

Pregnancy Craving and Pica: 60 Years Later

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Abstract

Purpose: To study pregnancy craving and pica in a cohort of women and compare our findings to a historic study. **Methods:** Prospective survey of women in the third trimester of pregnancy. Data were collected using the same questionnaire from a study published in *Obstetrics and Gynecology* in 1957. All surveys were conducted by clinicians at 35 0/7-41 6/7 weeks gestational age. High risk pregnancies were excluded. **Results:** We included 547 women in the analysis. Of those, 60.8% reported food craving vs 65.7% in the 1957 cohort, p -value 0.09. The most common food craving was fruit, seen in 31.1% vs 13.6%, p -value < 0.00001. In the group of women with craving, 64.6% reported that they craved the food item prior to becoming pregnant, 76.0% could not wait until another day to satisfy their food craving, and 41.7% reported there was something they liked as much. Only 2.9% of women in our cohort had pica vs 9.0%, p -value 0.00001. The cohorts differed in fruit craving, (31.1% vs 13.6%), meat, poultry, fish, dry beans, eggs, and nuts (21.0% vs 5.0%), milk, yogurt, and cheese, (17.0% vs 2.2%) and vegetable, (14.1% vs 6.9%), all with p -value < 0.00001. They did not differ in the category of bread, cereal, rice, and pasta, 17.9% vs 22.3, p -value 0.06. **Conclusion:** Food craving during the third trimester of pregnancy has remained constant for almost 60 years, although the items craved have changed. Pica was less common in our modern cohort of women.

Keywords

Pregnancy Craving, Pica

1. Introduction

Pickles and ice cream are the stereotypical pregnancy craving. Modern references to pregnancy craving are easily found in all media formats. An internet search on the phrase “pregnancy craving” yields countless results. However, information on the type of foods and items craved in pregnancy is lacking [1].

Pregnancy craving is common with up to 90% of women in the United States craving specific foods during pregnancy [2] [3] [4]. Pica, the craving for substances that lack nutritional value is much less common with an estimated incidence of 1.6% to 4.0% [5] [6] [7]. Examples of pica include consumption of clay, dirt, starch and ice. Craving is not unique to pregnancy as up to 97% of college-aged men and women in North America report having craved a specific food at some point in their lifetime. In women, food craving appears to have peak intensity and frequency during pregnancy and prior to menstruation [2].

We believe the first publication associating pregnancy and craving for unconventional food combinations appeared in *Good Housekeeping* in 1899. In 1903, a poem describing a pregnant woman craving pickles and ice cream appeared in *The Medical Standard* [8]. An anecdote regarding pregnancy craving was seen on the *I Love Lucy* show in 1954. In a humorous exchange between husband and wife, pickles were dipped in a papaya milkshake and sardines were mixed with ice cream and hot fudge [9]. For much of the 1950s craving was thought to be a psychological response to pregnancy and nutritional deficiency highlighted by an unusual observation that “the pregnant woman may well demand peaches out of season” [10] [11] [12].

In 1957, Posner *et al.* reported on 600 gravidas surveyed during the third trimester at Harlem Hospital which gave some insight into craving in a homogeneous cohort of obstetric patients in New York City during the 1950s. Interestingly, this study was initiated after one of their prenatal clinic patients reported a craving for baking powder despite the fact that she “rarely did any baking” [13]. We sought to duplicate that study in order to examine pregnancy craving in a more diverse, modern obstetric cohort and note any differences in the items craved.

2. Materials and Methods

This study was a prospective questionnaire study to evaluate pregnancy craving and pica during the third trimester. Pregnant women between 35 0/7 and 41 6/7 weeks of gestation were recruited to participate. In order to be consistent with the original study, we excluded women with a medical condition complicating pregnancy. Patients with multiple gestation and fetal growth abnormalities were also excluded. The patients received prenatal care between 2010 and 2015 at one of two sites affiliated with Jersey Shore University Medical Center (Family Health Center, Neptune, NJ and Jersey Shore Obstetrics and Gynecology, Freehold, NJ).

We used a questionnaire that included the same five questions asked in the original study conducted by Posner (**Figure 1**). All patients were interviewed by one of four clinicians in order to minimize variation and subjectivity in how information was obtained and recorded. Consent to participate was obtained verbally. Patients were reassured that their responses were confidential and would not be included in their medical record. A convenience sample was taken and the patients were not consecutive.

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| 1. | When was your last menstrual period? |
| 2. | Is there some special food you crave during this pregnancy? |
| 3. | Did you like this food before you became pregnant? |
| 4. | If you did not have this in the house, would you forget it until another day? |
| 5. | Is there something you like as much? |

Figure 1. Pregnancy craving and pica questions—Posner *et al.* (1957).

The U.S. Office of Management and Budget (OMB) Standards for Race and Ethnicity (1997) were used to define race [14]. Food cravings were then categorized into one of five major food groups as defined by U.S. Department of Agriculture (USDA) (**Figure 2**) [15]. If patients responded “yes” to having a food craving during their pregnancy, they were asked to list any particular food craving that they had experienced. More than one craving could be recorded for each woman. Food craving for items without nutritional value was categorized as pica [6] [16].

Mean and range were used to summarize study subject characteristics which were continuous variables. Median was used to summarize gravidity. Frequency and percentage were used to summarize the discrete variables. Pearson’s Chi-squared test with Yates’ continuity correction was used to compare the proportions between groups. A *p*-value of or less than 0.05 indicated statistical significance. An online statistical application was used for data analysis (Social Science Statistics Easy Chi-Square Calculator accessed via <http://www.socscistatistics.com/tests/chisquare/Default.aspx>). The Hackensack Meridian Health Institutional Review Board approved this study.

3. Results

A total of 600 women were enrolled and surveyed. We excluded 53 surveys that were incomplete. The mean age was 28 with a range of 15 - 42. Gravidity ranged from 0 - 14 with a median of 2. Patient characteristics are summarized in **Table 1**. More than 90% of our study cohort self-described as Hispanic, Black or African American, or White, and less than 7% self-described as a different race or ethnicity. The 1957 study group was described as “predominantly” Black but no other demographic details were reported.

Table 2 shows the comparison of the cohorts. The overall rate of food craving was similar in both cohorts, 60.8% vs 65.7% respectively, *p*-value 0.09. The cohorts differed in fruit craving, (31.1% vs 13.6%), meat, poultry, fish, dry beans, eggs, and nuts (21.0% vs 5.0%), milk, yogurt, and cheese, (17.0% vs 2.2%) and vegetable, (14.1% vs 6.9%), all with *p*-value < 0.00001. They did not differ in the category of bread, cereal, rice, and pasta, 17.9% vs 22.3, *p*-value 0.06.

When comparing the cohorts of women with craving, 64.6% reported that they craved the food item prior to becoming pregnant (vs “none”), 76.0% could not wait until another day to satisfy the craving (vs “almost none”), and 41.7% reported there was something they liked as much as the craving (vs “almost universally none”). Only 2.9% of women in our cohort craved substances consistent with pica vs 9.0% in the 1957 cohort, *p*-value 0.00001.

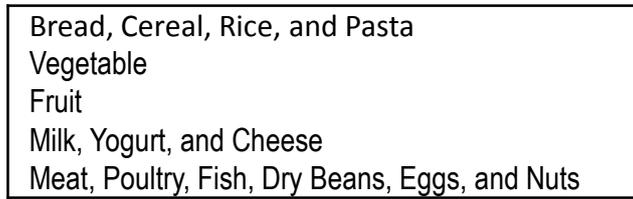


Figure 2. USDA food groups.

Table 1. Characteristics of the study cohort (n = 547).

Characteristic	Mean	Range
Age (years)	28	15 - 42
Gravidity	2	0 - 14
Gestational Age (weeks)	36	35 - 41
BMI (pre pregnancy)	25.5	16 - 51
Race		
Hispanic	50.3%	
Black or African American	22.1%	
White	21.0%	
Other*	6.6%	

*American Indian or Alaskan Native, Asian, Native Hawaiian and Other Pacific Islande.

Table 2. Comparison of study population to 1957 cohort.

Craving	Our Cohort n = 547	1957 Cohort n = 600	p-value
Craving reported	333 (60.8%)	394 (65.7%)	0.09
Craving by Basic Food Group*			
Fruits	170 (31.1%)	55 (13.6%)	<0.00001
Meat, Poultry, Fish, Dry Beans, Eggs, and Nuts	115 (21.0%)	20 (5.0%)	<0.00001
Bread, Cereal, Rice, and Pasta	98 (17.9%)	134 (22.3%)	0.06
Milk, Yogurt, and Cheese	93 (17.0%)	9 (2.2%)	<0.00001
Vegetable	77 (14.1%)	28 (6.9%)	<0.00001
Craving prior to pregnancy	215 (64.6%)	All answered "No"	n/a
Craving could be forgotten	253 (75.9%)	Almost all answered "No"	n/a
Craving something as much	139 (41.7%)	Almost universal "No"	n/a
Pica	16 (2.9%)	54 (9.0%)	0.00001

*Sum of percentages exceeds 100% because more than one craving could be recorded for each woman.

We found that food craving in our cohort varied by race and ethnicity with 71.3% of white, 68.6% of Black, and 54.9% of Hispanic women reporting craving respectively, *p*-value 0.002. Only 36.1% of the remaining women in our cohort had craving. No comparison could be made to the 1957 cohort as race and ethnicity details were limited. However, craving among Blacks was similar in both cohorts, 68.6% vs 65.7% respectively, *p*-value 0.04.

Craving was noted across all ages but we were not able to make any comparison to the 1957 cohort as this information was not reported. The highest rate of craving, 65.5%, was seen in women under the age of 20 years and the lowest rate of craving, 55.8%, was seen in women over the age of 35 years.

4. Discussion

Our analysis showed that food craving during the third trimester of pregnancy has remained surprisingly stable. We noted pregnancy craving in about two-thirds of both the modern and historic cohorts. This is consistent with the observation that pregnancy craving remains a very common and popular topic of discussion. Items craved, however, appear to have changed over the past several decades. We note that the number of cravings exceeds the number of women in our cohort because more than one craving could be recorded for each woman.

The modern cohort craved fruit, meat, poultry, fish, dry beans, eggs, nuts, milk, yogurt, cheese and vegetable more than the historic cohort. Carbohydrate was "...the food of choice" in the 1957 study which would now be included in the bread, cereal, rice and pasta food group. This apparent shift may, at least in part, be influenced by the current popularity of low carbohydrate diets that were introduced in the 1970s [17].

We found significant variation in pregnancy craving by race and age in the modern cohort; however, we could not make comparison to the 1957 cohort as race, ethnicity, and age information was limited. Pregnancy craving was highest in younger women and lowest in older women. Pica was uncommon in our cohort which is consistent with prior reports.

Our study has some limitations. A detailed comparison between cohorts was not possible due to missing or vague details in the 1957 publication. However, both cohorts do reflect pregnancy in young healthy women, and we believe the present study reflects a reasonable comparison between the past and present. Since our sample was not chosen randomly, it may not be generalizable to the entire pregnancy population. We were able to compare craving in Black women and found similar rates of craving in both cohorts. We could not calculate appropriate chi-square statistics since actual rates of craving prior to pregnancy, ability to wait another day to satisfy the craving, and craving liked as much were not reported in the 1957 publication. We did not examine the impact of parity but it would be interesting to see if cravings are the same during a future pregnancy. The strength of our study is that we used the same questions that were used in 1957 and enrolled the same number of women. We made comparisons using current USDA Food Groups.

5. Conclusion

In summary, pregnancy craving remains very common, but the items craved appear to have changed over the past 60 years. The modern gravida is more likely to crave fruit and less inclined to crave carbohydrates versus pregnant

women in the 1950s. Pregnancy craving appears to vary by race and age. Pica in pregnancy remains uncommon.

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Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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