Experiences of Exercise During Pregnancy Among Women Who Perform Regular Resistance Training: A Qualitative Study

Karolina Petrov Fieril, Monika Fagevik Olsén, Anna Glantz, Maria Larsson

Background. Women who are pregnant and healthy are recommended to do 30 minutes or more of light to moderate exercise a day on most, if not all, days of the week. However, only 1 of 6 pregnant women in the United States and northern Europe follows these recommendations. Little attention has been given to the experience of exercise in pregnancy.

Objectives. The aim of the study was to describe experiences of exercise during pregnancy among women who performed regular resistance training.

Design. This was a qualitative, inductive content analysis study.

Methods. Seventeen pregnant women who exercised on a regular basis participated in individual semistructured, face-to-face interviews that were recorded, transcribed, coded, and condensed into subcategories and categories.

Results. Four categories emerged (subcategories within parentheses): (1) positive impact on body and mind (reduced pregnancy-related problems, increased self-confidence and sense of control, immediate positive feedback, and effects on lifestyle and quality of life); (2) expected benefits and facilitators (knowledge of health benefits, part of one's lifestyle, preventing pregnancy-related problems, social support, staying in good shape, and healthy living with regard to the fetus); (3) new exercise barriers (physical limitations, taking care not to harm oneself or the fetus, uncertainty or lack of knowledge, sense of exclusion at the fitness center, lack of understanding on the part of others, and the pregnancy itself provided an easy excuse); and (4) overcoming exercise barriers (lowering the intensity of exercise, modifying the type of exercise, changing exercise goals, and being extra attentive during exercise).

Conclusion. Pregnant women strived to exercise if the exercise facilitators outweighed the barriers. As the study described facilitators, barriers, and strategies for how to overcome exercise barriers, the results can be useful in exercise promotion in healthy pregnancy.

K. Petrov Fieril, MSc, RPT, Department of Physical Therapy and Occupational Therapy, Institute of Neuroscience and Physiology, Sahlgrenska Academy, University of Gothenburg, SU/Sahlgrenska SE-41345, Gothenburg, Sweden. Address all correspondence to Ms Petrov Fieril at: karolina.fieril@vgregion.se.

M. Fagevik Olsén, RPT, Sahlgrenska University Hospital–Physiotherapy, Gothenburg, Sweden.

A. Glantz, PhD, MD, Region Västra Götaland–Primary Health Care, Gothenburg, Sweden.

M. Larsson, PhD, RPT, Region Västra Götaland–Primary Health Care and Sahlgrenska Academy, University of Gothenburg, Gothenburg, Sweden.

[Petrov Fieril K, Fagevik Olsén M, Glantz A, Larsson M. Experiences of exercise during pregnancy among women who perform regular resistance training: a qualitative study. *Phys Ther.* 2014;94:1135–1143.]

Published Ahead of Print: May 1, 2014
Accepted: April 16, 2014
Submitted: December 18, 2012

Women who are pregnant and healthy are recommended to do 30 minutes or more of light to moderate exercise a day on most, if not all, days of the week.[1,2] Exercise during pregnancy is associated with reduced back pain,[3] improved sleep,[4] and improved health perception.[5] Only a few randomized controlled trials have examined the efficacy and safety of resistance training during pregnancy.[6,7] One study showed that resistance training is effective in improving glycemic control in women with gestation diabetes mellitus.[7] No adverse impact on the newborn has been seen.[6] Downs et al[8] recently suggested adding resistance training to the recommendations. Despite beneficial exercise effects, only 1 of 6 pregnant women in the United States and northern Europe follows the recommendations,[9,10] and a majority of pregnant women reduce the duration, frequency, and intensity of exercise once they become pregnant.[9,11,12]

Effective promotion of exercise among pregnant women is considered to be dependent on the identification of both exercise barriers and facilitators.[13] Exercise barriers during pregnancy are well explored in the literature.[14–17] Facilitators to exercise during pregnancy have been less frequently studied and are primarily described as "weight control," "perceived easier labor," "social support," and being "part of one's lifestyle."[12,13,17]

The qualitative experience of exercising during pregnancy has been briefly reported in a few articles, and women have shared their views, such as "I feel better as a result of exercise,"[13,18–20] and exercise "helps to control blood glucoses" [among women with gestational diabetes mellitus].[19] To our knowledge, only one study has provided a detailed description of the experiences of a training session engaged during pregnancy.[16] However, this study was conducted a few years after the pregnancy, which should raise concerns about recall bias.

By interviewing physically active women while they are pregnant, further knowledge about experiences of exercise during pregnancy, including barriers and facilitators, can be elucidated and constitute a basis for more specific training advice in pregnancy. The aim of the present study was to describe experiences of exercise during pregnancy among women who performed regular resistance training.

Method

Participants

Seventeen women participated in the interview study, of whom 12 were recruited from an intervention study of the efficacy of a resistance training program during pregnancy that took place during 2006 and 2009. For the intervention study, women were recruited from 2 antenatal clinics in Gothenburg, Sweden. Approximately 1,500 pregnant women were registered at the antenatal clinics at this time (99% of women in Sweden receive combined obstetric and midwifery care through the public health system via antenatal clinics).[21]

A total of 92 women were included in the intervention study and were randomly assigned to a control group (n=41) or an intervention group (n=51). After the intervention was completed, all of the women who participated in the intervention group within a defined period of time (November 2008–February 2009) and who met the inclusion criteria (n=14) received verbal and written information about the present interview study. Twelve women agreed to participate, and the remaining 2 declined due to time constraints and reluctance to participate.

The inclusion criteria were: (1) single pregnancy; (2) ongoing, regular highly repetitive resistance training (once or twice a week for 5 weeks or longer); (3) absence of medical or obstetric diseases; and (4) ability to speak Swedish. To get a breadth of the sample, another 5 women, who also performed highly repetitive resistance training[22] at fitness centers on their own, participated in the study. These women were recruited by written information about the study that was freely available in the waiting room at the antenatal clinics. In total, 17 women were interviewed. Table 1 shows the participants' characteristics regarding demographic data and exercise level.

All of the interviewed women practiced highly repetitive resistance training, performed with light barbells (1–10 lb [1 lb=0.4536 kg]) and weight plates (2.5–10 lb) and with music in a group exercise setting.[22] The exercises were adjusted to pregnancy (ie, the squat jump was exchanged for heel rises, and the abdominal training was exchanged for static abdominal training and pelvic-floor muscle training). The exercise was performed at a self-perceived moderate to vigorous intensity.[23] Each session was 60 minutes long, including warm-up and relaxation. All major muscle groups were trained repeatedly[22] (50–80 repetitions for each muscle group) for 3 to 5 minutes, including short breaks. Fourteen of the 17 women had practiced highly repetitive resistance training before pregnancy. Except for the resistance training, Table 1 shows the participants' additional exercise during pregnancy.

Data Collection

The semistructured, face-to-face interviews took place in health care

facilities and were digitally recorded. Women who confirmed their participation were scheduled for an appointment for the interview. Each woman was informed that the interview would be open and focused around her own experience of practicing resistance training during pregnancy. An interview guide with open-ended questions was developed, using the following opening questions:

- Why are you doing exercise during your pregnancy?
- How does it feel to exercise during pregnancy? In particular, how does it feel to do resistance training?
- Are you as physically active now as before pregnancy?
- Is there anything else about resistance training that we have not discussed and you would like to add?

The questions could be followed up with comments such as "Could you tell me more about . . . ?" to deepen participants' understanding of their answers. One researcher (a physical therapist) conducted all of the interviews, which lasted, on average, 27 minutes (range=15–45). The study was approved by the Regional Ethical Review Board at the University of Gothenburg. The interviews were conducted in Swedish, and all interviews were completed before data analysis.

Data Analysis

To meet the aim of the current study, a qualitative inductive content analysis design was used, and a thematic analysis was performed.[24,25] First, each recorded interview was listened to several times to make sense of the data and the whole of the interview. Next, the interviews were transcribed verbatim and repeatedly read, bearing in mind the aim of the study. An open coding was then conducted by writing notes and headings of the informants' experiences of physical exercise in the text while reading it. All codes were cross-checked through the entire text, and some codes were revised. The codes also were compared for similarities to and differences from other codes. The next step was to condense and abstract the data by grouping similar codes into subcategories. The subcategories were then sorted and abstracted into categories. The data categorization was modified in the course of analysis to ensure the best fit of the data.[24,25] To verify constancy (stability) of the data during

Table 1.
Demographic Data and Exercise Level in Pregnant Women Who Engaged in Regular Resistance Training During Pregnancy (n=17)

Sociodemographic and Life Factors	n
Age (y)	
25–29	4
30–34	7
35+	6
Parity	
Primiparous	9
Parous	8
Nationality	
Swedish	14
Finnish	1
French	1
Canadian	1
Education	
Higher education	2
College graduate with diploma	15
Gestational week at interview	
15–19	2
20–24	3
25–29	10
30–35	2
Primary exercise prior to pregnancy	
Resistance training	5
Running	5
Walking	5
Bicycling	2
Exercise during pregnancy vs before pregnancy	
Increased	5
Maintained	5
Reduced	7
Further exercise during pregnancy, in addition to regular resistance training	
Walking	4
Bicycling	2
Swimming	1
Yoga	2
Running	2

Table 2.
Overview of Analyses and Examples

Quotes	Codes	Subcategories	Categories
I: How does it feel when you exercise? I:5: It feels great. I often exercise after work. I am often tired, but exercising gives me energy and I feel really good afterwards. I feel calm and at the same time energized.	Feels great Gives energy Feel really good afterwards	Immediate positive feedback Reduced pregnancy-related problems	Positive impact on body and mind
I: How come you exercise when pregnant? I:8: Because I do a large amount of training when I'm not pregnant. So I don't see why I should stop because I'm expecting. I think that the body needs movement, and you need exercise in order to feel good, regardless of whether or not you are pregnant.	Normally exercise a great deal The body needs movement You need exercise in order to feel good	Part of one's lifestyle Knowledge of health benefits	Expected benefits and facilitators
I: How does it feel when you exercise? I:3: A kind of restriction. I can't press myself as much as before. But that is only natural. The body sets the limit.	A kind of restriction The body sets the limit	Physical limitations	New exercise barriers
I:12: The intensity is not the same, but you still do something. I don't put on weight as much as I otherwise do. I: The intensity is not the same as before pregnancy? I:12: No, I don't think it is.	The intensity is not the same Not put on weight as usual	Lowering the intensity	Overcoming exercise barriers

the process of analysis, the transcripts were re-read several times.[24] The first author (K.P.F.) conducted the first steps of analysis. The last author (M.L.) read the transcripts of interviews and checked codes and categories performed by the first author, which were discussed until consensus was reached. Finally, the categories and subcategories were discussed among all authors until consensus was reached. Examples of quotes, codes, subcategories, and categories are shown in Table 2. The categories were considered saturated since no new subcategory emerged in the last interview. The interviews and the analysis were performed in Swedish. The analysis of data was directly translated into English, with an effort being made to convey the sense of the original data analysis.

Role of the Funding Source

The study was funded by the Local Research and Development Council of Gothenburg and Southern Bohuslän and the Primary Health Care Gothenburg Research and Development Unit.

Results

The women's described experiences of exercise during pregnancy were classified into 4 categories (Tab. 2). The categories describe the women's perceptions of exercise in general during pregnancy and of resistance training in particular. The 4 categories that emerged were: (1) positive impact on body and mind, (2) expected benefits and facilitators, (3) new exercise barriers, and (4) overcoming exercise barriers. Overall, as a theme,[26] the women strived more to exercise if "facilitators" outweighed "barriers." Beneficial short-term effects led to continued exercise, often with lowered intensity, adjustment to exercise activity, and alteration of exercise goals.

Positive Impact on Body and Mind

Exercise was perceived to have a positive impact on body and mind and thus was described to generate both immediate and short-term health benefits, recognized from previous experiences before pregnancy or influenced by pregnancy. The beneficial short-term effects were essential motivation for further exercise.

Reduced pregnancy-related problems. Several of the women experienced that regular exercise normalized or relieved various somatic problems that had arisen during pregnancy, including nausea, fatigue, and headache. One woman described that her back pain disappeared completely after participating in an exercise class for a few visits. Furthermore, a few women expressed that exercise had a positive impact on sleep:

> For a while I had a tingling sensation in my legs and was unable to sleep. It was so nice when I had my training, as then I was able to sleep really well [laughter]. (I:15)

Increased self-confidence and sense of control. Several of the women described that their experience of resistance training led to sustained or even increased muscular strength, which one woman considered gave her greater confidence that the body was capable of many

types of exercise, even during pregnancy. Additionally, the training was perceived as valuable for acquiring good posture. Regular exercise also was perceived as maintaining contact with the body, which led to an increased sense of control. Also, the training was a way of managing bodily changes in pregnancy. One woman noted weight gain associated with pregnancy and remarked it felt rather good to have a strong body that could help handle the weight increase:

> As gaining weight is a part of it, it feels rather good to have a strong body to be able to handle it. (I:5)

Immediate positive feedback. Several of the women experienced that resistance training resulted in some kind of immediate positive physical or psychological feedback. The positive responses also were recognized from exercising regardless of pregnancy. Using one's muscles led to a sense of satisfaction and physical well-being. In addition, exercise was described as "enjoyable" and to generate a sense of mental well-being, both during and after the performance.

Effects on lifestyle and quality of life. A few women mentioned that regular exercise reduced both stress and general pain and led to a healthier and more regular diet. Another woman noted that exercise kept "non-well-being" at bay and that the absence of physical activity had an emotionally negative effect:

> But this week I did not exercise very much, and it affected me negatively. (I:9)

Expected Benefits and Facilitators

All women identified their personal general and pregnancy-specific "facilitators to exercise." General facilitators were associated with an attitude that exercise is healthy and beneficial. For several women, exercise was part of their lifestyle. Pregnancy itself, as well as support from health care professionals and friends, also promoted exercise.

Knowledge of health benefits. All women identified knowledge of health benefits as an exercise facilitator. They stated that, in general, it is healthy to exercise and for this reason wanted to exercise during pregnancy. The health benefits of exercising during pregnancy were considered to include both the woman and her fetus.

Part of one's lifestyle. For several of the women, exercising was an important part of their prepregnancy lifestyle and a key factor for good health. During pregnancy, some women stated that they felt uncomfortable or restless due to physical inactivity. Consequently, previous experience of having had exercise benefits while not pregnant motivated the women to try to exercise during pregnancy:

> I like doing something physical, some activity. One feels a bit more alert when one exercises. And one feels better in general. (I:1)

Preventing pregnancy related problems. Several women expected or were hoping that exercise, in particular resistance training, would prevent or reduce pregnancy-related disorders, such as impaired posture and back pain. Additionally, the birth process and postpartum recovery were considered to be facilitated by remaining fit during pregnancy. An interest in using exercise to avoid musculoskeletal disorders when the child was born also motivated exercise (ie, resistance training):

> It's my second child, and with my first child, I noticed that I lacked muscles, mainly in the upper part of my body. I had to carry her a lot, she suffered from colic . . . and my back and shoulders became very painful, so I felt that I wanted to prevent that from happening this time. (I:6)

Social support. Several of the women described social support as a contributing facilitator. Such support included encouragement and exercise advice given by friends who themselves were physically active during pregnancy, or from parents and health care professionals (ie, physical therapists and midwives). Group training also was described as supportive, particularly if the group targeted pregnant women. Additionally, the women perceived the implicit understanding from the other pregnant women in the group as supportive (ie, exercise was performed in an adjusted way and open atmosphere):

> It's really fun that it is such a small group who train together. One gets to know the others, and they are all in the same situation, and it feels good. (I:13)

Stay in good shape. Regular exercise during pregnancy was a strategy for avoiding excessive weight gain. Some women believed that regular exercise also enabled them to start postpartum exercise sooner. One woman thought that exercising during pregnancy would lead to earlier postpartum recovery of body shape:

> It will probably be even more difficult to regain your figure and get into form after pregnancy if you don't exercise. (I:17)

Healthy living with regard to the fetus. Another reason for exercising, mentioned by a few women, was a desire to live an extra healthy lifestyle during pregnancy out of consideration for the fetus. In this respect, exercise was considered an important part of healthy living. One woman stated that by prioritizing exercise, other tasks (ie, "too much work") were reduced:

> I think I used to drive myself a bit too hard at work because I found it such great fun. But now, I have someone else to think of, and for that reason I intend to take better care of myself, too. And, training is a part of that, because it makes me feel so much better. (I:15)

New Exercise Barriers

All of the women identified several barriers to exercise. Pregnancy itself generated new exercise barriers that the women had not experienced when not pregnant. Barriers to exercise included physical, psychological, and social restrictions that hampered and complicated their performance. Access to exercise locations also was limiting.

Physical limitation. The physical changes during pregnancy complicated exercise performance. All the women described some kind of physical limitation, such as a growing belly, fatigue, nausea, contractions, headaches, back and pelvic pain, and anemia.

Taking care not to harm oneself or the fetus. All of the women reported being more careful when pregnant. There was a fear of harming oneself or the fetus by doing extreme-intensity exercise or the wrong type of exercises:

> One should be careful about the body so that nothing goes wrong. (I:3)

Uncertainty or lack of knowledge. Some women described uncertainty or lack of knowledge about appropriate type of exercise, and one woman even questioned the suitability of exercise in any shape or form during pregnancy:

> You didn't know, should you exercise when pregnant, aren't you just supposed to become fat. (I:7)

Sense of exclusion at the fitness center. A few women described a sense of exclusion while taking part in a training class in which they had participated before they became pregnant or where nonpregnant women exercised. One woman related that even though she did not feel or think that she was ill, the sense of exclusion at the fitness center sometimes generated a feeling that pregnancy was a disease. For another woman, there was absolutely no question of going to the training center:

> Just going to the gym where people are relatively well trained and dressed in neat clothes [laughter] makes you feel that, no, I don't fit in there. (1:7)

The pregnancy itself provided an easy excuse. A few women described that, for themselves and people around them, the pregnancy itself provided an easy excuse for not exercising:

> After all, I'm pregnant. (I:17)

Lack of understanding on the part of others. Social reproach was cited as a barrier to exercise. Some women recounted that relatives, friends, or colleagues demonstrated their lack of understanding about exercising during pregnancy or questioned a particular type of exercise, such as resistance training. Certain types of exercise were not recommended by health care professionals or were carried out on one's own:

> There have been many astonished looks. And some. . .my midwife thought that I exercised a bit too much for a while, especially when I did resistance training, which she considered a great strain on the body. I have many friends who stop all such activities when they are pregnant and who think that I'm nuts to continue. (I:11)

Overcoming Exercise Barriers

Regardless of the exercise barriers, all of the women exercised during pregnancy. By using different strategies, the exercise could be adapted to pregnancy. The strategies included lowering the exercise intensity, modifying the type of exercise, altering exercise goals, and being extra attentive during performance. These strategies were learned through recommendations and self-reflective caution.

Lowering the intensity. Many of the women described that exercise intensity was reduced as a result of pregnancy. Most women who were used to high-intensity training before pregnancy were advised, or chose themselves, to reduce the intensity (eg, jogging instead of running intervals or just training less intensively). Similarly, besides length and intensity, a focus on the quality of the exercise performance was of paramount importance:

> At the same time, I think even more of the importance of doing it as correctly as possible. As soon as one increases it a little, you can easily begin to lift incorrectly. It's better to do it correctly, but with a slightly lighter weight. (I:3)

Modifying the type of exercise. The type of exercise also was adjusted during pregnancy. Some types of exercise (ie, deep squats, running, and spinning) were left out if they were considered difficult, painful, or uncomfortable to perform. One woman described problems walking due to pelvic pain, although she had no difficulty with resistance training. Many women considered that resistance training was a suitable type of exercise during pregnancy:

> It [resistance training] does not feel difficult in pregnancy. Unlike the jumping, leaping, and running in fitness training, it doesn't disturb me in any way. (I:16)

Changing exercise goals. For several of the women, pregnancy led

to altering their exercise goals. One woman described that the goals of training changed from fitness before pregnancy to health improvement during pregnancy. Another woman expressed that her goal was to be physically active, regardless of the type of exercise. A few women had exercised a great deal before pregnancy, and, for them, the aim was not to become stronger or to face a challenge; instead, the goal was to try to maintain fitness and strength, or at least not lose too much:

> I try to keep on exercising, as well as I can, even during this period. (I:8)

Extra attentive during exercise. Some women found that another way to overcome exercise barriers was to be extra attentive and responsive, thus being guided by one's own body and thereby judging the appropriateness of an exercise activity. By paying extra attention, instant bodily feedback guided continuation or stopping the exercise. If it felt uncomfortable, the exercise would be modified accordingly:

> In my case, I believe that if my body feels good when I exercise, then it works; but if I feel pressure and it is uncomfortable, I would limit the training. (I:5)

Having confidence that the body could provide guidance as to the appropriateness of the exercise, a few of the women even engaged in self-rated strenuous exercise.

Discussion

The main findings in the present study were the experiences of a training session during pregnancy, some novel exercise barriers and facilitators, and the perceived benefits of exercise. To our knowledge, only one previous study provided a detailed description of one's experience of a training session engaged during pregnancy.[16] Also, Hegaard et al[16] reported that women in their study described enjoying using their muscles during exercise and reported that managing to exercise led to a "psychological boost" or increased self-confidence. In the present study, a new dimension emerged, described by several women, that exercise generated a sense of control. By exercising, some pregnancy problems, such as weight gain, poor posture, fatigue, impaired sleep, and back pain, were perceived to be solved or addressed. An interpretation of this result is that rapid and major changes in the body in pregnancy could engender feelings of anxiety and alienation. The sense of control may be regained or more easily maintained by doing exercise.

Many facilitators of exercise during pregnancy have been identified, including "weight control," "perceived easier labor," "social support," and "part of one's lifestyle."[8,13,17,27] Previous studies have shown that "preventing pregnancy-related problems" is an important facilitator, implying that exercise can be regarded as preventing complications during labor as well as facilitating childbirth.[13,27] The present study extended these findings further by identifying additional and new content to this exercise facilitator (ie, improving physical strength as well as preventing pain, impaired posture, and musculoskeletal disorders when the child is born). The physical therapist can highlight these facilitators when encountering pregnant women. Generally, a majority of pregnant women reduce their exercise intensity and frequency compared with prior to pregnancy.[9,11,12] In contrast, some women in the present study increased the amount of exercise. The fact that many of the women participated in a training group targeting pregnant women could be a possible explanation, implying the importance of group training in this population.

The present study identified a large number of exercise barriers experienced by the women. However, the exercise barriers in our study differ somewhat from those of previous studies. The women in the present study did not mention barriers such as "lack of time," "lack of motivation," "swelling," "cramps," and "feeling too big."[13–15,20] Instead, psychosocial aspects that had not been highlighted in previous studies were mentioned, including "sense of exclusion at the training center" and "lack of understanding on the part of others." The dissimilarity between our results and those of previous studies may have been due to different exercise experiences. The women in the present study had experienced prepregnancy exercise—even though some of the women did only light-intensity exercise such as walking. By having had a prepregnancy exercise experience, the women probably were more motivated to exercise during pregnancy as well. Downs and Hausenblas[20] found that intention, and not the degree of difficulty of participating in exercise, most strongly influences exercise adherence during pregnancy. Based on these findings, both previous exercisers and sedentary pregnant women need motivation, support, and accurate guidelines to engage in prenatal exercise.

The present study described different exercise strategies used by the pregnant women. One strategy was to be extra attentive during exercise, thus allowing the body to maintain body awareness to guide and determine the appropriateness of an exercise activity. This strategy is poorly described in the literature but might be similar to Hegaard and colleagues' finding of "an inner sense of security."[16] In order to use this strategy, prior experience of exercise is probably necessary. Using this strategy, a few women in the present study even exercised at what they

described as a strenuous level. Recent studies also have suggested that there is sufficient empirical evidence to support the promotion of moderate to vigorous prenatal exercise.[8,28] However, one should bear in mind that the recommendation for resistance training is light to moderate exercise intensity.[1,2]

The findings in this study show that significant others may have an important impact on the woman's exercise performance, both as an exercise facilitator and as an exercise barrier. Accordingly, as reported in previous articles,[8,20,27] support from friends and family members as well as support from health care professionals is an important exercise facilitator. Pregnancy can be considered a unique time for behavior modification and thus offers a propitious moment for health care professionals to give social support to enhance and implement healthy habits. To "tailor advice" has been found to be an exercise facilitator in nonpregnant individuals.[29] Hence, individually tailored training advice from knowledgeable health care professionals would probably be very helpful during pregnancy. Physical therapists with unique knowledge of instructing people in how to exercise also can advise how to plan alternative exercises and cope with exercise barriers.

Zavorsky and Longo[30] recently suggested that resistance training should be added to the exercise recommendations in pregnancy. Also, some studies have examined the efficacy and safety of resistance training adopted in pregnancy.[6,7] The results of the current study suggest potential benefits from doing resistance training during pregnancy, including reduced back pain and improved quality of life. These potential benefits could be explored in future research.

As very few interview studies have focused on the experience of exercise in pregnancy, the importance of the present study is that the study population comprised pregnant women with great experience of exercise in pregnancy. One previous study[16] interviewed pregnant women who were physically active before pregnancy, some of whom continued being physically active during the pregnancy. However, the interviews were conducted a few years after pregnancy, which raises concerns about recall bias. In the present study, the women were interviewed during pregnancy and while still engaging in regular exercise.

In the present study, the researchers who conducted the interviews and interpreted the data were physical therapists. A limitation of the study was that the participants' awareness of the interviewer's profession could have influenced their responses due to their preconceived conceptions of physical therapy. An important limitation of the present study was that the participants were a small sample of physically active pregnant women who were engaging in regular resistance training, the majority of whom participated in a randomized controlled trial. Because regular resistance training was an inclusion criterion, pregnant women with limited experience or bad experience with this type of training were not represented. Other experiences might have emerged in a more diverse sample. Furthermore, the women were homogeneous with regard to age and educational level; they all had an educational level equivalent to university, lived in an urban area, and were over 24 years of age. In general, women who exercise during pregnancy are more often higher educated, primiparous, nonsmokers, prepregnancy exercisers, and with a prepregnancy body mass index of <30 kg/m^2.[9,10]

In the present study, several of the results correlated with previous interview studies,[16–18,27] indicating that the study sample also represented a larger population of pregnant women. We suggest that the findings can be transferred to healthy pregnant women who are previous exercisers (ranging from regular walks to strenuous exercise), who want to exercise during pregnancy despite physiological and psychosocial barriers, and who receive information or social support regarding exercise. The findings can help physical therapists and other health care providers to encourage and support healthy behaviors in pregnancy.

Implications

Because group training is an exercise facilitator, physical therapists can provide information about appropriate training groups, or preferably recommend or initiate exercise groups targeting pregnant women. Physical therapists can have a major role by giving updated information on exercise guidelines in pregnancy and by encouraging and supporting the pregnant woman to follow the recommendations. Also, prepregnant exercisers need support and accurate guidelines from health care staff. Because pregnancy-related exercise barriers are very common, pregnant women may need information about strategies that are useful to cope with these barriers (eg, lower the exercise intensity, use alternative types of exercise, adjust exercise goals, pay extra attention to physical symptoms during the exercise performance). A contact with a physical therapist can be of value.

Ms Petrov Fieril and Ms Fagevik Olsén provided concept/idea/research design. Ms Petrov Fieril, Ms Fagevik Olsén, and Ms Larsson provided writing and data analysis. Ms Petrov Fieril provided fund procurement. Ms Glantz provided participants and consultation (including review of manuscript before submission).

The study was approved by the Regional Ethical Review Board at the University of Gothenburg.

The study was financially supported by the Local Research and Development Center of Gothenburg and South Bohuslän and from Research and Development Primary Health Care of Gothenburg (clinical trial registration number 48241).

DOI: 10.2522/ptj.20120432

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