

# Determinants for implementing information provision on healthy eating and weight management in the antenatal care services in Nepal

**Shakun Sharma**<sup>1,2</sup>, Susmita Neupane<sup>1,2</sup>, Anisha Rai<sup>1</sup>, Nisha Rana<sup>1</sup>, Shreeshti Uchai<sup>3</sup>, Heather Melanie R Ames<sup>3</sup>, Rajani Shakya<sup>1</sup>, Meghnath Dhimal<sup>4</sup>, Biraj Karmacharya<sup>1</sup>, Kjersti Mørkrid<sup>2,3</sup>

<sup>1</sup> Dhulikhel Hospital, Dhulikhel, <sup>2</sup> University of Bergen, Norway, <sup>3</sup> Norwegian Institute of Public Health, <sup>4</sup> Nepal Health Research Council

**12<sup>th</sup> National Summit of Health and Population Scientists in Nepal**  
**April 10<sup>th</sup>–12<sup>th</sup>, 2026**

# **Title of the Research**

Determinants for implementing information provision on healthy eating and weight management in the antenatal care services in Nepal

# Author's Name and Affiliation

Shakun Sharma<sup>1,2\*</sup>, Susmita Neupane<sup>1,2</sup>, Anisha Rai<sup>1</sup>, Nisha Rana<sup>1</sup>,  
Shreeshti Uchai<sup>3</sup>, Heather Melanie R Ames<sup>3</sup>, Rajani Shakya<sup>1</sup>, Meghnath  
Dhimal<sup>4</sup>, Biraj Karmacharya<sup>1</sup>, Kjersti Mørkrid<sup>2,3</sup>

<sup>1</sup> Dhulikhel Hospital, Dhulikhel

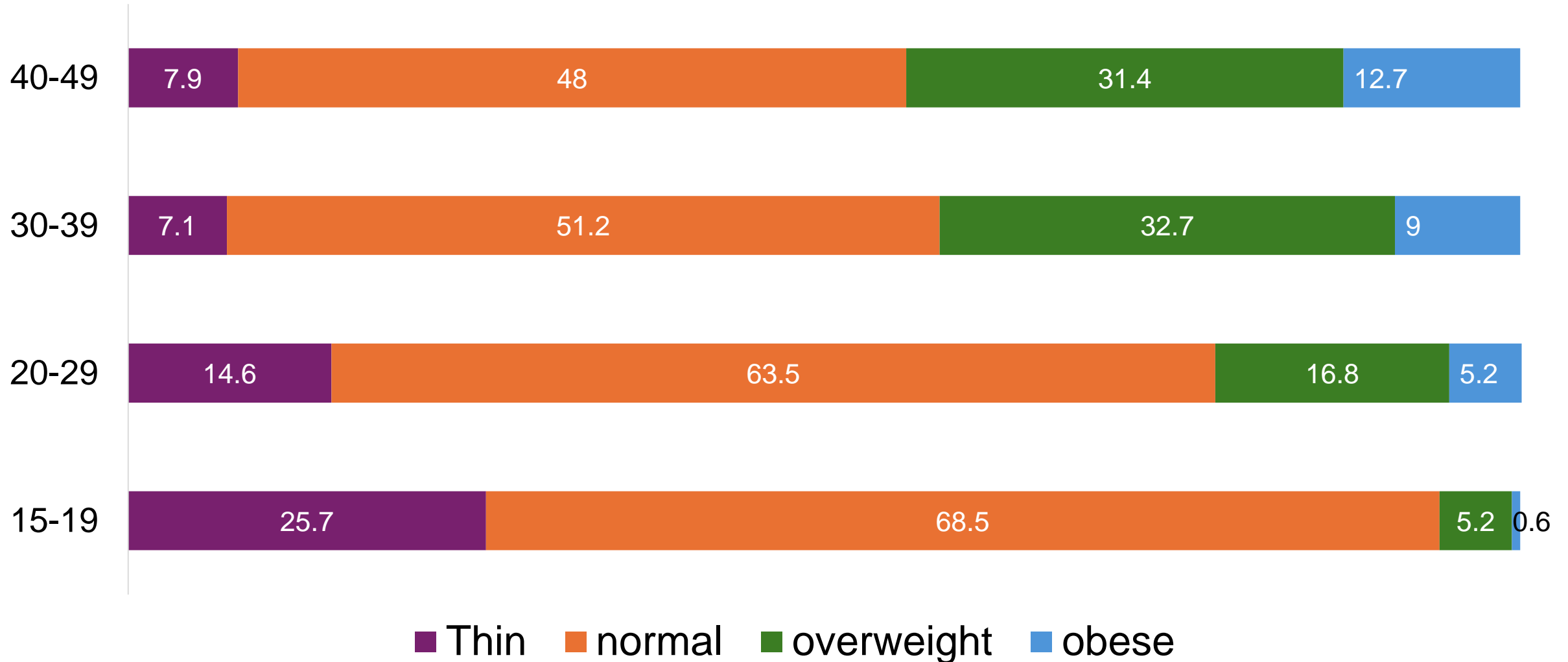
<sup>2</sup> University of Bergen, Norway

<sup>3</sup> Norwegian Institute of Public Health, Norway

<sup>4</sup> Nepal Health Research Council, Nepal

# Background

Nutritional status of Nepalese women aged 15-49 years



(NDHS 2022)

# Background

- Unhealthy diet and excessive weight gain during pregnancy are risks for
  - short- and long-term adverse pregnancy outcomes
  - future non-communicable diseases for both mother and her offspring
- World Health Organization (WHO) is developing global gestational weight gain standards
- The recommendations of the United States Institute of Medicine is widely used

Prepregnancy BMI	Total Weight Gain	
	Range in kg	Range in lbs
Underweight (< 18.5 kg/m <sup>2</sup> )	12.5-18	28-40
Normal weight (18.5-24.9 kg/m <sup>2</sup> )	11.5-16	25-35
Overweight (25.0-29.9 kg/m <sup>2</sup> )	7-11.5	15-25
Obese (≥ 30.0 kg/m <sup>2</sup> )	5-9	11-20

# Objective

- To explore antenatal care (ANC) service factors that influence the implementation of information provision on healthy eating and weight management for pregnant women in Nepal.

# Methodology


- Study districts: Gorkha, Nuwakot, Sarlahi
- Qualitative study
  - Key informant interviews (4 health facility in-charges)
  - Focus group discussions (4 with auxiliary nurse midwives (ANMs) and 4 with Female Community Health Volunteers (FCHVs))
- Framework analysis: Developed a Theoretical framework
  - Exploration, Preparation, Implementation, Sustainment (EPIS) implementation framework
  - WHO's Health System framework comprising six building blocks: leadership and governance, service delivery, health workforce, health system financing, medical products, vaccines & technologies and health information systems

# Results

- Counseling on one additional meal during pregnancy and two extra meals during the postpartum period (regardless of BMI) with a focus on dietary diversity

## मातृ पोषण

**खलफलका बिषयहरू**  
▶ गर्भवती तथा सुत्केरी अवस्थामा पोषण



गर्भवती तथा सुत्केरी महिलाले कति पटक खाना/ खाजा खाने ?	आमा र बच्चालाई के के फाइदाहरू हुन्छ ?
गर्भवती महिलाले दिनमा साविकको भन्दा थप १ पटक खाना वा खाजा खाने ।	<ul style="list-style-type: none"><li>• आवश्यक मात्रामा पोषिलो खाना खानाले गर्भको शिशुको दिमाग राम्रोसँग (३० प्रतिशत) विकास हुन्छ ।</li><li>• आमाले खाएको खानाले नै गर्भको शिशुले खाना पाँउछ र शिशुको राम्रो बृद्धि विकास हुन्छ ।</li><li>• आमाको शरीर स्वस्थ भई शिशु जन्माउन सजिलो हुन्छ ।</li></ul>
सुत्केरी महिलाले दिनमा साविकको भन्दा थप २ पटक खाना वा खाजा खाने ।	<ul style="list-style-type: none"><li>• शिशु जन्मेको ६ महिनासम्म उसलाई चाहिने सम्पूर्ण आहार आमाको दुधबाट पाउने हुँदा आमाले प्रशस्त मात्रामा पोषिलो खानेकुराहरू खानुपर्दछ ।</li><li>• पोषिलो खाना खानाले गर्भवती तथा सुत्केरी अवस्थाबाट साविकको अवस्थामा फर्कनलाई सहयोग गर्दछ ।</li></ul>

**\*गर्भवती, सुत्केरी र स्तनपान गराई रहेकी महिलाले हरेक दिन १० खाना समूह मध्यबाट कम्तिमा ५ प्रकारका खाना समावेश गर्नुपर्छ ।**

११

“We advise them to eat one extra meal a day (during pregnancy). We tell them it should include four types of food — four food groups. (हरेक बार खाना चार)”

# Results

- Most service providers not updated with the latest guideline/resource: ANC to PNC continuum of care
- Body mass index (BMI) calculation and BMI based weight gain counseling not common


*“We do measure weight, but sometimes BMI isn’t calculated. Some might not even know what BMI is. (laughs) But if someone has learned or read about it, they might figure it out based on height and weight and talk about it.”*

-Health facility in-charge



# Results

HMIS 3.5

प्रयोगशाला परीक्षण										 नेपाल सरकार स्वास्थ्य तथा जनसंख्या मन्त्रालय स्वास्थ्य सेवा विभाग स्वास्थ्य व्यवस्थापन सूचना प्रणाली							
Date (DD/MM/YY)	Hb	Albumin	Urine		Blood Sugar	HBsAg	VDRL	Retro- virus	Other	मातृ तथा नवशिशु स्वास्थ्य कार्ड							
			Protien	Sugar						स्वास्थ्य संस्थाको नाम	जिल्ला	नगर/गाउँपालिका	वडा नं.				
										मुल दर्ता नं.	सेवा दर्ता नं.	ORC दर्ता नं.	दर्ता मिति				
													गते	महिना	साल		
स्वास्थ्य संबन्धी मुख्य मुख्य समस्या										गर्भवती महिलाको व्यक्तिगत विवरण							
सुत्केरी सेवा										नाम, थर	उमेर	उचाई (से.मि.)					
आमालाई भिटामिन ए दिएको मिति										जिल्ला	नगर/गाउँपालिका		वडा नं.				
गते	महिना	साल	आमालाई आईरन चक्कि दिएको संख्या			गाउँ टोल	सम्पर्क नं.		रक्त समुह								
सुत्केरी जाँचको (PNC) विवरण										अधिल्ला गर्भहरूको विवरण							
जाँच पटक	मिति			आमाको अवस्था	बच्चाको अवस्था	उपचार/सल्लाह	गर्भनिरोध साधन प्रयोग	सेवा प्रदायकको नाम थर र सही	अधिल्ला गर्भहरूको क्रम	गर्भको विवरण				जिवित बच्चाको हालको उमेर	गर्भको जटिलता	प्रसूतीको किसिम	
	ग	म	सा							जिवित	मृत जन्म	अवधि नपुगेको (<३७ हप्ता)	जुम्ल्याहा				गर्भपतन
सुत्केरी भएको २४ घण्टामा	गते	महिना	साल						पहिलो								
सुत्केरी भएको तेश्रो दिन	घरमा	गते	महिना	साल					दोस्रो								
	संस्था	गते	महिना	साल					तेस्रो								
सुत्केरी भएको ७-१४ दिन	घरमा	गते	महिना	साल													
	संस्था	गते	महिना	साल													
सुत्केरी भएको ४२ औं दिन	गते	महिना	साल														
थप जाँच	गते	महिना	साल	आमा तथा बच्चाको अवस्था, उपचार सल्लाह पनि साधन प्रयोग				अधिल्ला गर्भमा टि.डी खोप लगाएको विवरण				टि.डी. १	१	टि.डी. २	२	टि.डी. २+	३
कार्ड तयार गर्ने स्वास्थ्यकर्मीको										नाम र थर		पद	दस्तखत	मिति			
										स्वास्थ्य संस्थाको सम्पर्क नं.	एम्युलेन्स सेवा सम्पर्क (फोन नं.)						

“Rather than not having one (height board), we tried to improvise by carving a measuring scale onto the wall and using that as a height board. But the MSS wouldn’t accept it, they insisted on a proper, standalone height board and refused to recognize our wall-carved version. We even offered to stick a printed scale to the wall, but MSS still wouldn’t approve it.”

# Results

*“This (overweight and obesity) issue is less (common) in primi and high in multi. The same primi when in Postnatal period do not lose weight and go for next baby...”*

-ANM

# Conclusion

- Access to latest service guidelines and updates [*Focus on ensuring universal access*]
- Weight gain recommendation varies across BMI categories but “blanket approach” to nutrition counselling [*consider overweight and obese women, risk of excessive gestational weight gain*]
- Measuring height, calculating BMI and BMI based weight gain counseling were not common though they are expected parts of ANC service provision [*consider logistics, service providers’ skills*]

# Acknowledgement

This study is a part of a larger project, “Implementing a life course approach in antenatal and postnatal care settings for prevention and reduction of non-communicable disease risks in Nepal (IpreventNCD)”

## Participating institutions



# Presenter

- Currently a PhD candidate at the University of Bergen Norway, I have my Master's and Bachelor's degrees in Public Health.
- With 10+ years of professional experience in the fields of maternal and child health, nutrition and research, I have also developed a strong interest in the areas of non-communicable diseases and implementation research over the years.



**THANK YOU**