Effect of Basic Drinking Water Quality on Anemia in Women and Birth Rate among Countries by their SDG (Sustainable Development Group) Ranks

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Abstract

Access to basic drinking water services remains a critical determinant of public health, particularly concerning maternal and infant outcomes. This study examines the relationship between basic drinking water quality and the prevalence of anemia in women of reproductive age, as well as low birth weight prevalence, across countries grouped by their Sustainable Development Goals (SDG) index rankings. Using global data from the World Health Organization (2012–2022), analyses revealed a significant inverse association between drinking water quality and both anemia prevalence (in pregnant and non-pregnant women) and low birth weight rates. While these findings were expected, the study also identified outlier countries that deviated from the overall trend, regardless of their SDG index scores. These outliers warrant further investigation, particularly regarding the role of drinking water quality in maternal and infant health outcomes, even if their overall SDG index scores are high. The study highlights the critical role of safe drinking water in improving maternal health and highlights the need for future research on environmental contaminants and broader SDG targets to inform global health policy.

Keywords

Anemia in women, basic drinking water quality, Sustainable Development Goals, Low birth weight, global health policies.