Author's response to reviews

Title: Compliance with national recommendations for exercise during pregnancy in a Danish cohort - a cross sectional study

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Version: 4 Date: 26 June 2015

Author's response to reviews: see over
Confidential comments to editors

Title: Compliance with national recommendations for exercise during pregnancy in a Danish cohort - a cross sectional study

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Version: 3
Date: 25 June 2015

Comments: see over
Reviewer's report by
by Dr. Lotte Hardman

Compliance with national recommendations for exercise during early pregnancy in a Danish cohort.
Lotte Broberg, Anne S. Ersbøll, Mette G. Backhausen, Peter Damm, Ann Tabor, Hanne K 5 Hegaard
By Dr Lotte Hardman.

Reviewer's comment 1.
Positive

This is a study with a large cohort and an impressive 82% response rate, with consideration of demographics between non-responders and responders.

It aims to address important clinical issue, i.e physical inactivity has been shown to increase the risk of preeclampsia, gestational diabetes mellitus and caesarean section.

The study does provide results on associations with physical activity which could be useful when considering interventions

Authors’ response 1:
Thank you these positive comments. We are pleased that you find our study important and useful.

Reviewer’s comment 2.
Major essential revisions

30 minutes of moderate exercise daily is the recommendation, whereas the primary outcome was compliance with 3.5hrs exercise per week. These are different and should be noted as such. Alternatively the breakdown of women complying with 30mins/day and those achieving 3.5hrs/week should be shown.

Authors’ response 2:
Thank you for this relevant comment. Unfortunately, our information about exercise does not allow us to make this distinction and the ≥3.5 h/week is a practical approximation.

Other studies of pregnancy and exercise also report the number of hours (references 11,13,14, 22) or times (12) per week of exercise, even though ACOG (7) recommends 30 minutes or more of moderate exercise on most, if not all, days of the week for pregnant women.

We have added a comment about this to the manuscript’s limitations section.

Change in the manuscript (page 9 line 217)

The primary outcome was defined as engagement in exercise ≥3.5 hours a week, which is a practical approximation to the Danish Health and Medicines Authority recommendation of 30 minutes of exercise daily (9). Other studies of pregnancy and exercise also report exercise as hours per week (11,13,14,22).

Minor revisions

Reviewer’s comment 3.

Cohort is unrepresentative of anywhere but Copenhagen, this is not representative of Denmark, non representative international patterns. This is also demonstrated in the description of population characteristics in the results section. The utility of results in therefore limited, particularly the percentage of the population meeting the guideline. This should be more clearly underlined.

Authors’ response 3:

Thank you for this comment. We agree that this is a limitation and have added text in order to clarify this point in the manuscript.

Changes in the manuscript: (page 11, line 292)

It is relevant to emphasize that this study population included well-educated, urban women and that the results may thus not be fully representative of all women in Denmark.

Reviewer’s comment 4.

Features associated with lack of exercise have the potential to provide useful results.

Authors’ response 4:
Thank you for this positive comment.

Reviewer’s comment 5.

It should also be noted that results are from a tertiary center and thus are unrepresentative in terms of pregnancy complications, which could change exercise patterns.

Authors’ response 5:

Although the vast majority of the pregnant women at our center is from the local catchment area of Copenhagen the function as a tertiary hospital also providing care to women with high risk pregnancies might influence the exercise patterns. We have inserted a sentence

Changes in the manuscript (page 11 line 228):

Furthermore although the vast majority of the pregnant women at our center is from the local catchment area of Copenhagen the function as a tertiary hospital also providing care to women with high risk pregnancies might influence the exercise patterns.

Reviewer’s comment 6.

Selection bias. Only women who attend the nuchal translucency scan were included. This excludes 10% of the population who did not attend the scan, and who are likely to have different exercise rates. This needs comment.

Authors’ response 6:

We appreciate this comment. In fact, only 5 % (2013) of the pregnant women did not attend the nuchal translucency scan. Some of our colleagues have examined the differences in reproductive health factors and socio-demographic characteristics between women attending the nuchal translucency fold scan and women not attending, however their findings have not yet been published.

We agree that this needs a comment, which we have added in the discussion.

Changes in the manuscript (page 11 line 287):

Approximately 5% did not attend the nuchal translucency scan and therefore did not receive the questionnaire. If their non-attendance was due to a lower level of education and because they did not read and understand Danish language, it would be expected that fewer of these women met the national recommendation for exercise (17,19). We do not know, however, whether the group attending the nuchal translucency scan differs from that who did not.
Reviewer´s comment 7.

Exclusion criteria of miscarriage should include by which gestation this set – one presumes before the questionnaire was completed. If not then, then justification to exclude those who miscarried is required.

Authors’ response:7

Thank you for this remark. We agree that exclusion of women who miscarried is insufficiently described in the manuscript. These women were excluded because they miscarried before responding to the questionnaire. All women who responded to the questionnaire are included in the Copenhagen Pregnancy Cohort regardless of their pregnancy outcome.

Changes in the manuscript (page 5 line 116):

Women who miscarried before responding to the questionnaire (n = 475) were not a part of this study population.

Reviewer´s comment 8.

Physical exercise before pregnancy is overwhelming the most significant factor in pregnancy exercise rates. It would be good to have a comment/ graphic representation on the relative importance of the associated factors with meeting/ not meeting the guideline.

Authors’ response 8:

Thank you for this comment. In Table 2 we describe the multivariate analysis and OR and 95% CI. We believe this gives an overview of significant risk factors.

We have, however, changed the order of the results so that the strongest predictor of meeting the recommendation (exercise before pregnancy) is mentioned first and inserted a sentence in the results section.

Changes in the manuscript (page7, line 173):

not engaging in exercise before the present pregnancy (aOR: 0.06; CI 0.05-0.08) was significantly associated with lower probability of meeting recommendations for exercise during pregnancy.
Reviewer’s comment 9.

Line 149 IBM – should be written in full before acronym.

Authors’ response 9:

*IBM is the acronym for International Business Machines Corporation. It is uncommon to write it in full and might confuse some readers. We are happy to let the editors decide whether IBM should be written as an acronym only or in full.*

Reviewer’s comment 10.

Discretionary revisions

Variation on questionnaire exercise intensities has the potential to be very wide. A comment on this is made, perhaps recommendations and ultimately the desire for prospective studies recording exercise through pedometers/quantitative representation in order to validate exercise associations would be relevant.

Authors’ response 10:

*Thank you very much for this important comment. Exercise was self-reported in this study. It would have been ideal to use objective measurements of exercise. In large study populations this is not feasible, and most studies are based on self-reported information about exercise (22, 30,31). Similarly, validation of the exercise questionnaire using objective measurements would have been ideal.*

We have inserted a new sentence.

Changes in the manuscript (page 11 line 279):

*It would have been ideal to validate the questions with objective measurements of exercise.*

Reviewer’s comment 11.

It would be useful to assess participant’s views on exercise in pregnancy for insight into whether women knew the value of exercise on the safety of their pregnancy or not. This would be important in structuring intervention – education vs access campaign, again this could be considered in recommendations for future research.

Authors’ response 11:

*We appreciate this comment and have inserted a sentence.*
Changes in the manuscript (page 12 line 305):

It would be useful to assess pregnant women’s views on exercise in pregnancy for insight into the level of awareness among women of the value of exercise for their pregnancy. This would be important in structuring intervention – education vs access campaigns, and research into this is recommended.

Reviewer's report by Silvia Salvi

Title:
Compliance with national recommendations for exercise during pregnancy in a Danish cohort - a cross sectional study

Version:2

Date:17 May 2015

Reviewer:Silvia Salvi

Reviewer’s report:
Review
The aim of this study is to elucidate the compliance of pregnant women to the National (Danish) guidelines about the physical exercise during pregnancy.
Major Compulsory Revisions

Reviewer’s comment 1

The study is based on the data obtained at the timing of the Nuchal Translucency scan. No informations are given from this study about the second and third trimester of pregnancy, the period in which more frequently the women reduce physical activity during pregnancy. This limitation is included in the discussion.

Authors’ response 1:

*We appreciate that you find this relevant to include in the discussion.*

Reviewer’s comment 2

Moreover, the questionnaire is performed before the scan: this means that the many of these women do not know anything about the evolution of this pregnancy (pregnant complications, fetal malformations, risk for Down’s Syndrome and other chromosomal abnormalities).

Authors’ response 2:

Thank you for a very relevant comment. It is correct that information about exercise was collected prospectively and before these women knew anything about the evolution of this pregnancy. If the information had been collected retrospectively it might have been influenced by the evolution of pregnancy complications, fetal malformations, risk of Down’s Syndrome and other chromosomal abnormalities and could have introduced bias.

*Change in manuscript (page 10 line 267):*

*Information about exercise was collected before the women knew anything about the evolution of pregnancy. This minimizes the risk of bias as information collected retrospectively might have been influenced by the evolution of the pregnancy in terms of pregnancy complications, fetal malformations, risk of Down’s Syndrome and other chromosomal abnormalities.*

Reviewer’s comment 3

The authors excluded from the analysis the miscarriages. However, it is reasonable that maternal comorbidities and fetal conditions can also extremely affect the compliance of pregnant women to physical exercise throughout the pregnancy.

Authors’ response 3:
Thank you very much for this comment. We agree that the text is not clear enough and can easily be misunderstood. The women were not excluded, but they did not fill in the questionnaire as they had miscarried before responding to the questionnaire and were therefore not a part of the study population. This was not clearly stated in the manuscript.

Change in manuscript (page 5 line 116): please see comment to author’s response 7

Women who miscarried before responding to the questionnaire (n = 475) were not a part of this study population.

Reviewer’s comment 4
Moreover, during the first weeks of pregnancy, the attitude to physical exercise before pregnancy can affect the compliance with national recommendation for exercise more than other factors related to the pregnancy. These observations could explain the differences in the features of women performing exercise during early pregnancy and not (overweight women, physical inactivity). So the significance of the data obtained from this study is strongly limited.

Authors’ response 4:

Thank you for this comment. We know from other studies (Hinton PS et al, Owe K et al) that physical activity before pregnancy is a strong predictor for physical activity during pregnancy. Attitude to physical activity will thus always affect compliance with national recommendations. We have adjusted for overweight, physical inactivity before pregnancy and other covariates in the statistical analyses (Table 2), therefore we do not agree that the data is strongly limited.
To clarify we have added information about this in a note below Table 2

Change in manuscript (page 19 line 454):

Adjusted for parity, previous miscarriage, method of conception, smoking before pregnancy, physical exercise before pregnancy, body mass index, cohabiting, education level and occupation

Reviewer’s comment 5
It is also important to discuss that the majority of these women have not met yet any midwife or obstetrician who have to educate pregnant women to a correct quality of life during pregnancy and so to practice some physical exercise. Please discuss on it.

Authors’ response 5:
Thank you for this important comment. The women might not have met their midwife or an obstetrician at the time they were included in the study. In Denmark it is the general practitioner who is responsible for the first pregnancy consultation and referral for the nuchal translucency scan. This first consultation takes place between 7 and 9 weeks of gestation and includes verbal and written information about lifestyle factors in pregnancy, including physical activity. The women have an opportunity to ask any questions they might have regarding physical activity during pregnancy at this visit.

This is not clear in the manuscript, and we have added information about timing of the first pregnancy consultation to the manuscript.

Changed in manuscript (page 5, line 101):

In Denmark, pregnant women are offered the first pregnancy consultation with their general practitioner.

Minor Essential Revisions

Reviewer´s comment 6
Additional informations needed:

1) Mean GA at the questionnaire

Authors’ response 6:

Mean GA is 10 weeks which is stated on page 5, line 106

Reviewer´s comment 7
Please, could you substitute:

Page 2, line 38: “unborn child” with “fetus”

Authors’ response 7:

We have changed this as requested.

Reviewer´s comment 8
Page 2, line 39: “evaluate” with “evacuate”

Authors’ response 8:
Thank you for this comment. We do not find the word “evacuate” optimal and choose “investigate” instead as it is more clear.

Reviewer’s comment 9
Page 4, line 80: “only a few studies” with “few studies”

Authors’ response 9:

Changed as requested

Reviewer’s comment 10
Please, review the phrases from line 161 to 163: it means now that nulliparous women and who read and understand Danish are more likely not to respond to the questionnaire (?).

Authors’ response 10:

Thank you for this comment. We fully agree that these sentences can be misunderstood but it is correct that women, who do not respond to the question about exercise were more likely to be nulliparous (68% vs.60%), and to read and understand Danish (98.1% vs.95.6%) and have revised appropriately.

Changed in manuscript (p 7 l 163):

Women, who do not respond the question about exercise were more likely to be nulliparous (68% vs.60%), read and understand Danish (98.1% vs.95.6%). No differences were seen in maternal age, pre-pregnancy BMI, employment status, cohabiting and education level.