

Nigerian newborns weigh less if their mothers use biomass fuel, a major health risk

October 7 2022, by Musa Kana



Credit: CC0 Public Domain

Babies should ideally weigh [about 2,500g or more at birth](#). Birth weight is a [vital indicator](#) of fetal and neonatal health. If a newborn weighs less

than 2,500g—because they are preterm or their growth in the womb was restricted for some reason—they are [more at risk](#) of death, disability and noncommunicable diseases.

The low [birth weight](#) infant's tiny body is not as strong as it should be. The baby might struggle to gain weight and fight infection. And with so little body fat, these babies often have difficulty staying warm in normal temperatures.

Low birth weight is [the primary cause](#) of infant morbidity and mortality in Nigeria.

The factors that are known to influence a baby's weight at birth [include](#) duration of pregnancy, and maternal characteristics like age, parity (the number of times a woman has given birth) and illness, as well as adverse environmental exposures.

One factor that hasn't been studied much in Nigeria is the type of cooking fuel that the baby's mother uses or is exposed to during pregnancy. My research group suspected this might be a significant factor because of the high prevalence of low birth weight in Nigeria and the fact that biomass fuel is [commonly used](#).

Nigeria [is among the five countries](#) where most preterm and small-for-gestational-age infants are born. [About 5.9 million babies are born in Nigeria each year](#), and 15% of these newborns have a low birth weight accounting for 25% of infant mortality.

Our [study](#) explored the association between biomass cooking fuel and birth weight among full term births in Kaduna, northwestern Nigeria. We found there was a link—and this was supported by [data from the nationally representative Demographic and Health Survey](#). Mothers in Kaduna who were exposed to biomass fuel gave birth to infants who

were on average 113g lighter than those using liquefied petroleum gas, which is [a cleaner fuel](#). Nationally, mothers using biomass had infants weighing 50g lower at birth than those using clean fuel.

Exposure to biomass fuel combustion during pregnancy [could adversely affect](#) fetal growth or increase preterm birth risk, resulting in a child born early or small for gestational age and thus creating further health risks for the child.

Biomass fuel includes wood, animal dung, charcoal and crop residues. It is used worldwide for cooking, heating and lighting. Biomass fuels and [kerosene](#) are still widely used in urban and rural Nigeria due to supply and demand issues driving household energy choices.

The study results show the importance of efforts to make safer fuel choices available.

Kaduna and national Nigerian data

Our study focused only on term infants because [duration of pregnancy independently affects](#) birth weight, and multiple factors influence [preterm birth](#).

We conducted the primary analysis based on a study of 1,514 mother-child pairs in Kaduna, northwestern Nigeria. [Kaduna](#) is the fourth largest city in Nigeria, with a population of 1.6 million.

To validate the primary analysis, we repeated it using data from 6,975 mother-child pairs in the most recent [Nigeria Demographic and Health Survey 2018](#).

The primary analysis classified cooking fuel types as liquefied petroleum gas, kerosene and biomass fuel (including charcoal, wood, crops or

straw, and animal dung). In the survey, cooking fuels were categorized into low pollution fuel (electricity, liquefied petroleum gas and natural gas), kerosene and biomass fuel.

In both analyses, we observed that the impact of biomass use on birth weight was greater than the impact of liquefied petroleum gas or kerosene.

The results highlight the need for [public health intervention](#). Reducing adverse birth outcomes like [low birth weight](#) will depend on addressing regional disparities in the key determinants.

Our results showed that birth order, household size, and socio-economic status influenced cooking fuel choice, which is consistent with [existing literature](#). It is reasonable that the women least able to use clean cooking fuels will be those who:

- live in households of five or more people
- live in poorer households
- have given birth at least once before.

This could be due to cost and unreliable fuel supply. Women with more children or living in larger households might also cook with bigger pots, requiring longer cooking times, which increases their exposure to indoor air pollution from biomass fuel use.

Recommendations

We recommend that [pregnant women](#) attending antenatal care be asked about cooking fuels and given help to minimize prenatal biomass exposure. Some recent intervention trials conducted in low- and [middle-income countries](#), including Nigeria, have shown that transition from [biomass fuel](#) to cleaner fuels reduces air pollution and [improves](#)

[outcomes like birth weight](#).

Interventions to reduce [indoor air pollution](#) could include a stove subsidy, fuel subsidy, fuel ban and behavior change communication.

It's important first to understand why a household uses a particular cooking fuel.

It is also vital to [learn](#) from other household health interventions, such as sanitation and nutrition. These can enhance an understanding of what bars or enables adoption of a new method.

This article is republished from [The Conversation](#) under a Creative Commons license. Read the [original article](#).

Provided by The Conversation

Citation: Nigerian newborns weigh less if their mothers use biomass fuel, a major health risk (2022, October 7) retrieved 11 May 2024 from

<https://medicalxpress.com/news/2022-10-nigerian-newborns-mothers-biomass-fuel.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.