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Pathways through which Climatic Shocks Affect Child Undernutrition: A Structural Equation Modelling

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Abstract

The past three decades have seen a striking change in climatic conditions. Globally, an increase in average temperature, greenhouse gas concentration, and anthropogenic CO_2 emissions have been recorded. These changes carry worrisome consequences for the planet earth including ocean acidity, increase in permafrost temperature, change in snow cover and decrease in Arctic sea-ice which in turn leads to the frequent occurrence of cyclones, droughts, floods, heat waves and wildfires and leaves billions at risk of malnutrition and illnesses. Using three rounds of the young lives cohort study dataset this study aims to identify the pathways through which climatic shocks affect child undernutrition and health. To this end, the study employed a structural equation modelling to empirically test the pathways through which climatic shocks affect child undernutrition based on the UNICEF conceptual framework. 1980 younger and 982 older cohort children were included in the main analysis. Results show a significant negative association between climatic shock and linear growth that is mediated by increased food insecurity and poor environmental and service conditions which inturn lead to lower child dietary diversity and poor child health status. Moreover, in this study the magnitude of the effect of climatic shocks on environmental and service conditions was higher than their effect on food insecurity for both height-for-age (YC-β_FI=.15, β_ES=.54 & OC -β_FI=.23 β_ES=.73) and BMI-for-age (YC-β_FI=.15 β_ES=.57 & OC -β_FI=.21,β_ES=.62) models. The implication of the results is that programs aiming to curb the negative impacts of climatic shocks should invest more on improving environmental and service conditions in addition to combating food insecurity. This could be achieved by incorporating other determinants of nutrition into programs through increased access to health services, sanitation and nutrition education. Moreover, in this study, households report of climatic shocks was positively correlated. Therefore, diversifying the means of livelihoods, social protection schemes, and access to credit should be considered as a policy alternative for recurrently affected populations.

Keywords: Climatic shock, Ethiopia, climate change, structural equation modelling, undernutrition, young lives data

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