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# MIDWIVES UNDERSTANDING OF PHYSICAL ACTIVITY GUIDELINES

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*Midwives understanding of physical activity guidelines during pregnancy.* Accepted for publication in Midwifery.

## **Abstract**

### **Objective**

To examine the current level of understanding held by midwives regarding the NICE physical activity guidelines in the UK, and to investigate the physical activity guidance given to women during pregnancy.

### **Design**

An 11 question online survey comprising of a mixture of closed and open ended questions.

### **Setting**

Data reflects participants sampled across the United Kingdom.

### **Participants**

Fifty-nine midwives completed the online survey

### **Measurements and findings**

An electronic survey was used to explore the midwives understanding of physical activity guidelines during pregnancy, and the advice they offered to women in their care. Qualitative content analysis was used to gain a more in-depth understanding of midwife knowledge. Two percent of midwives correctly identified the physical activity guidelines, with 44% giving partially correct responses, 25% giving incorrect responses and 29% unsure of what the guidelines are. Despite the low level of correct responses, 59% of respondents reported they were confident or very confident in answering questions regarding physical activity. Only 4% of respondents reported having access to continual professional development (CPD) in the area of PA guidance.

**Key conclusions**

There appears to be a misplaced confidence amongst midwives in their knowledge of the NICE PA guidelines for pregnancy.

**Implications for practice**

As physical inactivity can be detrimental for the health of both mother and baby, there is a clear need for better dissemination of the current and future NICE physical activity guidelines in primary health care settings. The current study determined a substantial lack of CPD in the area of PA guidance, which may be a contributing factor to the lack of knowledge of the guidelines.

As such, increasing CPD may in turn improve the accuracy of the advice given to pregnant women and consequently benefit the health of both mother and baby.

Key words: exercise; health professionals; inactivity; physical inactivity; prenatal guideline

## Introduction

It is accepted that regular physical activity (PA) has a positive impact on physical and mental health in the general population (ACOG 2015), with a growing body of evidence also supporting the benefits of PA during pregnancy for both mother and baby (Gaston et al. 2012). For example, increased cardiorespiratory fitness, decreased rates of urinary incontinence, lower back pain, gestational weight gain control, and reduction in rates of pre-eclampsia and gestational diabetes (Nascimento et al. 2012). Further, it has been established that PA during pregnancy can also enhance psychological wellbeing including overall mood and self-esteem (Poudevigne and O'Connor 2005). Current UK recommendations suggest that during pregnancy at least 30 minutes per day of moderate intensity PA should be maintained (NICE, 2010). Despite this, pregnant women often disengage from PA, with many who were previously active choosing to become inactive (Nascimento et al. 2012). Accordingly, a high proportion of pregnant women do not currently follow exercise or PA guidelines during pregnancy (Gjestland et al. 2013), with (Currie et al. 2013) suggesting that cross sectional population studies estimating that only 3–15% of pregnant women meet current PA guidelines in the UK and USA. Such inactivity during pregnancy is concerning because it can put pregnant women at an increased risk of obesity, gestational diabetes mellitus, hypertension and other pregnancy related diseases and complaints (ACOG, 2015; Downs et al. 2012)

Pregnancy signifies a time when most women engage with healthcare professionals more frequently (Wadsworth 2007), and tend to be more motivated to make positive changes to benefit themselves and their babies (Phelan 2010). Despite this, the 2014 Annual Report of the Chief Medical Officer identified that in England, opportunities are missed for delivering health messages and encouraging behaviour change, for the short- and long-term mental and physical health benefit of mothers and their children (Davies 2015). Of importance is the disconnection between the evidence-base supporting PA during pregnancy, and the information regarding PA received by the mother. Clarke and Gross (2004) found that many mothers in the UK received

limited guidance from their healthcare provider regarding PA, and of interest, some were even encouraged to remain sedentary. Moreover, as the pregnancy progressed, most women in the study relied increasingly on anecdotal forms of information from family and friends, as well as books and magazines for advice on whether to, and how to remain physically active (Clarke and Gross 2004). Evenson and Bradley (2010), and more recently, Atkinson et al. (2014) also reported that women appear unaware of the recommended levels of PA in pregnancy and have misconceptions about the safety of being active. Accordingly, Evenson and Bradley (2010) concluded that more research was needed to ascertain the PA advice being given by health professionals to pregnant women, and how to enhance the quality and uptake of this advice.

In response, the aims of this study were: (i) to examine the current level of understanding held by midwives regarding the NICE PA guidelines in the UK; and (ii) investigate the PA guidance given to women during pregnancy by midwives in the UK.

### **Method**

#### **Participants**

Following institutional ethical approval, 59 UK based midwives completed an electronic survey to explore their understanding of PA guidelines during pregnancy, and the advice they offered to women in their care. The research team developed the survey which consisted of 11 closed and open ended questions. Participants were recruited via social media groups (e.g., Midwifery Facebook groups) using convenience and snowball sampling (Teddlie and Tashakkori 2009).

Of the 59 female midwives who completed the survey, 20 also reported they had worked with women during pregnancy in other capacities such as antenatal teachers (non-NHS classes) (n=15), aqua natal teachers (n=3) and pregnancy yoga instructors (n=2). Prior to completion of the survey, participants read an introductory page explaining the purpose of the study, length of the survey and researcher contact details. Informed consent was provided through the participant agreeing to open the first question of the survey. Respondents were able

to go back and review earlier questions at any stage prior to completing the survey. To maintain anonymity, no personal identifying information was collected in the survey. The online survey was structured in such a way that each participant could only complete the survey once. Participation was voluntary with no incentives provided.

### **Data Collection**

Within the 11 survey questions asked, participants were required to identify their understanding of the current UK guidelines/recommendation for PA during pregnancy, including the frequency, intensity and duration of the activities. They were also asked to identify the advice/information they currently offer to women during their pregnancy regarding PA and in what, if any, circumstances they may advise against PA. Finally, participants were asked to rate their confidence in answering questions about PA during pregnancy.

### **Data Analysis**

To meet the aims of the current study, data from all six open ended questions were analysed in the same manner using qualitative content analysis (Flick 2014). First, each survey response was read several times to make sense of the data. When familiarity with the data had been achieved, the key themes that emerged from each question were identified and then, the frequency of responses under each theme was tallied. To ensure trustworthiness of the analysis, the themes were reviewed by a second member of the research team, and in order to minimize researcher bias any disparity/concerns were discussed until a consensus had been achieved. The remaining authors of the research team acted as ‘critical friends’ during the analysis process, to ensure transparency and quality of the analytic process (Sparkes and Smith 2014).

The open survey question which asked for the current UK recommendations for PA during pregnancy, was analysed directly against the following criteria: i) duration (30min); ii) intensity (moderate); iii) frequency (daily); iv) consideration of pre-pregnancy exercise habits (i.e., if exercised regularly before pregnancy they can continue. If they have previously not exercised regularly, they should begin with no more than 15 minutes of continuous exercise

three times a week, increasing gradually to daily 30 minute sessions) (NICE 2010). Responses were considered to be correct (C) if they identified all four points above, partially correct (PC) if they identified 1-3 of the four points above and incorrect (IC) if they failed to identify any of the four points correctly. A further category of unsure was given to participants who reported being unsure or unable to answer the question.

## Results

### **Accuracy of Knowledge Regarding PA Guidelines during Pregnancy**

Midwives were asked what they understood to be the current guidelines for PA during pregnancy. From this, the themes identified were frequency, intensity, duration, mode of exercise and behaviour. Responses were compared with the guidelines as previously described in the methods section. Following this analysis, only 2% of the midwives within this study correctly identified the PA guidelines for exercise during pregnancy as stipulated by NICE (2010); 44% were partially correct, 25% were incorrect and 29% were unsure of what the guidelines are. Analysis of the open responses identified intensity (IC = 10, C=6), frequency (IC = 6, C = 6) and duration (IC = 2, C = 6) as themes.

Whilst the modes of exercise that women should engage in were generally identified correctly (i.e., walking, swimming and yoga), a theme emerged regarding the general physical activity behaviour a pregnant woman should engage in. Many midwives (n=13) incorrectly suggested that women should not start any new exercise (24%). As an example, one midwife stated, “it is not the time to take up a new sport” whilst another stated, “not to commence an activity that you didn’t do pre-pregnancy”.

Over one third of respondents (39%) incorrectly believed the guidelines indicate that women should continue to exercise at pre-pregnant levels. For this mistakenly suggests that women who normally exercised either intensely or not at all, should maintain their exercise / sedentary state respectively. As indicated by one midwife, “if you are used to more

intensity...you can continue". Whereas another midwife stated that the guidelines suggest, "carry on as you were...do the same as you would do prior to pregnancy". While, (NICE 2010) recommends that women who exercised regularly before pregnancy should be able to continue with no adverse effects, women who have not exercised routinely should be encouraged to become physically active. Indeed, NICE suggest that sedentary women should begin undertaking 15 minutes of continuous exercise three times weekly, increasing to daily 30-minute sessions.

### **Advice / Information Offered During Pregnancy Regarding PA**

While the first survey question explored the midwives understanding of the NICE guidelines, this second question explored the advice they offered the women about PA during pregnancy. As with the previous question, the themes identified from the responses were frequency, intensity, duration, mode of exercise and behaviour. A small number of midwives (24%) identified that they recognized the positive role of exercise and the benefits to mother and baby, "It's good to be active" and "regular exercise in pregnancy is good". However, despite there being some acknowledgement that being physically active is of benefit, no participant accurately advised the women on the recommended level of exercise intensity, frequency and duration they should engage in. Rather than advising that at least 30 minutes of moderate intensity PA per day is recommended, the advice offered with regards to type, mode and frequency of exercise, was predominantly the adoption of "gentle exercise" in which the women felt comfortable. Moreover, in order to gauge intensity, the mother should "listen to their body". Twenty two percent of respondents reported that as pregnancy progresses they encourage women to "slow down" and "listen to their body". For example "[I] always tell them to listen to their body, and they naturally slow down as pregnancy advances". Fourteen percent of respondents suggested that modifications may need to be made depending upon how the pregnancy is progressing, for example "[It] depends on how pregnancy progresses...[I] emphasize listening to your body and tailoring exercise [the] to stage of pregnancy". It is

evident, that such advice which relies on the subjective perception of exercise intensity is a concern, particularly when a woman has been previously sedentary and had limited understanding of exercise states.

### **When to Abstain from PA**

The majority of midwives (91%) appeared to have a good understanding of when not to exercise during pregnancy, including the identification of various contraindications. The most commonly identified were when bleeding, risk of preterm labour, hypertension and joint issues respectively. For example, “If there were any obstetric contraindications including: abdominal pain; unexplained vaginal bleeding; known placenta praevia; pelvic girdle pain affecting mobility and comfort; specific concerns in the later stages of pregnancy e.g. unstable lie; pregnancy-induced hypertension.”

### **Sources of Information Regarding PA**

When asked where would they go for information if they had questions about PA participation during pregnancy, responses fell into four themes; colleagues, internet (unspecified sources), evidence-based sources and unsure.

Forty-eight percent of participants identified that if they had questions regarding PA during pregnancy, they would ask colleagues (physiotherapists, midwives and obstetricians) and 40% accessed evidence-based information sources included within the NICE guidelines, RCOG and NHS choices. For example, one midwife stated the information came from “Qualified professionals in exercise in pregnancy and postnatally, NICE guidelines, RCOG, NHS, colleagues”. Only 4% of midwives responded that they “Don’t know” where to go for information if they had questions. 8% reported visiting unspecified websites for information.

### **Confidence Levels in Answering Questions about PA During Pregnancy**

Despite very few (2%) midwives within this study correctly identifying the PA guidelines for pregnancy, a large number (59%) said they felt confident or very confident in answering questions in this area. Of concern, this suggests a misplaced confidence in their

knowledge regarding PA guidelines. Only 6% responded that they did not feel confident about answering questions in this area.

### **Opportunities for PA-Relevant CPD:**

Only 4% of respondents reported having access to continual professional development (CPD) in the area of PA guidance. Thirteen percent reported that they self-funded attendance at CPD events to ensure their knowledge was current or because they were required attend, for roles outside of midwifery. For example one midwife explained, “Not in my midwifery role but I have taken courses in exercise and pregnancy”. Another wrote, “...my update is the guidelines and reviews. I have had no update on exercise antenatally or postnatally other than pelvic floor exercises”. It is unknown whether the midwives do not actively pursue CPD in this topic area because as indicated, they are confident that their knowledge is sufficient in this area, and therefore may not feel the need for additional training.

### **Discussion**

The aims of the current study were to examine the current level of understanding held by midwives regarding the NICE PA guidelines in the UK, and investigate the PA guidance given to women during pregnancy by midwives. The main finding of the study was that there appears to be over/mis-placed confidence amongst midwives in their knowledge of the PA recommendations during pregnancy. Over half (59%) reported feeling very confident or confident in answering questions on PA during pregnancy but only 2% of the midwives within this study correctly identified the PA guidelines for exercise during pregnancy (25% giving incorrect responses and 29% unsure of what the guidelines are). Incorrect, vague or conflicting information may begin to explain why women tend to reduce their PA levels during their pregnancy (Borodulin et al. 2009).

There is considerable evidence that exercise during a healthy pregnancy has positive effects for both mother and baby (Prather et al. 2012). As such it is important that pregnant women are provided with the information within the guidelines regarding the intensities and

duration of physical activity during pregnancy in order to enhance or maintain health. Data from the current study suggests that there is discordance between current guidelines and knowledge of the practitioner. Furthermore, it would appear that there is a level of over cautiousness in advice given by midwives which may result in women not being actively encouraged and in some cases being discouraged to begin or maintain PA and/or exercise. As such mother and baby may be put at unnecessary risk of excessive weight gain and increased risk of caesarean birth (Domenjoz et al. 2014).

Although this is the first known UK study to investigate midwives understanding of the NICE (2010) guidelines, in the US, Bauer et al. (2010) and Evenson and Pompeii (2010) have both highlighted the lack of healthcare providers' knowledge of ACOG exercise prescription guidelines, and more recently Watson et al. (2015) reported similar findings in South Africa. However it should be noted that in those cases, healthcare providers were obstetricians and not midwives due to their different healthcare model.

Given the known health benefits for mother and baby when the mother is physically active (Moyer et al. 2016), and the discordance found in the current study between published guidelines and midwives knowledge, it would seem prudent to ensure that appropriate access to training and CPD is readily available. However, only 4% of respondents reported having access to CPD in the area of PA guidance. Although the current study did not determine the extent that autonomous learning took place, we did determine that 13% of midwives were self-funding CPD. This seems low given that only 2% correctly reported understanding the current NICE guidelines. As such, there appears to be a further knowledge transfer issue regarding an understanding of the NICE guidelines. Lewis and Lynch (1993) found that medical professional training can increase the amount of advice given regarding PA in a primary healthcare setting. Similarly, Clapp (2000) reported that healthcare providers can have a positive effect on their patients' attitudes towards exercise and it is therefore possible that gaining knowledge of the benefits of PA during pregnancy may motivate women to become

more active (Prather et al. 2012). Therefore, CPD needs to be more accessible. CPD in the form of training workshops or information should be beneficial in ensuring that accurate advice and the correct PA prescription is given. Although the study recruited 59 midwives, it should be noted that an additional 20 individuals terminated the survey at the question which asked about their knowledge of the current UK guidelines/recommendations for PA. Thus it would be interesting to further analyse those that withdrew from the study.

Although this study highlights a lack of understanding amongst midwives regarding recommendations for PA during pregnancy and the need to further explore the communication of PA guidance to midwives and pregnant women, several limitations should be acknowledged.

1) The nature of the recruitment strategy may have meant that the sample was skewed to include those participants who felt confident in their knowledge about PA and pregnancy, with those who were less confident choosing not to participate; 2) a larger sample size would also have allowed further analysis of whether the knowledge of the guidelines was affected by the age, regional location and experience level of the midwife; 3) midwives were informed before completing the questionnaire that they would be asked about their current understanding of the UK guidelines on PA. It is therefore possible that participants could have prepared for the survey in advance and that the findings of their knowledge have been overestimated; and 4) although only 4% of midwives were reported to have access to CPD, the current survey did not determine the prevalence of autonomous learning or knowledge which may be accessible elsewhere.

Future research should look to understand pregnant women's perspectives and investigate what midwife led information, if any, affected PA or exercise behaviours.

### **Summary and Conclusion**

Given the serious consequences to both mother and baby when a women is physically inactive during pregnancy there is a need for better dissemination of the current NICE PA guidelines to

midwives. This may in turn help to improve the accuracy of the advice given to pregnant women. Further, improving CPD opportunities specifically related to PA advice for midwives should be actively encouraged in primary health care settings.

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