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Diversity and Inclusion in the Academic Medicine Workforce: Encouraging Medical Students and Residents to Consider Academic Careers

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Abstract

Introduction: The expansion of medical schools and increased faculty attrition call for heightened efforts to encourage medical students and residents to consider academic careers. As diversity serves as a driver of institutional excellence, special attention to the ongoing underrepresentation of certain groups in academia, such as racial and ethnic minorities, women, and lesbian, gay, bisexual, and transgender individuals, is warranted. **Methods:** We developed a 90-minute workshop to raise medical student and resident awareness of academic medicine careers, and the benefits and challenges of having a diverse faculty. The workshop consists of a didactic PowerPoint presentation and a reflection exercise, shared in small- and large-group format, discussing facilitators and barriers to pursuing academia. The workshop was implemented at nine regional conferences. **Results:** There were 165 diverse participants. In comparing pre- and postworkshop responses of learners using the sample *t* test, there was a statistically significant increase in confidence to succeed in academic medicine given learners' gender (2.69 vs. 3.34, $p < .001$), race and ethnicity (2.53 vs. 3.24, $p < .001$), or sexual orientation (3.04 vs. 3.42, $p < .001$). Approximately 95% of learners felt that each of the workshop's learning objectives had been achieved. Participants considered the workshop to be enlightening, motivational, realistic, and validating. **Discussion:** This workshop was effective in providing an interactive format for medical students and residents to gain awareness of the state, benefits, and challenges of diversity and inclusion in academic medicine, and can affect their perception of being a future faculty member.

Keywords

Careers in Academic Medicine, Diversity and Inclusion

Appendices

- A. PPT Presentation.pptx
- B. Facilitator Guide.docx
- C. Handout.doc
- D. Train the Trainer Video .mp4
- E. Evaluation Form.docx

All appendices are peer reviewed as integral parts of the Original Publication.

Educational Objectives

By the end of this workshop, learners will be able to:

1. Describe statistics regarding diversity among academic faculty.
2. Explain diversity and inclusion terms.
3. List and discuss challenges and facilitators to pursuing an academic medicine career.
4. Identify at least three benefits of a diverse academic faculty.

Introduction

Increasing diversity in the academic physician workforce has been identified and embraced as a core value and driver of institutional excellence at nearly all academic medical institutions and professional associations. The benefits of a diverse academic physician workforce have been well described. Underrepresented minority (URM) and lesbian, gay, bisexual, and transgender (LGBT) physicians are more likely to be involved in practice, research, education, scholarship, service, and mentorship activities aligned with their identity.¹⁻³ Despite increasing diversity among all ranks within the academic physician workforce, certain groups such as URM individuals and women are present in lower proportions compared to the general population.^{4,5} URM medical students are less likely to desire a career in academic medicine, and when they do, they often feel that they lack tools for success in navigating the academic medicine

culture.^{6,7} When URM individuals do enter academic medicine, diversity remains at its highest in lower-rank faculty, demonstrating a diversity bottleneck initially at the assistant professor and then at the associate professor ranks.⁵ Retention and promotion challenges are not unique to URM faculty but are also shared by women, LGBT, and Asian faculty members. Contributory factors include insufficient concordant role models and mentors, -isms (e.g., racism, sexism), and institutional and cultural failure to recognize service and educational activities in promotion decisions.⁸⁻¹⁰ As a result, diverse faculty tend to report less satisfaction and engagement with their institution, which can often result in poor role modeling and an early exit from the institution or from academic medicine overall.

Although diversity and inclusion have been mandated by the Liaison Committee on Medical Education,¹¹ until recently little attention has been paid to increasing the pool of diverse candidates considering careers in academic medicine. Much of the published diversity-related educational content for medical students and residents has focused on improving the patient-physician interaction, such as through cultural competency, cultural humility, or improved communication practices with LGBT patients and their families.¹²⁻¹⁴ There is no educational content or module dedicated to advancing medical students' or residents' awareness of careers in academic medicine.

The Building the Next Generation of Academic Physicians (BNGAP)¹⁵ Initiative is a national organization dedicated to increasing diverse medical student and resident awareness of, interest in, and preparedness for an academic medicine career. In 2015, the BNGAP curriculum committee, comprising 25 diverse trainees and educational leaders from across the country, helped to create and/or review a series of educational workshops to promote academic career awareness.¹⁶ Five committee members with experience in diversity and inclusion work were responsible for developing and editing this particular workshop.

The six-step Kern model was used as a tool for creating the structure, implementation, and assessment of the workshop.¹⁷ In step 1, our problem identification and general needs assessment consisted of performing a literature review and gathering feedback from trainees and faculty. For step 2, our targeted needs assessment was conducted through mixed-methods studies of trainees' perceptions of diversity and inclusion in academic medicine, including facilitators and barriers to academic career intent and preferred career development activities.^{2,3,7,18-20} In step 3, we determined our goals and objectives based on a literature review and committee member input. In step 4, our chosen educational strategies included an interactive PowerPoint (PPT) presentation that incorporated reflection, understanding, and sharing of perspectives on diversity and inclusion within academic medicine via small- and large-group discussion. In step 5, workshop implementation was via an academic medicine career development conference for medical students and residents. Participants and speakers were from the hosting medical school or from nearby academic health centers. This venue was chosen because it afforded students opportunities for career-specific learning, skill development, positive learning environments, and networking with individuals beyond their own academic health centers. In Step 6, evaluation and feedback, a questionnaire was developed for each participant to evaluate the design and content of the workshop.

This workshop has been implemented in the context of a larger curriculum but can also be implemented as a stand-alone unit. The workshop includes core concepts such as statistics regarding diversity among academic faculty, diversity and inclusion terms, trainees' perceived challenges and facilitators to pursuing an academic medicine career, and benefits of diverse academic faculty. As each institution has its own culture, climate, and policies and practices, facilitators should consider and be prepared to discuss how their respective institutions address diversity and inclusion.

Methods

The workshop was drafted and revised by a team of experts in academic medicine. The primary team consisted of five individuals: a vice dean, an assistant dean for diversity and inclusion, a vice chancellor for diversity, an assistant professor of pathology, and a medical student. The presentation was developed to

increase awareness of the terms of diversity and inclusion, statistics regarding diversity among academic faculty, trainees' perceived challenges and facilitators to pursuing an academic medicine career, and benefits of a diverse faculty. The workshop can be implemented among medical students and/or residents (and even junior faculty). Each session was restricted to no more than 50 medical students and residents to create a safe space to discuss their personal perspectives, professional ambitions, and challenges in respect to their future academic medicine careers. The preferred facilitator would be a faculty member with an MD or DO degree and experience in diversity and inclusion programming.

The workshop featured two primary educational strategies: (1) an interactive didactic component, via PPT presentation, to introduce participants to trends, perceptions, and benefits of diversity and inclusion in academic medicine, and (2) a small- and large-group discussion format for trainees to reflect on and share perceived barriers and facilitators to pursuing an academic medicine career. The PPT started with a review and discussion of terms, followed by trends in diversity and inclusion in the academic medicine workforce by gender, race and ethnicity, and sexual orientation. These slides contextualized why it is important for all medical students, including women and URM and LGBT individuals, to consider academic careers. These slides were followed by slides that gave the facilitators the opportunity to share their own academic medicine journey, highlighting facilitators and barriers to their success. The participants were then broken up into groups of five to seven to discuss their perceived facilitators and challenges to pursuing academia. Published data on diverse trainees' perceptions of academia were provided for comparison's sake, to highlight commonalities between diverse groups. The following is a listing and description of the resources provided to conduct a successful workshop.

Appendix A. PPT Presentation

The flow and content of the workshop are featured in this 30-slide PPT presentation. The presentation outlines the core content for the participants, including key diversity and inclusion terms; a review of statistics regarding diversity among academic faculty; and tips for facilitating pursuit of, overcoming challenges in, and understanding the benefits of developing diverse academic faculty.

Appendix B. Facilitator Guide

This document gives step-by-step instructions for conducting the workshop along with an explanation of how to discuss each PPT slide. Slide instructions were created to ensure consistent implementation of the workshop across presentation sites. Facilitators are encouraged to include their own personal experiences for authenticity. For example, slide 18 features Dr. John P. Sánchez discussing and highlighting his academic trajectory from college to his faculty position. This should be replaced by a description of the facilitator's own academic journey, which should include obstacles overcome and enablers for academic success. This is an important addition because trainees have reported a lack of concordant or relatable role models; hence, a facilitator sharing his or her experience can heighten trainees' self-efficacy in becoming a successful faculty member.

Appendix C. Handout

The handout is distributed during the small-group segment for individuals to note challenges and facilitators to their pursuit of an academic career.

Appendix D. Train the Trainer Video

This video is an adjunct to the discussion guide to help visual and audio learners gain an appreciation of how to implement the workshop. The 19-minute video features Dr. Maria Soto-Greene explaining the intent of the slides, how to implement interactive exercises, and how she provided her own anecdotes and experiences.

Appendix E. Evaluation Form

Participants were asked to complete a preworkshop and postworkshop questionnaire. These questions served to assess participants' self-efficacy towards an academic medicine career, and assess the

effectiveness of the workshop. Preworkshop evaluations could be completed via email or prior to the start of the conference upon arrival. The postworkshop evaluation was completed after the workshop. Each questionnaire took approximately 5 minutes to complete. The following questions were included in both the pre- and postworkshop questionnaires:

- Using a 5-point Likert scale (0 = *No confidence*, 4 = *Complete confidence*), indicate “How much CONFIDENCE do you have in your ability to (a) succeed in academic medicine given your gender, (b) succeed in academic medicine given your race and ethnicity, and (c) succeed in academic medicine given your sexual orientation?”
- Using a 5-point Likert scale (1 = *Strongly Disagree*, 2 = *Disagree*, 3 = *Neither Agree nor Disagree*, 4 = *Agree*, 5 = *Strongly Agree*), indicate “To what extent do you agree with the following statements: (a) My racial/ethnic culture does not align with the culture of academic medicine. (b) My gender will impede my ability to succeed in academic medicine.”

The following questions were only asked postworkshop:

- Using a 5-point Likert scale (1 = *Strongly Disagree*, 2 = *Disagree*, 3 = *Neither Agree nor Disagree*, 4 = *Agree*, 5 = *Strongly Agree*), participants were asked to indicate “To what extent do you agree that the workshop learning objectives were met? (a) Describe statistics regarding diversity among academic faculty, (b) explain diversity and inclusion terms, (c) list and discuss challenges and facilitators to pursuing an academic medicine career, and (d) identify at least three benefits of a diverse academic faculty.”
- Open ended question: What did you like about this workshop?
- Open-ended question: What suggestions do you have to improve this workshop?

Review of the PPT, facilitator guide, evaluation form, and handout by facilitators takes approximately 1-2 hours. No more than two cofacilitators should lead the workshop. If there is more than one facilitator, then additional time should be spent by phone or face to face to discuss the breakdown of slides between individuals and to run a practice session.

Materials required include pens, AV equipment to show the PPT presentation, chairs and tables to support five to seven participants per table, flip chart and markers to note comments by participants, and printed copies of the evaluation form.

The optimal length of this workshop is 90 minutes; however, it can be tailored based on resources. A suggested time line for the workshop is as follows:

- Preworkshop evaluation: 5 minutes.
- Slides 1-18: 30 minutes.
- Slides 19-24 (group exercise and discussion): 30 minutes.
- Slides 25-29: 15 minutes.
- Slide 30: 5 minutes.
- Postworkshop evaluation: 5 minutes.

Results

This workshop was implemented at nine regional conferences and facilitated by a total of 13 presenters (four single presenters, three pairs, and one triple set of cofacilitators). All 13 had significant experience with driving diversity and inclusion at their institutions. Among the facilitators were chief diversity officers (three) and assistant (one) and associate deans (four) of diversity and inclusion. In terms of rank, 10 were full professors, one was an associate professor, and two were assistant professors.

There were 165 workshop participants. The respondents were a diverse sample—85 (51.5%) identified as women; 74 (44.8%) as men; 27 (16.4%) as lesbian, gay, or bisexual; 39 (26.9%) as Hispanic/Latino; 48

(29.1%) as white; 47 (28.5%) as African-American/black; 35 (21.2%) as Asian; and three (1.8%) as American Indian. There were 146 medical student and 19 resident respondents who were training in 21 different states and Washington, DC.

In comparing pre- and postworkshop responses of learners, there was a statistically significant increase in confidence to succeed in academic medicine given their gender (2.69 vs. 3.34, $p < .001$), race and ethnicity (2.53 vs. 3.24, $p < .001$), or sexual orientation (3.04 vs. 3.42, $p < .001$). Moreover, learners were statistically less likely to believe their racial/ethnic culture did not align with the culture of academic medicine (2.21 vs. 1.87, $p < .001$) and that their gender would impede their ability to succeed in academic medicine (2.48 vs. 2.04, $p < .001$). Data are listed in [Table 1](#).

Table 1. Learner Responses to the Pre- and Postworkshop Questions

Question	Preworkshop <i>M</i>	Postworkshop <i>M</i>	<i>p</i> ^a
How much CONFIDENCE do you have in your ability to . . .			
Succeed in academic medicine given your gender. ^b (<i>n</i> = 157)	2.69	3.34	<.001
Succeed in academic medicine given your race and ethnicity. ^b (<i>n</i> = 158)	2.53	3.24	<.001
Succeed in academic medicine given your sexual orientation. ^b (<i>n</i> = 157)	3.04	3.42	<.001
To what extent do you AGREE with the following statement . . .			
My racial/ethnic culture does not align with the culture of academic medicine. ^c (<i>n</i> = 156)	2.21	1.87	<.001
My gender will impede my ability to succeed in academic medicine. ^c (<i>n</i> = 155)	2.48	2.04	<.001

^aThe paired-sample *t* test was applied to assess a statistically significant change in confidence ($p < .05$).

^bFive-point Likert scale (0 = *No confidence*, 4 = *Complete confidence*).

^cFive-point Likert scale (1 = *Strongly Disagree*, 5 = *Strongly Agree*).

Learners from the nine regional conferences responded to the question, “To what extent do you agree that the workshop learning objectives were met?” Approximately 95% of learners felt that each of the four objectives had been achieved. Their responses are summarized in [Table 2](#).

Table 2. Learner Responses (*N* = 165) to the Question, “To What Extent Do You Agree That the Workshop Learning Objectives Were Met?”

Objective	No. (%)				
	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
Describe statistics regarding diversity among academic faculty.	116 (70.3)	47 (28.5)	1 (0.6)	0 (0)	1 (0.6)
Explain diversity and inclusion terms.	106 (64.2)	55 (33.3)	3 (1.8)	0 (0)	1 (0.6)
List and discuss challenges and facilitators to pursuing an academic medicine career.	92 (55.8)	70 (42.4)	2 (1.2)	0 (0)	1 (0.6)
Identify at least three benefits of a diverse academic faculty.	87 (52.7)	68 (41.2)	5 (3.0)	4 (2.4)	1 (0.6)

Comments for the workshop were overall positive, with a few suggestions for improvement. We have organized unique participants’ comments by the workshop learning objectives. For the question, “What did you like about this workshop?” responses included the following:

- Objective 1: Describe statistics regarding diversity among academic faculty.
 - “I liked the statistics that were provided. They gave a more realistic view of the demographics in academic med.”
 - “I liked the utilization of data (particularly the visual representation of it) to highlight the dearth of diversity in academic medicine. I also liked the small group work → made the seminar more engaging. I also liked having the presenter’s personal story as it brought a concrete narrative to the statistics.”
 - “I liked the fact that we were able to see the change throughout the years in the amount of representation of minorities & underrepresented groups. It’s evident that we have made progress but we still have a long way to go.”
 - “I found it very helpful in giving us statistics to outline exactly how severe the problem of underrepresentation is in the medical community.”
 - “As a South Asian, it was so interesting to see that 0% of deans are Asian. That totally caught me off guard and it actually lights a fire under me to change that.”

- “The statistics presented here confront us with our own subconscious sentiments or suspicions that we don’t see people who look like us in high ranking academic positions. It’s galvanizing, but more importantly it assures us that we’re not crazy for feeling that way.”
- Objective 2: Explain diversity and inclusion terms.
 - “There was great coverage on how to find footing in gaining an academic position and in the importance of diversity in academic medicine.”
 - “Good job touching on all aspects of underrepresented minorities, not just race.”
 - “I loved getting information on what diversity actually looks like; we always assume that we know what it is but we don’t. No suggestions. It was time well spent!”
- Objective 3: List and discuss challenges and facilitators to pursuing an academic medicine career.
 - “Appreciated group discussion time. Chance to talk about challenges. Thank you for allowing us to talk about and VALIDATE the challenges faced.”
 - “I like that the presenters gave specific examples of their mentors’ specific examples of people who were instrumental in diversity and inclusion programs.”
 - “I enjoyed understanding intention to obtain faculty positions and the suggestions to seek out outside resources to learn about more career opportunities.”
 - “I also enjoyed hearing stories from the presenters about their experiences going into academic medicine.”
- Objective 4: Identify at least three benefits of a diverse academic faculty.
 - “I liked the statistical and cited proof on the benefits of a diverse academic faculty.”
 - “I enjoyed the breakout session to talk about challenges/benefits of working in academic medicine.”

For the question, “What did you dislike about this workshop?” responses included the following:

- Objective 1: Describe statistics regarding diversity among academic faculty.
 - “I think the presentation was great but I’m of the opinion that there wasn’t much on the ways to buck those trends of under-representation.”
 - “It was eye-opening to look at the breakdown of academic faculty, which was very nice. However, I feel that the focus was a bit heavy on racial minority.”
 - “Any updated stats or studies? For example the one longitudinal study is 8 years old.”
 - “Solid overview of statistics. Improve: There’s newer data available to put into discussion.”
- Objective 2: Explain diversity and inclusion terms.
 - “I love that she focused on diversity based on gender and ethnicity, but also wish she could have included information on DACA [Deferred Action for Childhood Arrivals] students, and how they can also improve diversity.”
 - “I’d be interested to hear more about ethnicity and why that definition emerged. It was completely new to me and not at all what I thought ethnicity was. It’d also be helpful to address the real threat LGBTQ individuals face regarding the legal permissiveness associated with employees terminating employees based on sexual orientation.”
- Objective 3: List and discuss challenges and facilitators to pursuing an academic medicine career.
 - “Further discussion on the barriers and challenges in supporting diversity at educational institutions would have been insightful.”
 - “Would like more spoken about specific resources discussing overcoming barriers that we can reference later on, would like to know why there aren’t more diverse academic physicians (bias? Not enough applying?).”
 - “I enjoyed the breakout session to talk about challenges/benefits of working in academic medicine. To improve the workshop, I would have liked more information on speaker’s career path. What were your challenges?”
 - “Most speakers are clinical educators—I really wish that there are more clinical investigators present to talk to us.”

- “More examples of tangible ways that we can overcome diversity obstacles/disparities as medical students/residents.”
- “We heard early challenges for diverse faculty early in their careers. It’d be nice to hear similar/changing experiences from someone just starting, i.e. resident or post-medical graduate.”
- Objective 4: Identify at least three benefits of a diverse academic faculty.
 - “I know that the presenters ran short on time, but I would have liked to hear more about benefits of a diverse academic faculty.”

Discussion

This workshop was used to educate diverse trainees on the statistics of diversity and inclusion in academic medicine, diversity and inclusion terms, facilitators and barriers to pursuing an academic career, and the benefits of diversity. In general, the course was well received by all of the trainees. There were significant improvements in the attendees’ attitudes toward all of the metrics identified in the course evaluation, and all of the objectives were perceived to have been met. Through our postworkshop evaluations, we identified key activities and points from the presented workshop that students both enjoyed and disliked.

There were several aspects to our presentation that made this an excellent academic medicine workshop. Students appreciated the statistics that were provided in numerical, chart, and graphical form, depicting the presence of women and URM and LGBT individuals in academia. These data were enlightening, motivational, and realistic for a diverse group of trainees. Another well-appreciated aspect of the workshop was the use of quotes describing perceived barriers and successes of diverse trainees in pursuing academia and the personal journeys of the facilitators. Lastly, the participants enjoyed the proof of benefits of having diverse academic medicine faculty. It was important for our workshop to have both small-group and large-group discussions as these were validating for many students.

There were several opportunities for improvement of the workshop. Some students felt that our presenters placed an emphasis on URM individuals and not enough on gender or sexual orientation. We also acknowledge that our presentation has a significant number of slides describing workforce demographics by race and ethnicity while there are fewer slides describing gender or sexual orientation. Our larger number of slides on URM individuals reflects the historical focus of diversity and inclusion and emerging content on sexual orientation. Speakers should emphasize that today, attention is being paid to ensure diversity and inclusion not only by race and ethnicity but also by gender, sexual orientation, and other forms of diversity. In particular, participants mentioned DACA as a group deserving additional discussion during the session. Facilitators should attempt to recognize diversity characteristics represented by participants. This may be achieved simply by asking participants to name diversity groups of particular interest or affiliation. While participants enjoyed learning about existing obstacles regarding diversity and inclusion in the academic medicine workforce, they would have liked to see ways to overcome those obstacles. Speakers are therefore encouraged to spend time describing ways of overcoming obstacles they have encountered in their personal journey.

The workshop has been updated in response to several of the well-received comments by participants. The introduction has been updated to reflect more recent data. We are providing examples of data from our sources and as our projects become published. We suggest that facilitators download the most recent data, such as the annual report to date, to present more current data. For example, as referenced in slide 9 of the PPT, census data sources and the Association of American Medical Colleges’ Faculty Roster can be used to update data on the racial/ethnic demographics of both the U.S. population and medical school faculty. We chose to report on data from 2012 because that was the most recent year for which we were able to secure data across subgroups (e.g., general population, medical students, physicians, and faculty). Although participants asked that specific topics, such as the legal protections for certain groups, be addressed during our presentation, these topics go beyond its scope. However, such topics demonstrate the systematic support needed by underrepresented groups to succeed in academic medicine.

An alternative approach to delivering this workshop is through a flipped learning format. In flipped learning, classroom time is reserved for interactive learning that takes advantage of individual preclass preparation by reading text or watching video that delivers essential background information. Flipped learning is widely used across health professional education,²¹ with examples in both undergraduate²² and graduate²³ medical education. Advantages of the flipped model for this curriculum are its abilities to decrease scheduled session time, increase effective interactive learning, and improve memory formation by spacing learning rather than concentrating it into a single sitting. A potential disadvantage is lack of preparation if learners do not complete the preclass work. That risk is particularly high if this workshop is delivered separately from the other BNGAP academic medicine curriculum workshops or if learners are not used to the flipped learning model.²⁴

One way to apply the flipped approach in this workshop is to have participants be required to view PPT slides 1-18 on their own or watch and listen to a video that the facilitators make by recording their voices over the PPT presentation. This preparation permits the class session to begin with group work and discussion, without the estimated 30 minutes of introductory PPT presentation. The flipped approach would be further enhanced by having learners complete the individual reflection on challenges that is prompted by slide 19 and email those comments to the facilitators in advance. Making this assignment would: (a) encourage greater compliance and accountability for the preclass work, (b) better prepare the learners for the class session, and (c) alert the facilitators to topics that will come up in discussion.

It is important to note the limitations of the workshop evaluation and findings. The workshop was a brief, onetime intervention, with a survey implemented immediately before and after the workshop. The reported change in participants' confidence or beliefs should not be assumed to be a sustained change without additional assessment at later times (e.g., 6 months, 12 months, etc.). As reported in the presentation, there are numerous personal, institutional, and system-level challenges to diverse trainees maintaining a positive interest in an academic medicine career. This workshop aimed at raising their consciousness of such a possibility. Sustained interest in an academic career requires ongoing role modeling, mentorship, nurturing of personal and professional interests, and institutional and system-level interventions that ensure inclusion of all.

Two critical components of ensuring a successful workshop are choice of facilitator and workshop size. A facilitator can be of any identity but should feel comfortable and competent in discussing diversity and inclusion with a group of diverse individuals. If the workshop is being delivered to a particular diversity group (e.g., Latino medical students and residents), there is value in having a concordant facilitator, but this is not a requirement. To ensure a safe and engaging environment, we recommend limiting the size of the group to 30-50 individuals. Larger sizes may make it difficult for some participants to share personal experiences and beliefs.

This workshop addresses a specific unmet need within academic medicine career development by educating trainees on the facilitators and challenges to and benefits of their presence in academic medicine. We believe that the workshop can help encourage a larger diverse pipeline of trainees to consider academia as a career option and can contribute to the overall environment of academic medicine.

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Ethical Approval

Rutgers University Institutional Review Board approved this study.

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