Abstract

Purpose: To examine pregnant adolescents’ desire for pregnancy and determine whether there were opportunities for preconception care for pregnant adolescents with desired pregnancies.

Study Design: Retrospective chart review in a federally funded, urban adolescent care clinic. Medical records for 108 pregnant women under the age of 19 were the sample. A logistic regression model was developed to determine whether desiring pregnancy was associated with a lack of clinic visits before conception. For those adolescents who desired pregnancy and did have previous visits, preconception risks were identified.

Results: Of the 33% of adolescents who responded that their pregnancy was desired now or sooner, 18.5% arrived at the clinic already pregnant with no previous care, whereas 81.5% had at least one previous visit at this clinic. Those who desired pregnancy and did have previous visits had a multitude of risk factors present that could have been addressed with preconception counseling (including smoking, drugs, interpersonal violence, and weight issues). The majority of these adolescents had not desired a pregnancy at the time of pregnancy diagnosis; 57.4% of those had one or more documented visits at the clinic before receiving a pregnancy diagnosis.

Clinical Implications: Nurses who provide care to adolescents have an opportunity to discuss future pregnancies and to use healthcare visits to teach about preconception health. Teaching adolescents who both express a desire for pregnancy and those who do not express such a desire is an important part of comprehensive nursing care. Teens require thorough teaching about healthcare risks such as smoking cessation, body weight control, interpersonal violence, and the need for folic acid. Adolescents should be prime recipients of preconception education at every healthcare visit.

Key words: Adolescent; Preconception care; Pregnancy; Pregnancy desire; Teen
We know from the literature that addressing risky behaviors during the preconception period can contribute to improved pregnancy outcomes, yet it is not clear that nurses or other healthcare providers are consistently implementing preconception counseling with high-risk adolescents, including those who desire pregnancy (Biermann, Dunlop, Brady, Dubin, & Breann, 2006; Centers for Disease Control and Prevention [CDC], 2006; Curtis, Abelman, Schulkin, Williams, & Fassett, 2006; Klerman, 2006; Levi, Cimons, & Johnson, 2008). Pregnancy desire has been reported to be as high as 40% among some groups of adolescents in low socioeconomic environments (Davies et al., 2003; Heavey, Moysich, Hyland, Sill, & Druschel, 2008). Adolescents living in situations of cumulative social and environmental disadvantage may have limited opportunities to pursue educational and work-related pathways to adulthood, and may then perceive pregnancy as a positive alternative to achieving adult status within their families and community (Crosby et al., 2002; Davies et al., Davies et al., 2004; Heavey et al.; Klein, 2005; Vexler, 2007).

Taking a life course perspective, pregnancy desire may actually present an opportunity in which adolescents’ self-care behaviors are more likely to be amenable to change due to increased motivation and a sense of having responsibility for someone other than themselves (Pletsch, 2006; Szwajcer, Hiddink, Koelen, & Cees, 2006). Studies have reported, for instance, that pregnancy in adolescence is directly associated with lower rates of tobacco, alcohol, and marijuana use (SmithBattle, 2007). Teen pregnancy or even pregnancy desire may present a “turning point” in which, with appropriate support, a new identity and priorities can be developed (SmithBattle, 2009). The health beliefs and motivation of a young woman also directly relate to the utilization of available healthcare services such as preconception care (Weisman et al., 2008). If preconception counseling isn’t offered or integrated into family planning services, however, an opportunity to enhance young women’s health is lost (Atrash, Johnson, Adams, Cordero, & Howse, 2006; Klerman, 2006).

In several of our area clinics, staff had suggested that preconception care was not a viable concept for adolescents because they were arriving for care already pregnant. Although there were no data to support this, the belief was widespread. This study was undertaken, therefore, to investigate this question further. Do adolescents who desire pregnancy present for care already pregnant, or are there opportunities to incorporate preconception counseling into primary care that are being missed?

Study Design and Methods

Sample
The initial sample was 108 medical records from female adolescents (ages 14–19) who had a positive pregnancy test on the day of their clinic appointment. Twenty-seven records were excluded due to ambivalence or missing data regarding pregnancy desire. The final sample was limited to the remaining 81 patients. All subjects met income requirements making them eligible for participation in the New York State Family Planning Grant Program. Using subjects from this database was important, for the data in those records was standardized. Patient records were included in the study sample only once, that is, on the day they were diagnosed with the pregnancy.

Setting
The clinic is situated within an urban community in upstate New York and receives funding from the federal and state governments as well as from other sources. It offers family planning and primary care for young adults of both sexes, but not prenatal care; those with a positive pregnancy test are referred elsewhere for pregnancy follow-up.

Birth rates among adolescents living in this high-risk urban area are almost double the national average (71/1,000 vs. 41/1,000) (New York State Department of Health, 2006). In the previous 2 years, 68% of the adolescents who received family planning services at this clinic were from neighborhoods in which the adolescent pregnancy rates were over 100/1,000, and more than 34% were from neighborhoods with the highest adolescent birth rates in New York State (over 140/1,000) (New York State Department of Health).
Data Collection
The information utilized was part of the record keeping for the New York State Family Planning Program and was collected at all reproductive healthcare sites participating in this grant program in New York. Data included demographics such as age, sex, race, monthly income, family size, completed educational level, and student status (enrolled full-time, enrolled part-time, or not enrolled), as well as health data such as number of pregnancies, number of births, additional sources of healthcare, contraception use, services required, and services provided.

A nurse completed the data collection during a private intake session with each patient. Patients were asked about their desire for pregnancy during the same intake session in which they were told they were pregnant, and their responses were documented in the charts. Pregnancy desire was measured by the adolescent’s response to the question, “Was your pregnancy desired now, desired sooner, desired later, not desired, or unsure?” Patients who indicated that their current pregnancies were desired now or sooner were categorized as having desired pregnancies, and those who answered that they desired later pregnancies or did not desire to be pregnant were classified as having undesired pregnancies. Those who answered “unsure” were classified as ambivalent. The mechanism for entering ambivalence into the electronic chart did not differentiate between the patient being ambivalent about the pregnancy or the information being unavailable. Therefore, this study included only adolescents who indicated that they desired or did not desire to be pregnant. The clinical information was completed by the healthcare provider who examined the patient.

In an attempt to discover concurrent health risks in adolescents who expressed a desire for pregnancy during previous healthcare visits, their medical records were reviewed specifically for those risks (final n = 21, with one record of 22 missing data). Recorded risk factors included smoking status, alcohol consumption, folic acid supplementation, exercise habits, violence risk, marijuana use, infectious disease status, partner status, and weight. Any documented interventions for these behaviors during previous visits were also recorded during the chart review; however, the researcher had no way of assessing whether undocumented interventions were utilized.

Permission to analyze the data was obtained from the director of the state program and the medical director of the clinic. The study was approved by the institutional review board at the state university.

Statistical Analysis
All statistical analyses were done utilizing the SPSS program (v.15.0). Associations between demographic variables and the presence of previous visits before the pregnancy diagnosis (yes/no) were examined utilizing the χ² test for categorical data and t tests for continuous variables. Using logistic regression, the unadjusted odds ratio (OR) was calculated for each independent variable and the presence of previous visits before the pregnancy diagnosis (dependent variable). In addition, frequency reports were generated for the risks that the adolescents with desired pregnancies had self-identified on their intake forms during preconception visits.

Results
The adolescents all reported receiving their healthcare exclusively at this clinic, a common finding in this geographic area. From the total sample, 33% of adolescents responded that their pregnancy was desired now or sooner; of these (n = 27) 18.5% arrived at the clinic already pregnant with no previous care, whereas 81.5% had at least one previous visit at this clinic. Of the adolescents just diagnosed as pregnant but who answered that they did not desire pregnancy (n = 54), 42.6% arrived at the clinic pregnant with no previous care at this clinic or any other, but 57.4% had one or more documented visits at the clinic before receiving this pregnancy diagnosis (Table 1).

Eighty percent of the subjects (mean age 17.6) had not yet completed high school (median grade completed was 10). Seventy-two percent of the adolescents were pregnant with no previous care at this clinic or any other, whereas 81.5% had at least one previous visit at this clinic. Of the adolescents who indicated that their current pregnancies were desired now or sooner, whereas 81.5% had at least one previous visit at this clinic. Of the adolescents just diagnosed as pregnant but who answered that they did not desire pregnancy (n = 54), 42.6% arrived at the clinic pregnant with no previous care at this clinic or any other, but 57.4% had one or more documented visits at the clinic before receiving this pregnancy diagnosis (Table 1).

Eighty percent of the subjects (mean age 17.6) had not yet completed high school (median grade completed was 10). Seventy-two percent of the adolescents were pregnant for the first time, with no statistically significant

Table 1.
Characteristics of Pregnant Adolescents Attending this State-Funded Clinic

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>No Previous Visits (n = 28)</th>
<th>Prevalent Visits (n = 53)</th>
<th>p*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Previous pregnancy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>20 (71.4)</td>
<td>38 (71.7)</td>
<td></td>
</tr>
<tr>
<td>One or more</td>
<td>8 (28.6)</td>
<td>15 (28.3)</td>
<td>0.98</td>
</tr>
<tr>
<td>Age category</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;17</td>
<td>11 (39.3)</td>
<td>20 (37.7)</td>
<td></td>
</tr>
<tr>
<td>18-19</td>
<td>17 (60.7)</td>
<td>33 (62.3)</td>
<td></td>
</tr>
<tr>
<td>Race</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caucasian</td>
<td>6 (21.4)</td>
<td>7 (13.2)</td>
<td></td>
</tr>
<tr>
<td>African American</td>
<td>14 (50.0)</td>
<td>31 (58.5)</td>
<td></td>
</tr>
<tr>
<td>Latina</td>
<td>6 (21.4)</td>
<td>10 (18.9)</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>2 (7.1)</td>
<td>5 (9.4)</td>
<td></td>
</tr>
<tr>
<td>Student status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not in school</td>
<td>28 (100.0)</td>
<td>45 (84.9)</td>
<td></td>
</tr>
<tr>
<td>Full-time student</td>
<td>0 (0.0)</td>
<td>8 (15.1)</td>
<td></td>
</tr>
<tr>
<td>Pregnancy desire</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Desired pregnancy</td>
<td>5 (17.9)</td>
<td>22 (41.5)</td>
<td></td>
</tr>
<tr>
<td>Undesired pregnancy</td>
<td>23 (82.1)</td>
<td>31 (58.5)</td>
<td></td>
</tr>
</tbody>
</table>

*p*Statistically significant difference.
difference in gravidity between those who desired and those who did not desire pregnancy. All of the adolescents who arrived pregnant with no previous visits were no longer in school.

Univariate analysis utilizing the \( \chi^2 \) test detected a statistically significant difference between pregnancy desire and previous healthcare visits (\( \chi^2 = 5.017, p = 0.032 \)), and also between student status and previous visits (\( \chi^2 = 4.690, p = 0.03 \)). No statistically significant differences were found between race and previous healthcare visits (this was not included in the logistic regression model).

Unadjusted logistic regression was utilized to examine the relationship between pregnancy desire and the presence of previous clinic visits. Adolescents who reported a desired pregnancy were less likely to arrive for their first clinic visit already pregnant compared with those who did not desire pregnancy (OR = 0.306, 95% CI [95% confidence interval] 0.10–0.93).

In reviewing the 21 records (of 22, one had too much missing data) of adolescents who reported desiring pregnancy and who had previous healthcare visits to the clinic before the pregnancy diagnosis, it was found that this group had a high prevalence of risk factors that could have been addressed in a preconception visit. These risks included smoking, alcohol consumption, no regular exercise, significant violence risk, marijuana use, infectious disease that negatively affects pregnancy, known diabetes, and weight under 110 pounds or over 158 pounds. Only one adolescent had been advised (or prescribed) folic acid or prenatal vitamins, potentially leaving 95% of the high-risk adolescents without adequate prenatal folic acid supplementation before conception. Fifty-seven percent (\( n = 12 \)) of the adolescents who desired their pregnancies reported risk of violence in their lives, such as carrying a weapon for their own safety (\( n = 4 \)), being involved in physical violence at home or school (\( n = 6 \)), or considering suicide (\( n = 2 \)) (Table 2).

### Clinical Implications

In this study, opportunities for preconception intervention did exist with adolescents who desired pregnancy, and many of the young women who desired pregnancy also had substantial health risk factors. It is very important for nurses to address pregnancy desire among adolescents, and to teach young women about risk factors that predispose them to adverse pregnancy outcomes, even if those pregnancies are not imminent.

### Preconception Intervention: Folic Acid

It is of concern that 95% of the pregnant adolescents in this sample who desired pregnancy and had previous visits were not taking folic acid or prenatal vitamins. The consumption of adequate folic acid can decrease the risk of neural tube disorders by up to 71% (CDC, 2006; Reifsnider & Gill, 2000). Current public health recommendations are that all sexually active women of childbearing age take 400 mg of folic acid per day (Rosenberg, Gelow, & Sandoval, 2003). Unfortunately, only 10% of women in a national survey reported knowing that it was important to take folic acid before conception (Hilton, 2007). This critical piece of information should be presented to all adolescents who are at high risk for pregnancy. One study reports that, even with limited exposure to preconception counseling, adolescents with intended pregnancies were twice as likely (14.9% vs. 6.0%) to have been taking folic acid at the time of conception, compared to adolescents who did not intend to be pregnant (Rosenberg et al.). Nurses should include this vital information as a part of routine visits for all women of childbearing age, particularly for those who desire pregnancy.
Preconception Intervention: Monitoring of Disease States

Almost one half of the adolescents in this sample who reported a desired pregnancy and had other visits before their pregnancy arrived at the clinic with gonorrhea, chlamydia, Type I diabetes, urinary tract infections, or bacterial vaginosis. There is no documentation about whether these risks and the effects on pregnancy were addressed with these teenagers, but this presents yet another opportunity for preconception intervention, for it could be that appropriate treatment and options for preventing reinfection may be more successful when pregnancy desire is high. In one study of adolescent women with Type I diabetes, 75% were unaware of the importance of preplanning a pregnancy and good metabolic control to prevent pregnancy-related complications (Charron-Prochownik et al., 2006). When nurses link the effects of monitoring/treating these disease states with better pregnancy outcomes, they may be able to have a positive impact on a patient’s motivation to closely monitor her health.

Preconception Intervention: Smoking Cessation

Smoking has also been clearly linked to poor maternal and fetal outcomes in pregnancy. In this sample, 19% of the adolescents who desired pregnancy and had previous visits acknowledged smoking. It has been documented repeatedly that pregnancy creates a greater willingness to change this behavior and that many women successfully quit or decrease cigarette consumption in pregnancy (Pletsch, 2006; Ruggiero, Webster, Peipert, & Wood, 2003). If nurses are able to motivate adolescents to quit smoking, it could improve their own health as well as the health of their future offspring.

Preconception Intervention: Nonoptimal Body Weight

A large number (43%) of the adolescents in this study were either above (>158 pounds) or below (<110 pounds) standard weight recommendations. Research has clearly linked low prepregnancy BMI with chronic nutritional deficiency, intraterine growth restriction, preterm birth, and anemia, whereas elevated prepregnancy BMI is associated with gestational diabetes, pregnancy-induced hypertension, birth defects, cesarean birth, large-for-gestational-age babies, and prolonged labor (Siega-Riz & Laraia, 2006). A preconception discussion of these risks with adolescents who desire pregnancy may encourage better nutrition and exercise before or during pregnancy, for pregnancy is associated with increased motivation to consume nutritionally sound food or to eliminate the consumption of empty-calorie foods (Szwajcer et al., 2006). Nurses who are able to initiate and maintain conversations that encourage self-disclosure of pregnancy desire may be better able to help adolescents clarify their weight issues and utilize their own motivations, strengths, and available resources to address nutritional problems.

Preconception Intervention: Regular Exercise

In this study, only 10% of the adolescents who desired pregnancy and had previous healthcare visits engaged in the recommended 20 minutes of exercise three times a week. Preconception options for routine exercise should also be explored as a potential outlet for social interaction and support. A small pilot conducted in the United Kingdom found that exercise classes, which were conducted by a midwife and a fitness instructor and that emphasized fitness for healthy pregnancy development, were an incentive to start regular exercise despite the fact that, previous to participation, 79% of the women had not exercised regularly (Steen, 2007).

Once nurses are aware that an adolescent desires pregnancy, a simple question such as “What are you doing now to help yourself have a healthy baby in the future?” can lead into a discussion of the importance of diet and exercise. Asking about any previous athletic interests or childhood experiences involving physical activity can also be a way to suggest physical activity the patient would enjoy. In many urban locations, afterschool programs are available that encourage physical activity as a routine part of their programming, and community recreational centers also offer low-cost locations for physical activity. Exploring these options with those who desire pregnancy may be effective in improving overall health and decreasing risk related to nonoptimal weight.

Preconception Intervention: Violence Screening and Safety Planning

One of the most striking findings in this study was the high prevalence of risk of violence found among pregnant adolescents who desired pregnancy (57%). Although the actual numbers are small, it is still of concern that so many young women are involved in, or concerned with, interpersonal violence. Kramer (2007) has found high rates of violence among adolescents who have less than a high school education and present in low socioeconomic clinical settings. Additionally, women have reported that pregnancy triggered or exacerbated violence that they were already experiencing (Kramer). Violence during pregnancy is associated with a broad range of pregnancy complications, including mortality; homicide is the leading cause of traumatic death for pregnant and postpartum women (Campbell & Furniss, 2002). For these reasons, nurses should address violence concerns with all adolescents, particularly with those who desire pregnancy. Many of these young women believe that a pregnancy will improve their situations, but the research literature has not supported this view (Kramer). Currently, fewer than one half of reproductive healthcare providers routinely screen for domestic violence (Sarkar, 2008). All adolescents should be screened regularly for violence concerns as part of routine preconception care.

Limitations

Assessing pregnancy desire with a single question at only one point in time is not the most effective manner of assessing pregnancy desire, which may not remain constant over time. Ideally, assessing the strength of pregnancy avoidance would be a more optimal measure; however, this study had to work within the confines of a preexist-
Suggested Clinical Nursing Implications

- Routine primary care visits for high-risk adolescent populations should include an assessment of pregnancy desire and risk. Screening guidelines should be established for all members of the patient care team.

- Aspects of preconception care should be integrated into all visits within primary care settings. U.S. government-funded family planning programs should integrate preconception care into routine family planning services.

- Once pregnancy desire is identified, preconception care should be individualized to capitalize on the potentially increased motivation for healthcare promotion and the specific needs of adolescents who desire pregnancy.

- Adolescents who desire pregnancy are at high risk for multiple healthcare concerns and should be managed with that risk in mind. Interdisciplinary involvement and support, including nutrition consultations, social work intervention, and support group referrals, may be beneficial in ameliorating or eliminating these risks.

- All high-risk adolescents, particularly those who desire pregnancy, should be routinely screened for violence concerns. Nurses who identify adolescents at risk for self-harm or interpersonal violence can then facilitate interdisciplinary referrals for appropriate intervention in a timely manner.

- Nurses provide much of the initial screening and interaction to which an at-risk adolescent is exposed in a healthcare setting. Active listening, combined with a willingness to legitimize the adolescent’s concerns, improves clinical understanding and guides effective care.

information about the prevalence of risk factors in pregnant adolescents who desired pregnancy and had previous clinic visits does not argue that these risk factors are not present among pregnant adolescents who did not desire pregnancy or among those who had no previous visits. The information gathered regarding risk factors in this sample was used as a marker of issues, which should be addressed in a preconception care visit with adolescents for whom pregnancy desire may impact motivation and the effectiveness of this intervention.

Future research is needed to determine how or whether pregnancy desire affects motivation among adolescents and how this may or may not translate into initiating or sustaining health-seeking behaviors. There is also a critical need to develop and evaluate research-based interventions to target this group of adolescents specifically.

Conclusion

This study illustrates the need for and opportunities available to provide preconception care to an adolescent population. Because some adolescents either are not opposed to becoming pregnant or actively desire pregnancy, the need for preconception counseling becomes more urgent.

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References


