

Household vaccine hesitancy, migration background and generational inequalities: expected evidence from administrative data in a large Italian metropolitan area

Silvia Coretti (Sapienza University of Rome)

Co-author: Rocchina Carlucci (Sapienza University of Rome); Valeria Fano (Asl Roma); Giovanni Colaiocco (Asl Roma)

Background and aim

Vaccine hesitancy has increasingly been recognized as a key challenge for public health systems, reflecting a complex interplay of socio-economic, cultural and institutional determinants. While a growing body of literature has highlighted the role of parental attitudes in shaping children's immunization behaviours, less attention has been devoted to how vaccine hesitancy operates within households and across socio-demographic groups when observed through real-world behavioural data rather than self-reported attitudes. This gap is particularly relevant in urban contexts characterized by high social heterogeneity and significant migrant populations.

This study builds on previous evidence on intra-household vaccination dynamics and aims to investigate how parental COVID-19 vaccination behaviour is associated with children's adherence to both mandatory paediatric vaccination schedules and recommended adolescent vaccinations (HPV). In particular, the analysis focuses on the role of migration background and socio-economic inequalities, with a specific emphasis on differences between families from High Migratory Pressure Countries (HMPC) and those from Italy and other Highly Developed Countries (HDC), as well as on generational differences between first- and second-generation migrants.

Data and methods

The empirical setting is the Local Health Authority Roma 2, one of the largest and most socio-economically diverse metropolitan areas in Italy, covering over 1.3 million residents. The study exploits a unique dataset obtained by linking multiple administrative sources at the individual and household level, including the Municipal Registry, General Practitioner Registry and Regional Vaccination Registry. This allows for the reconstruction of family units and the observation of actual vaccination behaviours for both adults and children, overcoming limitations typically associated with survey-based measures of vaccine hesitancy.

The study population includes families with at least one adult and one minor belonging to selected birth cohorts, allowing for the comparison of vaccination adherence before and after the COVID-19 pandemic. The main explanatory variable is the COVID-19 vaccination status of the head of household, used as a proxy for household-level vaccine hesitancy. Outcome variables include adherence to mandatory paediatric vaccinations in early childhood and uptake of HPV vaccination in adolescence. The analysis further incorporates a rich set of socio-demographic controls, including family size, area-level deprivation and parental origin.

Expected findings and study contribution

A key contribution of the study lies in its detailed stratification by migration background. Households are classified into two main groups: those originating from Italy and other Highly Developed Countries (HDC), and those from High Migratory Pressure Countries (HMPC), which are more likely to experience structural barriers to healthcare access, language difficulties and socio-economic disadvantage. Within the HMPC population, additional heterogeneity is explored by distinguishing between first-generation migrants (children born abroad) and second-generation migrants (children born in Italy to foreign-born parents). This distinction is crucial, as generational status is associated with different levels of integration into the healthcare system and exposure to preventive services.

Although the empirical analysis is ongoing, expected results point to three main findings. First, parental COVID-19 vaccination behaviour is expected to be a strong predictor of children's vaccination adherence, supporting the hypothesis of intra-household spillovers in preventive health behaviours, consistent with health economics models emphasizing social interactions and norm transmission within families. Second, significant inequalities are expected to emerge across socio-economic groups, with lower vaccination adherence among households living in more deprived areas and among larger families. Third, and most importantly, substantial disparities are anticipated between migrant and non-migrant populations. In particular, families from HMPC are expected to exhibit lower vaccination uptake, reflecting both structural barriers and differences in trust and access to healthcare services. Within the migrant population, further heterogeneity is expected along generational lines. First- generation migrants are likely to display lower adherence to vaccination schedules compared to second- generation migrants, due to delayed integration into the healthcare system, administrative barriers and weaker exposure to institutional recall mechanisms. Conversely, second-generation migrants, being born and raised within the Italian healthcare system, are expected to show higher adherence rates, although still potentially lagging behind native populations due to persistent socio-economic inequalities. By combining a household-level perspective with detailed socio-demographic stratification, this study contributes to the literature on vaccine hesitancy, health inequalities and migration. It provides novel real-world evidence on how preventive health behaviours are shaped by both intra-family dynamics and broader structural determinants. From a policy perspective, the expected findings highlight the need for targeted and differentiated interventions aimed at reducing inequalities in immunization coverage. In particular, they suggest that strategies to improve vaccination uptake should account for migration background, generational status and socio-economic conditions, moving beyond one-size-fits-all approaches.