

MADISON BALSINGER
HEATHER ENGLE
KATELYN FENIK
KIRSTEN HAUSMANN
MEGAN NIELANDER
MADISON SLOMAN

EDUCATION FOR NURSES ON PRETERM BIRTH IN BLACK WOMEN

WHAT IS PRETERM BIRTH?

- Preterm birth is when a baby is born before 37 weeks' gestation
- Babies who survive preterm birth are at risk for:
 - Breathing problems
 - Feeding difficulties
 - Cerebral palsy
 - Vision and/or hearing problems
- Preterm births also take an emotional and financial toll on families

(Preterm birth, 2020)



For more information, visit:
www.cdc.gov/reproductivehealth/maternalinfanthealth/pretermbirth.htm

RISK FACTORS AND WARNING SIGNS OF PRETERM LABOR

■ Risk Factors

- Ethnicity
- Age of mother
- Previous preterm births
- Multiple gestations
- Stress levels
- Illegal drug use
- Smoking

(What are the risk factors for preterm labor and birth?, 2021)

■ Warning signs of preterm labor

- Contractions
- Change in vaginal discharge
- Pelvic pressure
- Low, dull backache
- Abdominal cramps

(Preterm birth, 2020)

Some Factors Associated with Preterm Birth

Social, Personal, and Economic Characteristics

- ✓ Teens and women over age 35
- ✓ Black race
- ✓ Women with low income

Pregnancy and Medical Conditions

- ✓ Prior preterm birth
- ✓ Infection
- ✓ Carrying more than 1 baby (twins, triplets, or more)

Behavioral

- ✓ Tobacco use
- ✓ Substance use
- ✓ Stress



For more information visit: www.cdc.gov/reproductivehealth/MaternalInfantHealth/PretermBirth.htm

BACKGROUND

In 2019, the rate of preterm birth among African-American women was about 50 percent higher than the rate of preterm birth among white or Hispanic women.

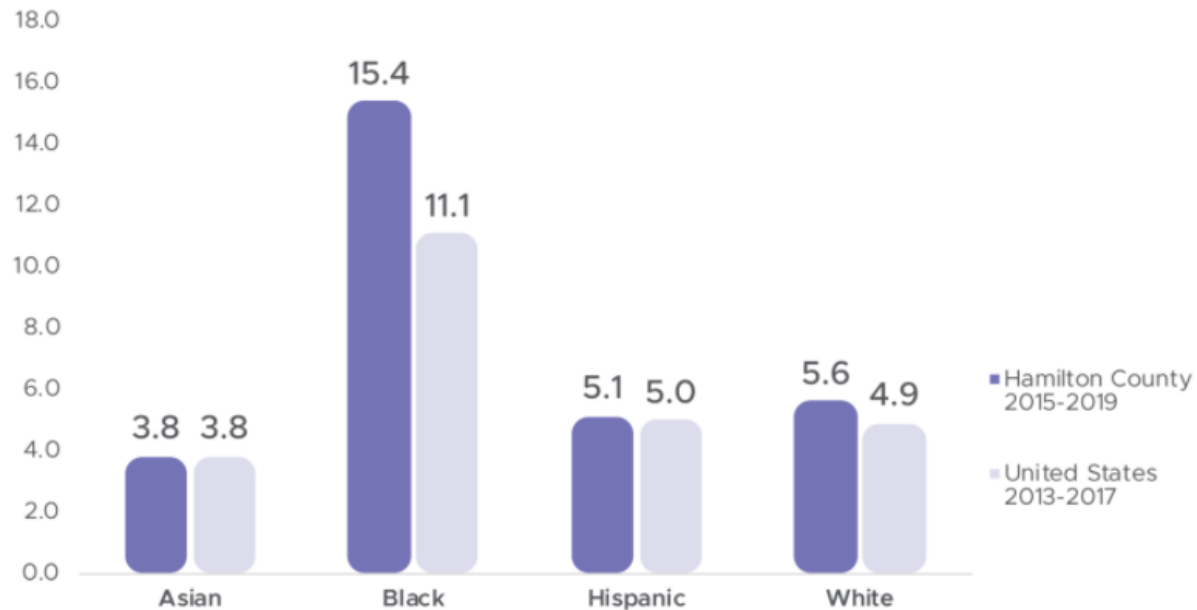
(Preterm birth, 2020)

■ Purpose

- Develop an education session to present findings derived from current evidence to nurses on the Labor and Delivery unit at Mercy Fairfield Hospital
- Develop an evidence-based project to determine interventions and strategies to improve preterm birth rates among Black women

LOCAL STATISTICS

Hamilton County (2015-2019)

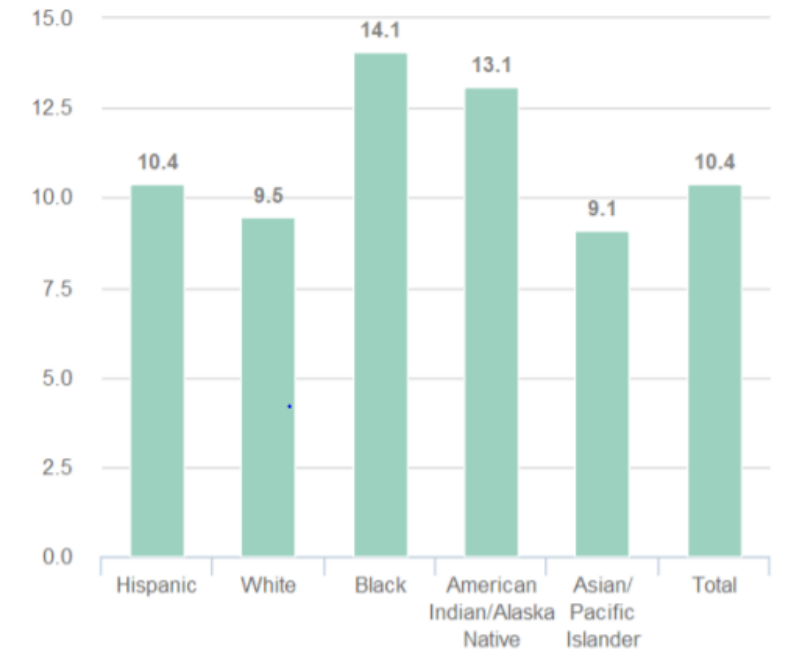


Hamilton County versus United States
Infant Mortality Rate
number of infant deaths per 1,000 live births

("Maternal and Infant Health", 2020)

Ohio (2017-2019)

Percent of live births



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(Peristats, 2021)

PICO QUESTION



Are nurses who care for hospitalized pregnant Black women who receive education on the impact of racial disparities on preterm birth compared to nurses who do not, have better knowledge on the impact of preterm birth due to racial disparities?

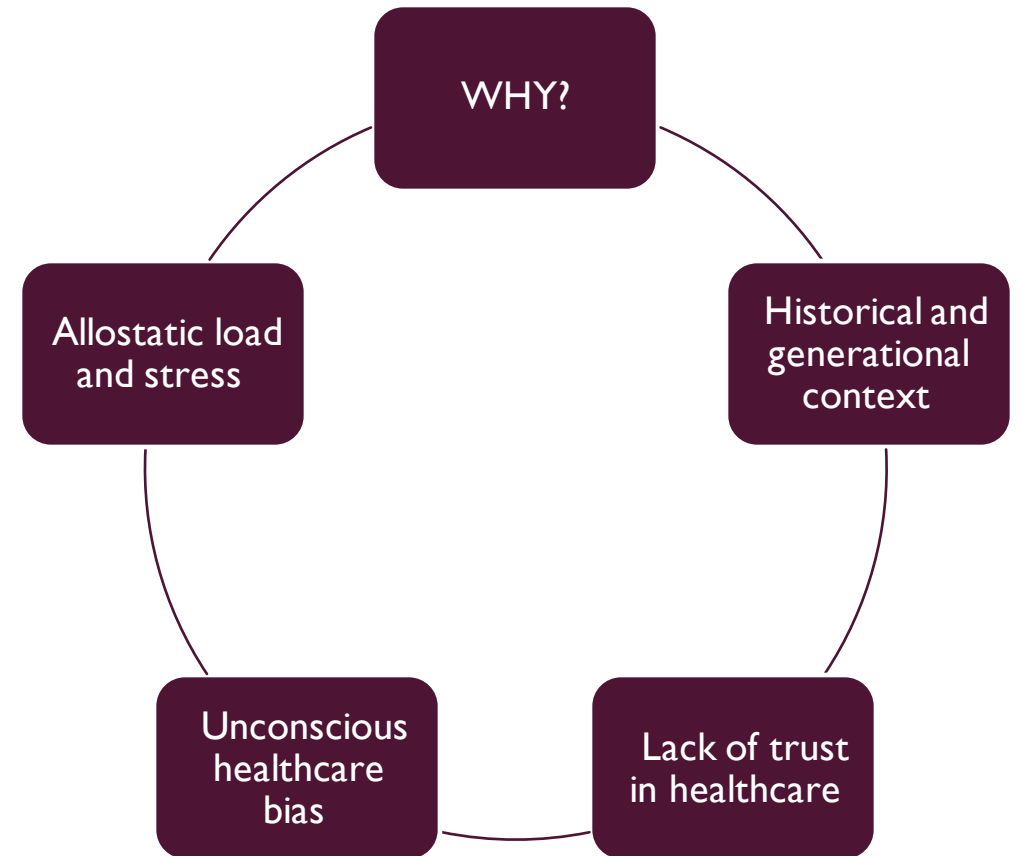
LITERATURE SEARCH

- **Databases:** PubMed, Medline, CINAHL
- **Search parameters**
 - Peer-reviewed articles
 - Published in the past 7 years (2014-2021)
 - English language
- **Keywords:** preterm birth, preterm, premature, prematurity, African-American, Black, pregnancy, pregnant, women, rates, outcomes, labor, delivery

CURRENT EVIDENCE

■ Themes

- Indication for change and research based on PTB rate disparity
- Disproven theories (Johnson et al., 2020)
- Persistent racism and discrimination (Bower et al., 2018)



Level	Intervention
Policy-makers	<ul style="list-style-type: none"> • Advocated for increased obstetrician staffing at one hospital
Patient	<ul style="list-style-type: none"> • Creation of new culturally-relevant preterm birth prevention education materials targeting black women
Community	<ul style="list-style-type: none"> • Initiated resource sharing network linking community organizations and service providers around pregnancy • Trained six community organizations to implement “Becoming a Mom” prenatal classes
Health institutions	<ul style="list-style-type: none"> • High risk patient navigator implemented at two hospital prenatal clinics • CenteringPregnancy™ at initiated at one hospital clinic and supported at five community health centers • Fostered system changes to reduce wait times and enable same day appointments at study sites
Providers	<ul style="list-style-type: none"> • Providers and staff two hospitals and five community health centers trained in Medicaid policies, cultural competency, social determinants of preterm birth, and customer service

(Janevic et al., 2018)

MULTILEVEL INTERVENTIONS

- Strategies to Reduce Preterm Birth
 - Progesterone Treatment
 - Smoking Cessation
 - Access to Prenatal Care
- Multilevel interventions are necessary

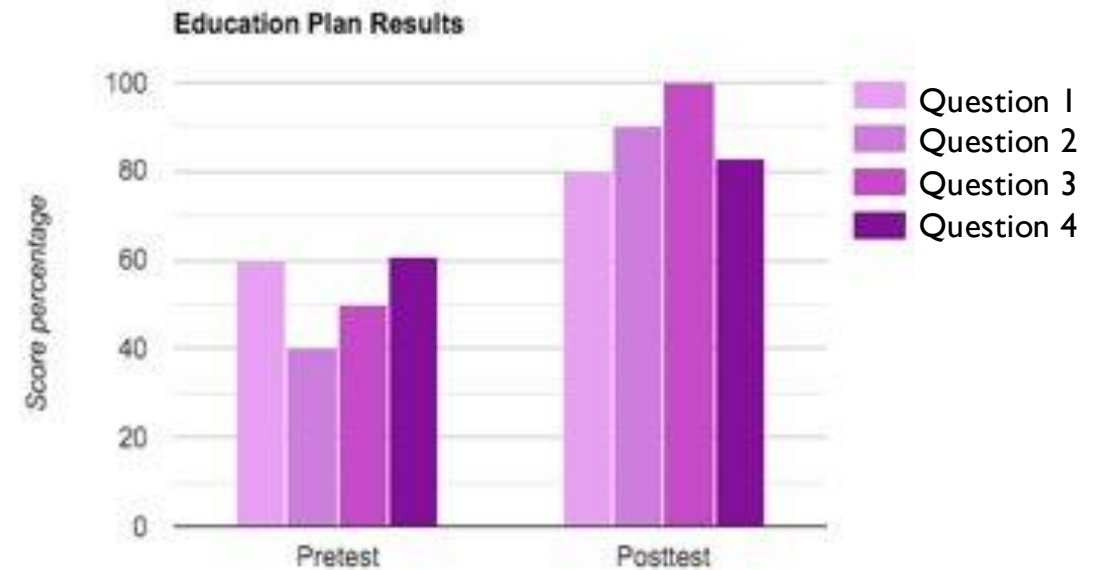
METHODOLOGY

- Intervention
 - Educational session for L&D nurses at Mercy Health Fairfield
- Data Collection
 - Pretest and posttest via "Survey Monkey"
 - Confidential, compact, and timely



FINDINGS/EVALUATION

- **4 knowledge-based questions**
- **2 opinion questions**
 - How would rate your knowledge on preterm birth in Black women on a scale of 1-10?
 - Average pretest: 4.375
 - Average posttest 9.14
 - How confident do you feel using resources and strategies to prevent preterm birth in Black women on a scale of 1-10?
 - Average pretest 4.25
 - Average posttest 9.0



1. What are risk factors for preterm birth? (select all that apply)
2. Which is NOT a sign of preterm labor? (multiple choice)
3. In Black women in Hamilton County from 2015-2019 the preterm labor percentage was 11.1 compared to 15.4 for the entire United States (true or false)
4. Which are strategies to reduce preterm birth in Black women? (select all that apply)

RECOMMENDATIONS & LIMITATIONS

- **Recommendations:**

- It is important to increase the amount of education in hospitals regarding preterm birth in Black women
- Increasing the pool of nurses presented to would provide more reliable results
- Increasing the number of hospitals presented to in order to get a better understanding of education across different facilities

- **Limitations:**

- Working together through virtual meetings
- Limited number of nurses to present the presentation to due to COVID guidelines

CONCLUSION

- All answers were improved during the posttest indicating that the intervention was successful
- There is a need to educate nurses about racial disparities in preterm birth in order to improve health outcomes



REFERENCES

- Blair, L. M., Porter, K., Leblebicioglu, B., & Christian, L. M. (2015). Poor sleep quality and associated inflammation predict preterm birth: Heightened risk among African Americans. *Sleep: Journal of Sleep and Sleep Disorders Research*, 38(8), 1259–1267.
- Bower, K. M., Geller, R. J., Perrin, N. A., & Alhusen, J. (2018). Experiences of Racism and Preterm Birth: Findings from a Pregnancy Risk Assessment Monitoring System, 2004 through 2012. *Women's Health Issues: Official Publication of the Jacobs Institute of Women's Health*, 28(6), 495–501. <https://doi-org.proxy.libraries.uc.edu/10.1016/j.whi.2018.06.002>
- Braveman, P., Heck, K., Egerter, S., Dominguez, T. P., Rinki, C., Marchi, K. S., & Curtis, M. (2017). Worry about racial discrimination: A missing piece of the puzzle of Black- White disparities in preterm birth? *PLoS ONE*, 12(10), 1–17. <https://doi-org.proxy.libraries.uc.edu/10.1371/journal.pone.0186151>
- Carmichael, S. L., Cullen, M. R., Mayo, J. A., Gould, J. B., Loftus, P., Stevenson, D. K., Wise, P. H., & Shaw, G. M. (2014). Population-level correlates of preterm delivery among black and white women in the U.S. *PLoS one*, 9(4), e94153. <https://doi.org/10.1371/journal.pone.0094153>
- Chambers, B. D., Arabia, S. E., Arega, H. A., Altman, M. R., Berkowitz, R., Feuer, S. K., Franck, L. S., Gomez, A. M., Kober, K., Pacheco, W. T., Paynter, R. A., Prather, A. A., Spellen, S. A., Stanley, D., Jelliffe, P. L. L., & McLemore, M. R. (2020). Exposures to structural racism and racial discrimination among pregnant and early post-partum Black women living in Oakland, California. *Stress & Health: Journal of the International Society for the Investigation of Stress*, 36(2), 213–219.
- Dorner, R., Rankin, K., & Collins, J. (2017). Early Preterm Birth Across Generations Among Whites and African-Americans: A Population-Based Study. *Maternal & Child Health Journal*, 21(11), 2061–2067. <https://doi-org.proxy.libraries.uc.edu/10.1007/s10995-017-2311-2>
- Dunn, A. B., Dunlop, A. L., Miller, A. H., Hogue, C. J., Crofton, J. M., & Corwin, E. J. (2019). Complement Activation During Early Pregnancy and Clinical Predictors of Preterm Birth in African American Women. *Journal of Perinatal & Neonatal Nursing*, 33(4), E15–E26. <https://doi-org.proxy.libraries.uc.edu/10.1097/JPN.0000000000000443>
- Dunlop, A. L., Taylor, R. N., Tangpricha, V., Fortunato, S., & Menon, R. (2012). Maternal Micronutrient Status and Preterm Versus Term Birth for Black and White US Women. *Reproductive Sciences*, 19(9), 939-948. doi:10.1177/1933719112438442
- Fryer, K. E., Vines, A. I., & Stuebe, A. M. (2020). A Multisite Examination of Everyday Discrimination and the Prevalence of Spontaneous Preterm Birth in African American and Latina Women in the United States. *American Journal of Perinatology*, 37(13), 1340–1350. <https://doi-org.proxy.libraries.uc.edu/10.1055/s-0039-1693696>
- Gillespie, S. L., Christian, L. M., Alston, A. D., & Salsberry, P. J. (2017). Childhood stress and birth timing among African American women: Cortisol as biological mediator. *Psychoneuroendocrinology*, 84, 32–41. <https://doi-org.proxy.libraries.uc.edu/10.1016/j.psyneuen.2017.06.009>
- Giurgescu, C., Zenk, S. N., Templin, T. N., Engeland, C. G., Kavanaugh, K., & Misra, D. P. (2017). The Impact of Neighborhood Conditions and Psychological Distress on Preterm Birth in African-American Women. *Public Health Nursing*, 34(3), 256–266. <https://doi-org.proxy.libraries.uc.edu/10.1111/phn.12305>
- Janevic, T., Hutcheon, J. A., Hess, N., Navin, L., Howell, E. A., & Gittens-Williams, L. (2018). Evaluation of Multilevel Intervention to Reduce Preterm Birth Among Black Women in Newark, New Jersey: A Controlled Interrupted Time Series Analysis. *Maternal and Child Health Journal* 22(10), 1511–1518. <https://doi-org.proxy.libraries.uc.edu/10.1007/s10995-018-2550-x>

REFERENCES

- Johnson, J. D., Green, C. A., Vladutlu, C. J., & Manuck, T. A. (2020). Racial Disparities in Prematurity Persist among Women of High Socioeconomic Status. *American Journal of Obstetrics & Gynecology* *MFM*, 2(3). <https://doi-org.proxy.libraries.uc.edu/10.1016/j.jagomf.2020.100104>
- Loggins, S., & Andrade, F. C. (2014). Despite an overall decline in U.S. infant mortality rates, the Black/White disparity persists: recent trends and future projections. *Journal of community health*, 39(1), 118–123. <https://doi.org/10.1007/s10900-013-9747-0>
- Maternal and Infant Health Trends from our 2019 Annual Report*. Cradle Cincinnati. (2020, June 25). <https://www.cradlecincinnati.org/2020/06/25/maternal-and-infant-health-trends-from-our-2019-annual-report/>.
- Mkandawire-Vallmu, L., Lathen, L., Baisch, M. J., Cotton, Q., Dressel, A., Antilla, J., Olukotun, O., Washington, R., Jordan, L., & Hess, A. (2018). Enhancing Healthier Birth Outcomes by Creating Supportive Spaces for Pregnant African American Women Living in Milwaukee. *Maternal & Child Health Journal*, 22(12), 1797–1804. <https://doi-org.proxy.libraries.uc.edu/10.1007/s10995-018-2580-4>
- Montoya-Williams, D., Salloum, R. G., & Lorch, S. A. (2019). New Strategies to Tackle the Combined Biological and Social Context of Preterm Birth. doi:<https://doi.org/10.1055/s-0039-1695774>.ISSN0735-1631
- Ncube, C. N., Enquobahrie, D. A., & Gavin, A. R. (2017). Racial Differences in the Association Between Maternal Antenatal Depression and Preterm Birth Risk: A Prospective Cohort Study. *Journal of Women's Health* (15409996), 26(12), 1312–1318. <https://doi-org.proxy.libraries.uc.edu/10.1089/jwh.2016.6198>
- Pearl, M., Ahern, J., Hubbard, A., Laraia, B., Shrimali, B. P., Poon, V., & Kharrazi, M. (2018). Life-course neighbourhood opportunity and racial-ethnic disparities in risk of preterm birth. *Paediatric and Perinatal Epidemiology*, 32(5), 412–419. <https://doi-org.proxy.libraries.uc.edu/10.1111/ppe.12482>
- Peristats.(2021). Ohio. <https://www.marchofdimes.org/peristats/ViewSubtopic.aspx?reg=39&top=3&stop=63&lev=1&slev=4&obj=1>.
- Preterm birth. (2020, October 30). Retrieved February 23, 2021, from <https://www.cdc.gov/reproductivehealth/maternalinfanthealth/pretermbirth.htm#:~:text=Additionally%2C%20racial%20and%20ethnic%20differences,%25%20and%2010%25%20respectively>
- Roeder, A. (2019). America is Failing its Black Mothers. Harvard Public Health. https://www.hsph.harvard.edu/magazine/magazine_article/america-is-failing-its-black-mothers/
- Simon, C., Adam, E., Holl, J., Wolfe, K., Grobman, W., & Borders, A. (2016). Prenatal Stress and the Cortisol Awakening Response in African-American and Caucasian Women in the Third Trimester of Pregnancy. *Maternal & Child Health Journal*, 20(10), 2142–2149. <https://doi-org.proxy.libraries.uc.edu/10.1007/s10995-016-2060-7>
- Taylor, J. K. (2020). Structural Racism and Maternal Health Among Black Women. *Journal of Law, Medicine & Ethics*, 48(3), 506–517. <https://doi-org.proxy.libraries.uc.edu/10.1177/1073110520958875>
- Thoma, M. E., Drew, L. B., Hirai, A. H., Kim, T. Y., Fenelon, A., & Shenassa, E. D. (2019). Black-White Disparities in Preterm Birth: Geographic, Social, and Health Determinants. *American Journal of Preventive Medicine*, 57(5), 675–686. <https://doi-org.proxy.libraries.uc.edu/10.1016/j.amepre.2019.07.007>
- Wallace, M. E., & Harville, E. W. (2013). Allostatic load and birth outcomes among white and black women in New Orleans. *Maternal and child health journal*, 17(6), 1025–1029. <https://doi.org/10.1007/s10995-012-1083-y>
- What are the risk factors for preterm labor and birth? (2017). Retrieved from https://www.nichd.nih.gov/health/topics/preterm/conditioninfo/who_risk



THANK YOU FOR
YOUR TIME!

ANY QUESTIONS?