Self-management Counseling to Reduce Cardiometabolic Risk for T2D in Reproductive Age Women: A Survey of Primary Care Practices

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Purpose/Background

Purpose: to analyze the frequency of recommended well-woman/interpregnancy primary care practices related to reducing risks for developing type 2 diabetes (T2D) in reproductive age women to promote lifelong health and prevent undiagnosed pregestational T2D

Background:

- Interpregnancy care occurs during the time between pregnancies in women of reproductive age to promote health prior to future pregnancies and throughout the lifespan (ACOG, 2019; Louis et al., 2019)
- Well-woman/interpregnancy care is essential to identify cardiometabolic risks in reproductive age women and to implement diabetes prevention, early diagnosis, and self-management education/support interventions to optimize glycemia before conception
- Undiagnosed T2D creates future pregnancy risks (e.g., spontaneous abortion, congenital malformations, macrosomia, fetal demise, maternal glycemic instability, maternal chronic diabetes complications) (Jovanovic et al., 2019; Nakanish et al., 2021)
- Healthy diet, physical activity, and healthy weight contribute to ↓ risks for developing T2D (NIDDK, 2016)
- Social determinants of health (SDOH) barriers include poor living conditions, low income, low education, poor food/health care access, and social factors, which ↑ risks for T2D (Hill et al., 2013; Hill-Briggs et al., 2021)
- Limited health literacy and numeracy are barriers to patient self-management (White et al., 2010)
- Breastfeeding is associated with ↓T2D rates & long-term cardiovascular health benefits (Rameez et al., 2019)
- Gestational diabetes mellitus (GDM) history ↑ risks for developing T2D, especially within 6 years after the affected pregnancy (Song et al., 2018)
- Support from primary care providers for healthy lifestyles is needed to reduce risks for T2D (Portero McLellan et al., 2014)

Research Questions

1. How often do primary care nurse practitioners (NPs) perform recommended well-woman/interpregnancy practices to lower cardiometabolic and other risks for developing and managing pregestational T2D in reproductive age women?

2. Are primary care NP professional, practice, or patient characteristics associated with consistently performing diabetes preventative well-woman/interpregnancy practices?

Methods

- Random systematic sampling with 3 separate waves of 10,000 emails were sent to APRNs licensed in Florida using a publicly available email list
- Florida primary care NPs (n=51) meeting criteria of caring for reproductive-age women were recruited to anonymously complete a web survey

- Measurement:
  - 57-item web survey for a cross-sectional study about performing NP practices involving well-woman/interpregnancy care for women of reproductive age completed by participants
  - Survey included 9-items derived from recommended well-woman/interpregnancy primary care practices related to managing or reducing risks for T2D
  - Items were measured with a 5-point Likert-type scale with response options: Never, Rarely, Sometimes, Often, Always
  - Response options were dichotomized as "Often/Always" vs. "Sometimes/Rarely/Never" for further analysis

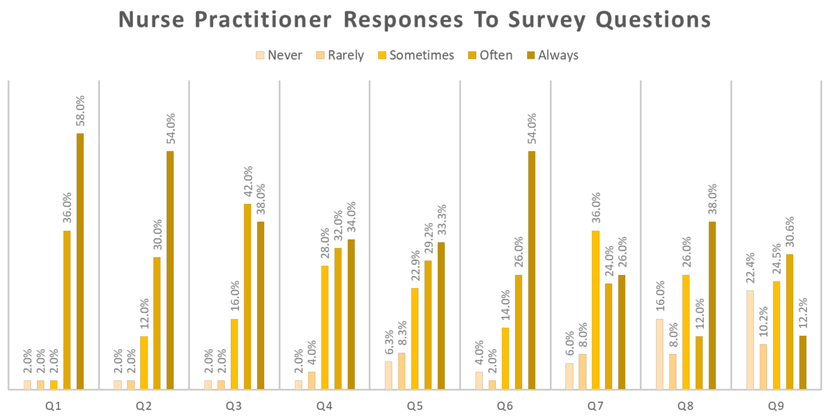
- Data Analysis:
  - Descriptive statistics characterized the sample & described frequency of NP primary care practices
  - Chi square tests analyzed NP care practice frequencies & associations w/ NP professional/practice/patient population characteristics

Results

- 1 case w/ missing data was omitted from analysis (n=50); 36% of sample from non-white race/ethnicity & 94% female; 20% doctoral degree
- 60% reported ≤ 2 hours education about primary care for women with GDM history; 52% had < 10 years NP experience
- All except for 9 NPs practiced in Florida; 52% of NP practices were in urban settings; 72% of NPs provided care to a majority (> 50%) non-white race/ethnicity patient population

- Less than two-thirds of NPs "Often/Always" performed 3 recommended well-woman/interpregnancy primary care practices: tailored guidance on weight recommendation (66%); SDOH assessment (62.5%); and GDM history screening (42.9%)
- Only 50% "Often/Always" counseled about reproductive life planning and/or breastfeeding benefits

- NPs caring for patients in urban cluster/rural settings and/or >20% patients with low literacy "Often/Always" assessed SDOH barriers to health care (X^2 (1) = 7.49; p = .006 and X^2 (1) = 9.74; p = .002, respectively) more than in urban settings and/or fewer patients with low literacy
- NPs with >2 hours GDM education (95%) "Often /Always" assessed health literacy/numeracy/language barriers vs. NPs (70%) with ≤ 2 hours GDM education (X^2 (1) = 4.69; p = .03); Doctoral degree NPs (100%) vs. MSN degree NPs (75%) "Often/Always" performed this practice.



Note: **Survey questions – How frequently do you:**
Q1: counsel on healthy diet?
Q2: counsel on physical activity to meet Physical Activity Guidelines for Americans?
Q3: prescribe exercise?
Q4: provide tailored guidance on weight recommendations?
Q5: establish potential barriers to care associated with social determinants of health including health care access?
Q6: provide culturally sensitive care and assess for barriers including language, health literacy, and numeracy?
Q7: initiate discussions on reproductive life planning?
Q8: counsel on benefits of breastfeeding?
Q9: incorporate gestational diabetes mellitus history screening questions into post-pregnancy preventative and episodic visits?

Discussion & Conclusions

Potential factors contributing to frequency of NP well-woman/interpregnancy primary care related to ↓ T2D risks:

- Most NPs "Often/Always" counseled about healthy diet and physical activity guidelines – possibly due to positive impact on overall health, including ↓ risks for T2D during interpregnancy and lifespan (Healthy People 2030; WHO, 2023)
- Some primary care providers may be reluctant to provide tailored guidance on weight recommendations due to lack of confidence in treatments or perceptions that weight guidance is ineffective, inappropriate, or negatively affects interactions/relationships w/ patients (Warr et al., 2021)
- NP lack of knowledge about need for preconception T2D assessment may explain why only 42.9% "Often/Always" screened for GDM history in reproductive age women
- Inconsistent counseling about reproductive life planning and/or breastfeeding benefits may be related to providers' lack of knowledge about positive impact on health and development/management of T2D during interpregnancy
- Providing care to patients with higher % of low literacy may contribute to NPs assessing SDOH barriers to health care access more often because low literacy is associated w/ lower education attainment (Coughlin et al., 2020)
- NPs may assess SDOH barriers to health care access in urban clusters/rural setting practices more often due to less availability of public transportation compared to patients in urban settings
- More (> 2 hours) GDM care education and doctoral education may provide information about need to routinely assess health literacy/numeracy/language barriers to inform patient education strategies involving self-care/management

Recommendations:

- Targeted education is needed for consistent well-woman/interpregnancy care practices to promote health & ↓ pregnancy risks associated with pregestational T2D
- Implementation of policies to standardize recommended well-woman/interpregnancy primary care practices
- Additional research with larger sample of primary care NPs including other geographic regions is needed to determine if these preliminary findings are generalizable

References available on request