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Factors associated with attendance for pre-pregnancy care and reasons for non-attendance among women with diabetes

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ABSTRACT

Aims: To describe factors associated with the uptake of diabetes-specific pre-pregnancy care (PPC), determine the perceived helpfulness of attending, reasons for non-attendance and intention to seek PPC in the future.

Methods: A cross-sectional 66-item survey was administered to Australian women with type 1 or type 2 diabetes mellitus (DM) aged 18–50 years.

Results: Of 429 eligible women, 54% reported having attended PPC. In multivariable logistic regression analysis, having Type 1 DM [adjusted OR 1.89, 95% CI (1.07, 3.33)], being married or in a defacto relationship [OR 2.43 (95% CI 1.27, 4.65)], tertiary educated [OR 1.91 (95% CI 1.27, 2.88)] or employed [OR 1.80 (95% CI 1.14, 2.82)] were associated with being more likely to attend PPC. Sixty eight percent (68%) rated attending PPC as helpful. A lack of awareness about the availability of PPC (48%) and unplanned pregnancy (47%) were the main reasons for non-attendance. Of women with future pregnancy plans, 43% were aware of local services offering PPC and 84% indicated they would attend PPC if available.

Conclusion: Australian women who attend PPC differ by type of diabetes and socioeconomic characteristics. Initiatives are needed to address this disparity and encourage all women with diabetes to plan and prepare for pregnancy. Reasons reported for non-attendance suggest that strategies to increase awareness about the availability of diabetes-specific PPC and the risks of unplanned pregnancy are warranted.

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1. Introduction

Women with Type 1 and Type 2 diabetes mellitus (DM) are at increased risk for adverse pregnancy outcomes, with rates of miscarriage, stillbirth and congenital anomalies reported to be 3–10 times higher than those in the background population [1–3]. Research has shown that these risks can be minimised through appropriate family planning and diabetes-specific pre-pregnancy care (PPC) [4–6].

PPC refers to diabetes care specifically targeted at optimising diabetes management prior to conception [7]. This includes a multidisciplinary review of diabetes management and education to achieve recommended pre-pregnancy glycaemic targets, diabetes complication screening and medication review, as well as high dose folic acid supplementation [8,9].

International guidelines support the implementation of PPC for all women with pre-existing diabetes [9–11], however evidence suggests that many women with diabetes do not plan their pregnancies nor seek PPC [6]. Rates of PPC attendance between 10 and 28% have been reported [2,12,13], with cited reasons for non-attendance including negative experiences with health professionals, conceiving earlier than anticipated, desire for a ‘normal’ pregnancy, as well as practical and financial issues [14].

To date, there has been limited research to understand the reasons why Australian women with diabetes do or don’t attend PPC. Zhu et al. in a study of women with diabetes at a tertiary level obstetric hospital in Western Australia reported that only 55% of pregnancies among women attending their service were planned and almost 60% of participants were unaware of the availability of PPC [15]. In the same study, glycated haemoglobin (HbA1c) was lower among those with a planned pregnancy [7.5 vs 8.9% (58 mmol/mol vs 74 mmol/mol)]. In a study across two metropolitan hospitals in the state of Victoria, Komitis et al. reported that exposure to a greater number of cues to attend PPC, along with older age and not having children predicted PPC uptake in their sample [16]. While these studies provide insight into some of the issues regarding PPC attendance for Australian women, they are limited by small samples size and convenience sampling. To date, factors associated with uptake of PPC and reasons for non-attendance have not been reported in a national sample of Australian women with diabetes. Although similar studies have been conducted internationally, it cannot be assumed that these results can be generalised to Australia, because of differences in health care systems and specific challenges in health care delivery, such as remoteness.

The aims of the current study were therefore to (1) describe factors associated with the uptake of PPC in a national sample of Australian women; (2) determine the perceived helpfulness of attending; (3) better understand the reasons for non-attending and; (4) describe intention to seek PPC in the future.

2. Methods

2.1. Participant recruitment

A random selection of 6000 women registered with the National Diabetes Services Scheme (NDSS), who met the inclusion criteria and had consented to be contacted for research, were invited to participate. The NDSS is an initiative of the Australian Government and provides subsidised diabetes-related products, information and support. Registration is free and open to all Australians with a confirmed diagnosis of diabetes. Registrants were eligible to participate in the current study if they were female, between 18 and 50 years, had Type 1 or Type 2 DM and able to read English. Participant eligibility included women to age 50 years, due to evidence that women with diabetes giving birth were more likely to be aged >40 years than Australian women overall [17].

NDSS registrants from areas of low socioeconomic status (SES) as measured by postcode, were oversampled to overcome the expected lower response rate and increase the representativeness to the entire NDSS database. Deakin University Human Research Ethics Committee approved the study (2014–134) and Diabetes Australia Ltd. conducted the NDSS database search of registrants who met the inclusion criteria. Additional survey promotion was undertaken through flyers sent to Diabetes Australia agents, social media and online diabetes networks. The NDSS *Contraception, Pregnancy & Women’s Health Survey* was available online for 12 weeks.

Eligible women were posted an invitation letter, a plain language statement and a flyer with an URL to log on to an online survey. There was the option to request a paper survey. All invited NDSS registrants were sent a reminder postcard three weeks after the initial letter. Women who completed the online survey read an electronic plain language description of the study and provided consent. Return of the paper copy of the survey was considered to be implied consent.

Data from all women who met the inclusion criteria ($n = 90,699$) were used to determine whether respondents differed from those who did not consent to be contacted for research purposes or did not participate.

2.2. Survey design

Survey development was informed by published diabetes and pregnancy guidelines [9], an extensive literature review and expert consultation. The 66-item survey (available in full upon request from the corresponding author) covered a range of pregnancy related topics and included open-ended questions, fixed-choice responses and Likert scales. In addition to the study-specific items, validated measures of knowledge and beliefs were adapted from the Reproductive Health and Behaviours Questionnaire [18] and Holmes et al. [19], with permission of the original authors. Results

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