Patient Characteristics Associated with Pregnancy Ambivalence

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Abstract

Background: The objective of our study was to determine demographic characteristics, health and sexual behaviors, and psychological health associated with pregnancy ambivalence. We used a cross-sectional design for our study.

Methods: A self-administered cross-sectional survey was conducted among nonpregnant women 16–40 years old from southeast Texas from July 2010 to August 2011. The survey included questions pertaining to demographics, pregnancy intentions, health behaviors, sexual behaviors, violence exposure, pregnancy coercion, and psychological behaviors. Multivariate logistic regression analyses were performed to determine differences between ambivalent and nonambivalent females.

Results: Of the 1,388 women included in this analysis, 529 (38%) were ambivalent toward pregnancy. Ambivalent women were younger ($p=0.03$), had fewer children living at home ($p<0.01$), and were less likely to have been previously pregnant ($p=0.01$). Multivariate analysis showed that ambivalent women were more likely to smoke ($p<0.01$), sleep poorly ($p=0.02$), have had more sexual partners in the past month ($p<0.01$) and in their lifetime ($p=0.01$), not used contraception at last sex ($p=0.01$), be a victim of violence ($p=0.01$), and have experienced pregnancy coercion ($p<0.01$). In addition, these women exhibited higher scores on scales measuring depressive symptoms ($p=0.01$) and perceived stress ($p<0.01$).

Conclusions: Women ambivalent toward pregnancy are not only less likely to use contraception but also more likely to have unhealthy behaviors and psychological risk factors. As this combination of characteristics may put a future pregnancy and child at risk, awareness about the possible consequences of pregnancy ambivalence needs to increase among the public and medical community. Providers need to focus efforts on screening for this patient population and preventive education through contraceptive counseling.

Introduction

ALMOST HALF OF US PREGNANCIES are unintended.¹ In studies pertaining to pregnancy desires, women are usually categorized according to a dichotomous construct of intended or unintended pregnancies; however, ambivalence toward pregnancy is not captured in such a scheme. Those studies that have focused on pregnancy ambivalence demonstrate that ambivalence is associated with contraceptive nonuse.² Moreover, ambivalent couples may avoid contraceptive methods to achieve “sexual arousal and fulfillment, closeness and connection...and a more emotionally and materially secure future.”³ Pregnancies that occur under these circumstances may not be desired, as the majority of women who undergo abortions also admit to pregnancy ambivalence at conception.⁴

Few data are available on characteristics of women ambivalent toward pregnancy. The only study to date on this topic found no association between social-class patterns and pregnancy ambivalence among 3,317 Irish men and women.⁵ The study did find, however, that unskilled manual-working women were more likely to feel ambivalent about a pregnancy than were professional women. The purpose of our study was to determine demographic characteristics, health and sexual behaviors, and psychological health associated with pregnancy ambivalence.

Methods

A self-administered cross-sectional survey (available in English and Spanish) was conducted among nonpregnant women 16–40 years old attending one of three publicly funded

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reproductive-health clinics located in southeast Texas between July 2010 and August 2011. These facilities provide care to low-income women, almost 80% of whom have a family income <\$30,000 a year. Women were seen for family-planning services, pregnancy testing, treatment of sexually transmitted infections, and cervical cancer screening. A research assistant approached all eligible participants in the privacy of the examination room and asked whether they would agree to complete a health survey. After obtaining oral informed consent, the research assistant left the room and returned to retrieve the completed survey from the patient. Participants were reimbursed \$5 for their time. To ensure that participants completed the survey only once, study personnel maintained a database containing the names of those who had previously completed the survey and compared it daily to those appointed for a visit. Women who had previously completed the survey were not approached a second time. A total of 2,059 eligible women were approached for participation; 1,726 agreed to participate, and 333 declined. The overall response rate was 83.8% (1,726/2,059). All procedures were approved by the University of Texas Medical Branch Institutional Review Board.

This study focused on the survey questions related to pregnancy ambivalence, demographics, health behaviors, sexual behaviors, violence exposure, pregnancy coercion, and psychological behaviors. Pregnancy ambivalence was determined

TABLE 1. PREGNANCY AMBIVALENCE BY DEMOGRAPHICS

Characteristics	Total	Ambivalent	p-value ^a
Age, year, mean ($\pm$ SD)	1,388	25.3 ($\pm$ 5.4)	0.03
Race/ethnicity, <i>n</i> (%)	1,370	525 (38.3)	0.90
White	367	143 (39.0)	
Black	608	229 (37.7)	
Hispanic	395	153 (38.7)	
Education, <i>n</i> (%)	1,377	526 (30.2)	0.84
Did not complete HS	256	95 (37.1)	
Enrolled in HS/HS graduate	641	243 (37.9)	
Some college hours/degree	480	188 (39.2)	
Marital status, <i>n</i> (%)	1,363	519 (38.1)	0.51
Never married	703	268 (38.1)	
Living together/currently married	472	186 (39.4)	
Divorced/separated/widowed	188	65 (34.6)	
Household income/year, <i>n</i> (%)	1,272	491 (38.6)	0.59
<\$15,000	809	319 (39.4)	
\$15,000–\$29,999	312	119 (38.1)	
\$30,000 or above	151	53 (35.1)	
Work/week, <i>n</i> (%)	1,376	525 (38.2)	0.07
Do not work	721	259 (35.9)	
Work part/full time	655	266 (40.6)	
Number of pregnancies, <i>n</i> (%)	1,386	528 (38.1)	0.01
None	348	153 (44.0)	
At least once	1,038	375 (36.1)	
Religious attendance, <i>n</i> (%)	1,369	522 (38.1)	0.91
Never/not frequently	910	346 (38.0)	
Frequently	459	176 (38.3)	
Number of household children, mean ($\pm$ SD)	1,375	1.4 ($\pm$ 1.2)	<0.01

A *p*-value <0.05 considered statistically significant.

^aBased on *t*-test or chi-square test.

HS, high school; SD, standard deviation.

by asking respondents whether they agreed or disagreed with the following statement: “Sometimes I think I’m ready to get pregnant and other times I think I’m not.” It is important to note that these women were not pregnant at the time of interview. Women who agreed with the statement were considered ambivalent about pregnancy; those who disagreed were considered not ambivalent. Demographic information was self-reported. Women’s age was calculated using years and months. Race and ethnicity choices included non-Hispanic white, non-Hispanic black, and Hispanic. No other choices were available. Information on education level, annual income, marital status,

TABLE 2. PREGNANCY AMBIVALENCE BY HEALTH, SEXUAL BEHAVIORS, AND OTHER BEHAVIORS

Characteristics	Total	Ambivalent	p-value ^a
Current smoking status, <i>n</i> (%)	1,382	526 (38.1)	<0.01
No	337	337 (35.0)	
Yes	189	189 (45.2)	
Current drinking status, <i>n</i> (%)	1,334	511 (38.3)	0.01
No	590	202 (34.2)	
Yes	744	309 (41.5)	
Past-week exercise ($\geq$ 30 minutes straight), <i>n</i> (%)	1,375	524 (38.1)	0.12
No/< 3 days/week	1,077	422 (39.2)	
$\geq$ 3 days/week	298	102 (34.2)	
Past-month overall quality of sleep, <i>n</i> (%)	1,374	524 (38.1)	0.02
Bad	331	144 (43.5)	
Good	1,043	380 (36.4)	
Past-month use of sleep medication, <i>n</i> (%)	1,362	519 (38.1)	0.89
No	1,063	404 (38.0)	
Yes	299	115 (38.5)	
Age at first sex, <i>n</i> (%)	1,360	526 (38.7)	0.32
< 14 years	149	52 (34.9)	
14 years or more	1,211	474 (39.1)	
Past-month sexual partners, <i>n</i> (%)	1,344	515 (38.3)	<0.01
None	160	41 (25.6)	
One or more	1,184	474 (40.0)	
Lifetime sexual partners, <i>n</i> (%)	1,346	518 (38.5)	0.01
< 4	548	188 (34.3)	
4 /more	798	330 (41.3)	
Birth control methods used at last sex	1,388	529 (38.1)	0.01
No	418	187 (44.7)	
Yes	970	342 (35.3)	
Past-year exposure to violence, <i>n</i> (%)	1,306	501 (38.4)	0.01
No	1,141	423 (37.1)	
Yes	165	78 (47.3)	
Lifetime pregnancy coercion, <i>n</i> (%)	1,376	527 (38.3)	<0.01
No	1,277	470 (36.8)	
Yes	99	57 (57.6)	

A *p*-value <0.05 considered statistically significant.

^aBased on chi-square test.

TABLE 3. ADJUSTED ODDS RATIOS (95% CONFIDENCE INTERVAL) OF HEALTH AND SEXUAL BEHAVIORS FOR WOMEN AMBIVALENT VERSUS NOT AMBIVALENT ABOUT PREGNANCY

Characteristics	Odds ratios (95% CI)	p-value ^a
Current smoking status	1.50 (1.18–1.90)	0.01
Current drinking status	1.22 (0.97–1.55)	0.09
Past-week exercise (≥ 30 minutes straight; ≥ 3 days/week)	0.79 (0.60–1.04)	0.09
Past-month overall (good) quality of sleep	0.72 (0.55–0.93)	0.01
Past-month use of sleep medication	1.03 (0.79–1.36)	0.81
Age at first sex (14 years or more)	1.16 (0.81–1.67)	0.43
Past-month sexual partners (one or more)	1.97 (1.34–2.91)	0.01
Lifetime sexual partners (four or more)	1.31 (1.03–1.66)	0.03
Birth control methods used at last sex	0.66 (0.52–0.84)	0.01
Past-year exposure to violence	1.53 (1.09–2.14)	0.01
Lifetime pregnancy coercion	2.21 (1.44–3.40)	<0.01

A p-value < 0.05 considered statistically significant.

^aBased on multivariable logistic regression analysis adjusted by age, work per week, gravidity, number of children at home. CI, confidence interval.

employment status, previous pregnancy status, religious attendance, and number of household children was also obtained.

This study also assessed respondents' health behaviors, such as current smoking and drinking status, past-week physical activity, and past-month quality of sleep. Information was also obtained on the use of sleep medications and sexual behaviors, including age at first sex, number of sexual partners, and any birth control methods used at last sex. Other behaviors, such as past-year exposure to violence and lifetime pregnancy coercion, were also evaluated. Psychological measures included quality of life (QOL), Beck Depression Inventory (BDI), Perceived Stress Scale (PSS), Body-Esteem Scale (BES), and Health Locus of Control (HLOC).^{6–9}

Bivariate comparisons were performed using chi-square tests or Student's *t*-tests. Multiple linear regression analyses and multivariable logistic regression analyses were used to examine differences in health, sexual, psychological, and other behaviors between women who were or were not ambivalent about

pregnancy, after adjusting for confounding variables (defined as a *p*-value of less than 0.2). All analyses were performed using STATA 12 (Stata Corporation, College Station, TX).

Results

A total of 1,388 participants (mean age: 26.2; $\pm$ standard deviation [SD]: 6.2) responded to the statement regarding ambivalence about pregnancy in the survey and were included in this study. Of these, 529 women were classified as ambivalent about pregnancy. Sociodemographic characteristics showed that ambivalent women were younger ($p=0.03$), had fewer children living at home ($p = <0.01$), and were less likely to have been previously pregnant ($p=0.01$) than were those who were not ambivalent (Table 1). The distribution of education level, marital status, annual income, employment status, and religious attendance did not differ between these two groups.

TABLE 4. PSYCHOLOGICAL BEHAVIORS AMONG REPRODUCTIVE-AGE WOMEN (16–40 YEARS) WHO WERE AMBIVALENT VERSUS NOT AMBIVALENT ABOUT PREGNANCY

Psychological assessments ^a	Total	Pregnancy ambivalence			Regression coefficient (95% CI)	p-value ^c
		Yes	No	p-value ^b		
Quality of life, mean ($\pm$ SD)	1,376	7.0 (2.0)	7.3 (2.0)	0.03	–0.21 (–0.43 to 0.01)	0.06
Beck Depression Inventory, mean ($\pm$ SD)	1,316	2.3 (3.3)	1.8 (2.9)	0.01	0.54 (0.19 to 0.89)	0.01 ^d
Perceived Stress Scale, mean ($\pm$ SD)	1,290	18.9 (6.3)	16.6 (6.2)	<0.01	2.45 (1.73 to 3.18)	<0.01 ^d
Body Esteem Scale, mean ($\pm$ SD)	1,158	76.3 (20.3)	77.5 (20.5)	0.32	–2.15 (–4.64 to 0.34)	0.09
Internal Health Locus of Control, mean ($\pm$ SD) ^d	1,283	20.4 (4.3)	20.2 (4.6)	0.44	0.10 (–0.42 to 0.62)	0.71
Chance Health Locus of Control, mean ($\pm$ SD) ^e	1,288	16.3 (4.2)	15.9 (4.3)	0.10	0.39 (–0.10 to 0.87)	0.12
Power Health Locus of Control, mean ($\pm$ SD) ^f	1,300	17.7 (4.0)	17.5 (4.4)	0.25	0.33 (–0.15 to 0.82)	0.18

A p-value < 0.05 considered statistically significant.

^aScales for quality of life = 0–10; Beck Depression Inventory = 0–21; Perceived Stress Scale = 0–40; Body Esteem Scale = 22–110; Health Locus of Control = 6–30.

^bBased on Student's *t*-test.

^cBased on multiple linear regression analysis; adjusted by age, work per week, gravidity, number of children at home.

^dInternal scale measures whether subject feels she has control over her own health.

^eChance scale measures whether the subject feels her health is due to luck, fate, or chance.

^fPower scale measures whether the subject feels that powerful individuals, such as physicians or other health professionals, control her health.

Bivariate analyses showed that women with pregnancy ambivalence were more likely than those who were not ambivalent to smoke ($p = <0.01$), drink ($p=0.01$), sleep poorly ($p=0.02$), have had more sexual partners in the past month ($p = <0.01$) and in their lifetime ($p=0.01$), not used any birth control at last sex ($p=0.01$), been a victim of violence in the past year ($p=0.01$), and have been coerced to get pregnant in their lifetime ($p = <0.01$; Table 2). The adjusted multivariable logistic regression analyses showed a similar pattern (Table 3), except that drinking status did not differ significantly between the two groups ($p=0.09$).

Moreover, bivariate analyses showed that women who were ambivalent about pregnancy had higher scores than nonambivalent women on the BDI ($p=0.01$) and PSS ($p = <0.01$) and lower QOL scores ($p=0.03$ s) (Table 4). All these variables, except the QOL score, remained significant in the adjusted multiple linear regression models.

Discussion

Consistent with prior studies, just over one-third of reproductive-age women in our study stated that they were ambivalent about becoming pregnant.^{10,11} Our results also support the findings of previous studies in that women ambivalent toward pregnancy were significantly less likely to use contraception.^{2,4} In addition, ambivalent females were significantly more likely to report $\geq$ four lifetime sexual partners, to have been exposed to violence, or to report that they had previously been coerced to become pregnant. Prior studies have shown that to achieve a greater emotional connection with their partner and future security, ambivalent couples choose not to use contraception. We also found that ambivalent females were more likely to have had a troubled sexual past and therefore may resort to ambivalence or contraceptive nonuse with the hope that a pregnancy would improve the current relationship. Moreover, women may believe that creating a living being with their partner would increase the connectedness within the relationship.³

The relationship between age and pregnancy ambivalence is unclear. Using data from the National Survey of Family Growth (NSFG), Higgins *et al.* found that individuals in their 20s were more likely than adolescents to be ambivalent about avoiding pregnancy.¹⁰ In contrast, we observed that younger women were more likely to be ambivalent about pregnancy than were older women. These results may be owing to the fact that younger women were more likely to be still enrolled in school, less likely to be in a serious relationship, and less likely to be concerned about infertility associated with increasing age. However, further research is needed to validate this theory.

The fact that ambivalent females scored higher on depression and perceived stress scales may support the theory that ambivalent females seek a pregnancy in order to improve their current emotional situation, resulting in decreased contraception use. Research shows that some ambivalent females experience an escapist pleasure during intercourse that cultivating a new family would help them escape current hardships or bring purpose to their lives.³ Women who are more depressed and stressed would theoretically be more likely to have these feelings and therefore not use contraception, in an attempt to supposedly improve their situation.

Since ambivalent women are less likely to use contraception, these women are at a higher risk of an unintended preg-

nancy. The psychological disorders associated with pregnancy ambivalence also put these pregnancies at high risk. Depressed women are more likely to suffer from substance abuse during pregnancy, have poor prenatal care, and neglect their neonate after pregnancy.¹² Anxiety disorders during pregnancy are also associated with diminished fetal well-being, preterm delivery, and persistent behavioral problems in the child.^{13,14} Therefore, ambivalent women who do not use contraception may be inadvertently putting themselves and their child at increased risk of an adverse outcome.

We also found that ambivalent women were more likely to use tobacco. Risks associated with smoking during pregnancy include intrauterine growth restriction, placenta previa, abruptio placentae, decreased maternal thyroid function, preterm premature rupture of membranes, low birth weight, perinatal mortality, and ectopic pregnancy.¹⁵ Since these women are at an increased risk of becoming pregnant owing to contraception nonuse, they need to be counseled regarding the increased risk to their child from using tobacco products.

Finally, ambivalent females were more likely to not have had children previously and have fewer children living in their household. This may be because women who live with children are more likely to be aware of their attitudes toward children and more certain about whether they want a future pregnancy. Women who are not exposed to children as often may be more easily persuaded by fantasies of what it would be like to have a child.

There are a few limitations to our study. First, our sample resides in a single geographic region and may not represent the national US population. Second, our survey was limited to low-income reproductive-age women and therefore may not be generalizable to other age groups or income-levels. Third, the questions used to conduct this study were not validated and may not have measured true ambivalence. Finally, as this study is cross-sectional in nature, it limits our ability to establish causal relationships.

In conclusion, we observed that women who are unsure about pregnancy are less likely to use adequate contraception and have a number of unhealthy behaviors and psychological risk factors that would place an unborn child at risk. Educational efforts need to focus on increasing public awareness about the possible consequences of pregnancy ambivalence and the need to use contraception until an individual has decided she wants to conceive a child. Moreover, medical providers need to be made aware of these associations in order to actively screen their patients for ambivalence and provide appropriate contraceptive counseling for these women. Time may also need to be spent in screening this population for health and psychological risk factors and in educating women who engage in unhealthy behaviors about potential problems that may ensue if pregnancy occurs.

Author Disclosure Statement

No competing financial interests exist.

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