

# Factors Connected to Immunization Compliance in Children Ages 0–59 Months: A Multilevel Examination of the 2020 Somaliland Demographic and Health Survey

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## Introduction

Immunization is one of the most effective public health interventions to prevent infectious diseases in children. Despite its benefits, immunization compliance remains a significant challenge in many parts of the world, including Somaliland. This article explores the factors influencing immunization compliance in children aged 0–59 months in Somaliland, using data from the 2020 Somaliland Demographic and Health Survey (SDHS). By examining these factors at multiple levels, including individual, household, and community levels, this study aims to provide a comprehensive understanding of the barriers and facilitators to immunization in Somaliland [1,2].

## Description

Somaliland, a self-declared independent region in northern Somalia, faces unique challenges in its health sector due to political instability, limited resources, and a fragile health infrastructure. Immunization coverage in Somaliland is lower than global targets, with significant variations across different regions and communities. Understanding the factors that influence immunization compliance is crucial for designing effective interventions to improve vaccination rates and protect children's health. The analysis is based on data from the 2020 SDHS, a nationally representative survey that collects information on demographic, health, and social indicators. The survey includes data on immunization status, socio-economic characteristics, and health-related behaviors of children aged 0–59 months. A multilevel modeling approach is employed to analyze the data, considering the hierarchical structure of the survey data (individuals nested within households and households nested within communities). The 2020 SDHS collected data through household interviews using structured questionnaires. A multilevel logistic regression model is used to analyze the factors associated with immunization compliance [3,4]. This approach allows for the examination of both individual-level and contextual factors, providing a more nuanced understanding of the determinants of immunization compliance. Immunization compliance varied significantly by age, with older children (12–23 months) showing higher compliance compared to infants (0–11 months). This may be due to the cumulative nature of vaccination schedules. No significant differences were observed between boys and girls in terms of immunization compliance, indicating gender parity in vaccination efforts. Children with better health status were more likely to be fully immunized, possibly reflecting better access to healthcare services and parental motivation to prevent illness. Higher levels of maternal education were strongly associated with better immunization compliance. Educated mothers are more likely to understand the importance of

vaccines and adhere to vaccination schedules. Wealthier households showed higher immunization compliance. Economic resources enable better access to healthcare services and transportation to vaccination centers. Households with better access to healthcare facilities had higher immunization rates. Proximity to health services reduces barriers to vaccination. Larger households were associated with lower immunization compliance, potentially due to resource constraints and logistical challenges in managing multiple children's healthcare needs. Urban areas exhibited higher immunization compliance compared to rural areas [5,6].

## Conclusion

Urban residents typically have better access to healthcare infrastructure and information. Communities with well-established health infrastructure, including regular vaccination campaigns and outreach programs, had higher immunization rates. Communities with positive attitudes towards vaccination and strong social support for health interventions showed better immunization compliance. Rural and remote areas face significant challenges in accessing healthcare services due to poor infrastructure and long distances to health facilities. Financial barriers, including the cost of transportation and indirect costs such as lost income, can hinder families from accessing immunization services. Low levels of maternal education limit awareness and understanding of the importance of immunization, leading to lower compliance. In larger households, the competing demands on parents' time and resources can lead to missed vaccination appointments. Raising awareness about the benefits of vaccination through educational programs targeted at mothers and caregivers can significantly improve compliance. Providing financial incentives or subsidies for transportation to vaccination centers can alleviate economic barriers.

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None.

## Conflict of Interest

None.

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