Who Knows More About Pregnancy and Nutrition Related Knowledge? Pregnant Incarcerated Women, Pregnant Community Women or Female College Students

Morgan Thompson, Danielle Dallaire, & Catherine A. Forestell
The College of William & Mary

Prior Research

- Female incarceration rates have been increasing over the past decade with 112,961 females in state and federal correctional facilities in 2014 (Carson, 2015).
- Reports estimate that up to 30% of incarcerated women are pregnant upon arrest (Association of State Correctional Administrators, 2011; Marushak, 2008).
- Currently, there are no federal regulations concerning the nutritional standards in correctional facilities with assessments revealing that vegetable, fruit, and milk servings at correctional facilities in South Carolina fall below dietary Reference Intake recommendations and do not meet recommendations specific to pregnant women (Collins & Thompson, 2012; Kaiser & Campbell, 2014).
- Consumption of fruits and vegetables as well as nutrients such as folic acid and omega-3 fatty acid have been demonstrated to reduce the odds of low birth weight, preterm labor, and small for gestational age (Liu, 2011).

Research Question

- This research aimed to examine differences in nutrition and pregnancy knowledge among three populations: pregnant incarcerated females, pregnant females from the community, and undergraduate college females.
- Prior to nutritional counseling, who receives higher scores regarding nutrition- and pregnancy-related knowledge?
- After the jail sample receives nutritional counseling, who receives higher scores?

Participants

Jail sample (*N* = 172):

- Average age 25.7 (*SD* = 5.3) years
- 50.5% African American
- 71.4% complete high school
- 25.3% primiparous
- 9.9% married
- 10.0% carrying private insurance

Community sample (*N* = 50):

- Average age 30.1 (*SD* = 5.7) years
- 28.0% African American
- 94.0% complete high school
- 46.0% primiparous
- 72.0% married
- 64.0% carrying private insurance

College sample (*N* = 305):

- Average age 19.35 (*SD* = 1.4) years
- 7.4% African American

Measures

- **Nutrition and Pregnancy Knowledge:** 39-items (α = .812) assessing knowledge, nutrition and pregnancy including nutritional characteristics of specific foods and health-related risk behaviors during pregnancy.
- **Virginia Pregnancy Risk Risk Assessment Measure:** 79-items examining maternal behaviors and experiences occurring before, during and after pregnancy, including health insurance coverage, cigarette use, caffeine consumption, alcohol consumption, previous birth complications.

Procedures

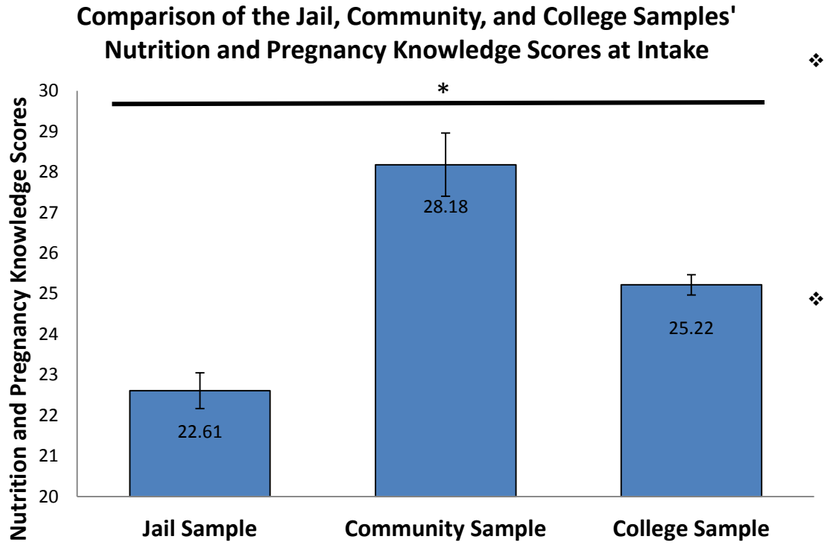
- The Health Beginnings Project:
  - Pregnancy test administration
  - Prenatal vitamins
  - Nutritional counseling
  - Access to information and services

Jail sample
- Intake interview (*n* = 172)
- Nutritional counseling
- Post-counseling interview (*n* = 118)

Community sample:
- Intake interview

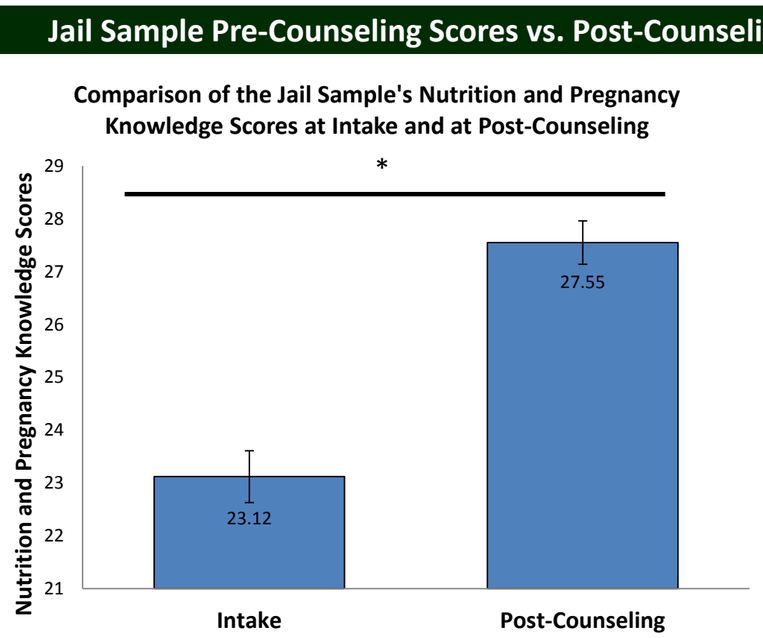
College sample:
- Mass Testing as part introductory psychology course

Pre-Counseling Nutrition and Pregnancy Knowledge



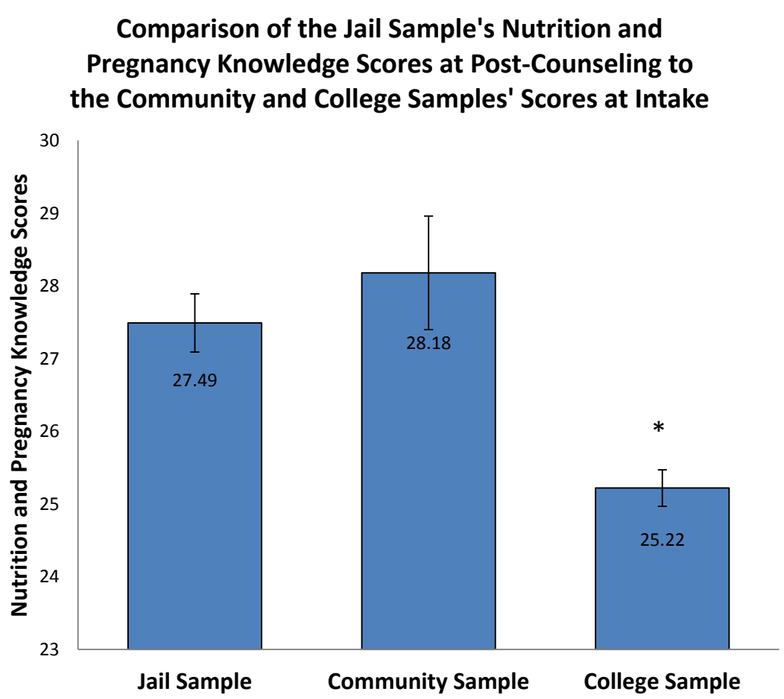
- At intake, the jail sample received significantly lower nutrition and pregnancy knowledge scores in comparison to both the community and college sample.
- The community sample additionally received significantly higher scores in comparison to the college sample's

Jail Sample Pre-Counseling Scores vs. Post-Counseling Scores



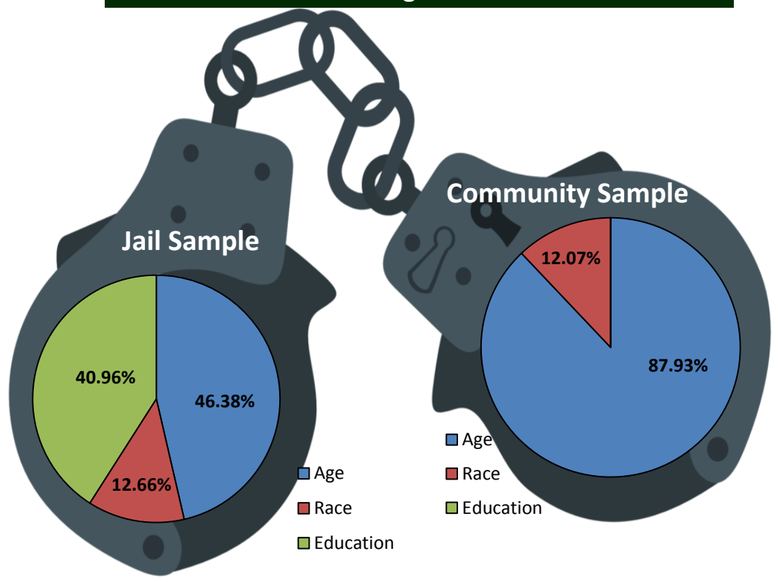
- The jail sample's nutrition and pregnancy knowledge scores significantly improved from intake to post-counseling, such that their scores at post-counseling were significantly higher.

Post-Counseling Nutrition and Pregnancy Knowledge Scores



- The jail sample's nutrition and pregnancy knowledge scores improved so much, that their post-counseling scores did not significantly differ from the community sample's scores at intake.
- The jail sample's nutrition and pregnancy knowledge scores at post-counseling surpassed the college sample's scores at intake, such that the jail sample received significantly higher scores at post-counseling than the college sample at intake.

Sociodemographic Predictors of the Jail and Community Samples' Nutrition and Pregnancy Knowledge at Intake



Note: Error variance is not included in the above graphic.

- At intake, the jail sample's nutrition and pregnancy knowledge scores could largely be accounted for by age and education.
- In comparison, education did not account for any variance in the community sample's nutrition and pregnancy knowledge scores. Rather age primarily accounted for the variance in the community sample's scores at intake.

Discussion

- Previous nutritional interventions have successfully improved perinatal outcomes and mothers' nutrition knowledge (Sachdeva &Mann, 1993; USDA & FNS, 2001); however, few interventions target incarcerated pregnant women.
- Nutrition may serve as a mediating factor causing socioeconomic status (SES) disadvantages to result in unhealthy nutritional behaviors, and consequently, poor birth outcomes (Kramer, Séguin, Lydon, & Goulet, 2000). Unfortunately, 49.4% of mothers in state and federal prisons earned less $1,000 in the month prior to arrest, suggesting a large proportion of inmates are of low SES (Glaze & Maruschak, 2008).

Clinical Implications and Future Research

- Although the nutritional intervention significantly improved nutrition and pregnancy knowledge scores in the jail sample, this does not mean their nutritional habits will improve. There is typically a weak correlation between nutrition knowledge and food intake (). Consequently, interventions must focus on food consumption.
- Because the jail sample is incarcerated they have limited to no control over the food they eat. Correctional facilities must work to provide inmates, especially pregnant females, with nutrition options that meet Dietary Reference Intake recommendations.
- This research is also assessing food frequency consumption and will contribute insight into the nutritional habits of incarcerated pregnant women and assist in improving birth outcomes through nutritional interventions.

Acknowledgements

We would like to acknowledge all of the graduate and undergraduate students who have been a part of the Healthy Beginnings Project Research Team. We would also like to thank the women who participated and our partner jail facilities. Finally, we would like to acknowledge current and past funders of the W&M Healthy Beginnings Project:

Graduate Student Association
The College of William and Mary

Anthem Foundation
W.K. Kellogg Foundation
March of Dimes Saving babies, together