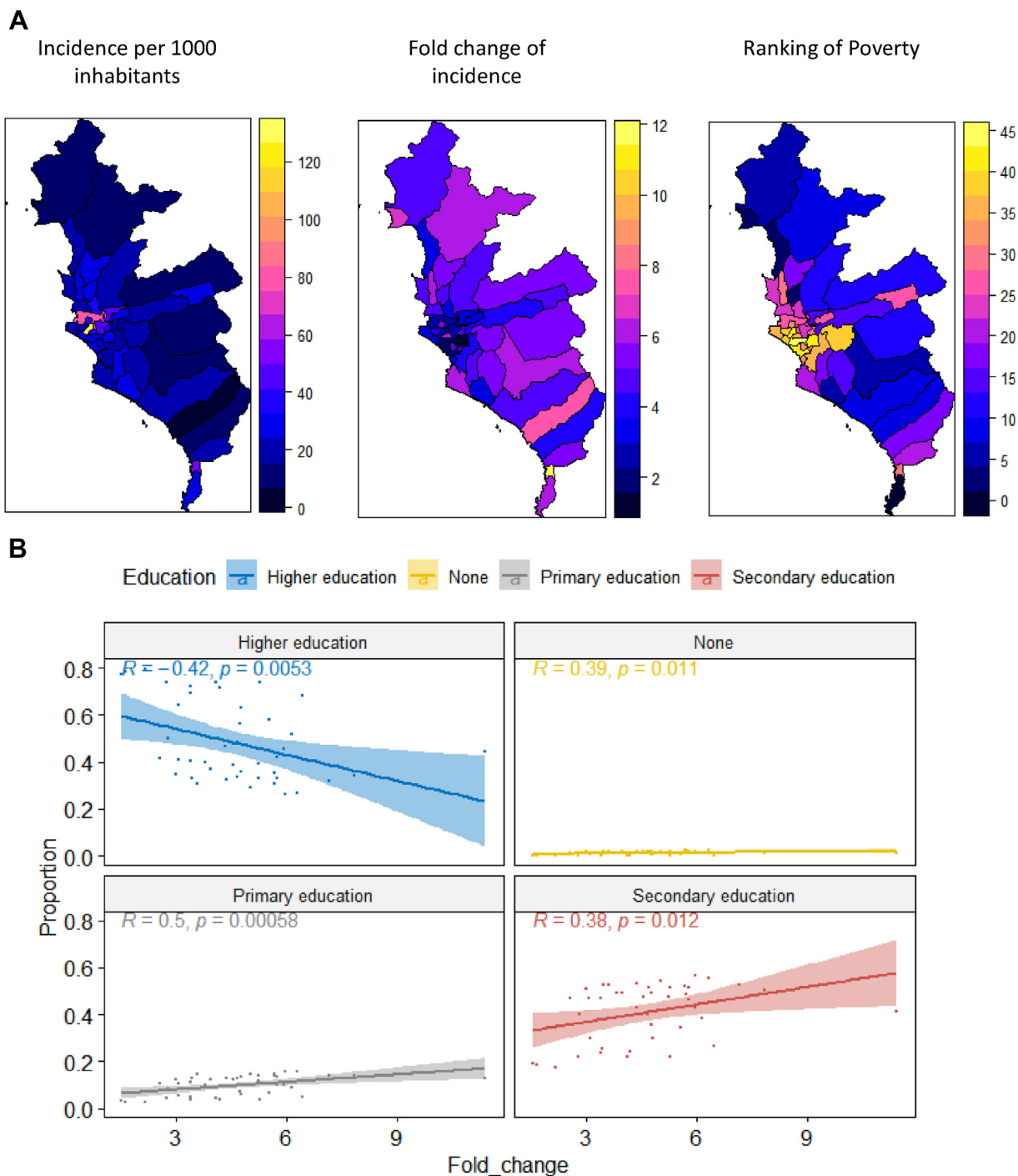


Figure 1: A) Incidence of Covid-19 as August 21th, 2020. It is possible to observe a correlation between the fold change of the incidence (since May 21th up to August 21th). B) The level of education was selected in the regression model as significantly associated to the change in the Incidence of Covid-19.