



# Sleep Interventions During Postpartum in Women With a History of Gestational Diabetes: A Scoping Review Protocol

Kelley Quach<sup>1</sup>, Kapuaola Gellert<sup>2</sup> Marjorie Mau<sup>2</sup>, Michelle Meyer<sup>3</sup>, Melissa Kahili-Heede<sup>4</sup>

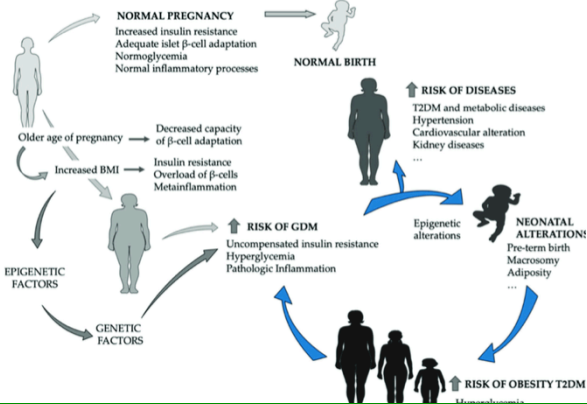
<sup>1</sup>Department of Tropical Medicine, Medical Microbiology, and Pharmacology, John A. Burns School of Medicine, University of Hawaii at Manoa; <sup>2</sup>Department of Native Hawaiian Health, John A Burns School of Medicine, University of Hawai'i at Mānoa; <sup>3</sup>Department of Emergency Medicine, School of Medicine, University of North Carolina-Chapel Hill; <sup>4</sup>Health Sciences Library John A. Burns School of Medicine, University of Hawaii at Manoa



## INTRODUCTION

Pregnancy complications, including gestational diabetes (GDM), are linked to an increased risk of cardiovascular disease (CVD) and type 2 diabetes mellitus (DM) later in life, and sleep deficiency (i.e., sleep duration and quality) is an emerging risk factor for GDM. Women with diabetes are more likely to develop CVD, which is the leading cause of death in women in the United States. Women with a history of GDM are seven times more likely to develop DM after delivery than women who had a normoglycemic pregnancy. Diabetes type 1 or type 2 diagnosed before pregnancy increases the risk of congenital anomalies, stillbirth, and being large for gestational age in an infant. DM during pregnancy can cause complications in 4% of pregnancies and increase the risk of developing postpartum diabetes. Ethnic minority women are also more likely to develop associated adverse outcomes such as type 2 diabetes, neonatal macrosomia, and hypoglycemia later in life. Sleep deficiency is becoming an increasingly important risk factor for GDM and DM, and women appear to be more vulnerable to the effects of sleep deficiency on cardiometabolic risk and mortality.

Sleep is a vital biological function that regulates the body's metabolism. Sleep deprivation causes an individual to sleep less than the average amount of time for an adult. Pregnancy and the postpartum period provide an opportunity to identify women at high risk for DM16 and other cardiometabolic risk factors. Despite the fact that nearly half of women with a history of GDM develop Type 2 DM, little is known about sleep deprivation and glycemic status postpartum. The study of sleep deficiency and gestational diabetes is important because it is a public health endemic that, if prevented, could reduce the number of women who have gestational diabetes.



**Figure 1:** Flow diagram of the characteristics following gestational diabetes mellitus in pregnancies.

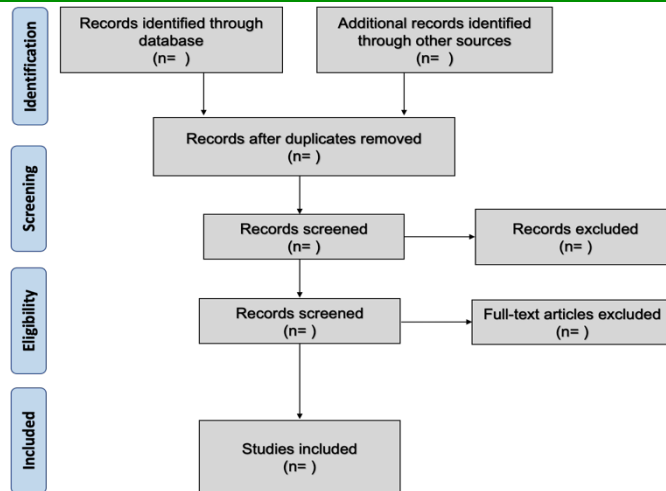
## OBJECTIVE

**Objective:** This scoping review aim is to determine and examine the effects of sleep interventions for women with a history of gestational diabetes.

**Inclusion criteria:** Eligible studies will include postpartum women with a history of gestational diabetes. All sleep interventions during the postpartum period will be included, and all types of research will be considered. Mothers between the ages of 18 and 45 will also be considered for inclusion.

# The effects of sleep deprivation in mothers with a history of Gestational Diabetes Mellitus increases the risk of cardiovascular diseases and mortality

## MATERIALS AND METHODS



**Figure 2:** Diagram of Joanna Briggs Institute (JBI) Methodology for inclusion of scoping review and protocol

## MATERIALS AND METHODS

Joanna Briggs Institution (JBI) Methodology for scoping reviews reflects the background, scoping review question, and inclusion criteria. Sources published in English from 2010 to present will be screened in the study as evidence. Additional gray literature sources will include Cochrane Library, Scopus, Embase, and Emcare. Critical appraisal of the literature will be conducted and tabulated, accompanying narrative summaries that will be presented in the final review. Main elements and key concepts of the literature articles were conceptualized for the background.

## PRELIMINARY RESULTS FROM THE LITERATURE

- Women with type II diabetes are at an increased risk of cardiovascular disease (Sullivan, 2012)
- Mothers with a history of Gestational Diabetes are seven times more likely than women who had a normoglycemic pregnancy to develop Type 2 Diabetes after giving birth (Sullivan, 2012)

## NEXT STEPS

- Continue to expand and build on the findings of gestational diabetes and sleep interventions for the scoping review.
- Begin conducting the scoping review on Sleep Interventions During Postpartum in Women With a History of Gestational Diabetes

## ACKNOWLEDGEMENTS

I'd like to thank my mentor, Dr. Kapuaola Gellert for guiding me along this summer journey of research. I'd like to also thank Dr. Vivek R. Nerurkar, Dr. Angela Sy, Boonyanudh Jiyarom, and Rennsilve Salomon for their assistance throughout the MHRT program. I had a fantastic time working in this program and made lifelong friends with my classmates. Thank you to the support of the Minority Health International Research Training (MHIRT) Program at the University of Hawaii through the NIMHD, National Institutes of Health (NIH) grant (T37MD008636-08).