

Research

Attitudes, barriers and enablers to physical activity in pregnant women: a systematic review

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KEY WORDS

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ABSTRACT

Question: What are the attitudes, barriers and enablers to physical activity perceived by pregnant women? **Design:** In a systematic literature review, eight electronic databases were searched: AMED, CINAHL, Embase, Joanna Briggs Institute, Medline, PsycInfo, SPORTDiscus (from database inception until June 2016) and PubMed (from 2011 until June 2016). Quantitative data expressed as proportions were meta-analysed. Data collected using Likert scales were synthesised descriptively. Qualitative data were analysed thematically using an inductive approach and content analysis. Findings were categorised as intrapersonal, interpersonal or environmental, based on a social-ecological framework. **Participants:** Pregnant women. **Intervention:** Not applicable. **Outcome measures:** Attitudes and perceived barriers and enablers to physical activity during pregnancy. **Results:** Forty-nine articles reporting data from 47 studies (7655 participants) were included. Data were collected using questionnaires, interviews and focus groups. Meta-analyses of proportions showed that pregnant women had positive attitudes towards physical activity, identifying it as important (0.80, 95% CI 0.52 to 0.98), beneficial (0.71, 95% CI 0.58 to 0.83) and safe (0.86, 95% CI 0.79 to 0.92). This was supported by themes emerging in 15 qualitative studies that reported on attitudes (important, 12 studies; beneficial, 10 studies). Barriers to physical activity were predominantly intrapersonal such as fatigue, lack of time and pregnancy discomforts. Frequent enablers included maternal and foetal health benefits (intrapersonal), social support (interpersonal) and pregnancy-specific programs. Few environmental factors were identified. Little information was available about attitudes, barriers and enablers of physical activity for pregnant women with gestational diabetes mellitus who are at risk from inactivity. **Conclusion:** Intrapersonal themes were the most frequently reported barriers and enablers to physical activity during pregnancy. Social support also played an enabling role. Person-centred strategies using behaviour change techniques should be used to address intrapersonal and social factors to translate pregnant women's positive attitudes into increased physical activity participation. **Registration:** PROSPERO CRD42016037643. **[Harrison AL, Taylor NF, Shields N, Frawley HC (2018) Attitudes, barriers and enablers to physical activity in pregnant women: a systematic review. *Journal of Physiotherapy* 64: 24–32]**

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Introduction

Physical activity has substantial benefits for women with uncomplicated pregnancies, minimal risks, and is recommended in pregnancy guidelines.^{1–3} The benefits of physical activity during pregnancy include improved physical fitness,^{3–5} reduced risk of excessive weight gain,⁶ reduced risk of pre-eclampsia and pre-term birth,⁷ reduced low back pain,^{8,9} improved sleep,¹⁰ reduced anxiety and depressive symptoms,^{11,12} and improved health perception¹³ and self-reported body image.¹⁴

Physical activity is also important for pregnant women with comorbidities and complications such as obesity¹ or gestational diabetes mellitus (GDM).^{15–17} Physical activity assists with weight control and reduces the risk of GDM in obese pregnant women.¹ In women diagnosed with GDM (a common pregnancy-related complication occurring in 3.5 to 12% of pregnancies),^{15,16} physical

activity is beneficial as an adjunctive intervention in the management of glycaemic control.^{15,17–20} Managing glycaemic control is critical for reducing adverse effects associated with poorly controlled GDM.²¹ Consequently, aerobic exercise performed at moderate intensity for 30 minutes on most days of the week is recommended for healthy pregnant women,^{1,3} those with GDM^{15,22,23} and those who are overweight or obese.²⁴

Despite well-documented health benefits,^{1,3–17,24–27} 60 to 80% of pregnant women^{28–31} – including those who are overweight or obese³¹ – and more than 60% of women with GDM³² do not participate in physical activity as recommended. Pregnant women from backgrounds other than Caucasian are also less likely to engage in physical activity.²⁹ However, to improve pregnant women's participation in physical activity (ie, leisure time physical activities or structured exercise programs), we need to understand their attitudes to it, the reasons why they do not engage in physical

activity, and enablers that could be harnessed to design effective physical activity interventions or programs that facilitate behaviour change and thereby improve their participation in physical activity during pregnancy.

The inclusion of behaviour change techniques into physical activity interventions has been reported as helpful in improving physical activity levels during pregnancy.³³ Behaviour change techniques such as goal setting, planning and education to shape knowledge appear most effective when delivered with face-to-face feedback about goal achievement.³³ However, to facilitate uptake of these effective physical activity interventions, clinicians need to know which barriers, enablers and attitudes are common among pregnant women, so they can effectively target their education and evidence-based behaviour change strategies. A systematic review of barriers, enablers and attitudes of pregnant women to physical activity would provide valuable information to enable clinicians to effect a positive behaviour change of increased physical activity in this group.

Identification of women's attitudes and perceptions of barriers and enablers to physical activity in pregnancy could be informed by quantitative or qualitative research approaches. A review that collates data from studies using either method would benefit from the advantages of each: improving generalisability and providing deeper insights into pregnant women's beliefs and perceptions about physical activity during pregnancy. Inclusion of qualitative findings may assist in better understanding the factors that can influence women's attitudes and perceptions. Such deeper understanding would provide valuable insight that clinicians can use to plan strategies to encourage pregnant women – in particular at-risk groups of women such as those with GDM – to participate in physical activity. It would also inform the design of realistic and acceptable interventions to be tested in an effectiveness study. No systematic review has collated quantitative data or provided a meta-summary of attitudes and perceptions of barriers and enablers to physical activity in pregnant women.

Therefore, the research question for this review was:

What are the attitudes, barriers and enablers to physical activity perceived by pregnant women, including women diagnosed with gestational diabetes mellitus?

Method

The review was reported in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines,³⁴ the Enhancing Transparency in Reporting the Synthesis of Qualitative Research (ENTREQ),³⁵ and guided by information from the Cochrane Qualitative and Implementation Methods Group.³⁶

Identification and selection of studies

One reviewer (AH) searched eight electronic databases: AMED, CINAHL, Embase, Joanna Briggs Institute, Medline, PsycInfo, and SPORTDiscus from database inception until June 2016; and PubMed from 2011 until June 2016. The search strategy comprised three key concepts: attitudes, barriers and facilitators/enablers; physical activity; and pregnancy. For each concept, key words and MeSH terms were combined with the 'OR' operator and the results were combined with the 'AND' operator (see Appendix 1 on the eAddenda). No limits were applied to the search. Reference lists from included studies were manually searched for additional relevant articles. Using Google Scholar and Web of Science, citation tracking was performed on the included articles to identify any other relevant articles.

Two reviewers (AH and HF/NS/NT) independently reviewed the title and abstracts of articles yielded according to the inclusion criteria presented in Box 1. If eligibility was unclear based on the title and abstract, a full-text version was obtained and reviewed by

Box 1. Inclusion criteria.

Design

- Qualitative or quantitative studies
- Full-text article published in a peer-reviewed journal

Participants

- Pregnant women whose pregnancy was not high risk^a

Outcome measures

- Pregnant women's attitudes to physical activity^b during pregnancy
- Pregnant women's perceived barriers and enablers to physical activity during pregnancy

^a High-risk pregnancy was defined as premature labour, incompetent cervix, persistent bleeding, ruptured membranes, growth retardation, pre-eclampsia, severe anaemia, placenta previa after 26 weeks gestation, haemodynamically significant heart disease or restrictive lung disease.^{1,2}

^b Physical activity was defined as leisure time physical activities and structured exercise programs.

two reviewers independently. Disagreements were resolved by discussion between reviewers.

Studies using qualitative or quantitative methods were included. This integrated approach was used to enable thorough exploration of the women's perceptions, given the potential for qualitative data to complement and add greater meaning to quantitative findings.³⁶ This was intended to maximise the value of the findings for those designing interventions to promote physical activity in pregnant women.³⁷

Assessment of characteristics of studies

Quality

Adapted from the McMaster Critical Review Forms for qualitative and quantitative research,^{38,39} which include guidelines for interpreting the criteria^{40,41} to facilitate inter-rater reliability,⁴² the rating method for key criteria for quantitative and qualitative studies developed by Imms⁴³ was used to assess validity and rigor of included studies (Table 1 on the eAddenda). This form has been used previously in a study exploring similar phenomena in a different cohort.⁴⁴ Quantitative studies were rated on sample, measure and analysis. Qualitative studies were rated on credibility, transferability, dependability and confirmability, consistent with the criteria for trustworthiness.⁴⁵ A rating of one (no evidence of study meeting criterion), two (some evidence or unclear reporting) or three (evidence of study meeting criterion) was used to rate each criterion.

All included studies were assessed by two reviewers independently (AH and HF/NT) and any disagreements resolved by discussion until an agreement was reached. Where agreement could not be reached the findings were discussed with a third reviewer (NS). In appreciation that studies rated as lower methodological quality on rating scales can still provide useful insights based on the data,³⁶ all studies were included regardless of assessment of methodological quality but study quality was taken into account in interpretation of the results.

Participants

Data were extracted from each study regarding sample size, age, body mass index, ethnicity, education, gestation, parity, comorbidities (GDM, obesity) and physical activity level, where available. See Table 2 on the eAddenda.

Data extraction and analysis

Data were extracted from the included articles using a standardised form. Data were extracted by one reviewer (AH),

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