Patient and Provider Communication Regarding Exercise during Pregnancy in a Rural Setting

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Abstract

Introduction: Women in rural settings are at increased risk for adverse pregnancy outcomes. One potential way to improve pregnancy outcomes in rural settings is through physical activity promotion. However, given the disparities in prenatal care, women in rural areas may not receive information from their health care provider regarding physical activity during pregnancy. Therefore, the purpose of this study was to examine patient and provider communication in a rural setting (from both patients’ and providers’ perspectives) regarding physical activity during pregnancy.

Methods: A mixed methods study was performed in a rural obstetrical practice in the southeastern United States. During early pregnancy, patients were asked questions about their current physical activity levels and intentions for physical activity during their pregnancy. During late pregnancy, patients completed a survey regarding communication from their obstetric provider about exercise during pregnancy. Providers responsible for the patients’ prenatal care were surveyed regarding communication with patients about physical activity.

Results: Seventy-one pregnant women and 5 providers participated. 58.2% of patients reported their provider did not discuss physical activity during pregnancy with them at all. Meanwhile, all providers (100%) reported discussing physical activity with all of their patients. Similarly, only 21.8% of patients reported their provider discussed the benefits of exercise during pregnancy, while 100% of providers reported telling their patients about the benefits of exercise during pregnancy.

Conclusions: Our study suggests ineffective patient-provider communication regarding physical activity during pregnancy in rural settings. Improved communication strategies could reduce disparities in health outcomes among pregnant women in rural settings.

Keywords
Pregnant, Physical activity, Health care

Introduction

The American College of Obstetrics and Gynecology (ACOG) recommends regular physical activity during pregnancy to limit excessive weight gain and improve obstetric outcomes [1]. Physical activity during pregnancy is safe and effective for improving a number of maternal and infant short and long-term outcomes [2-8]. Despite all of the benefits of exercise, only 23% of all pregnant women report exercising in accordance with guidelines recommended by ACOG [9]. This number is likely to be even lower among pregnant women in rural communities as it is well established that people who live in rural settings are significantly less active [10,11]. In addition, pregnant women report receiving little or no advice about physical activity during pregnancy from their health care provider [12-15]; thus, the scientific evidence supporting exercise during pregnancy does not appear to be translating into the clinical setting and the community. Further, pregnant women report receiving much of their physical activity information from online and media-based sources, which emphasizes the need to address the quality of advice women are receiving, as well as help guide them towards evidence-based physical activity information [16].
All patients were recruited from an obstetrical practice in a multi-speciality, rural healthcare clinic in the southeastern United States (U.S.). Patient characteristics are included in Table 1. Inclusion criteria were 1) Age 18-44 years old 2) Between 8 and 16 weeks gestation 3) Confirmed singleton viable pregnancy via routine ultrasonography, and 4) English-Speaking. The University’s Institutional Review Board approved all study procedures. All patients and providers gave written informed consent to participate in the study.

Between 8-16 weeks (early pregnancy), patients were asked questions about their current physical activity levels and intentions for physical activity during their current pregnancy. Surveys were completed via paper and pencil and returned to the study team within 7-10 days. At 32-37 weeks (late pregnancy), all patients were asked to complete a survey regarding communication from their obstetric provider about exercise during pregnancy. All surveys were adapted from a previous study in an urban setting [20]. The survey contained specific questions, shown in Table 2, regarding health care provider communication related to physical activity during pregnancy.

After all patients had completed their late pregnancy survey, the providers responsible for the patients’ prenatal care were contacted and asked to take the provider version of the survey. Provider questions and responses can be found in Table 3. All data analyses were conducted using IBM SPSS Statistics, Version 22 (Armonk, New York). All data was entered and managed via REDcap® electronic data management system [21].

**Results**

Seventy-one women participated in the study.

**Table 2: Health care provider communication with patients regarding exercise (n = 55).**

<table>
<thead>
<tr>
<th>Question</th>
<th>n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Did your doctor or nurse discuss exercise recommendations for pregnancy with you?</td>
<td>23 (41.8%)</td>
</tr>
<tr>
<td>Yes</td>
<td>23 (41.8%)</td>
</tr>
<tr>
<td>No</td>
<td>32 (58.2%)</td>
</tr>
<tr>
<td>How often did your doctor or nurse discuss exercise during pregnancy with you?</td>
<td></td>
</tr>
<tr>
<td>Never</td>
<td>28 (38.9%)</td>
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<tr>
<td>First Visit Only</td>
<td>14 (19.4%)</td>
</tr>
<tr>
<td>Once per Trimester</td>
<td>9 (12.5%)</td>
</tr>
<tr>
<td>Every Single Visit</td>
<td>4 (5.6%)</td>
</tr>
<tr>
<td>Did your doctor or nurse discuss the risks of NOT exercising during pregnancy with you?</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>3 (38.9%)</td>
</tr>
<tr>
<td>No</td>
<td>52 (19.4%)</td>
</tr>
<tr>
<td>Did your doctor or nurse discuss the benefits of exercising during pregnancy with you?</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>12 (21.8%)</td>
</tr>
<tr>
<td>No</td>
<td>43 (78.2%)</td>
</tr>
</tbody>
</table>
cussed exercise during pregnancy with them, while most physicians reported bringing it up several times throughout the pregnancy, or as needed. Patient and provider response data can be found in Table 2 (patient) and Table 3 (provider).

When patients were asked open-ended questions regarding provider advice about physical activity during pregnancy, several common themes were noted for women who did report conversations about physical activity during pregnancy occurring. Patients were encouraged by providers to stay active and continue their pre-pregnancy activity levels. Walking, low-impact aerobics, swimming, yoga, and weight lifting were exercise activities suggested by providers. Heavy lifting and any exercise that could cause discomfort or harm were discouraged. When providers did recommend specific guidelines for exercise during pregnancy, patients reported being encouraged to exercise somewhere between 3 to 7 days per week for approximately 30-45 minutes per day. Patients reported providers stated risks associated with not exercising during pregnancy included increased weight gain and increased risk for gestational diabetes. Patients reported providers stated benefits of regular exercise during pregnancy included weight management, an easier labor and delivery and generally feeling better during pregnancy (Table 4).

**Discussion**

Findings of this study indicate that while providers
appear to value physical activity during pregnancy, and intend to communicate the importance of physical activity during pregnancy with their patients, the majority of patients did not report receiving the intended communication/message in this rural setting. More than half of patients surveyed in this study reported their provider did not discuss physical activity during pregnancy with them, although every provider reported having a discussion about physical activity with all of their patients. Less than 25% of these patients reported their doctor or nurse discussed the benefits of exercise during pregnancy with them, while all providers reported telling their patients about the benefits of exercise during pregnancy. Our findings were similar to previous studies conducted by Duthie, Drew, and Flynn [14] and Leiferman, Sinatra, and Huberty [22] who noted discrepancies between obstetricians’ and patients’ perceptions of their clinical interactions pertaining to physical activity during pregnancy. Findings from these studies and the present study suggest that there is a missed opportunity to use prenatal visits as a way to discuss exercise during pregnancy [14,23].

Leiferman and colleagues found that a major barrier to physical activity during pregnancy was inconsistent information [22]. Coiffi and colleagues reported that physical activity information conflicted with other sources (i.e. health care providers, online sources, classes, and personal beliefs) and may not be up-to-date [24]. These study findings are consistent with the current study in that 54.9% of patients in this study reported that ideas regarding exercise during pregnancy came from sources other than their provider. Since 1985, ACOG has amended its recommendations for physical activity during pregnancy 4 times [24]. Providers may be unclear on current guidelines for exercise and uncertain of how to appropriately prescribe exercise for their patients. This uncertainty may limit physician-lead discussions regarding exercise during prenatal visits.

Another potential explanation for inconsistent discussion of physical activity may be due to required components of the prenatal exam relative to limited time allotment. The demands of clinical productivity limit the amount of time a provider can spend with each patient, which can play a significant role in poor patient-provider communication [25]. Rural woman are impacted by many disparities such as poor overall health status, cigarette smoking, and obesity [23]. Due to the seriousness of many of these issues, physical activity may not be a priority to discuss in rural obstetric clinics. Time constraints may prevent physical activity from being an option for the provider to review. Each visit is specific to each patient’s health concerns, and thus, physical activity assessments and prescriptions would require even more time from the provider. In addition, most physicians do not have specific training in exercise science. In fact, most medical schools do not provide formal exercise education to aspiring physicians, which might contribute to the lack of physical activity counseling being incorporated into office visits [26].

Although our findings suggest providers may not be discussing physical activity during pregnancy with patients, it is also possible that the providers are discussing physical activity but patients are not recalling the conversation. Duthie and colleagues suggested that discrepancies in patient-provider communication could be attributed to patient recall bias [14]. Patients may not remember all parts of provider education that occurred earlier in the pregnancy. Pregnancy is an emotional and busy time in a woman’s life. It is well established that pregnancy alters brain structure [27], and more importantly, memory functioning [28]. Research confirms pregnant women tend to be more forgetful [28]. It is possible providers discussed information about exercise during pregnancy with patients, but patients did not retain the information or did not remember the conversation happening. It is also possible the information from providers about exercise during pregnancy was not of high-importance to patients; thus, they did not retain the information [29].

It has been established that high-quality, open communication between the provider and the patient is related to improved patient outcomes [25]; thus, improving patient-provider communication about exercise during pregnancy is critical. As mentioned, the current health care system poses major challenges to providers. One of the suggestions from ACOG is to consider hiring non-physician health care providers to help with patient-provider communication and assist with patient care [25]. Further, it may be beneficial to include not only doctors and nurses on the obstetric care team, but other health care professionals, such as physical therapists or certified fitness professionals [30]. This would allow patients the opportunity to receive all of the information they need without increasing the demands placed on the obstetrician.

During visits when the provider did discuss exercise (with less than 50% of the patients), recommendations appeared to be consistent with the ACOG guidelines (Table 4). However, results from the present study suggest a lack of specific information given to pregnant patients from providers regarding modes and volumes of exercise during pregnancy (see Table 4). It is well-established that physicians are not trained to give specific advice about physical activity [26] and it is possible they might lack confidence to educate patients on physical activity [31]. This further reinforces the concept of including fitness experts on the health care team, rather than increasing the demands placed on the physician. This idea is similar to
• care. A key factor that may encourage patient-provider communication on exercise is the patient expressing interest and beginning the conversation about exercise by asking questions [34,35]. Patients should always be encouraged to ask questions about important topics pertaining to pregnancy, such as exercise.

Limitations

Generalizability of results is limited, due to the use of a single obstetrics clinic; therefore, results are not representative of all pregnant women and obstetricians in the U.S. Our population was predominately Caucasian, with greater than 70% of the patients having college and graduate degrees. Further research is needed to include women who are not represented in this study, such as those that are culturally and linguistically diverse.

Table 4: Open-Ended Patient Responses Regarding Provider Advice on Physical Activity during Pregnancy. Note: Only patients who reported their provider discussed physical activity during pregnancy with them answered these questions. Questions 5 and 6 were only answered by patients who answered “Yes” to the following questions from Table 2: Did your doctor or nurse discuss the risks of NOT exercising during pregnancy with you? Did your doctor or nurse discuss the benefits of exercise during pregnancy with you?

<table>
<thead>
<tr>
<th>Question</th>
<th>Response/s</th>
<th>Representative Quote/s</th>
</tr>
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<tbody>
<tr>
<td>1. What advice were you given?</td>
<td>The most commonly reported answer was to continue doing what they were already doing.</td>
<td>“To continue what I was doing before pregnancy as long as I had the energy”</td>
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<tr>
<td></td>
<td>Another common answer was to simply stay active.</td>
<td>“Don’t be a couch potato!”</td>
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<td>2. What types of exercises were recommended for you to do?</td>
<td>The most common type of exercise patients recalled their provider recommending was walking. Other common responses included swimming, yoga, low-impact aerobics, and weight lifting. Several women also reported their doctor saying they could continue any exercises they were already doing.</td>
<td>“Whatever I am currently doing and modify the further along I get”</td>
</tr>
<tr>
<td>3. What types of exercises were recommended for you not to do?</td>
<td>The most commonly reported answer was heavy lifting or anything that caused discomfort.</td>
<td>“Anything that made me uncomfortable or caused me pain”.</td>
</tr>
<tr>
<td>4. How much exercise was recommended?</td>
<td>Most women that answered this question reported being recommended to exercise between 3-7 days per week for 30-45 minutes. Several women reported that a specific number was not given to them.</td>
<td>“Wasn't a specific recommendation, but was given the okay to continue 5-7 days per week for 30 minutes”</td>
</tr>
<tr>
<td>5. What were the risks of not exercising during pregnancy as discussed by your doctor or nurse?</td>
<td>The risks mentioned were excess weight gain and gestational diabetes.</td>
<td>“Health risks - diabetes, pre-eclampsia”</td>
</tr>
<tr>
<td>7. What were the benefits of exercising during pregnancy as discussed by your doctor or nurse?</td>
<td>The benefits listed were improved weight control, easier labor and delivery, and overall feeling better/healthier pregnancy and recovery.</td>
<td>“Smooth delivery and avoiding excess weight gain”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>“Less health risks/better delivery/recovery”</td>
</tr>
</tbody>
</table>

the way in which referrals to dieticians are utilized (and reimbursed through insurance) during prenatal care [32].

In 2018, ACOG identified that there are increased challenges to providing individual care during pregnancy [33]. These included healthcare costs, availability of the provider, patient wait times, and limited time for education and support. An alternative model proposed included group prenatal care. This care model was designed to increase opportunities for education and offer social support while continuing to screen for risks and provide prenatal physical assessments. Research by ACOG found that patients showed high levels of satisfaction in the group care model, measurable outcomes shared similar results to individual care models, and there were improved outcomes in some patient populations [33]. A group care model could be another potential way to better incorporate conversations regarding exercise during pregnancy into prenatal care.

In addition to making changes to prenatal health care delivery, patients also need to be encouraged to ask questions and be involved in their own prenatal care. A key factor that may encourage patient-provider communication on exercise is the patient expressing interest and beginning the conversation about exercise by asking questions [34,35]. Patients should always be encouraged to ask questions about important topics pertaining to pregnancy, such as exercise.
vey the providers numerous times/after each patient in order to prevent the study questions from influencing their care and inserting bias into the study.

Conclusions

Effective patient-provider communication is critical as it contributes to improved patient outcomes. Our study suggests there is ineffective communication between patients and their obstetric care provider regarding physical activity during pregnancy in rural settings. Increased and improved communication between the patient and the provider is important in rural communities as pregnant women may experience unique health care challenges compared to women in urban areas. Pregnancy is considered a “teachable moment” [13], and intervention strategies to improve the quality of health care and patient-provider communication on important topics, such as exercise during pregnancy, are needed. These intervention strategies are opportunities to improve future health outcomes among women and their infants in rural areas.

Declaration of Interest Statement

The authors whose names are listed on the title page certify that they have NO affiliations with or involvement in any organization or entity with any financial interest (such as honoraria; educational grants; participation in speakers’ bureaus; membership, employment, consultancies, stock ownership, or other equity interest; and expert testimony or patent-licensing arrangements), or non-financial interest (such as personal or professional relationships, affiliations, knowledge or beliefs) in the subject matter or materials discussed in this manuscript.

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References


