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Implicit Bias Training: Improving Racial/Ethnic Disparities in Maternal Care

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Abstract

Background: Racial and ethnic disparities persist in the United States leading to adverse maternal outcomes. Nationally, the maternal mortality rates in black women are two to three times higher than white women. Implementing implicit bias training, recommended by the Council on Patient Safety in Women's Health, is a key intervention that may help to reduce these disparities.

Objectives: This quasi-experimental/mixed methods project evaluated the effectiveness of training on implicit bias to increase awareness of implicit bias among a convenience sample of registered nurses in labor and delivery and postpartum units at two community hospitals.

Methods: Quantitative data was analyzed with IBM SPSS Statistics software and the Wilcoxon signed-rank test used. Compared were pre and post training results of the free, online race Implicit Association Test. A two-question post training survey assessed what was learned and how it will be used in practice. Demographic data of age, gender and race was analyzed with descriptive statistics.

Results: Completing the study were thirteen white, female participants; their mean age 49.83 years. Results of the Implicit Association Test showed that an educational session on implicit bias did not elicit a statistically significant change in participants' association between concepts involving race and bias. ($Z = -.137, p = 0.891$).

Conclusion/Implications: The lack of statistical significance in the results can be attributed to the small sample size which did not generate enough power to detect changes in associations between concepts. This may lay the groundwork for a replicative study with a larger sample size. One implication for practice is that respondents overwhelmingly indicated they will endeavor to be more consciously aware of their biases while recognizing that we all have biases.

Introduction

Racial and ethnic disparities persist among black, non-Hispanic, obstetric patients, resulting in adverse maternal outcomes. It is well documented that increased maternal mortality is a public health crisis (Jain & Moroz, 2017). Based on data from 2016-2018, maternal mortality for all races increased 4% nationwide. (Becker Hospital Review, 2019). In the most recent data from 2019, New Jersey ranked 47th in maternal mortality in the United States with a rate of at 46.4 per 100,000 births. This is an increase of over 2% since 2016. (America's Health Rankings, 2019). Additionally, looking at the trends in maternal mortality in New Jersey from 2001-2013, the mortality rates were 26.9% for non-Hispanic White women and 46.2% for non-Hispanic Black women. (State of New Jersey, n.d.).

The Council on Patient Safety in Women's Health Care, which is a consortium of leading experts in the field, developed the Alliance for Innovation on Maternal Health (AIM). AIM is a "national data-driven maternal safety and quality improvement initiative based on proven implementation approaches to improving maternal safety and outcomes in the U.S." AIM has developed several safety bundles that, once incorporated, lead to a reduction in adverse outcomes. One of which focuses on the reduction of peripartum racial/ethnic disparities which includes the recommendation of providing staff-wide education on implicit bias (Council on Patient Safety in Women's Health Care, 2020).

Background and Significance

Implicit bias or attitudes refer to unconscious thoughts and feelings that may foster a negative evaluation of an individual based on specific characteristics. The fact that this is difficult to control, an implicit bias about race may fuel racial/ethnic disparities. (Hall et. al., 2015). This disparity may be demonstrated in the patient's perception of care and overall communication. Although there are limited studies on implicit bias and patient's perception of

care and communication, research conducted by Cooper et. al., (2012) investigated this

relationship. Results found that there was an association between implicit bias about race and

communication and patient's ratings of care. Similarly, studies by Blair et.al. (2013),

demonstrated a negative correlation between clinicians with greater implicit race bias and the

patient's rating of patient centered care. The Joint Commission (2016) in its published advisory

recognized that implicit bias may have a direct impact on patient care which may lead to patient

harm and supports training as one method of reducing implicit bias. It is then posited that

participation in implicit bias training among registered nurses in obstetrics will increase self-

awareness. Increasing awareness of implicit biases effectively aligns with this health system's

mission and vision by being safety focused. Emphasis is placed on putting people first by

embracing diversity, being respectful, and service minded. Implicit bias training is solution

oriented; it offers the participants to courageously acknowledge their biases and explore

meaningful solutions for change.

Needs Assessment

This project focused on providing implicit bias training to increase awareness of bias

among nursing staff in labor and delivery and postpartum units at two community hospitals in

Pennsylvania and New Jersey. These institutions are a part of a large health system. The

obstetrical department in New Jersey has approximately 1000 deliveries per year racially

consisting of 64% white, 24% black and 12% other. In Pennsylvania, the racial distribution oof

the patients are 60% white, 21 % black and 19% other with approximately 4500 deliveries

annually. A SWOT, analysis was conducted among staff, medical and nursing leadership. (see

Appendix A). Results revealed a strong commitment to the hospital's core values as evidenced

by executive, medical and nursing leadership support, well-structured quality improvement,

nursing research and nursing education departments. Additionally, evidence showed strong staff support for implicit bias training as it is a part of a maternity safety initiative. Weaknesses pointed to a history of high turnover of front-line management, multiple incomplete projects and multiple initiatives being implemented at the same time without clear communication. A weakness that was learned of through huddles and staff meetings and was not strong and bears keeping in mind is staff support regarding race implicit bias training. During meetings with staff there was an openness in recognizing the need for implicit bias training while there were others who were doubtful that it would make a difference in terms of increasing awareness. Opportunities related to community engagement of minority groups and reputation were noted. Based on this analysis, threats included market share, with this community hospital having the lowest in the region. Budgetary constraints and state funding were also identified as threats; competing priorities for advertising and expansion dollars at the hospital level and having state funds allocated to the family health clinics is a challenge. Overall, the SWOT analysis demonstrated strong support for the project, staff were eager to participate and committed to increasing their awareness of implicit bias. Although there were weaknesses noted, it was not a barrier to completing this project.

Problem Statement

Implicit bias or attitudes refer to unconscious thoughts and feelings that may foster a negative or positive evaluation of an individual based on specific characteristics. Currently there is no formal training for the obstetrical staff to educate them on implicit bias and make the connection between this and the quality of care they provide.

Purpose

The purpose of this project was to evaluate the effectiveness of training on implicit bias to increase awareness among registered nurses in labor and delivery and postpartum units. An implicit bias training was provided with a comparison of implicit bias scores pre and post training.

Aim

To evaluate the effectiveness of an educational session to increase awareness of the effects of implicit bias on nurses' attitudes in the care of black non-Hispanic obstetrical patients.

Objectives

1. Implement implicit bias training for nursing staff on labor and delivery and postpartum units.

2. Conduct pre and post training implicit bias testing with the goal of a decrease in scores or no change in scores.

3. Participants will have an increased awareness of implicit bias as measured by utilizing an implicit association test.

Review of Literature

Many studies in health care have demonstrated the fact that in patient-provider interactions there is often implicit racial and ethnic bias against black and minority patients. The relative effects may influence disparities in care, affect care outcomes and patient satisfaction. The purpose of this review was to provide a succinct overview of the various research, expert opinions and guidelines as it relates to implicit racial bias among health care providers. A search was conducted using PubMed, MEDLINE, CINAHL and Scopus resulting in 27 articles; after duplicate removal, 14 articles were reviewed. (see Appendix B). Search terms included, implicit bias, unconscious bias, race Implicit Association Test, health care provider, registered nurse,

unconscious bias, black, African American, non-Hispanic black, resident nurse. Inclusion criteria were Race Implicit Association Test, English publication, referring to health care providers and published after 2012. Exclusion criteria were non-English articles, articles published before 2013, Implicit Association Test not used, participants not health care providers.

Much of the literature on implicit racial and ethnic bias showed an association between implicit racial bias and communication. Cooper et. al., (2012), found that decreased patient satisfaction and poor visit communication correlated with clinicians' implicit bias against blacks. These findings were supported in additional studies where implicit racial bias was related to the way in which clinicians communicated with their patients. Hagiwara et al., (2017) noticed a relationship with word usage; interactions in which the clinician used anxiety producing words or words related to social dominance, which influenced patients' negative perceptions. This can also be manifested in less rapport building conversations (Schaa et al., 2015), lower ratings in patient centered care (Blair et al., 2013) and perception of care (Tajeu et al., 2018). As noted in a systematic review conducted by Maina et al, (2018), it can be summarized that increased implicit bias consistently correlates with less than optimal patient-clinician interaction.

There was ample evidence supporting the effects of implicit bias on communication and patient's perception of care, however, studies exploring the association with care outcomes have more mixed results, in fact several did not show an association with patient outcomes, clinical decision making or provision of care. (Blair, et al., 2014; Oliver et al., 2014; Haider et al, 2015)

Experts agree to the existence of implicit racial bias and its possible contribution to perpetuating health care disparities (Narayan, 2019). One would assume that this is only seen in adults, this was disproven in a study conducted by Johnson et al., (2017) which showed that implicit racial bias against minorities was at the same levels for pediatrics.

Most of the studies cited had several limitations including small sample size, use of web-based scenarios, setting in an urban area, the use of convenience samples and limited to physicians. Implicit bias is a reality and more research is needed to explore its effects on communication and patient outcomes. With this being said, in maternity care, racial/ethnic disparities were deemed a serious patient safety issue. As such, the Council on Patient Safety in Women's Health Care and AIM program has taken a leadership role in developing action items focused on this safety issue. This is echoed by Howell &Ahmed, (2019) in the steps outlined to reduce racial disparities in maternal care.

Additional studies are needed that include various occupations in health care and nursing specifically. It was posited that this pilot project at two community hospitals which aimed to increase awareness of implicit bias will have a positive impact on registered nurses in labor and delivery and postpartum.

Evidenced Based Practice Model

The Iowa Model is currently being utilized for all EBP projects in this health system, hence the utilization of this model for the implementation of my DNP Project.

Identifying Triggering Issue - Knowledge Focused

Maternal mortality and adverse events among women of color is without doubt a serious healthcare issue. Steps aimed at improving birth outcomes is of paramount importance. Taking a look at the many ways in which a positive impact, one of which is increasing the awareness of one's biases, may have a lasting influence in effecting change.

Team Formation

A multidisciplinary team inclusive of nurses, lactation consultants, physicians, and nurse midwives helped to guide this project. Team leaders included myself under the guidance of three

DNP prepared advisors, one from George Washington University and the other two from each participating institution.

Critiquing the Evidence/Evaluating the Research

Analysis of evidence indicated the importance of improving safety outcomes in maternity care. Currently, both institutions are participants in the AIM initiatives. This program is comprised of multiple patient safety bundles one of which is focused on reducing peripartum racial/ethnic disparities. One criterion for this bundle is staff wide education on implicit bias. There was ample research to support this education.

Piloting the Change in Practice

Outcomes:

- Implicit bias training provided for the nursing staff in labor and delivery and postpartum units.

- Pre and post implicit bias testing conducted.

- Increased awareness and knowledge of implicit bias as evidenced by the use of the race Implicit Association Test (IAT) pre and post education.

Piloting the change in practice included implementing training of registered nurses on pilot units comprised of Labor and Delivery and Mother-Baby units and evaluating the effects of the training.

Institute Change in Practice

If pilot supports implementing implicit bias training, will seek adopt implicit bias training as a part of the annual competencies**.** Conducting implicit bias training for all staff inclusive of providers, nurses, unit secretaries, surgical technicians, patient care technicians and lactation consultants.

Methods

Design

This quasi-experimental, mixed-methods pilot project utilized a pre and posttest design to evaluate the effectiveness of training on implicit bias to increase awareness of this phenomenon. A convenience sample of registered nurses in labor and delivery and postpartum units at two community hospitals were utilized and a comparison of implicit bias scores measured before and after attending an implicit bias training session. A two question Qualtrics survey specific to the training was also completed. These were open ended questions that sought to elicit from participants what was learned from the training and to indicate one in which they would practice differently.

Participants

The study population included registered nursing staff in labor and delivery and postpartum at a 239-bed community hospital in southern New Jersey and a 665-bed hospital in Pennsylvania; both part of the same health system.

Inclusion Criteria

This study was open to any registered nurse working full and part-time in the labor and delivery and postpartum units.

Sample Size

A sample size calculator was used to determine the number of participants needed to conduct a paired t-test to compare pre and post differences in implicit bias and communication scores. The sample size calculation showed that a minimum sample of 26 was needed at a power of 0.800, effect size of 0.5 and p=0.05 for a one-sided test to detect statistically significant

differences (Statistical Decision Tree, 2020). It must be noted that this sample size was not achieved.

Recruitment Strategy

Participants were recruited by email, staff meetings, huddles and posted flyers. E-mails that included information about the training were sent to all potential participants.

Consent Procedure

The recruitment email contained information about the project and instructions for volunteering for the study. Consents were obtained in person and by telephone. Participant signatures were not required. (see Appendix C). Participation in the training session and completion of the surveys was voluntary.

Risk/harms

The risks of participating in this project were minimal. Participants were informed that they may experience some emotional discomfort or stress when answering the survey questions or during the implicit bias training. Subjects were allowed to skip any questions, stop taking the survey or stop participating in the study at any point. Every effort was made to keep the participant's information confidential, however, this could not be guaranteed. To minimize this risk, no personally identifiable data was collected and only the primary investigator and the DNP primary advisors had access to the data. The primary investigator was in a supervisory role with the participants in New Jersey and as such participation in the training and completion of the surveys did not have an impact on their employment status. Additionally, in order to mitigate the perception of retaliation, the training was administered by the institution's office of Diversity, Equity and Inclusion. All survey data was collected anonymously in an online format without the presence of supervisors or other personnel that may influence the participant's answers. The data

was stored on a secure, password protected desktop computer in the primary investigator's office. If results of this research study are reported in journals or at scientific meetings, the people who participated in this study will not be named or identified.

Ethical considerations

The Implicit Association Test and accompanying results may make one feel uncomfortable and may cause emotional discomfort which can be minimized by encouraging participants to acknowledge their feelings and practice mindfulness. The project was submitted and approved and by the hospital's Nursing Research Committee and Institutional Review Board.

Setting

This project took place at a 239-bed community hospital in New Jersey and a 665-bed hospital in Pennsylvania. The New Jersey hospital performs about 1000 deliveries per year. The inpatient obstetrics consisted of an 8-bed postpartum and 7-bed labor and delivery units. In Pennsylvania, the hospital had 22 birthing suites and two postpartum units with about 4500 births annually. The Implicit Association Tests took place in the respective hospital's computer training classroom. Due to the COVID-19 pandemic, the Implicit Bias Training was conducted online.

Intervention

The intervention consisted of an hour-long zoom session of voluntary implicit bias training coordinated and conducted by the by the health system's Diversity, Equity, Inclusion and Community Department.

Outcomes

To measure implicit bias, the free, online Race Implicit Association Test was administered pre and post intervention. The test was developed by Project Implicit, a non-profit organization comprised of social scientists who are interested in implicit social cognition. It requires one to differentiate between faces of varying ethnicities and measures the strength of associations between concepts (see Appendix D).

Instrument

The free, web-based Race Implicit Association Test used with permission from Project Implicit, Inc. Consisting of a 7-point composite scale, the score reflects the length of time it takes for one to associate good meaning words, for example glad, and bad meaning words, for example pain, with white and black faces (see Appendix E). The IAT also has a questionnaire consisting of 20 questions that are scored on a 7-part Likert scale, the questions relate to black versus white stereotypes.(Project Implicit, 2011). This test is a validated and reliable tool that has been widely used in studies involving healthcare providers, namely physicians. There are limited studies among nurses. (Johnson et al., 2017) (Haider et al., 2015) (Blair et al., 2013).

Data Collection

Data on implicit bias was collected from the printed results of the web-based Implicit Association Test. Demographic data and the post survey questionnaire were collected with use of Qualtrics surveys.

Data Analysis

IBM SPSS software was utilized to store and analyze the quantitative data which was double checked for accuracy by the onsite project advisors. Test scores were deidentified with randomly assigned numbers and the outcome evaluated using the Wilcoxon signed-rank test to compare pre and post training IAT scores. Three demographic questions were asked-age, sex and

race, which were analyzed with descriptive statistics. Qualitative data regarding what was learned and how it will be used in practice was collected with two open ended questions at the end of the training. These questions were analyzed for themes. (see Appendix F, G).

Project timeline

This study ran over a six-month period beginning in June, 2022 and ending in December 2022. Data analysis and writing up findings were completed over a two-month period from January to March, 2022.

Resources

Minimal resources were needed for the successful implementation and completion of this study. Approvals were obtained from the Unit Based Council and Nursing Research Council in New Jersey and nursing leadership in Pennsylvania. Institutional Review Board approval was required and obtained from the health system.

Evaluation Plan

Evaluation is an integral step toward the successful implementation of a project and provides a basis of thinking to assist in improving the work necessary to achieve and be accountable for results. To this end the logic model developed by the University of Wisconsin-Madison was used as a framework for this study. (University of Wisconsin-Madison, 2020) This model looks at inputs, outputs and short, medium- and long-term goals.

Inputs are important as this is an overview of the resources needed for implementation. Outputs are the activities and participation required, namely, coordinating the training and completing the instructions for the online Implicit Association Test. Additionally, performing completing the training, the IAT and statistical analysis were included in outputs. Short term outcome was the increase in awareness of implicit bias. Medium- and long-term outcomes

sought to explore the relationship between implicit bias training and a possible decrease or low

Implicit Association Test scores. A sustained increase in awareness over a six to twelve month

period was a long-term goal. The results of this project and the use of a logic model assisted in

the dissemination of findings with the data having the potential usage for publication.

Results

Participants consisted of 13 white, female registered nurses from 2 states. The hospitals were

located in suburban, middle-class cities with median incomes of $94, 863 and $80,000. Twelve

subjects included their age which ranged from 47-61, with a mean age of = 49.83, median = 52

and SD =7.918. The IAT categorized results for bias as no, mild, medium and strong automatic

preference for white over black people. It is a measurement of associations between concepts and

evaluations or stereotypes. The main intent is to make a response less difficult when concepts are

closely connected. (see Appendix H).

To evaluate the outcome of the study, the Wilcoxon signed-rank test was used. Results

showed that an educational session to increase awareness of the effects of implicit bias training

did not elicit a statistically significant change in participants awareness of bias (Z = -.137, p =

0.891). Although the sample size was too small to make inferences, it must be noted that test

results may be influenced by several factors, an example being recent thoughts and experiences.

In summarizing the themes elicited from the two open ended questions, participants

acknowledged that there are many forms of implicit bias. They further indicated that implicit bias

is a frequently occurring subconscious phenomenon and there is value in learning from others

experiences. Furthermore, participants noted that they would be more mindful of these

subconscious biases in the future when interacting with others. (see Appendix I).

Discussion

Increasing awareness of implicit bias in the setting of maternal care is an important method of improving communication and decreasing disparities in maternal care. A positive implication for practice is that respondents overwhelmingly indicated that they will endeavor to be more consciously aware of their biases while recognizing that we all have bias. It is critical for front line nursing leaders to be aware of the effects of implicit bias and the relationship to positive patient outcomes. Executive leadership should invest in the continuous training and development of their leadership and staff as a step in mitigating the effects of one's implicit biases on providing quality care in a safe and responsible manner. Emphasis should be placed on ensuring that safety measures are in place to support the reduction on racial and ethnic disparities in maternal care.

At the healthcare policy level, the state government in New Jersey recently legislated mandatory implicit bias training for all staff in perinatal settings. Currently, the health system where this pilot study was implemented, annually requires all staff to complete a basic, online implicit bias course. It is hoped that measures such as these will be adopted nationwide.

Limitations of the study included the small sample size as well as limited data in nursing setting on this topic. This is especially true as it relates to obstetrical nursing. Exploring alternative recruitment strategies may be beneficial when considering studies of this sensitive nature.

Plans for Sustainability and Future Scholarship

This pilot study contributed to the increase in awareness of implicit bias in maternal care. In addition to implementing mandatory implicit bias training, both hospitals have made initial

steps toward implementing the Racial/Ethnic Disparities Safety Bundle as recommended by AIM. It may also lay the groundwork for spreadability and opportunity for future studies within various nursing specialties and a larger sample size

Conclusion

Racial and ethnic biases in maternity care are public health issues that need to be addressed at every level in health care. Measuring implicit bias and providing training on implicit bias is a valid intervention toward increasing awareness, reducing implicit bias and improving patient care.

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Appendix A

SWOT Analysis

	Helpful To achieving the objective	Harmful To achieving the objective
Internal Origin {Attributes of the organization}	**Strengths** • Executive and medical leadership support • Quality Improvement Department • Well-structured research council • Nursing Education Department supportive of scholarly inquiry • Frontline staff support • Mission and values	**Weaknesses** • High turnover of frontline management staff • Multiple projects and processes being implemented as the same time • History of multiple incomplete projects • Staff buy-in • Lack of diversity among nursing staff
External Origin {Attributes of the	**Opportunities** • Community engagement of minority groups • Reputation: low "likely to recommend" patient satisfaction scores	**Threats** • Market share • Budgetary constraints • State funding

Appendix B
Evidence Table

PICOT Question: Among labor and delivery and postpartum nurses will taking the Implicit Association Test and completing implicit bias training have an effect on their awareness of bias?

Article #	Author & Date	Evidence Type	Sample, Sample Size, Setting	Study findings that help answer the EBP Question	Observable Measures	Limitations	Evidence Level & Quality
1	Cooper, et al., 2012	Quasi-experimental	40 primary care clinicians 269 patients Setting: Urban community-based practice	Clinicians with race bias were more verbally dominant Implicit Association Test (IAT) measures associated with Black's poor rating of care	Implicit Association Test-Race and Social Cognition Post visit surveys completed by patients Communication measures from audiotapes of medical visits	Study was not randomized and depended on participation in an earlier study. Sample mostly consisted of back patients Study conducted in an urban area with a high population of blacks may not be representative of the general population	Level II B-Good quality
2.	Hagiwara, et al., 2017	Quasi-experimental	14 non-Black physicians 117 black patients Setting: Primary care clinic in large Midwestern city	Implicit racial bias strongly associated with anxiety producing words Physician racial bias is manifested in their word use	Patient/clinical baseline assessment Post interaction questionnaires Video recorded interactions Recorded interactions analysis using Linguistic Inquiry and Word Count software	Secondary analysis Focus on theoretical question, lack of practical application	Level II B-Good quality

3	Blair, et al., 2014	Quasi-experimental	138 primary care physicians 4,794 black and Latino patients with hypertension Setting: Adult primary clinics from two health systems in Denver, Co	Nearly 70% of clinicians showed implicit bias against blacks. No evidence of association with implicit biases and treatment intensification, worse adherence or worse blood pressure control for black patients	Treatment intensification and medication compliance based on pharmacy refills Blood pressure readings relative to goals when measured during visits Implicit Association Tests of ethnic and racial bias	Patients who received regular care Primary care setting Patients with hypertension Disparities in care were small	Level II B-good quality
4	Oliver, et al., 2014	Quasi-experimental	543 physicians 528 indirect web-based scenarios/vignettes	Physicians demonstrated pro-white bias Patient race did not affect clinical decision making	Implicit Association Test-Race Preference Implicit Association Test-Medical Cooperativeness Physicians' response to web-based scenarios	Clinical vignettes may not have been sensitive enough to detect racial differences Role of Implicit Association Test given before looking at scenarios Although web-based, participants reported 30% or more of their patients were African American. This may not be representative of the population	Level II Good quality
5	Schaa, et al., 2015	Quasi-experimental	67 genetic counselors 152 video simulated counseling sessions	Moderate to strong preference for whites over blacks Implicit bias toward blacks	Implicit Association Test-Race Genetic Counseling Communication-videotapes	Self-selected sample of genetic counselors from a previous study.	Level II B-Good quality

			Setting: Simulated genetic counseling session	associated with negative ratings of communication	coded using the Roter Interaction Analysis System Client rating of interaction	Simulated sessions with actors as patients. Small sample size Majority of participating genetic counselors were white.	
6	Haider, et al., 2015	Quasi-experimental	245 Registered nurses 8 web-based clinical vignettes	No association between Implicit Association Test scores and treatment decisions Implicit Association test preference toward white and upper class No statistically difference in mean IAT scores for black and white nurses The oldest demographic group had the highest mean race and class IAT scores	Implicit Association Test -Race and Class RN's response to web-based vignettes	Some nurses may have understood the intent of the study Participants limited to a single institution Majority of study participants were from critical care	Level II B-Good quality
7	Blair, et al., 2013	Quasi-experimental	134 primary care clinicians 2,908 patients Setting: Primary care clinics from 3 health care organizations in Denver, Co.	Overall, clinicians were evaluated positively in reference to patient centered care Negative associations observed between clinicians' implicit bias and black	Implicit Association Test-Race Primary Care Assessment Survey	This was an observational study. Low participation rate. Narrow scope, limited to well established patients diagnosed with hypertension.	Level II B-Good quality

				patient's rating of them. For some patients, clinicians implicit bias related to the quality of their clinical relationship			
8	Tajeu, et al., 2018	Quasi-experimental	107 participants from 2 groups namely medical doctor/registered nurse and non-medical doctor/registered nurse Setting: Outpatient practices throughout Alabama	Implicit racial bias differed by race. White staff were more pro white compared to other races. Implicit racial bias differed by occupation. Non-medical doctor/RN group showed higher levels of implicit racial bias In comparison to other race and black staff, white participants showed higher levels of explicit bias toward blacks	Implicit Association Test-Race Explicit racial bias test using the Modern Racism Scale	Limited sample size Small geographic area affecting the ability to generalize to national population	Level II B-Good quality
9	Johnson, et al., 2017	Quasi-experimental	91 residents physicians20 Setting: Urban academic Pediatric Emergency Department	Moderate pro white implicit bias for both adult and child race Implicit Association Test Black children may have similar levels of racial bias as that of adults	Adult and Child Race Implicit Association Tests	Small sample size Study conducted at one institution and limits the generalization to the overall population. Limited to resident physicians	Level II B-Good quality

						Study did not include impact on patient care	
10	Hall, et al., 2015	Systematic Review	Review of 15 studies investigating the level of implicit bias among health care professionals and the relationship to health care outcomes.	Low to moderate implicit bias in favor of whites. No significance noted between implicit bias and health care outcomes Significant relation between implicit bias and patient to provided interaction, treatment decisions, treatment compliance and patient health outcomes	Implicit Association Test	Further studies needed to explore the relationship between implicit bias and health care outcomes. Small sample sizes Use of convenience sampling	Level III B-Good quality
11	Maina, et al., 2018	Systematic Review	Review of 37 studies measuring the presence of implicit bias among health care providers.	A large proportion of health care providers have implicit bias against black, Hispanic, Native American and other dark-skinned individuals. Mixed results on the relationship of implicit bias ant its effect on patient care outcomes. Black providers may demonstrate no	Implicit Association Test	Small sample sizes Use of convenience sampling Low response rate Use of vignettes Most of the studies used a cross-sectional design Most of the studies limited the participants to physicians	Level III B-Good quality

				implicit bias compared to Whites and other minorities		Single site studies in large urban areas	
12	Howell & Ahmed, 2019	Opinion of respected authorities		Plan that includes 8 steps to reduce maternal health disparities			Level IV B-Good quality
13	Council on Patient Safety in Women's Health	Opinion of nationally recognized expert consensus panel		Safety bundle for reducing racial and ethnic disparities in maternal health			Level IV A-High quality
14	Narayan, 2019	Clinician opinion		Recommended steps to address implicit bias in nursing			Level V A-High quality

This assignment is used during the DNP Project Planning Course to evaluate the Table of Evidence. It is adapted from Dearholt, S. & Dang, D. (2018). *Johns Hopkins Nursing Evidence-Based Practice Model and Guidelines*. Indianapolis, IN: Sigma Theta Tau International, Chapters 5,6,7, Appendices D, E, F, and G.

Appendix C

<u>Participant Verbal Informed Consent</u>

Department: Women's and Children's Services

Principal Investigator: Marilyn Mapp

Study Title: Implicit Bias Training: Improving Racial/Ethnic Disparities in Maternal Care

Lay Title: Implicit bias training in obstetrical nursing

Hello, my name is Marilyn Mapp. I'm from <u>name of institution.</u>

I am contacting you because you have been identified as a labor and delivery or mother-baby nurse through <u>name of institution</u> obstetrics listserv.

We are conducting a research study that consists of asking you questions about your race implicit biases and completing 1 training session in implicit bias. This will take about 1.5 hours to complete. About 60 people will take part in this research at <u>name of institution</u> and about 60 in the whole study.

The purpose of this research is to evaluate the effectiveness of implicit bias training on increasing awareness among labor and delivery and post-partum nurses at a community hospital. The alternative to being in this study is to not take part. Your participation is voluntary. It is your choice whether or not you want to take part. If you choose not to take part or choose to stop taking part at any time, there will be no penalty or loss of benefits that you would normally get.

You may not personally benefit from taking part in this research, but other people may be helped by what is learned. Some of the benefits may be an increase in of one's awareness of one's biases leading to a positive impact on patient interactions.

A risk of taking part in this study is that you may not feel comfortable answering some of the questions. If any question makes you feel uncomfortable, you do not have to answer the question.

The other possible risk is a loss of the confidentiality of your information. In order to maintain confidentiality, no personally identifiable information will be collected. Information will be collected about you for this study. The information will be seen by the people involved with this research. Steps will be taken to protect your identity. But the information collected about you can never be 100% secure.

There will be no cost to you for taking part in this study. You will not be paid for taking part in this study. If this research or the information or specimens you provide result in commercial profit, you will not receive any money.

New information may come out during this study. You will be given any new information that could change your decision to take part. You may ask to see the information collected about you, but not until the entire study is complete.

HIPAA (Health Insurance Portability and Accountability Act) -This is the law that protects yourpersonal health information.

To do this study, we need to collect, use, and share your personal health information. I will explain why your information is being collected, what information will be collected, and who will have access to it. By agreeing, you are giving us permission to use your information as described in this form.

We are committed to respecting your privacy and to keeping you r personal health information confidential. Your personal health information includes the information in your health care records and information that can identify you. For example, personal information may include your name, address, phone number, social security number, and medical information. The personal health information that may be collected, used, and shared for this research includes:

- The information from the questionnaire
- Your gender, age and race/ethnicity

Your personal information will be used by and shared with the following:

- Personnel at <u>name of institution</u> and its affiliates for the purpose of this research
- Institutional Review Boards (ethics committees that review research) including <u>name</u> <u>of institution</u> and George Washington University IRB

When your personal information is provided to some of the people listed, it may no longer be protected under the HIPAA privacy law. However, generally you will not be able to see your study records or the study results until the study is completed

This authorization does not have an expiration date. If you want to end your permission to collect your information, please inform the investigator in writing. If you do this, no more information will be collected, but the information already collected will still be used. If you end your permission to use your personal information, you will not be able to continue in this study.

The information from this study may be published in scientific journals or presented at scientific meetings, but you will not be personally identified.

Your private information and specimens, with the identifiers removed, could be used for future research studies or distributed to other researchers for future research studies without your additional permission.

_____

Do you agree to participate in this research study as it has been describe to you?

If you have any questions about this research, you can contact:

Name: Marilyn Mapp   Phone Number: email:

If you need to contact someone other than the study personnel about a concern or your rights as a research subject, please call the institution IRB at: _____

_____

Investigator writes name of participant and signs to verify verbal response of subject:

Name of research participant:

_____

   ☐YES, the participant consented   ☐ NO, the participant did NOT consent

  _____   _____   _____
    Name of Investigator   Signature of Investigator   Date

Appendix D

Race Implicit Association Test

Category	Items
Good	Cheer, Smiling, Cherish, Terrific, Pleasing, Glad, Fabulous, Lovely
Bad	Horrible, Despise, Pain, Angry, Hatred, Detest, Tragic, Bothersome
Black people	
White people	

Appendix E

About the Implicit Association Test

The IAT measures the strength of associations between concepts (e.g., black people, gay people) and evaluations (e.g., good, bad) or stereotypes (e.g., athletic, clumsy). The main idea is that making a response is easier when closely related items share the same response key.

When doing an IAT you are asked to quickly sort words into categories that are on the left and right hand side of the computer screen by pressing the "e" key if the word belongs to the category on the left and the "i" key if the word belongs to the category on the right. The IAT has five main parts.

In the first part of the IAT you sort words relating to the concepts (e.g., fat people, thin people) into categories. So if the category "Fat People" was on the left, and a picture of a heavy person appeared on the screen, you would press the "e" key.

In the second part of the IAT you sort words relating to the evaluation (e.g., good, bad). So if the category "good" was on the left, and a pleasant word appeared on the screen, you would press the "e" key.

In the third part of the IAT the categories are combined and you are asked to sort both concept and evaluation words. So the categories on the left hand side would be Fat People/Good and the categories on the right hand side would be Thin People/Bad. It is important to note that the order in which the blocks are presented varies across participants, so some people will do the Fat People/Good, Thin People/Bad part first and other people will do the Fat People/Bad, Thin People/Good part first.

In the fourth part of the IAT the placement of the concepts switches. If the category "Fat People" was previously on the left, now it would be on the right. Importantly, the number of trials in this part of the IAT is increased in order to minimize the effects of practice.

In the final part of the IAT the categories are combined in a way that is opposite what they were before. If the category on the left was previously Fat People/Good, it would now be Fat People/Bad.

The IAT score is based on how long it takes a person, on average, to sort the words in the third part of the IAT versus the fifth part of the IAT. We would say that one has an implicit preference for thin people relative to fat people if they are faster to categorize words when Thin People and Good share a response key and Fat People and Bad share a response key, relative to the reverse.

Used with permission from Project Implicit. (2011)

Appendix F

Data Collection/Evaluation and Analysis Methods Table

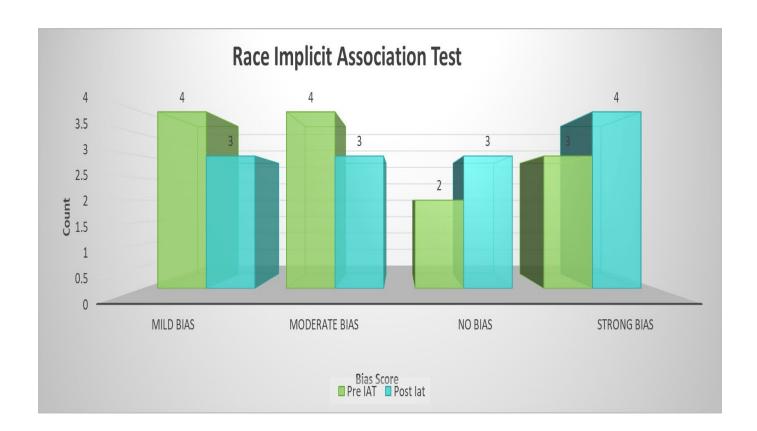| Aims/Evaluation Questions	Measures	Measure Type	Data Source	Recruitment Method/ Population	Timing/Frequency	Calculation/ Statistics	Goal/ Benchmark
Aim: Increase awareness of race implicit bias among staff nurses in labor and delivery and postpartum units	Race Implicit Association Test	Outcome	Online Race Implicit Association Test result https://implicit.harvard.edu/implicit/	**Recruitment Method**: Email, flyer, huddles and staff meetings. **Population:** All registered nurses from postpartum and labor and delivery units	Pre and post implicit bias training. 2 weeks prior to training and 2 weeks post training.	Wilcoxon signed-test rank, Z and p values	Group IAT score will remain the same or improve.
Evaluation Question #1 What have you learned from the training session.	Post training survey	Outcome	Qualtrics Survey	All participants completing the implicit bias training and pre/post implicit association test.	Within 2 weeks of completing the implicit bias training.	Written response to open ended question	Participants will indicate they have learned at least one thing in reference to implicit bias.
Evaluation Question #2 How will you practice differently in light of what you have learned?	Post training survey	Outcome	Qualtrics Survey	All participants completing the implicit bias training and pre/post implicit association test.	Within 2 weeks of completing the implicit bias training.	Written response to open ended question	Participants will indicate at least one way in which they will practice differently.

Appendix G

Data Dictionary

Data Element	Data Label	Data Type	Definition/Purpose	Data Values & Coding
SPSS				
Participant identifier	Participant #	Alpha-Numeric	Unique number	Alpha-numeric
Age	Age	Numeric, continuous	Age in years	Actual numeric value
Gender	Gender	Categorical	Self-identified gender	1, Male; 2, Female; 3, Transgender
Race	race	Categorical	Self-identified race	1, White; 2, Non-Whit; 3, Black/African American; 4, Asian; 5, Hispanic/Latino; 6, Native Hawaiian/Pacific Islander; 7, American Indian/Alaska Native; 8, Non specified
IAT pre training	Pre IAT	Categorical	IAT generated bias score	1, None; 2, Slight; 3, =Moderate; 4, Strong
IAT post training	Post IAT	Categorical	IAT generated bias score	1, None; 2, Slight; 3, =Moderate; 4, Strong
Post training Qualtrics survey1	Post survey 1	Text	Elicit feedback from participants on what was learned from the training.	Written responses to open ended question.
Post training Qualtrics survey2	Post survey 2	Text	Elicit feedback from participants on how they would practice differently in light of what was learned.	Written response to open ended question

Appendix H

Race Implicit Association Test Results

Appendix I

Post Training Survey Response

Participant	Question #1 What have you learned from this training session?	Question #2 How will you practice differently in light of what you have learned?
1	Reviewed definitions of implicit bias	Continue to be open and receptive to all people
2	I learned that there are times when bias is not race based	I will try and think more from my pts perspective
3	unsure	unsure
4	That there are many forms of bias, not just racial bias.	I will have a better sense of awareness of my thoughts and actions
5	Awareness of implicit bias	Consider whether implicit bias is affecting my decision making
6	To be more concsious of any bias I may have	Being more aware of my bias.
7	Experiences shared from diverse presenter	Have an open mind
8	We all have unconscious biases which impact our responses often without even realizing	Be more thoughtful/think before respond/react
9	I have learned that we can have subconscious bias that affects how we interact with others.	I will stop and reflect before I interact with others to insure that I am not responding with bias.
10	That it is important to realize that implicit bias occurs in most everyday situations	I will cont to learn to be sensitive and more cognizant of my own personal biases
11	That I may have some biases I was not aware of	I will stop and think about what I am thinking, recognizing if I have any biases
12	Listen and learn form others- not only what they say but their experiences	Continue to develop others to communicate openly and freely about issues and concerns and provide resources and an open forum for converstaion and learning