Counselling on physical activity in Danish antenatal care: A qualitative study of experiences from both the pregnant woman’s and the care provider’s perspective

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A R T I C L E   A B S T R A C T

Objectives: Physical activity during pregnancy is beneficial to maternal and fetal health, but most pregnant women do not achieve the recommended level of physical activity. To investigate how antenatal care can promote physical activity during pregnancy, this study explores experiences of physical activity counselling from the perspectives of pregnant women and antenatal care providers.

Methods: In a qualitative design with an inductive approach individual semi-structured interviews with 19 pregnant women and seven antenatal care providers were performed and analyzed using thematic analysis.

Results: The themes “Experiencing inadequate counselling”, “Benefiting from individualized guidance”, and “Voicing a need for enhanced support” cover the perspectives from the participating pregnant women. They often experienced insufficient physical activity counselling that left them insecure about proper physical activity during pregnancy. The pregnant women desired individualized and concrete advice and early and continuous support. From antenatal care providers the themes “Providers’ perceived barriers in counselling”, “Balancing the act of counselling”, and “Acknowledging potential for enhanced counselling” were identified. They perceived barriers towards counselling including time restraints, lack of interest, and doubts about certain physical activity during pregnancy but expressed trying to adjust the counselling to meet the woman’s individual situation. They acknowledged that continuous support during pregnancy and updated knowledge and increased focus among providers might improve physical activity counselling.

Conclusions: Pregnant women received scarce counselling on physical activity in antenatal care, while care providers described several barriers towards counselling on physical activity. Both pregnant women and antenatal care providers recognized opportunities for enhanced physical activity counselling.

Introduction

Pregnant women are recommended to be physically active at moderate intensity for at least 30 min a day according to guidelines from the Danish Health Authority, based on literature from WHO and American and Canadian research institutes \cite{1,2}. Yet, an overall decline in physical activity during pregnancy has been observed \cite{3} and less than four out of ten Danish pregnant women succeed to meet these recommendations \cite{4}.

Physical activity during pregnancy offers several potential benefits to maternal and fetal health including achievement of appropriate maternal and fetal weight gain, prevention and treatment of gestational diabetes mellitus, and reduced risk of cesarean section and instrumental deliveries. It is generally considered safe for healthy women with uncomplicated pregnancies to engage in physical activity during pregnancy regardless of their pre-pregnancy activity level \cite{5-7}.

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Different factors such as pain, fatigue, practical barriers, and concerns for own and fetal health have been suggested to contribute to low levels of physical activity in pregnancy [8,9]. Pregnant women who receive counselling on physical activity might be more likely to increase or maintain physical activity during pregnancy [10]. The importance of health promotion is stated in the antenatal care guidelines by the Danish Health Authority [1]. These guidelines recommend that counselling on lifestyle changes including physical activity is conducted at several antenatal care visits, especially during first and second trimester. In Denmark, healthy women with uncomplicated pregnancies are offered 8–9 antenatal care visits and two ultrasound scans during pregnancy [1]. The midwife is the provider with whom the pregnant woman has the most frequent contact, while pregnant women with an increased risk of complications during pregnancy and childbirth must be referred for examination by an obstetrician [1]. Due to this regular contact with healthcare providers, pregnancy might constitute an opportunity to encourage and support pregnant women toward a physically active lifestyle [10]. However, studies have shown that most pregnant women receive little or no advice on physical activity [9,11,12].

Considering the potential benefits for maternal and fetal health [5–7] it is important to examine potential factors influencing counselling on physical activity to understand how antenatal care can support pregnant women in maintaining or implementing a physically active lifestyle during pregnancy. Therefore, this qualitative study aims to explore experiences of physical activity counselling in antenatal care from the perspectives of both pregnant women and antenatal care providers.

Methods

Population and study design

In the present study, a total of 26 individual semi-structured interviews with pregnant women, midwives and obstetricians were conducted. The study was designed as a qualitative pilot study prior to the process of designing the exercise interventions in the “FitMum” randomized controlled trial (RCT), which aimed to evaluate the effects of structured supervised exercise training or motivational counselling supported by health technology on physical activity level during pregnancy [13].

In the present study, 19 pregnant women (Table 1) and seven antenatal care providers; five midwives and two obstetricians/gynecologist (Table 2) were included.

Data collection

To explore aspects of physical activity during pregnancy relevant to the design of the FitMum RCT [13] interventions, the pilot interview guide was based on a broad interest in physical activity and pregnancy. Two different interview guides were developed: One for pregnant women and one for providers. The guide used for the interviews with pregnant women covered topics such as “Motivational factors and perceived barriers” and “Information sources and counselling on physical activity”. The guides used for the interviews with providers covered topics such as “Barriers and facilitators towards physical activity counselling” and “Beliefs about the need and effect of physical activity counselling in antenatal care”.

The recruitment of pregnant women was carried out in-person in the waiting room at two antenatal clinics at Copenhagen University Hospital – North Zealand, Hilleroed and through posts on Facebook. The women were recruited in two rounds. In the first round all volunteer women who fulfilled the criteria of having a singleton pregnancy were included. In the second round, women with singleton pregnancies were included using purposive sampling to achieve variation in age, physical activity level, gestational age, educational level, parity, and prepregnational body mass index (BMI). This was ensured by inviting women selected e.g. based on prepregnational BMI when they attended routine care consultations at the antenatal clinics. To recruit antenatal care providers an invitation to participate in the study was sent via email to 45 midwives and 11 obstetricians/gynecologists employed at Copenhagen University Hospital – North Zealand, Hilleroed. Care providers who responded positively to the invitation were included in the study. Thus, care providers recruited for the study were not selected by the research group.

When included, participants were contacted via telephone or e-mail to schedule the interviews. The interviews were conducted face-to-face, by two of the authors, and took place when and where the participants preferred. All interviews were conducted from June 2017 to December 2017. The pregnant women answered questions on basic demographic

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<th>Table 1</th>
<th>Characteristics of the interviewed pregnant women (n = 19).</th>
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<td>Characteristics</td>
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<tr>
<td>Age (years)</td>
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<td>26–30</td>
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<td>31–35</td>
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<td>&gt;36</td>
<td>3</td>
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<td>Timing of interview</td>
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<td>First trimester</td>
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<td>Second trimester</td>
<td>7</td>
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<tr>
<td>Third trimester</td>
<td>11</td>
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<td>Pregestational BMI (kg/m²)</td>
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<td>&lt;18.5</td>
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<td>18.5–24.9</td>
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<td>25.0–29.9</td>
<td>3</td>
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<tr>
<td>≥30</td>
<td>2</td>
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<tr>
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<tr>
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<th>Table 2</th>
<th>Characteristics of the interviewed antenatal care providers (n = 7).</th>
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<td>Characteristics</td>
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<td>Occupation</td>
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<td>Obstetrician/gynecologist</td>
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<tr>
<td>Midwife</td>
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<td>Age (years)</td>
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<td>Gender</td>
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<td>Women</td>
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<tr>
<td>Men</td>
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<tr>
<td>Years since graduation</td>
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<td>Mean</td>
<td>21</td>
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<td>Range</td>
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measures in the beginning of the interview. The providers answered questions on age and years of work experience. Before the interviews, participants were informed about the study aim and their rights as research participants and each participant signed a consent form. All interviews were audio-recorded.

Data analysis

The interviews were inductively analyzed using thematic analysis with a realist approach as presented by Braun and Clarke [14]. Initially, interview data was transcribed verbatim, and the transcripts were read thoroughly to gain a sense of the whole. During transcribing and reading, notes were taken about initial ideas. The transcripts were transferred to the qualitative software program NVivo 12 for a systematic process of identifying and initially coding content of interest, a process that further narrowed the scope of the study. Similar and closely related codes were grouped into sub-themes. The relationships between sub-themes were then investigated and organized into preliminary themes. Themes were reviewed and refined to differentiate between themes and to ensure coherence within each theme. The data set was re-read to ensure that the themes represented the content and additional data was coded within themes. We ensured intercoder consistency through group discussions on codes, themes, and interpretation of data. When an exhaustive and satisfactory set of themes was reached, themes were finally defined and named. The data from the pregnant women and from the caregivers were analyzed separately. Results were compiled for presentation and demonstrating quotations were identified. Quotations were translated from Danish to English.

Results

Pregnant women

An overview of themes and sub-themes according to pregnant women’s perspectives is presented in Table 3.

Experiencing inadequate counselling

Not counselled on physical activity

Most pregnant women experienced that physical activity was discussed only to a small extent or not at all during antenatal care visits. The provider would often ask the woman about her physical activity habits, but regardless of whether she was being active or not, her answer was seldom followed by advice on achieving a proper physical activity level. Some women perceived that physical activity was only discussed because of their own initiative.

They ask quickly, but it’s just to check-off… do you eat healthy? Are you physically active? It’s just “check, check, check”. I don’t think there was much focus on it. It was more because I asked about it myself… (12)

A few women believed that they received less counselling on physical activity because they were normal weight or being physically active to some extent.

If I had been overweight, then maybe she would have asked more about it… I haven’t been told much. (8)

Advice on physical activity was vague

The women reported, when advice was given on physical activity, it was often unspecific. Often the women were solely told to be active or not to be completely inactive, and “listen to your body” was the advice regarding intensity level and amount of exercise. In other occasions, women were suggested activities such as “walking” or “swimming”. The advice was sometimes given in a leaflet to read at home.

At the doctor or midwife… you get a leaflet… and then it lists some activities; “biking is good, swimming is good” and so. But that’s not very concrete. How far can you bike, for instance? (6)

Advised to be less active

A couple of women described situations in which they had been advised to be cautious or to be less active. This advice was sometimes given due to complications or because the women expressed complaints such as having pain during exercise. However, the advice was also given without apparent cause.

… my doctor told me, that it was important not to increase my heart rate too much in the beginning. I have been wondering about that… you are just so worried to do something wrong. So, I was certainly being cautious… reducing my exercise for some time. (6)

Left with unanswered questions

Some women were exposed to ambiguous or contradictory counselling on the safety of physical activity and were left alone to assess the risk of their exercise practice. This led to frustration, especially in one woman who was highly active before pregnancy.

… [the midwife] said that maybe I had an “at-risk pregnancy” and maybe I shouldn’t exercise. But I’m not sure that it’s better for me or the fetus that I’m stressed out about not exercising… she wasn’t sure at all. She said that I just had to listen to my body and then it would probably be fine. (14)

In absence of satisfactory counselling several women turned to the internet for guidance. There was a perception among the women that the internet could easily be misleading and worry-inducing, but still viewed it as their best option. A few women purchased counselling or training sessions from a fitness instructor or physiotherapist.

… there are a thousand baby-fora – massive amounts – on the internet… Some say… they tried yoga once and had pelvic girdle pain… others say you can do it all the way [throughout pregnancy]. You can easily become lost… you just have so many questions… (3)

Voicing a need for enhanced support

Longing for concrete and individualized counselling

A few women were at peace with their inadequate physical activity level, however, most women wanted to be physically active during pregnancy for the benefit of their own and/or offspring’s health. Doubts about proper intensity levels as well as suitable activities and exercises were perceived as significant barriers. Women often believed that physical activity would be more feasible with specific and individualized counselling beyond the general recommendations for physical activity during pregnancy.

Table 3

Themes and sub-themes according to pregnant women’s perspectives.

<table>
<thead>
<tr>
<th>Themes</th>
<th>Sub-themes</th>
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<tr>
<td>Experiencing inadequate counselling</td>
<td>Not counselled on physical activity</td>
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<td>Advice on physical activity was vague</td>
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<td>Advised to be less active</td>
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<td>Left with unanswered questions</td>
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<td>Voicing a need for enhanced support</td>
<td>Longing for concrete and individualized counselling</td>
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<td>A need for support throughout pregnancy</td>
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<tr>
<td>Benefits from individualized guidance</td>
<td>The care provider as a sparring partner</td>
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<td>Hearing it from an expert</td>
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A need for support throughout pregnancy

The pregnant women voiced a need for support during the entire course of pregnancy. Some women felt on their own in the first trimester due to few antenatal care visits and perceived that their physical activity level would have been higher if they were helped to implement good habits early in pregnancy. In addition, it was desired that providers would address physical activity continuously at antenatal care visits to motivate and help the women adjust their physical activity behaviors with respect to the physical changes of the pregnant body.

… it’s a long period from you become pregnant till you meet your midwife… the counselling doesn’t take place until you’re about 16 weeks pregnant… (13)

A few women commented that they could have been more physically active if they had just been more aware of it; that it might have made a difference if a provider had encouraged them to be active.

… it would have been nice if they at the first visit at the doctor had said “we really recommend that you stay active…” Well, because pregnant persons listen to every advice they get from doctors and so… I think somehow you would have done more… (3)

Benefiting from individualized guidance

The care provider as a sparring partner

A couple of women received useful counselling on physical activity. Counselling was considered helpful because it was tangible, using the woman’s situation as a starting point and taking account of her capabilities and wishes. One woman viewed her provider as a sparring partner and valued that counselling was carried out as a dialogue. It was appreciated that the provider explicitly encouraged healthy behaviors.

What I liked about her [the midwife] was that she took my everyday life as a starting point and told me “You can’t change everything – what’s your worst habit? Let’s talk about that.” She stayed close to practice… she was inviting and not patronizing… we talked about activities; what I could start doing and so… (26)

Hearing it from an expert

Some women gained reassurance and courage to exercise when their worries about the safety of physical activity were heard and responded to by a provider. The healthcare providers were perceived as reliable sources of exercise advice.

… but I first felt safe about it [exercising] when I talked to my midwife about it, because you can find a lot of information on the internet and see what others do, but I feel like that is outweighed by hearing it from an authority. (10)

"…I asked to what extent I can be physically active, and they [the midwife and the doctor] told me that I should be able to talk at the same time, and I think that has been a good guideline for me." (12)

Antenatal care providers

An overview of themes and sub-themes according to antenatal care providers’ perspectives is presented in Table 4.

Providers’ perceived barriers in counselling

Prioritizing limited time

Providers frequently emphasized lack of time as a challenge towards counselling on physical activity. It was explained how the many work tasks they had to complete in a short time during consultations obliged them to stick to a strict schedule that barely allowed them to discuss physical activity. Some providers pointed out that time restraints made them provide less care than desired.

… I have half an hour to talk to the patient, examine the patient, scan the patient, and write patient records. So, you see, there is not much time for motivational interviewing… to ask them how they feel. It’s a question you sometimes avoid because you simply do not have time for that. (16)

In shortage of time, counselling on physical activity was sometimes limited to mentioning some suitable activities or informing where to read more about physical activity during pregnancy. Providers commented that physical activity counselling had higher priority when they counselled women with overweight or medical conditions that they believed would benefit from lifestyle changes.

I can tell for sure, there is not much time to discuss this [physical activity]. So, it’s high priority to me when I’m consulting a woman with BMI above 35. (25)

A provider called for stronger evidence of the positive outcomes of physical activity during pregnancy to justify allocating more resources for counselling on physical activity in antenatal care.

Well, it requires resources if you want the midwife to counsel [on physical activity] and the general practitioner too… then you need proof that it [physical activity during pregnancy] is effective… (16)

Facing lack of interest and barriers expressed by the pregnant women

Several providers had the impression that physical activity was not of great interest to most pregnant women. A few providers viewed this because of missing knowledge about the benefits of physical activity during pregnancy while others linked it to perceived barriers such as a busy work schedule or discomforts of pregnancy. Still, others did not perceive the missing interest as a pregnancy-related matter but believed that many women just preferred a sedentary lifestyle. However, there was a general perception that women, regardless of their pre-pregnancy activity level, tend to decrease their physical activity level when they become pregnant.

She’s feeling nauseated and has a poor appetite… she’s certainly not receptive to talk about physical activity if she feels that way. (25)

… when they come to see me, they have already slowed down and then it’s really difficult for them to start again. (18)

Pregnant women’s lack of interest in physical activity would sometimes lead providers to counsel on other health-related topics instead, e. g., diet.

… I cannot cover it all within the time given. So, if I sense that this person is not interested, then this [counselling on physical activity] is

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<th>Themes Sub-themes</th>
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<tr>
<td>Providers’ perceived barriers in counselling</td>
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<td>Balancing the act of counselling</td>
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<td>Acknowledging potential for enhanced counselling</td>
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<td>Recognizing room for improvement</td>
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Table 4

Themes and sub-themes according to antenatal care providers’ perspectives.
Doubting the advisability of high levels of physical activity

The safety of physical activity during pregnancy was taken into consideration by a couple of providers. One provider expressed a need for more evidence on the safety of physical activity during pregnancy and felt uncertain about recommending high-intensity activity and activities such as running and lifting heavy weights. Another provider felt a responsibility to help highly active women moderate their activity level.

... the evidence on both safety and efficacy is lacking... the current studies on preventing cesarean section and gestational diabetes mellitus and so are not completely convincing. Well, if you start early in pregnancy but then there’s the abortion risk... I don’t want to tell the women “Yes, of course” because I think we need more evidence. (16)

There’s this group... they go to gym all the time... it becomes a talk about that you must listen to your body and stop if you have discomfort... I think my role is different with these women. (17)

Balancing the act of counselling

Aiming to create a safe space

Providers emphasized that visits in antenatal care should be an empowering experience. To truly play their supporting role for a pregnant woman, providers found it essential that the woman felt safe to share her thoughts. To nudge her towards healthy lifestyle changes while still maintaining the experience of a safe space was described as a balancing act. Demanding too much of the woman could intimidate her.

Of course, it’s important with the examinations and so, but the most important thing is that they feel safe to share if they have something on their mind and feel prepared to give birth and be a parent. (23)

If I lecture her, I won’t get anywhere with her, and she won’t come to see me anymore. (18)

Meeting the woman where she is

A strategy often used when promoting physical activity was to meet the woman where she is, praise her efforts and aim for small improvements in her physical activity level. Providers would start by asking questions about the woman’s daily life and then suggest one or more adjustments to increase her physical activity level. These suggestions were mainly on low-intensity activities.

I ask her how she gets to work... If she drives the car... then I tell her “Try to park your car a bit further from the entrance”... and sometimes, just to get started, I say “Do you watch television in the evening? If so, during the commercial breaks maybe you could stand up.” (25)

Some activity is better than none

Providers believed that setting very modest goals was necessary for pregnant women to even try to gain a higher physical activity level. This was found especially important with overweight or sedentary women. Proposing substantial changes in physical activity behaviors was perceived as futile. One provider expressed that the physical activity recommendations by the Danish Health Authority were unattainable for most pregnant women. Sometimes providers would motivate the women by explicitly assuring them that some physical activity is better than none.

... I tell them that some is better than none because it can be quite overwhelming to be told to exercise half an hour a day, and if that means they must pack their bags and go to the gym each time, it will be too much for them. (18)

Acknowledging potential for enhanced counselling

Being aware of the central position

The role as physical activity counsellor was differently perceived among the interviewed providers. Some did not view physical activity counselling as a key task and briefly informed the women on the subject, while others believed they had a responsibility to encourage and support the women toward a physically active lifestyle. Yet, providers generally believed it was important for pregnant women to engage in physical activity during pregnancy. Providers were aware of their central role in providing information to women during pregnancy and some acknowledged that their position constituted an opportunity for promoting a healthy lifestyle. Doubt about the impact of counselling on activity levels among pregnant women was voiced, however, other providers thought it possible to impact the pregnant women through firm and continuous support.

My job is to tell them, that it’s safe. (16)

We know that we as midwives have a huge opportunity to push in certain directions during a pregnancy... I think the key word is continuity... (25)

Recognizing room for improvement

A few providers reported that their counselling to some extent was based on their own experience rather than specific guidelines, yet they were generally confident that they were able to guide the pregnant women towards suitable activities. However, it was noted that updated knowledge of physical activity counselling might improve and diversify the counselling.

I have my basic knowledge. If there’s some knowledge that I can use to motivate them even further, I would fancy knowing. I’m stuck in the same as always... it would be nice to have more ideas on how to get the women started. (25)

Some providers found that physical activity guidelines and methods for counselling were rarely discussed among providers, and one provider pointed out that counselling on physical activity would benefit merely from increased focus and awareness among providers.

It seems like it’s just not prioritized... I think I will start asking more often. (19)

Discussion

This study explored experiences of counselling on physical activity in antenatal care from the perspectives of both pregnant women and antenatal care providers working in antenatal care clinics. Our findings suggest that pregnant women did not receive counselling in accordance with the national recommendations on physical activity during pregnancy [1,2]. Most women were either not counselled or given inadequate advice on physical activity. Women reported feeling uncertain about safety and proper levels of physical activity, which constituted a perceived barrier to sufficient physical activity. Similar experiences of inadequate counselling have been described previously [9,11,12]. In our study, providers believed it was important for pregnant women to be physically active. They were aware of their central position in providing information but expressed several barriers in the counselling including lack of time, lack of interest and barriers expressed by the pregnant women, and doubts about the advisability of high levels of physical activity. This is consistent with previous research [15–17] and might help explain why providers do not supply sufficient physical activity counselling in antenatal care.
Two qualitative studies conducted by Lindqvist et al. [9,15] explored Swedish midwives’ counselling on physical activity and described a discrepancy in experiences between midwives and pregnant women: Midwives expressed that they tried to achieve individualized counselling on physical activity, but the pregnant women experienced that the advice was poor and longed for a knowledgeable midwife. Midwives were described as attached to their own agenda, which prevented counselling aimed at individual needs. Lindqvist et al. stated that there were missed opportunities in knowledge exchange during encounters between providers and pregnant women and implicated a need for time restraints to be addressed and to provide midwives with updated tools for counselling. The findings of our study highly resonate with those of Lindqvist et al. This similarity of findings indicates that inadequate counselling on physical activity is a cross-national and profound challenge, suggesting that established approaches and interventions to promote physical activity are ineffective and/or not well incorporated in antenatal care. In addition, similar discrepancies in experiences of counselling between pregnant women and providers have been described in studies focusing on weight gain [18] and diet [19,20] during pregnancy.

Our study contributes with findings emphasizing that early onset and high frequency of counselling on physical activity are important factors to promote physical activity during pregnancy. Both pregnant women and providers recognized a need for continuous encouragement and guidance. Early and regular motivational counselling seems to help women become aware of their physical activity level and make it easier for them to seek the help they need from their provider [21]. The first visit in the Danish routine antenatal care plan is at the general practitioner at gestational age 6–10 weeks, in which counselling on lifestyle choices comprising physical activity is recommended to be included depending on the woman’s needs [1]. However, women in our study seldom reported receiving counselling on physical activity in the first trimester. A study that investigated physical activity promotion by general practitioners in Danish primary care found that specific advice on how to exercise was often missing in sessions even though general practitioners reported frequently promoting physical activity [22]. The study also found that increased time and education of general practitioners on physical activity recommendations were associated with increased quality of physical activity counselling. Another study found that midwives lacked knowledge of physical activity guidelines and might have misplaced confidence in their knowledge on this subject and suggested that medical professional training should be more accessible to increase the amount and accuracy of advice given regarding physical activity [23]. These conclusions are highly relevant as the counselling barriers are in line with our findings in terms of the perceived lack of updated professional knowledge of the effects and the advisability of specific physical activities in pregnancy.

In the present study, strong evidence of the health benefits of physical activity during pregnancy was requested by one provider to allocate resources for counselling on physical activity. Also, some providers doubted the efficacy of counselling on physical activity. While there is growing evidence for the health benefits of physical activity during pregnancy [5–7], several counselling interventions have only proven small impact on promotion of physical activity during pregnancy significant [21]. However, it might be possible to reduce the decline in or increase physical activity levels with regular face-to-face meetings [10] and regular information [21]. Combining different behaviour change techniques such as individual goal setting, planning, feedback, information, and instruction seems favorable [10,21]. A study focusing on reducing weight gain in overweight pregnant women found that interventions seem to be most effective when delivered by a care provider during routine antenatal care, suggesting that it is important to incorporate pregnancy issues in counselling on physical activity as pregnancy advances [24]. These assessments are supported by our findings in terms of pregnant women’s desire for ongoing help to implement and maintain a physically active lifestyle adjusted to the capabilities of their changing bodies during pregnancy. It also might indicate that pregnant women have great trust in antenatal care provider’s expertise in physical activity counselling, implying that they are in a good position for promotion of physical activity.

**Strengths and limitations**

The inclusion of both pregnant women and providers is a strength of this study since the assessment of experiences from both perspectives provides rich and nuanced insights into several aspects of physical activity counselling. To increase generalizability, purposive sampling was used to achieve variation in characteristics of the pregnant women regarding age, physical activity level, gestational age, educational level, parity, and pre-pregnancy BMI. Further, both midwives and obstetricians were included in the study to cover experiences of consulting women with uncomplicated as well as high-risk pregnancies.

The group of providers consisted of six women and one man. Among the authors, one is a man and nine are women. The author group covers diverse disciplines relevant to this study such as midwifery, gynecology and obstetrics, physiotherapy, exercise physiology, ethnological expertise in qualitative research, and research in daily life.

As described, the interviews were conducted in an explorative pilot study [13] with a broad interest in physical activity and pregnancy. This explains the larger proportion of pregnant women than care providers included in the study. The theme of counselling in antenatal care first came to attention during the initial phases of analysis. This ability to generate unanticipated insights is considered one of the strengths of thematic analysis. It is a pragmatic method for identifying, analyzing, and describing patterns within data in rich detail, and by using an inductive, realist approach the analysis enables applicable theorization of experiences [14].

The study has several limitations. Participating pregnant women were not systematically matched with participating antenatal care providers which weakens the possibility of a direct comparison of experiences between pregnant women and providers. Also, it is possible that pregnant women and providers who agreed to participate in this study had more interest in physical activity than those who declined to participate. Furthermore, there might be differences in approach to physical activity counselling among different groups of antenatal care providers i.e., obstetricians/gynecologists and midwives, however, that distinction was not made in the study. Inclusion of additional antenatal care providers would have enabled that distinction and fully ensured theoretical saturation. Inclusion of general practitioners would also have strengthened the study since they play a role in Danish routine antenatal care. The data was collected six years ago, which might weaken its relevance, however, it seems that most pregnant women still do not achieve the recommended amount of physical activity [25].

**Conclusions and implications**

Considering that a physically active lifestyle during pregnancy is known to improve health in pregnant women and their offspring and reduce the risk of adverse pregnancy and perinatal outcomes it is essential to promote physical activity to pregnant women. The gap between the known benefits of exercise and women’s behavior during pregnancy could be a result of ineffective dissemination of guidelines through counselling [26]. Our findings implicate that antenatal healthcare providers should be equipped with updated knowledge as well as applicable counselling strategies and/or tools to adjust the general recommendations on physical activity during pregnancy to suit the need of each individual woman. A systematic review that found great discrepancies in clinical practice guidelines for physical activity in pregnancy acknowledged the confusion among providers and emphasized the importance of the applicability of guidelines [27].

In conclusion, our study demonstrated that pregnant women received scarce counselling on physical activity in antenatal care despite...
it being desired. Care providers experienced several barriers towards counselling on physical activity yet tried to adjust their counselling on physical activity to meet the woman’s individual situation and make physical activity more feasible. Both pregnant women and providers recognized opportunities for enhancing the counselling on physical activity in the antenatal care settings. Future research should focus on exploring effective interventions to promote physical activity during pregnancy and how to implement these in routine antenatal care to enhance the counselling on physical activity.

Author contributions
B.S, A.P.J., C.B.R., S.d.P.K and J.M.B. designed the study. J.M.B., C.B. R and S.d.P.K. conducted the interviews. C.B.R., S.d.P.K., N.B. and one master student transcribed the interviews. N.B. and A.P.J. conducted the data analysis and wrote the discussion. N.B., A.P.J., J.M.B. and E.L. contributed to the first draft of the article. All authors revised the manuscript and approved the final version.

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Ethical approval
To assess if ethical approval was needed for this study, the study protocol was sent to The North Denmark Region Committee on Health Research Ethics. On June 16th 2017, the committee stated in writing that ethical approval was not required for this study. According to Ethical approval manuscript and approved the final version.

Declaration of Competing Interest
There are no conflicts of interest or personal relationships that could have appeared to influence the authors’ work.

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