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Cover Page Footnote

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Comparing Medical Student Nonverbal Behavior with Cisgender and Transgender Standardized Patients

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ABSTRACT

It is essential for medical students to effectively communicate with patients of all gender identities. Evaluating nonverbal behavior is one way to assess the quality of patient care – examining providers' behaviors while working with cisgender and transgender patients can identify potential biases linked to patient identity. To evaluate nonverbal behavior, the authors analyzed video-recorded training sessions with medical students interviewing standardized patients who identified as cisgender or transgender women. All students identified as cisgender men or cisgender women. The authors rated ten nonverbal behaviors from 1-7 and noted whether these behaviors were perceived to detract from the encounter. Average scores for nonverbal behaviors were similar between students working with cisgender and transgender patients. Nodding frequency showed the largest difference between cisgender ($m = 5.65$) and transgender ($m = 4.93$) patients. When considering student gender identity, cisgender men had lower facial expressivity and smiling frequency scores on average but higher scores for unnecessary silence compared to cisgender women across encounters. Detracting behaviors that negatively impacted the patient encounters were most likely to be self-touching/unpurposive movements (41%) and unnecessary silences (26%). Among the students, cisgender men demonstrated detracting behaviors at a higher rate than cisgender women. The consistency in nonverbal behavior during encounters with cisgender and transgender patients is encouraging. It is possible that LGBTQ health training in medical education contributed to this outcome; however, differences in verbal communication could contribute more to health disparities for transgender patients. Additional practice with unpurposive movements and unnecessary silences could improve nonverbal communication skills.

KEYWORDS: medical education, LGBTQ, communication, nonverbal, transgender

INTRODUCTION

Gender minority communities face health disparities and barriers to care that non-LGBTQ patients do not encounter.¹ Lack of competency with gender-affirming care among physicians plays a major role in perpetuating inequity for transgender and nonbinary patients.¹ For medical students, curricular experiences during medical education are integral for the development of cultural competency that will be carried over into their careers as physicians.² It is important for students to be able to communicate with patients of all gender identities so they can provide equal treatment for all patients.³

Nonverbal behaviors such as eye contact and hand movement play a large role within communication; they allow for the development of rapport and trust with patients.² However, certain nonverbal behaviors can also inadvertently detract from a patient encounter and harm the relationship between the provider and patient.⁴ For example, a provider's unexpressive monotone during a

patient encounter could lead the patient to believe that the student is not empathetic. Evaluating a provider's nonverbal behavior is one indication of the quality and efficacy of patient care, and variation in nonverbal communication could identify potential implicit biases that medical students may have among patients with different gender identities. In this context, bias is the result of unconscious stereotypes, prejudice, and other biases that influence how an individual processes information and therefore makes decisions.³ It is possible that students are unaware of the presentation of these implicit biases within their own patient care.³

The aim of this project was to explore the incidence of certain nonverbal communication behaviors during medical student encounters with cisgender and transgender standardized patients. The goal was to determine if student communication varied between patients with different gender identities, which could indicate underlying biases. Because of the systemic biases

<i>Student</i>		Cisgender Men		Cisgender Women		ANOVA	
Standardized Patient		Transgender Women	Cisgender Women	Transgender Women	Cisgender Women	F-Value	p-value
Nonverbal Behaviors	Facial Expressivity	5.83	5.14	6.23	6.32	3.626	0.016
	Smiling Frequency	5.17	5.06	6.17	6.00	5.093	0.003*
	Eye Contact	6.07	6.19	6.32	6.55	1.16	0.330
	Nodding Frequency	4.59	5.56	5.42	5.76	1.603	0.194
	Gesture Frequency	4.93	4.84	5.00	5.29	0.534	0.660
	Self-touching/unpurposive	4.78	4.44	4.26	4.71	0.229	0.876
	Body Lean	4.48	4.44	4.42	4.33	0.112	0.953
	Body Posture	5.59	5.84	5.89	6.19	0.839	0.476
	Tone of Voice	6.44	6.20	6.79	6.86	1.709	0.171
	Unnecessary Silence	3.70	3.64	2.26	2.95	2.206	0.093

Table 1. Mean nonverbal behavior scores. Results were analyzed using two-way ANOVAs; original p-values are reported with significance after adjusting for multiple comparisons indicated with an asterisk.

that gender minority patients experience with the healthcare system,⁵ it was predicted that significant variation in nonverbal communication skills used with cisgender and transgender patients would be observed. By comparing experiences of cisgender and transgender patients, this study provides insight on the relevance of providers' nonverbal behaviors to the healthcare disparities faced by gender minority communities.

METHODS

Video-recorded training sessions of standardized patient encounters were analyzed in order to evaluate the nonverbal behaviors of rising third-year medical students. Standardized patient cases are used to assess medical students' clinical skills with people who are trained to portray the same, specific patient history during encounters with multiple students. For this assessment case, standardized patients were hired to portray patients establishing primary care. The gender identity of each standardized patient aligned with the gender identity of their patient role, and this study focused specifically on encounters with patients who identified as transgender women and cisgender women.

One coder (MS) rated the following nonverbal behaviors on a scale of 1-7: facial expressivity, smiling frequency,

eye contact, nodding frequency, gestures frequency, self-touching/unpurposive movements, body lean, body posture, tone of voice, and unnecessary silence. Our scale was adapted from existing medical student nonverbal communication scales.^{2,4} The rater also noted whether nonverbal interactions were perceived to detract from the encounter (i.e., perceived to introduce awkwardness, tension, or discomfort). To ensure rating consistency, definitions for each nonverbal behavior were operationalized based on these previous descriptions. These operational definitions were reviewed by the research group, and the rater applied the definitions to a set of three training videos that were evaluated by all members of the research group before data collection for the study began.

The average scores of the medical student group were analyzed in order to obtain general conclusions about which nonverbal behaviors were most and least common. For any encounter in which a recording was truncated (such as when the recording began after the student introductions with the patient, which occurred randomly in the dataset), imputed mean scores were used for facial expressivity, smiling frequency, and eye contact because scores for these behaviors depended on greeting interactions. Average scores for each behavior across the

four possible combinations of students and patients were also compared using a one-way analysis of variance (ANOVA) in order to assess equality among the student and patient groups, and the resulting p-values were adjusted for multiple comparisons.

Finally, for each type of nonverbal behavior, the proportion of encounters in which that behavior was considered detracting at any point during the encounter was calculated. The most detracting nonverbal behaviors were compared, then the proportion of encounters with one or more detracting behaviors across the four patient-student gender groups were compared using a test for equality of proportions.

RESULTS

We coded videos of medical students interacting with standardized patients who identified as either cisgender women (n = 46) or transgender women (n = 46). In these encounters, medical students identified as either cisgender men (n = 52) or cisgender women (n = 40). Across all rated nonverbal behaviors, students scored similarly among patients who were transgender and cisgender women. Differences between the mean scores rated for interactions with cisgender and transgender women were not particularly notable (Figure 1). Nodding frequency demonstrated the largest difference between average scores with students nodding more frequently during encounters with cisgender patients. However, none of these differences were statistically significant.

Variation in nonverbal communication was more notable when comparing among student gender identity. The four possible combinations of students interviewing patients included: cisgender men interviewing cisgender women (n = 25), cisgender men interviewing transgender women (n = 27), cisgender women interviewing cisgender women (n = 21), and cisgender women interviewing patient transgender women (n = 19). One-way ANOVA results showed that two nonverbal behaviors, facial expressivity and smiling frequency, varied significantly among the four patient-student gender identity groups before correcting for multiple comparisons (Table 1). Students who were cisgender women were more facially expressive than cisgender men during encounters with both cisgender and transgender patients (Figure 2). The same pattern was observed with smiling frequency, with cisgender women also smiling more frequently than men during encounters with cisgender women and during encounters with transgender women (Figure 2).

All behaviors were classified as detracting in at least one or more of the encounters, but some behaviors were more frequently detracting than others (Table 2). Proportions of detraction frequency for each nonverbal behavior show that nonverbal behaviors categorized as self-touching/unpurposive movements (41% of encounters) and unnecessary silence (26% of encounters) were the most negatively impactful on the patient encounters. Nodding and body lean were the least likely to be detracting.

Nonverbal Behavior	Proportion of Encounters	Example Detracting Behavior
Facial Expressivity	0.10	Lack of facial expressivity was not visually engaging for the patient.
Smiling Frequency	0.06	Low smiling frequency made the student seem unfriendly.
Eye Contact	0.10	Lack of eye contact made the student seem uncomfortable.
Nodding Frequency	0.03	Low nodding frequency made the student seem disengaged.
Gestures Frequency	0.04	Lack of a handshake at introduction or closing could seem unprofessional.
Self-Touching/Unpurposive Movements	0.41	Hand wringing and foot bouncing made the student seem nervous and restless.
Body Lean	0.03	Frequent change of body lean direction was visually distracting.
Body Posture	0.04	Slouched body posture made student seem unprofessional.
Tone of Voice	0.04	Mostly monotone tone of voice was not auditorily engaging.
Unnecessary Silence	0.26	Frequent unnecessary silence while note-taking broke up dialogue.

Table 2. Proportion of standardized patient encounters in which one or more interaction type was perceived to be detracting (induced awkwardness, tension, or discomfort) and examples of these detracting nonverbal behaviors.

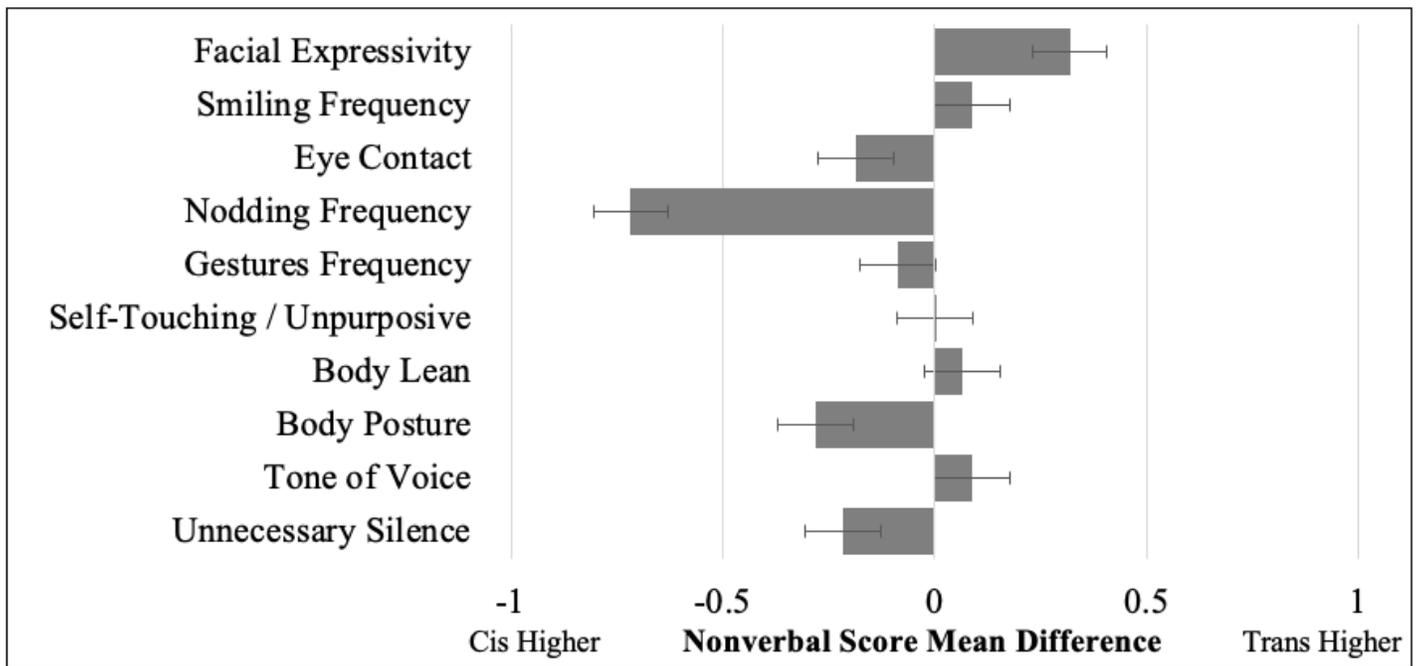


Figure 1. Difference between mean nonverbal behavior scores among all students.

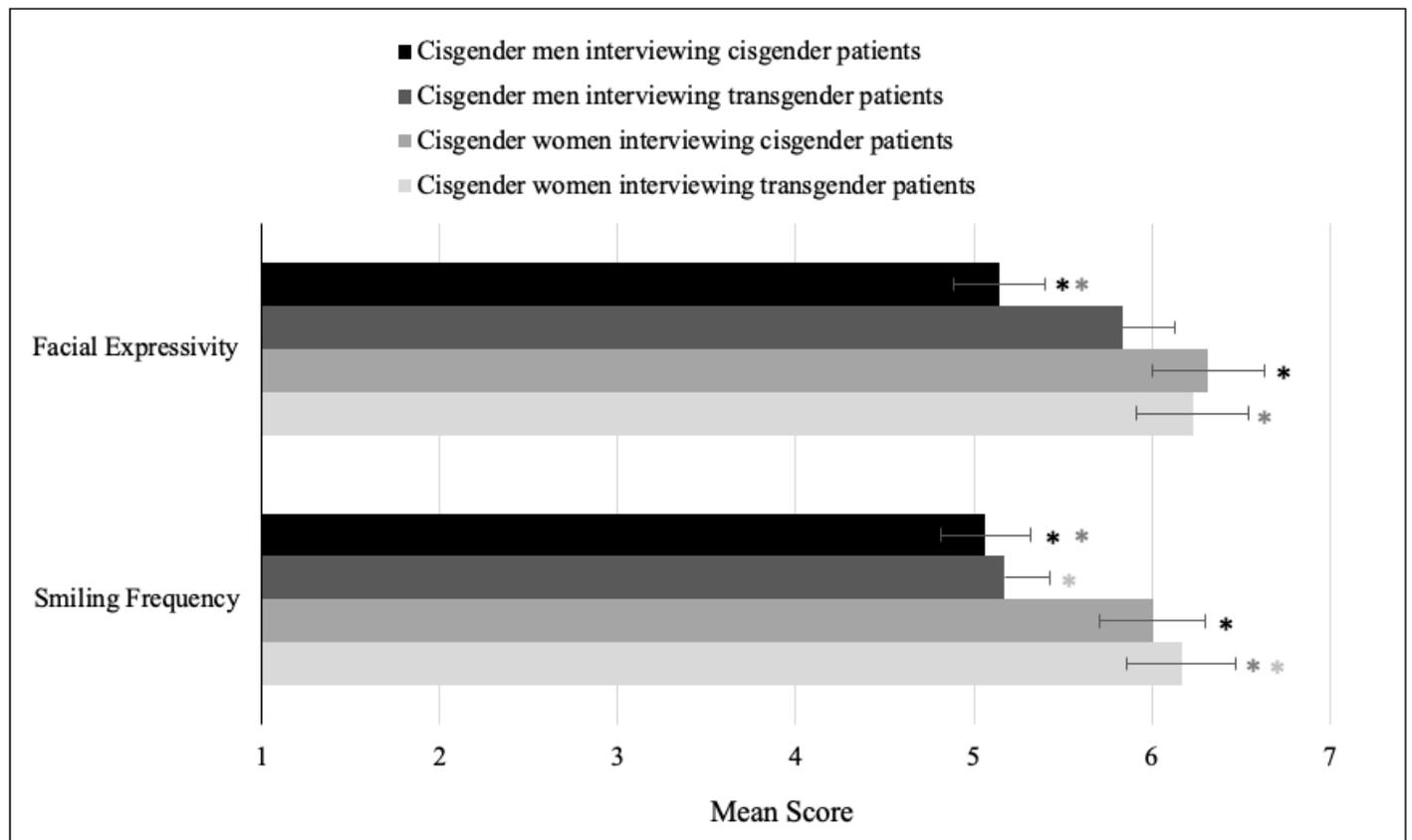


Figure 2. Mean facial expressivity and smiling frequency scores among the four student-patient gender identity groups. (*matching colors indicate significant between-group differences from a one-way ANOVA analysis, $p < 0.05$).

A larger proportion of one or more detracting behaviors was observed during encounters with students who were cisgender men. Cisgender men demonstrated one or more detracting nonverbal behaviors during 68.2% of

encounters with cisgender women and 70.8% of encounters with transgender women. Meanwhile, students who were cisgender women demonstrated one or more detracting nonverbal behaviors during 57.9% of

encounters with cisgender women and 40% of encounters with transgender women. However, the test for equality of proportions showed that these differences among the proportion of encounters with one or more detracting behaviors were not statistically significant ($\chi^2 = 4.32$, $df = 4$, $p = 0.229$).

DISCUSSION

Overall, this study found that variation in nonverbal behaviors appears to be influenced more by student gender identity than by patient gender identity. During standardized patient encounters with cisgender and transgender women, the average nonverbal behavior scores of medical students were similar. Because many patients who identify as transgender report negative interactions with healthcare providers,⁶ these findings were unexpected. It was predicted that more differences between interactions with cisgender and transgender women may be found.

The lack of major differences between nonverbal behaviors during encounters with cisgender and transgender women may suggest that biases and discrimination against transgender patients could be driven more centrally by verbal communication. However, students in this study had completed LGBTQ health training before completing the encounter.⁷ If the nonverbal similarities observed in this study were positively influenced by the LGBTQ health training, this could indicate the importance of similar training within medical education. Additional comparisons of nonverbal communication among students who have not had specific LGBTQ health training could help clarify this point.

The significant differences in facial expressivity and smiling frequency of cisgender men and women students align with current literature that suggests that there are notable gender differences in these nonverbal behaviors.⁸ This behavioral variation is assumed to result from a broader difference of social values and intensity of emotional experiences that are associated with gender.⁸ Within the clinical setting, it is possible that students who identified as cisgender women felt more comfortable expressing emotion during patient encounters because of gender role conformity.

Our findings regarding the frequency of detracting nonverbal behavior suggest that there are opportunities for further practice to improve specific nonverbal communication skills. Students are likely unaware of the unpurposive movements and self-touching behaviors that occur during patient encounters (such as face touching, pen tapping, or foot bouncing). Similarly, unnecessary silence may also message a lack of confidence or knowledge during the patient encounter. Efforts to reduce

unpurposive movements and avoiding unnecessary silence would be important topics of emphasis during training to help to ensure that the comfort and trust of patients is maintained.

Although statistically insignificant, trends showing differences between the frequency of detracting behaviors used by men and women students were still notable and may be a suitable area for future study. This provides information about potential patient comfort level disparities with students of different genders. It is possible that larger amounts of detracting behaviors could inadvertently lead to lower patient comfort or satisfaction on average with certain patient groups. This study is limited because it focused only on the experiences of patients who identify as women, so the broader question of how detraction occurs with the interaction between student and patient gender identity could serve as a potential area of future study around supportive and detracting nonverbal communication.

Our study provides insight about the nonverbal communication employed by medical students during standardized patient encounters with cisgender and transgender women. However, verbal communication is also critical to understanding LGBTQ health disparities. Future studies on the verbal behaviors of medical students would allow us to compare whether patterns of verbal and nonverbal communication are consistent. Because our study observed encounters with patients who were women only, it would also be relevant to investigate medical students' verbal and nonverbal communication patterns during encounters with patients of other gender minority groups, such as those who identify as transgender men and genderqueer, to see if these trends are maintained.

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