Center for Asian Health Promotion and Equity (CAHPE)

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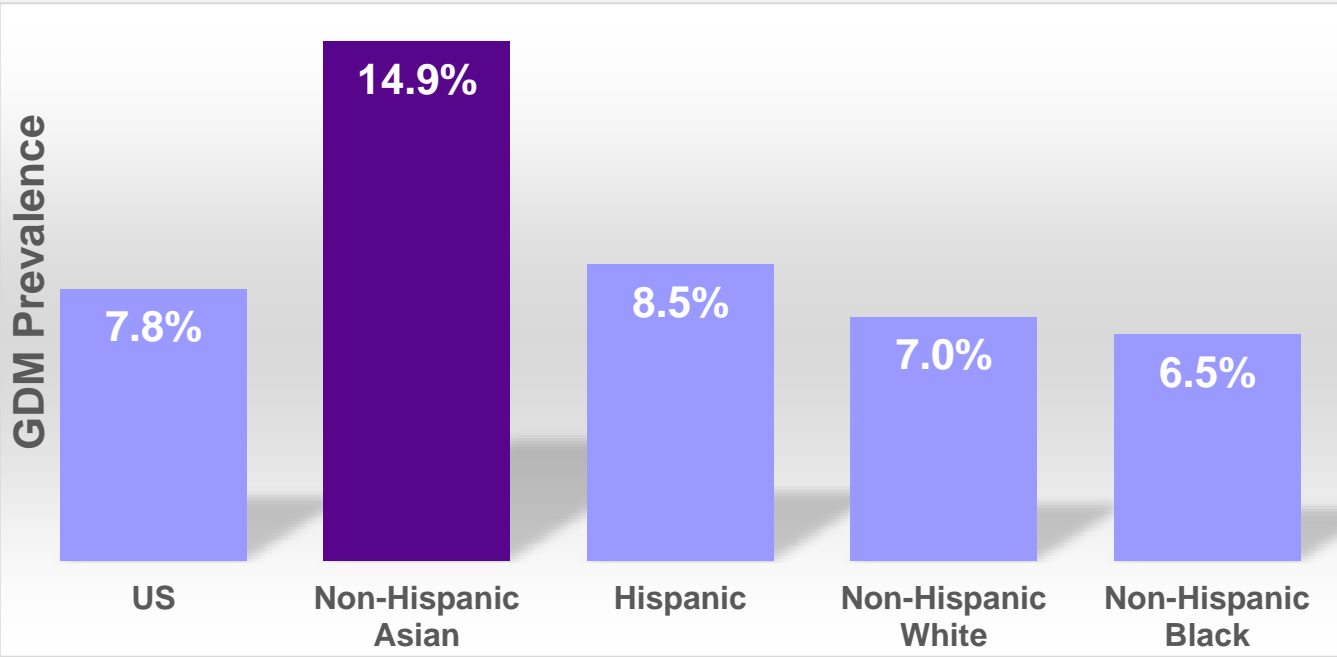
NYU | MEYERS

A suboptimal cardiometabolic risk profile and 24-hour activity pattern were identified for Chinese Americans with prior gestational diabetes.

Cardiometabolic Health and Accelerometer-Based 24-Hour Activity in Chinese American Women with a History of Gestational Diabetes

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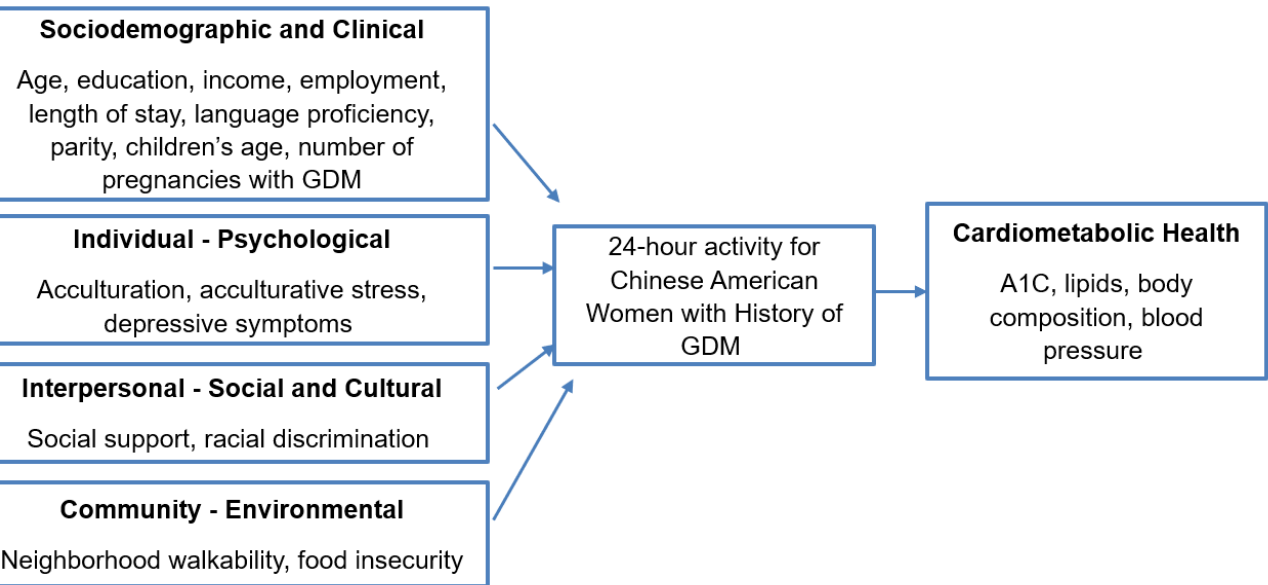NYU Meyers College of Nursing

GDM PREVALENCE IN THE US, 2020

(bar chart: US 7.8%, Non-Hispanic Asian 14.9%, Hispanic 8.5%, Non-Hispanic White 7.0%, Non-Hispanic Black 6.5%)

Background & Objective

Chinese Americans are disproportionately affected by gestational diabetes mellitus (GDM), yet their cardiometabolic health and 24-hour activity (physical activity, sedentary behavior, and sleep) after GDM are rarely studied.
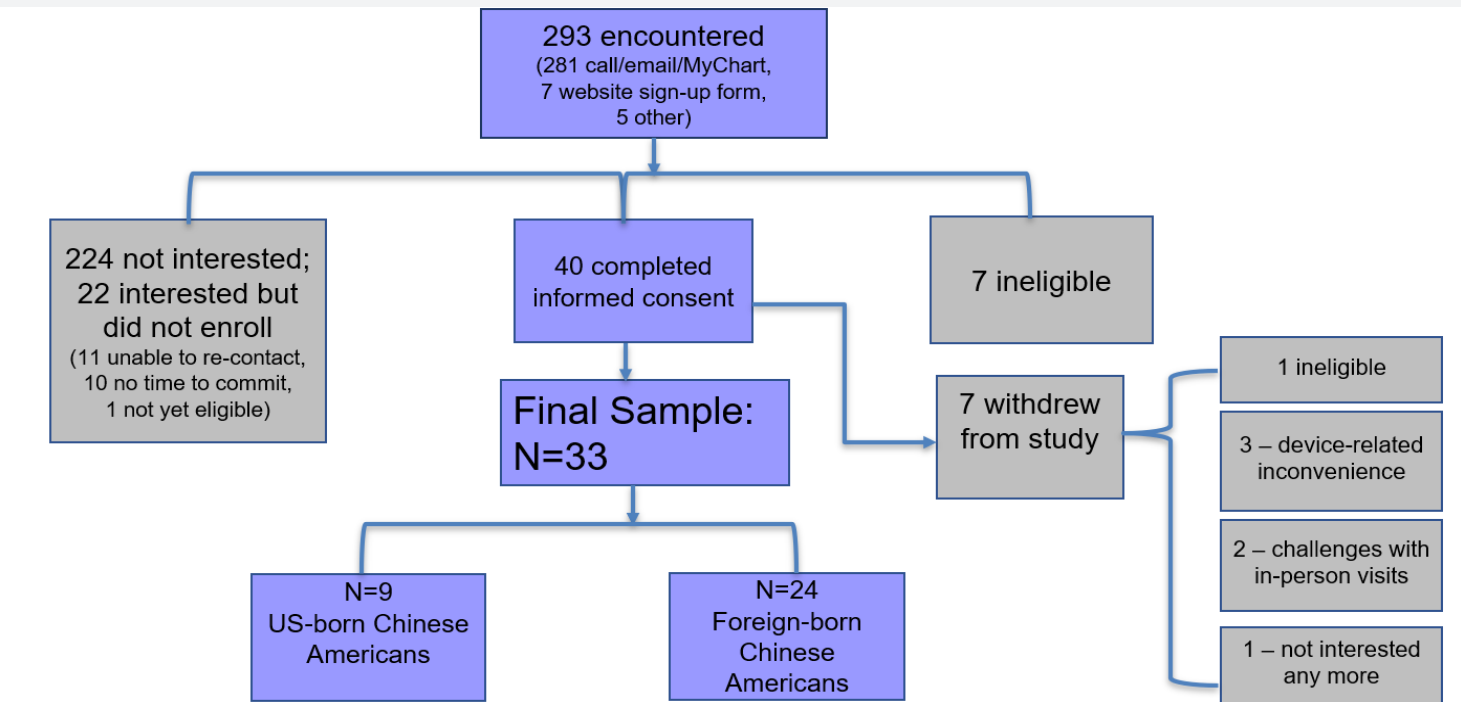
Aim: To describe the cardiometabolic risk profiles and accelerometer-based 24-hour activity of Chinese Americans with a history of GDM.

Conceptual Framework

Sociodemographic and Clinical
Age, education, income, employment, length of stay, language proficiency, parity, children's age, number of pregnancies with GDM

Individual - Psychological
Acculturation, acculturative stress, depressive symptoms

Interpersonal - Social and Cultural
Social support, racial discrimination

Community - Environmental
Neighborhood walkability, food insecurity

→ 24-hour activity for Chinese American Women with History of GDM → **Cardiometabolic Health** A1C, lipids, body composition, blood pressure

Findings

Socio-Demographic and Clinical Characteristics (N=33)

Variables	Mean (SD) or N (%)
Age	38.1 (3.3)
Education - High school or less	7 (21.2%)
Employed	26 (78.8%)
Household income > $40K	22 (68.8%)
Birthplace Mainland China	21 (63.6%)
Chinese speaking only	8 (24.2%)
BMI (kg/m2)	24.2 (5.3)
Postpartum age (years)	2.6 (1.5)
Depression risk (EPDS ≥10)	13 (39.4%)

(Flow diagram: 293 encountered (281 call/email/MyChart, 7 website sign-up form, 5 other); 224 not interested; 22 interested but did not enroll (11 unable to re-contact, 10 no time to commit, 1 not yet eligible); 40 completed informed consent; 7 ineligible; Final Sample: N=33; 7 withdrew from study → 1 ineligible, 3 – device-related inconvenience, 2 – challenges with in-person visits, 1 – not interested any more; N=9 US-born Chinese Americans; N=24 Foreign-born Chinese Americans)

Methods / Pilot Design

- Cross-sectional design; feasibility pilot study
- N = 33; Chinese American mothers (0.5-5 years postpartum) recruited between 2023-2024 in the greater NYC area
- NYU Langone IRB approval
- Recruitment - Datacore, community partnership, and other
- Data collection - Wearing accelerometers, lab visit, online survey

Cardiometabolic Health Profile (N=33)

Variables	Mean (SD) or N (%)
HbA1c (%)	5.3 (0.3)
Fasting glucose (mg/dL)	94.9 (8.5)
Prediabetes – Yes	**9 (27.3%)**
Lipid Dysregulation - Yes	**17 (51.5%)**
BMI (kg/m²)	**24.2 (5.3)**
Waist circumference (cm)	80.7 (11.7)
Body fat %	33.7 (7.7)
Elevated BP – Yes	**7 (21.2%)**

Notes: Prediabetes = HbA1c ≥ 5.7% or fasting glucose ≥100 mg/dL, Lipid Dysregulation = Total cholesterol ≥200, LDL ≥130, or HDL <50 mg/dl, Elevated Blood Pressure/Hypertensive = Systolic BP ≥130 or Diastolic BP ≥ 80 mmHg

24-Hour Activity Pattern (N=33)

	Mean (SD) or Median (IQR) or N (%)
#days with valid Actigraphy PA data (waist data)	7.0 (0.8)
Minutes of MVPA per week	**132.4 (90.5, 272)**
Average steps per day	7508.9 (2684.6)
Meet MVPA Guidelines - Yes	**15 (46.9%)**
Average sedentary time per day (hr)	10.2 (1.5)
#days with valid Actigraphy sleep data (wrist data)	7.9 (0.9)
Total time in bed	7.9 (0.9)
Average sleep hours per day	**6.3 (0.8)**
Sleep efficacy	80.1% (6.3%)
Meet Sleep Guidelines - Yes	**6 (18.2%)**

Notes: Meet MVPA guidelines = ≥150 minutes of MVPA per week, Meet sleep guidelines = ≥7 hours per night.

Discussion & Conclusions

- To summarize, we have identified a suboptimal cardiometabolic risk profile, a suboptimal 24-hour activity pattern for them, as well as suboptimal mental health.
- Despite a small sample size, we identified this group as being at very high risk for cardiometabolic diseases at such a young age.
- We also identified multiple potential targets for future intervention efforts, including improving their lipid profile, increasing physical activity, enhancing sleep health, and addressing their mental health needs.

(logos: NYU CTSI, FAMILY HEALTH CENTERS AT NYU LANGONE, CPC 華人策劃協會 ADVANCING OUR COMMUNITY)