

Penetration and participation rates of women at risk of gestational diabetes in mHealth coaching diabetes prevention and weight management intervention: The Bump2Baby and Me study

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Background

Gestational diabetes (GDM) affects up to 18% of pregnancies and increase both a woman's and child's risk of developing non-communicable diseases such as type 2 diabetes. Lifestyle interventions during pregnancy can limit excess gestational weight gain and reduce non-communicable disease risk such as diabetes and obesity¹. However, existing interventions have not moved beyond the research phase to consider routine health implementation. Study reach and participation rates are rarely recorded.²

IMPACT DIABETES B2B aims to demonstrate the real-world implementation of an evidence-based system of care for the prevention of diabetes, overweight and obesity when delivered 'at scale' in antenatal settings. **Bump2Baby and Me** is the **multicentre randomised controlled trial (RCT)** central to the project that aims to investigate a mHealth coaching program for women who are at high risk of developing GDM. The trial registration is ACTRN12620001240932.

Methodology

Study Design

Women attending maternity services in Dublin, Granada, Melbourne and Bristol for their first antenatal appointment were screened for eligibility. Eligible women received further trial information and were invited to participate (Figure 1).

Participants are enrolled at approx. 12 weeks' gestation and randomised on a 1:1 basis into the **intervention** or **control** arm.

- **Intervention:** mHealth coaching delivered via a smartphone application, using a mixture of synchronous and asynchronous video and text messaging to allow for personalised support and goal setting with a personal health coach from early pregnancy to 12 months postpartum.
- **Control:** Standard information provision and usual antenatal and postnatal care.

Participants

Women attending for their first antenatal appointment were screened for study eligibility using the validated Monash GDM screening tool³.

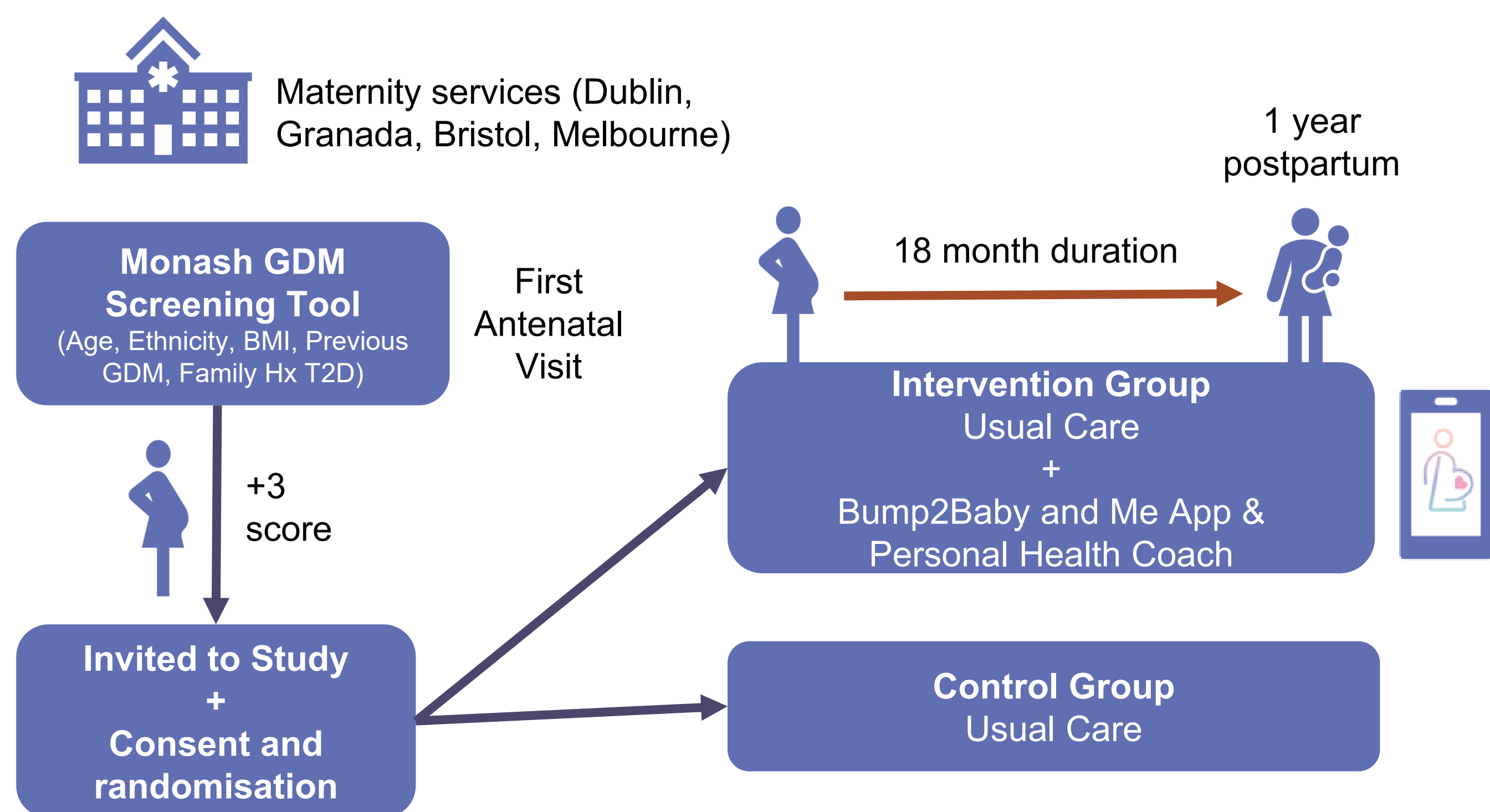


Figure 1: Bump2Baby and Me Study Recruitment Process

Results

Table 1: Penetration and Participation Data for Ireland, UK, Spain and Australia

Site	Screened (n)	Eligible (n)	Penetration rate (%)	Invited to trial (n)	Enrolled in trial (n)	Participation Rate (%)
Dublin	653	373	57.12	354	193	54.52
Bristol	1336	519	38.85	360	201	55.83
Granada	1006	319	31.71	203	188	92.61
Melbourne	1398	463	33.12	463	127	27.43
Total	4393	1674	38.11	1380	709	51.38

Women scoring **3+** were eligible for the study and received further information before being invited to participate.

- **Penetration rate:** Calculated as the number of women eligible to take part within the general maternity service population.
- **Participation rate:** Calculated as the number of eligible women who agreed to take part in the study.

8th February 2021 to 31st November 2021: 4,393 women were screened for study eligibility. 1,674 women met the criteria for increased GDM risk and study eligibility. Penetration rate was 38% (Figure 2). 1,380 women were invited to take part in the study with 709 signing up. Participation rate was 51% (Figure 3).

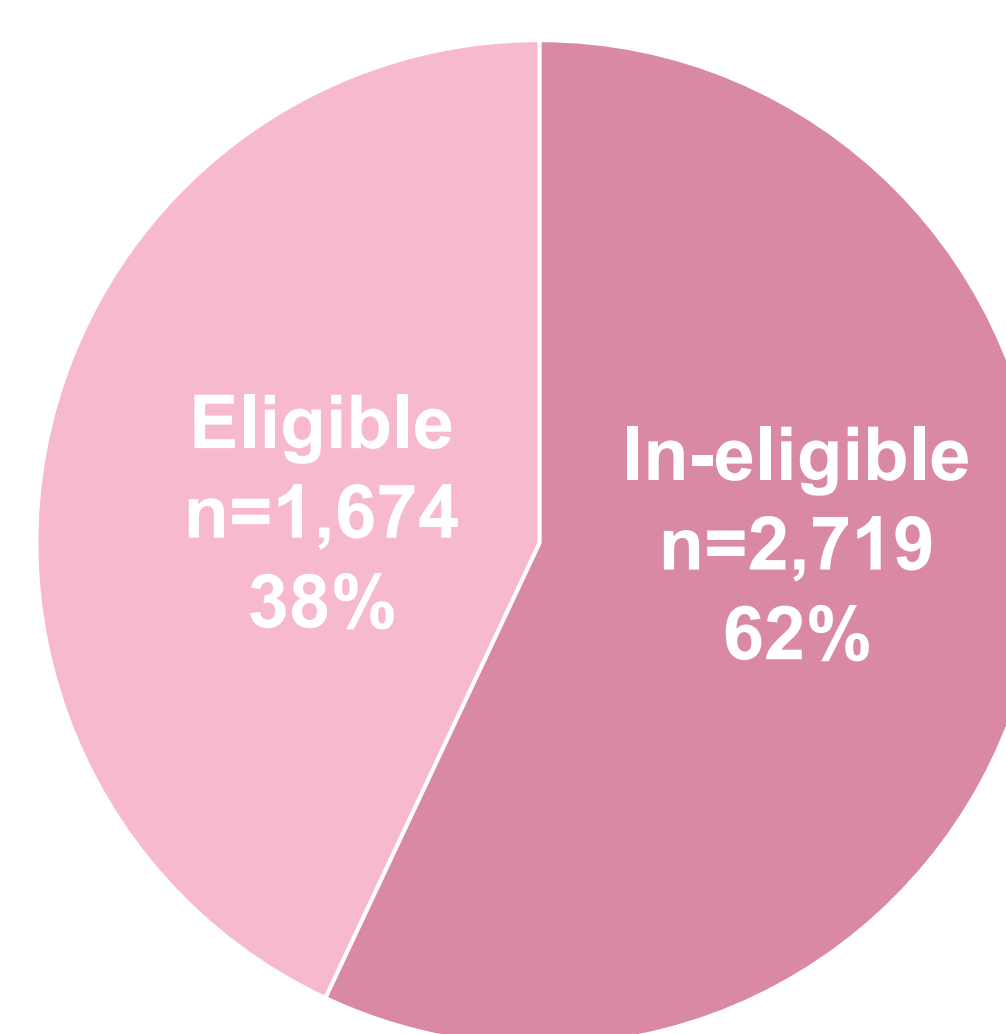


Figure 2: Study Penetration Rate (n=4,393)

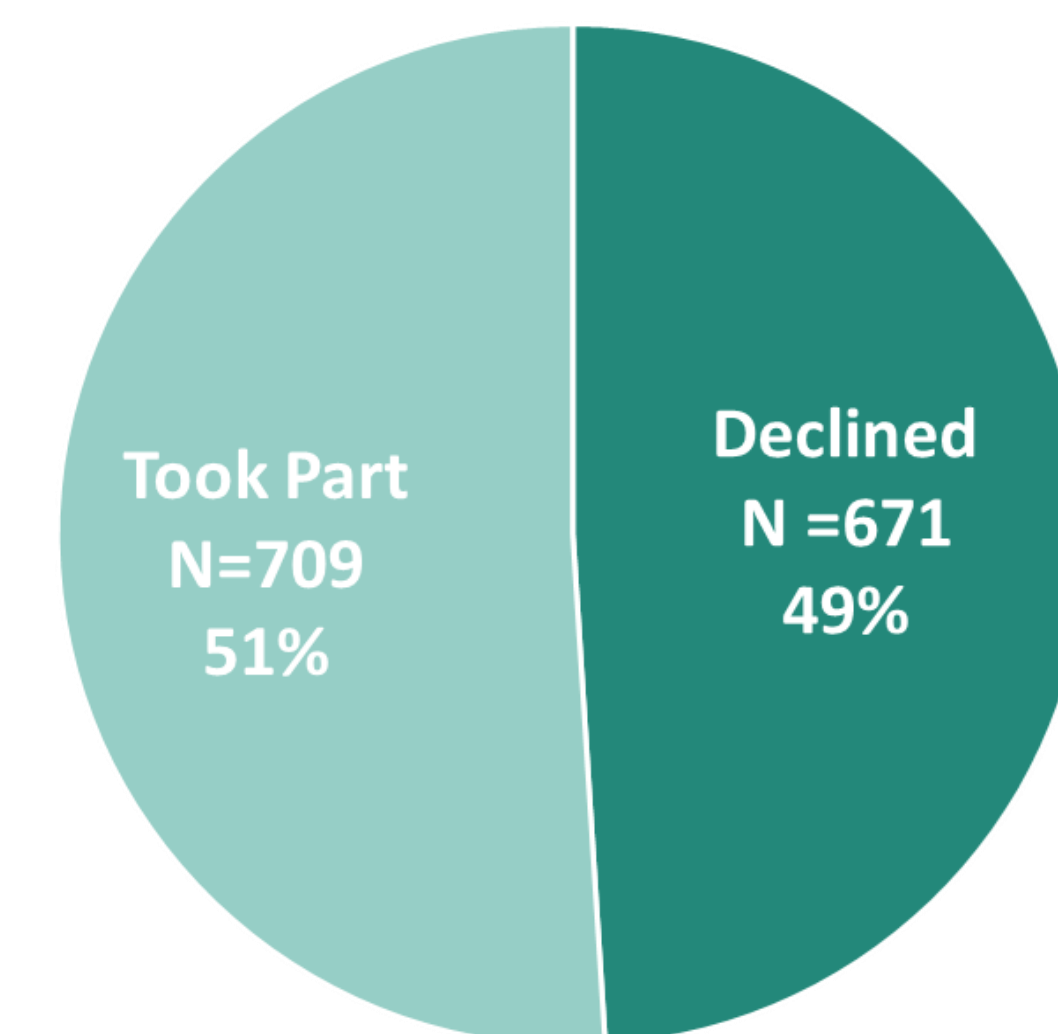


Figure 3: Study Participation Rate (n=1,380)

RCT: 437 and 429 participants were randomised to the intervention and control arms respectively. Participants will be followed through to 1 year postpartum with implementation data recorded throughout.

Conclusion

Almost 40% the women attending routine antenatal services across 4 busy maternity services in Spain, Ireland, UK and Australia have risk factors for developing GDM. Over half of the population are **interested** in participating in research.

Acknowledgements: Thanks to the mothers and their babies who are participating in our research.

References: 1. Lindström et al. Lancet. 2006;368(9548):1673–9. 2. Dasgupta et al. Diabetes Res Clin Pract. 2018;145:200–13. 3. Teede et al., ANZJOG 2011;51(6):499–504



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