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Obesity risk knowledge, weight misperception and diet and health-related attitudes among women intending to become pregnant

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Abstract

Objective—To evaluate obesity risk knowledge, weight misperception and diet and health-related attitudes among women intending to become pregnant compared to those not intending to become pregnant.

Study Design—Cross-sectional survey of health behaviors including obesity risk knowledge, weight misperception, and diet and health-related attitudes among women (16-40 **years**) attending reproductive health clinics in southeast Texas. Data were collected through self-administered questionnaires and chart review. Multivariable logistic regression analyses were performed to examine the association between pregnancy intention and obesity risk knowledge, weight misperception and health-related attitudes after adjusting for age, race, income and gravidity.

Results—Overall, 1,726 women completed the survey of which 1,420 responded to a question on pregnancy intention. Of these, 126 stated they were intending to become pregnant. Obesity risk knowledge (adjusted odds ratio [aOR] 1.14, 95% confidence interval [CI] 0.74-1.77) and weight misperception (aOR 1.17, 95% CI 0.75-1.83) did not differ between women intending and not intending to become pregnant. Additionally, diet and health-related attitudes did not differ between these two groups ($P>0.05$ for all). Among women intending to become pregnant, 51% had low obesity risk knowledge and 31% misperceived their body weight. Further, 76% of these

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women felt confused about what constitutes a healthy diet, although 47% believed that their current diet was healthy and saw no reason to change their current eating patterns. While weight misperception did not differ significantly between the two groups, overweight women intending to become pregnant were more likely to misperceive their weight than obese women intending to become pregnant (71% vs 10%, $P<0.001$).

Conclusion—There is a need for improved preconception counseling, especially for women intending to become pregnant, regarding the risks associated with being overweight or obese, misperception of body weight, and negative diet and health-related attitudes.

Keywords

Obesity risk knowledge; weight misperception; pregnancy intention; preconception

Introduction

Over half of women of childbearing age in the US are overweight or obese according to 2009-2010 data.¹ Excess weight is associated with several chronic conditions such as diabetes and high blood pressure, which can increase the risk for adverse pregnancy outcomes, such as gestational diabetes, preeclampsia, cesarean delivery, stillbirth, congenital abnormalities and delivery of a large for gestational age infant if the woman becomes pregnant.²⁻⁴ In addition, the offspring of obese women face an increased risk of obesity and related chronic disease.⁵⁻⁸ In 2006, the Center for Disease Control and Prevention (**CDC**)'s Select Panel on Preconception Care released recommendations to improve preconception care of women, including addressing preconception obesity and associated risks and improving health-related knowledge and attitudes of reproductive-aged women.⁹ Thus, to reduce obesity-related risks, women should be advised to lose weight prior to conception.¹⁰ However, many women often do not perceive themselves as overweight or obese and may be less likely to try to lose weight, putting themselves and their child at risk.¹¹

Previous research has also shown that overall, reproductive-age women have poor knowledge of the risks associated with obesity;¹² however it is unknown whether women intending to become pregnant have better diet and health-related knowledge and attitudes as compared to women not intending to become pregnant. To address these gaps, this study was designed to assess obesity risk knowledge (ORK), misperception of body weight and diet and health-related attitudes among women intending to become pregnant as compared to women not intending to become pregnant.

Methods

The University of Texas Medical Branch Institutional Review Board approved the administration of a cross-sectional survey (English and Spanish) on health behaviors. The surveys were administered to non-pregnant women (16-40 years) attending reproductive health clinics located in southeast Texas from July 2010 to February 2011. These clinics serve low-income women, and >80% have annual incomes <\$30,000/year. Women were seen for family planning services, pregnancy testing, treatment of sexually transmitted infections and cervical cancer screening. All eligible participants were approached and

asked if they would agree to complete a health survey. A total of 2,059 eligible women were approached. Of these, 1,726 agreed to participate and 333 declined. The overall response rate was 83.8%. Of these 1,726 participants, 1,420 responded to the question on pregnancy intention. All analyses reported in this study were based on these 1,420 women.

After obtaining informed consent, participants completed a self-administered questionnaire that included questions pertaining to socio-demographic characteristics. Race and ethnicity were categorized as non-Hispanic White, non-Hispanic Black and Hispanic by self-identification. Height and weight were obtained from data recorded in the participant's medical chart. Body mass index (BMI) was calculated as weight (kg)/ height (m²). Women with a BMI <25.0 kg/m² were **classified as** underweight and normal weight, 25.0-29.9 kg/m² were considered overweight and 30.0 kg/m² were considered obese.

Pregnancy intention was assessed using the question, "Are you trying or hoping to get pregnant right now?" The response options were "yes" and "no". We used the obesity risk knowledge (ORK-10) instrument (this contains 10 questions; 1 point for each correct response and 0 for incorrect or "do not know" response for a total score range of 0-10) to measure obesity-related health risk knowledge. The ORK-10 scale has been reported to be reliable, discriminant, and valid, with high internal consistency (Cronbach α , 0.83).¹³ A higher score indicates a higher level of **ORK**. Diet and health-related attitudes were measured using a subscale from the USDA's 1994-96 Continuing Survey of Food Intakes by Individuals (CSFII) and Diet and Health Knowledge Survey (DHKS), which was developed to collect information related to nutrition knowledge, health awareness and dietary attitudes.

Self-perception of weight was measured by asking, "How do you describe your weight?" Response options included "very underweight", "slightly underweight", "about the right weight", "slightly overweight" and "very overweight". For analysis purposes, these five response options were collapsed into three categories: (1) underweight (this included slightly underweight and very underweight), (2) normal weight (this included about the right weight) and (3) overweight (this included slightly overweight and very overweight). Women were also asked the question "What would you like to weigh?". Response options included "less than I currently weigh", "the same as I currently weigh" and "more than I currently weigh."

Completed surveys were reviewed individually by a research assistant for missing items and inconsistencies and then reconciled and sent to another staff member for data entry. Descriptive statistical procedures were used to evaluate the data for accuracy and consistency. Additionally, to ensure a precise representation of the physical data, 10% of all weekly surveys were contrasted with their corresponding electronic data.

Univariate and bivariate comparisons were performed using the Student's t-test, chi-square test and Fisher's exact test as appropriate. Adjusted multivariable logistic regression analyses were performed to examine the association of pregnancy intention with obesity risk knowledge, weight misperception and diet and health-related attitudes. Socio-demographic variables with a $P \leq 0.20$ on bivariate analyses were included into the multivariable models. Age in continuous scale was included in multivariable models. All analyses were performed using STATA 12 (Stata Corporation, College Station, TX).

Results

The mean age of the 1,420 women was 26.2 ± 6.2 years. Of these women, 8.9% (126/1,420) were intending to become pregnant (mean age 25.7 ± 6.0 years). Women intending to become pregnant were more likely to be non-Hispanic black than non-Hispanic white ($P=0.03$) or Hispanic ($P=0.05$), and less likely to have had a prior pregnancy ($P=0.01$) as compared to those not intending to become pregnant (Table 1). While there was no difference in BMI between the groups, the majority of women intending to become pregnant were overweight or obese ($\geq 25 \text{ kg/m}^2$).

The mean score on the **ORK** scale was 5.4 for both groups (range: 1-10). The ORK and weight misperception did not differ significantly between women intending to become pregnant and not intending to become pregnant ($P=0.89$ and $P=0.59$, respectively). These did not differ between the groups irrespective of BMI class (Tables 2). The association between pregnancy intention, ORK and weight misperception did not differ significantly between the groups even after adjusting for age, race/ethnicity, annual income and gravidity (adjusted odds ratio [aOR] 1.14, 95% confidence interval [CI] 0.74-1.77 and aOR 1.17, 95% CI 0.75-1.83, respectively). While weight misperception did not differ significantly between women intending to become pregnant and not intending to become pregnant, there was a significant difference in weight misperception based on BMI class among women intending to become pregnant; over 70% of overweight women misperceived their weight compared to 30% of underweight and normal weight women ($P<0.01$) and only 10% of obese women ($P<0.01$) (Table 3).

Bivariate and multivariable logistic regression analyses did not show any significant differences in the percentage of women agreeing to the statements measuring diet and health-related attitudes between women intending to become pregnant and those not intending (Table 4). Among women intending to become pregnant, 43% agreed with the statement "Some people are born to be fat and some thin; there is not much you can do about it", 47% agreed with the statement "The things I eat and drink now are healthy so there is no reason for me to make changes" and 76% agreed that "There are so many recommendations about healthy ways to eat, it's hard to know what to believe."

Results from a subgroup analysis based on different age categories and different levels of income and education with regard to outcome of interests did not differ substantially from the overall findings.

Conclusion

The goal of this study was to measure ORK, misperception of weight and diet and health-related attitudes among women intending to become pregnant versus women not intending to become pregnant. Despite the recent CDC guidelines emphasizing education and counseling on the importance of healthy dietary habits and optimal weight maintenance prior to conception,^{9, 14} this study found that women intending to become pregnant do not have appropriate diet and health-related knowledge and attitudes and did not differ from those not intending to become pregnant. While it is clear that women intending to become

pregnant require additional information related to obesity and its associated risks, all reproductive-aged women should be informed of these risks, given that many pregnancies are often unplanned.¹⁵

Nearly two-thirds of the women in our study intending to become pregnant were overweight or obese.¹⁶ This supports previous studies, which have shown that many women are overweight or obese before conception.¹⁷ Evidence is accumulating regarding the association between being overweight or obese before conception and adverse pregnancy outcomes.^{7,18} Further, evidence suggests that children born to mothers that are overweight or obese prior to pregnancy are at an increased risk of obesity, type 2 diabetes and cardiovascular disease.^{5, 7, 19, 20} According to Catalano et al,¹⁹ preconception BMI is the strongest predictor of childhood obesity. In our study, women intending to become pregnant compared to those not intending did not show any better attitude with regard to eating a variety of foods for their vitamins, not making dietary changes and defining their diet choices as good or bad. Therefore, women of childbearing age, especially those intending to become pregnant, should be encouraged to reach a healthy weight before conception through changes in diet and lifestyle.

While the risks of maternal preconception overweight and obesity are well established, many women do not accurately perceive their weight. Weight misperception is especially common among minorities and those with lower income and education levels.^{11, 21} In the present study, we found that approximately 90% of obese women who were intending to become pregnant accurately perceived their weight, while <30% of overweight women who were intending to become pregnant accurately perceived their weight. These results are both promising, as 90% of obese women accurately perceived their body weight, and of concern, as >70% of overweight women did not. However, published studies noted that not only preconception obesity, but also preconception overweight **status increases the risk** of adverse outcomes (pregnancy and perinatal) among mothers and their fetus or newborn.^{17, 22, 23} Overweight women who do not accurately perceive their weight are less likely to try to lose weight before conception and are more likely to gain excess weight in pregnancy, thereby putting themselves and their child at risk.^{21, 24} One study found that women who received a diagnosis of overweight or obesity from their health care provider were more likely to try to control their weight through diet and exercise.²⁵ Therefore, targeted screening for both overweight and obesity among women of childbearing age is critically important. In addition, clinicians should consider patients' perceived weight status when pursuing patient-centered preconception counseling, especially among overweight **and obese** patients.^{10, 26}

We found that women intending to become pregnant do not have adequate knowledge of the health risks associated with obesity, which may put them at risk for developing diabetes or hypertension in the years prior to conception. In the US, the prevalence of pre-existing diabetes among diabetic pregnancies increased from 10% in 1999 to 21% in 2005.²⁷ Research has shown that fetal exposure to abnormal glucose metabolism in early pregnancy (5-8 gestational weeks) in women with pre-existing diabetes may increase the risks of adverse pregnancy outcomes to a greater degree than exposure in late gestation among women that develop gestational diabetes.²⁷ In addition, women with chronic hypertension

have significantly increased risks of maternal and perinatal mortality.²⁸ Thus, the preconception period is a critical time to educate women at risk for diabetes and hypertension on the health risks associated with obesity, as well as the risks to both mother and baby if the woman becomes pregnant.²⁹

We observed that 76% of women who intended to become pregnant were **unaware** about what constitutes a healthy diet while 47% considered their current diet healthy and they did not need to change their current eating patterns. In addition, 43% of women desiring pregnancy believed that some people are born fat and there is little that can be done about it. These attitudes are concerning considering our group recently published a report showing that the vast majority of low-income women desiring pregnancy ate fewer than one serving of fruit and vegetable per day and regularly consumed soft drinks and fast food¹⁵. Therefore, information on a healthy diet should be provided in women's health clinics to encourage women with pregnancy intention to consume a diet high in vegetables, fruits, nuts and lean protein and low in processed meats and starches.³⁰⁻³³

This study has some limitations. **Firstly**, self-reported data are subject to recall and social-desirability biases. **Secondly**, this study included primarily low-income women (16-40 years) and from ethnically diverse backgrounds. Thus, findings may not be generalizable to other populations. Finally, the data collected using simplified binary responses for some questions and, thus, may not have captured accurate, descriptive representations.

Our finding demonstrate that weight misperception as well as inadequate knowledge regarding a healthy diet in women who intend to become pregnant should be educated and counseled on health risks associated with excess weight. Appropriate awareness materials, as brochures, can be developed targeting women who intend to become pregnant. By addressing weight misperception and improving diet and health-related knowledge and attitudes during the preconception period, clinicians have the opportunity to improve the health of women before they conceive and potentially reduce the risk of adverse pregnancy outcomes.

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References

1. Flegal KM, Carroll MD, Kit BK, Ogden CL. Prevalence of obesity and trends in the distribution of body mass index among US adults, 1999-2010. JAMA. 2012; 307(5):491-497. [PubMed: 22253363]
2. Krummel DA. Postpartum weight control: A vicious cycle. J Am Diet Assoc. 2007; 107(1):37-40. [PubMed: 17197268]

3. Gaillard R, Durmu B, Hofman A, et al. Risk factors and outcomes of maternal obesity and excessive weight gain during pregnancy. *Obesity*. 2013; 21(5):1046–1055. [PubMed: 23784909]
4. Rosenberg TJ, Garbers S, Chavkin W, Chiasson MA. Prepregnancy weight and adverse perinatal outcomes in an ethnically diverse population. *Obstet Gynecol*. 2003; 102(5, Part 1):1022–1027. [PubMed: 14672480]
5. Whitaker RC. Predicting preschooler obesity at birth: The role of maternal obesity in early pregnancy. *Pediatrics*. 2004; 114(1):e29–e36. [PubMed: 15231970]
6. Kral JG, Biron S, Simard S, et al. Large maternal weight loss from obesity surgery prevents transmission of obesity to children who were followed for 2 to 18 years. *Pediatrics*. 2006; 118(6):e1644–e1649. [PubMed: 17142494]
7. Pirkola J, Pouta A, Bloigu A, et al. Risks of overweight and abdominal obesity at age 16 years associated with prenatal exposures to maternal prepregnancy overweight and gestational diabetes mellitus. *Diabetes Care*. 2010; 33(5):1115–1121. [PubMed: 20427685]
8. Ehrlich SF, Rosas LG, Ferrara A, et al. Pregnancy glucose levels in women without diabetes or gestational diabetes and childhood cardiometabolic risk at 7 years of age. *J Pediatr*. 2012; 161(6):1016–1021. [PubMed: 22790183]
9. Johnson K, Posner SF, Biermann J, et al. Recommendations to improve preconception health and health care--United States. A report of the CDC/ATSDR Preconception Care Work Group and the Select Panel on Preconception Care. *MMWR Recomm Rep*. 2006; 55(RR-6):1–23. [PubMed: 16617292]
10. Zera C, McGirr S, Oken E. Screening for obesity in reproductive-aged women. *Prev Chronic Dis*. 2011; 8(6):A125. [PubMed: 22005618]
11. Rahman M, Berenson AB. Self-perception of weight and its association with weight-related behaviors in young, reproductive-aged women. *Obstet Gynecol*. 2010; 116(6):1274–80. [PubMed: 21099591]
12. Rahman M, Justiss AA, Berenson AB. Racial differences in obesity risk knowledge among low-income reproductive-age women. *J Am Coll Nutr*. 2012; 31(6):397–400. [PubMed: 23756583]
13. Swift JA, Glazebrook C, Macdonald I. Validation of a brief, reliable scale to measure knowledge about the health risks associated with obesity. *Int J Obes (Lond)*. 2006; 30(4):661–668. [PubMed: 16276360]
14. Schumann N L, Brinsden H, Lobstein T. A review of national health policies and professional guidelines on maternal obesity and weight gain in pregnancy. *Clin Obes*. 2014; 4:197–208. [PubMed: 25826791]
15. Finer L, Zolna M. Unintended pregnancy in the United States: Incidence and disparities, 2006. *Contraception*. 2011; 84(5):478–485. [PubMed: 22018121]
16. Berenson AB, Pohlmeier AM, Laz TH, Rahman M, McGrath CJ. Nutritional and weight management behaviors in low-income women trying to conceive. *Obstet Gynecol*. 2014; 124(3):579–584.
17. Hinkle SN, Sharma AJ, Kim SY, et al. Prepregnancy obesity trends among low-income women, United States, 1999–2008. *Matern Child Health J*. 2012; 16(7):1339–1348. [PubMed: 22009444]
18. Ovesen P, Rasmussen S, Kesmodel U. Effect of prepregnancy maternal overweight and obesity on pregnancy outcome. *Obstet Gynecol*. 2011; 118(2 Pt 1):305–312. [PubMed: 21775846]
19. Catalano PM, Farrell K, Thomas A, et al. Perinatal risk factors for childhood obesity and metabolic dysregulation. *Am J Clin Nutr*. 2009; 90(5):1303–1313. [PubMed: 19759171]
20. Boney CM, Verma A, Tucker R, Vohr BR. Metabolic syndrome in childhood: Association with birth weight, maternal obesity, and gestational diabetes mellitus. *Pediatrics*. 2005; 115(3):e290–296. [PubMed: 15741354]
21. Kuchler F, Variyam JN. Mistakes were made: misperception as a barrier to reducing overweight. *Int J Obes Relat Metab Disord*. 2003; 27(7):856–861. [PubMed: 12821973]
22. Schummers L, Hutcheon JA, Bodnar LM, Lieberman E, Himes KP. Risk of adverse pregnancy outcomes by prepregnancy body mass index: A population-based study to inform prepregnancy weight loss counseling. *Obstet Gynecol*. 2015; 125:133–143. [PubMed: 25560115]

23. Athukorala C, Rumbold AR, Willson KJ, Crowther CA. The risk of adverse pregnancy outcomes in women who are overweight or obese. *BMC Pregnancy Childbirth*. 2010; 10:56. [PubMed: 20849609]
24. Herring SJ, Oken E, Haines J. Misperceived pre-pregnancy body weight status predicts excessive gestational weight gain: findings from a US cohort study. *BMC pregnancy childbirth*. 2008; 8(1): 54. [PubMed: 19102729]
25. Yaemsiri S, Slining MM, Agarwal SK. Perceived weight status, overweight diagnosis, and weight control among US adults: the NHANES 2003-2008 Study. *Int J Obes*. 2011; 35(8):1063–1070.
26. Honein MA, Devine O, Sharma AJ, et al. Modeling the potential public health impact of prepregnancy obesity on adverse fetal and infant outcomes. *Obesity*. 2013; 21(6):1276–1283. [PubMed: 23913736]
27. Lawrence JM, Contreras R, Chen W, Sacks DA. Trends in the prevalence of preexisting diabetes and gestational diabetes mellitus among a racially/ethnically diverse population of pregnant women, 1999–2005. *Diabetes Care*. 2008; 31(5):899–904. [PubMed: 18223030]
28. Gilbert WM, Young AL, Danielsen B. Pregnancy outcomes in women with chronic hypertension: a population-based study. *J Reprod Med*. 2007; 52(11):1046–1051. [PubMed: 18161404]
29. Morgan MA, Anderson BL, Lawrence H, Schulkin J. Well-woman care among obstetrician-gynecologists: opportunity for preconception care. *J Matern Fetal Neonatal Med*. 2012; 25(6):595–599. [PubMed: 21888468]
30. Tobias DK, Zhang C, Chavarro J, et al. Prepregnancy adherence to dietary patterns and lower risk of gestational diabetes mellitus. *Am J Clin Nutr*. 2012; 96(2):289–295. [PubMed: 22760563]
31. Grieger JA, Grzeskowiak LE, Clifton VL. Preconception dietary patterns in human pregnancies are associated with preterm delivery. *J Nutr*. 2014; 144(7):1075–1080. [PubMed: 24790026]
32. Moredich CA, Kessler TA. Physical activity and nutritional weight loss interventions in obese, low-income women: An integrative review. *J Midwifery Women's Health*. 2014; 59(4):380–387. [PubMed: 24256087]
33. Gardiner PM, Nelson L, Shellhaas CS, et al. The clinical content of preconception care: nutrition and dietary supplements. *Am J Obstet Gynecol*. 2008; 199(6 Suppl 2):S345–356. [PubMed: 19081429]

Table 1

Socio-demographic characteristics of women (16-40 y) intending to become pregnant compared to women not intending to become pregnant (N=1,420)

Characteristics	Pregnancy intention	
	Yes (n=126)	No (n=1294)
Age, (%)		
20y	17.5	21.3
21-30y	61.1	54.1
>30y	21.4	24.6
Race/ethnicity, (%)		
Non-Hispanic White	20.2	26.3
Non-Hispanic Black	51.6*	40.1
Hispanic	28.2	33.7
Education, (%)		
Some high school classes	23.6	20.8
Enrolled in or graduate of high school	49.6	45.9
Some college course work or degree	26.8	33.3
Household income/y, (%)		
< \$15,000	62.5	64.0
\$15,000-\$29,999	19.6	24.8
\$30,000	17.9	11.2
Marital status, (%)		
Never married	45.9	50.0
Living together/currently married	41.0	35.4
Divorced/separated/widowed	13.1	14.6
BMI (kg/m ²), (%)		
Underweight and normal weight (<25.0)	34.2	36.5
Overweight (25.0-29.9)	23.3	28.5
Obese (30.0)	42.5	35.0
Gravidity, (%)		
None	32.8	22.8
1 time	67.2*	77.2

Abbreviation: BMI= body mass index

Chi-square test was used to compare categorical variables between women intending to become pregnant and those not intending

* Significantly different, *P* value <0.05

Table 2

Obesity risk knowledge, weight perception and weight misperception by actual weight status among women (16-40y) intending to become pregnant compared to women not intending to become pregnant (N=1,420)

Characteristics	Overall			Underweight & normal weight			Overweight			Obese		
	Pregnancy intention			Pregnancy intention			Pregnancy intention			Pregnancy intention		
	Yes n=126	No n=1294	P value	Yes n=41	No n=459	P value	Yes n=28	No n=358	P value	Yes n=51	No n=440	P value
Obesity risk knowledge, (%)			0.89			0.56			0.94			0.57
Low	50.5	51.2		47.1	52.3		54.2	55.0		52.3	47.8	
High	49.5	48.8		53.0	47.7		45.8	45.0		47.7	52.2	
Weight perception, (%)						0.36			0.56			0.06
Underweight	9.6	6.3		22.0	15.2		3.6	2.0		2.0	0.5	
About the right weight	44.8	53.5		70.7	79.6		67.9	65.3		7.8	18.5	
Overweight	45.6	40.3		7.3	5.3		28.6	32.8		90.2	81.1	
Weight misperception, (%)			0.59			0.19			0.65			0.11
Misperception	30.8	33.3		29.3	20.4		71.4	67.2		9.8	19.0	
Accurate perception	69.2	66.7		70.7	79.6		28.6	32.8		90.2	81.1	

Underweight or normal weight, BMI <25.0 kg/m²; Overweight, BMI 25.0-29.9 kg/m²; Obese, BMI ≥30.0 kg/m²

Chi-square test or Fisher's exact test was used to compare the categorical variables between women with and without pregnancy intentions

Table 3

Obesity risk knowledge and weight misperception by actual weight status among women intending to become pregnant

Characteristics	Women intending to become pregnant n=126			P value ^a	P value ^b
	Underweight & normal weight n=41	Overweight n=28	Obese n=51		
Obesity risk knowledge, (%)				0.59	0.88
Low	47.1	54.2	52.3		
High	53.0	45.8	47.7		
Weight misperception, (%)					
Misperception	29.3	71.3	9.8	<0.01 *	<0.001 *
Accurate perception	70.7	28.7	90.2		

Underweight or normal weight, BM <25.0 kg/m²; Overweight, BM 25.0-29.9 kg/m²; Obese, BM ≥30.0 kg/m²

^a Normal weight Vs. Overweight

^b Overweight Vs. Obese

* P value <0.05 considered significant

Table 4

Attitudes related to diet and health among women (16-40 years) intending to become pregnant compared to women not intending to become pregnant (N=1,420)

<u>Attitudinal statements</u>	<u>Pregnancy intentions</u>		
	<u>Yes n=126 (%)^a</u>	<u>No n=1294 (%)^a</u>	<u>Adjusted odds ratios (95% CI)^b</u>
Choosing a healthy diet is just a matter of knowing what foods are good and what foods are bad	89.7	91.8	0.88 (0.44-1.77)
Eating a variety of foods each day probably gives you all the vitamins and minerals you need	74.8	78.3	0.79 (0.49-1.27)
Some people are born to be fat and some thin; there is not much you can do about it	43.0	36.7	1.18 (0.77-1.81)
Starchy foods, like bread, potato, and rice make people fat	78.6	76.4	1.34 (0.78-2.29)
There are so many recommendations about healthy ways to eat, it's hard to know what to believe	76.1	77.4	0.92 (0.57-1.48)
What you eat can make a big difference in your chance of getting a disease, like heart disease, diabetes, or cancer	86.4	87.7	0.79 (0.43-1.44)
The things I eat and drink now are healthy so there is no reason for me to make changes	46.9	48.2	0.81 (0.53-1.25)

Abbreviation: CI, confidence interval

Separate multivariable logistic regression model was used for each outcome variable. Main predictor variable: pregnancy intention (yes/no); reference group: women who responded "no". Dependent variable: each of the health attitude statements (binary). Adjusted by age (continuous), race/ethnicity (non-Hispanic white, non-Hispanic black, Hispanic), annual income (<\$15,000, \$15,000-\$29,999, \$30,000) and gravidity (none and 1 time)

^a **Agreement (%) with attitudinal statements**

^b Based on multivariable logistic regression analysis