

# **Study finds no link between first-trimester diet quality and gestational weight gain among pregnant women in Nepal**

December 19 2022

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A study on the factors driving a rise in weight gain among pregnant woman in Nepal has ruled out poor diet quality in the first trimester as one of the major causes, according to team of researchers with the Rutgers School of Health Professions.

Historically, one of the greatest challenges facing pregnant women in Nepal and other [low-income countries](#) was undernourishment, a result of poverty. While that continues to be a concern, doctors are seeing some of the same issues confronting women in western nations: excessive [weight gain](#) and the [health risks](#) that come with it, such as [high blood pressure](#) and gestational diabetes.

Obstacles to addressing the problem included a lack of data, prompting a [pilot study](#) on gestational weight gain among pregnant women in Nepal by Shristi Rawal, an assistant professor of nutritional sciences at the Rutgers School of Health Professions; Kelly Martin, a 2021 graduate of the Doctor in Clinical Nutrition program and an assistant professor at the State University of New York College at Oneonta; and other faculty members. The findings were recently published in the research journal *BMC Nutrition*.

Rawal, who is from Nepal, said the impact of diet quality has been studied in wealthier countries, but had not been investigated in the context of many low-income countries, including Nepal.

"Studies on perinatal complications have largely been based on

Caucasian samples from [high income countries](#), and there has been a lack of diversity in general in terms of women represented in these studies," she said. "Pregnancy complications are increasing in Nepal, and no one was doing this work there. This is a first step."

The study tracked 101 pregnant women receiving prenatal care at Dhulikhel Hospital at Kathmandu University. Rawal and her colleagues administered a 21-item questionnaire to assess intake of foods from groups categorized either as healthy (such as whole grains, fruits and vegetables) or unhealthy (such as desserts, refined grains and red meats), to the participants.

The study looked at diet quality in the first trimester and the rate of gestational weight gain from second to the third trimester but found no link between diet quality in early pregnancy and rate of gestational weight gain. It did find that a high intake of red meat could be a potential factor in driving up weight.

"The most striking result is that so many had excessive rate of gestational weight gain," said Rawal. "If diet quality is not it, it could be daily caloric intake, physical activity or sleep that could be associated with gestational weight gain. It could be other diet, lifestyle or clinical factors. The next step is collecting more data and in a larger sample. "

The pilot study established the need to conduct a larger birth cohort study with hundreds to thousands of women seeking antenatal care at Dhulikhel Hospital.

A key part of the pilot study also was to evaluate the efficacy of a novel dietary screening tool in capturing valid dietary data in the target population of Nepalese pregnant women.

In a paper [published](#) in September in *Maternal and Child Health Journal*,

the researchers concluded that the 21-question dietary screen tool modified for use by pregnant Nepalese woman is a valid and reliable instrument for assessing the dietary intake of [pregnant women](#) in Nepal.

"This adds credence to the tool, and we now know that it has cultural applicability to the setting and that it measures what it is intended to measure," said Martin, who was the first author on both papers. "This is important for conducting further studies on diet quality in this population."

Rawal is in the midst of a study testing a mobile app that supports Nepalese women with [gestational diabetes](#) by providing them with information and tools to adopt diet and lifestyle modifications needed to self-manage their condition.

"By improving pregnancy health, we are not only preventing at the earliest possible point—in utero—but also disrupting the vicious intergenerational cycle of obesity and diabetes," Rawal said.

**More information:** Kelly Martin et al, Association between 1st trimester diet quality & gestational weight gain rate among pregnant women in Dhulikhel, Nepal, *BMC Nutrition* (2022). [DOI: 10.1186/s40795-022-00623-7](#)

Provided by Rutgers University

Citation: Study finds no link between first-trimester diet quality and gestational weight gain among pregnant women in Nepal (2022, December 19) retrieved 20 April 2024 from <https://medicalxpress.com/news/2022-12-link-first-trimester-diet-quality-gestational.html>

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