



# Immigrant Status Differences in Emotional Responses to Language-Related Microaggressions:

# A ChatGPT Sentiment Analysis of Chinese American Parent-teen Conversations.

HARVARD MEDICAL SCHOOL

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# INTRODUCTION

- Microaggressions, subtle instances of indirect or unintentional discrimination against marginalized groups, have been linked to negative social, emotional, psychological, and physiological well being among ethnic minority groups in the United States.<sup>1-3</sup>
- In the United States, language-related microaggressions occur when an individual's English proficiency is called into question, often based on racial stereotypes about foreign accents. Language-related microaggressions is a common experiences among Asians in the United States and has been linked with feelings of alienation and loneliness for the target<sup>3-4</sup>.
- Prior studies on ethnic minority samples have found that stress in response to explicit discrimination can differ between immigrant and U.S.-born adults.<sup>5-6</sup> However, less is known about how Asian parents and children feel when confronted by microaggressions and how this may differ across Asian immigrant status.
- The current study uses AI sentiment analysis to investigate whether emotional responses to language-related microaggressive scenarios ("you speak English so well!") differs across family immigrant status among Chinese families.

### **RESEARCH QUESTIONS & HYPOHTESES**

Q1: What are the feelings among Chinese-heritage parent-child dyads when confronted by a language-related microaggression?

Q2: Does the relative frequency of positive and negative emotions differ across immigrant status?

Hypothesis 1: We hypothesized that Chinese-heritage parent-teen dyads in the United States will express a variety of feelings when confronted with a language-related microaggression vignette.

Hypothesis 2: We hypothesized that the US-Born dyads will express more negative emotions toward the vignette about language-related microaggression. On the other hand, we also hypothesized that the immigrant dyads will express more positive emotions toward the same vignette.

### METHODS

- Data were taken from a subset of the ongoing Building Our Bonds Authentically (BOBA) Project (R01MH129360, MPIs: Liu & Yip).
- Six Chinese-heritage parent-teen dyads (3 immigrant, 3 United States-born) reported their language preference (Mandarin vs English) in an online survey. Language preference was used as a proxy for immigrant status.
- Dyads completed a facilitated virtual activity session where they were presented the following vignette:

Chat GPT Prompt 1

between the parent and the child.

It is the first day of school. After entering the classroom, you appear to be the only Asian American in the class. As you sit down after you finish your self-introduction, a classmate says to you, "When did you learn English? You speak really well!"

• For up to 5 minutes, dyads were asked to imagine the scenario happening to the participating teen and discuss: 1) how they would feel, and 2) what they would do.

Sentiment analysis through ChatGPT was conducted using the prompts below. Chi-square analysis determined differences by language preference/immigrant



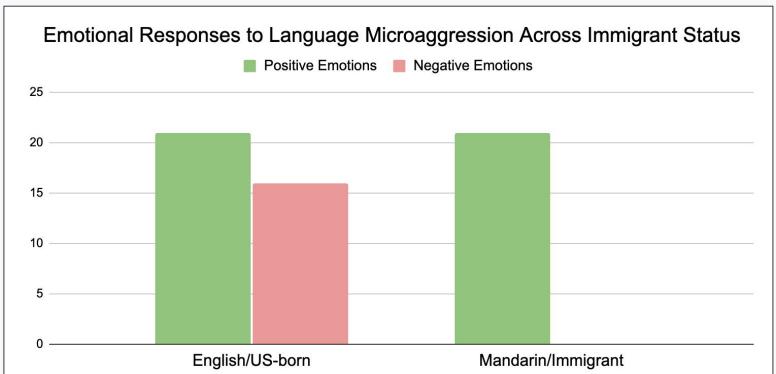
Analyze and create a sentiment analysis on the transcribed conversation between an Asian American parent ("P") and child ("T") responding to the scenario facilitated by the investigator ("I"): [VIGNETTE]. Categorize and provide counts of positive and negative emotions separately for both the parent and the child. Offer a breakdown of the frequency of emotional tones expressed by each participant, highlighting any noteworthy patterns or differences

Analyze and create a sentiment analysis on the transcribed conversation between an Asian American parent ("P") and child ("T") responding to the scenario facilitated by the investigator ("I"): [VIGNETTE] Categorize and provide counts of positive and negative emotions separately for both the parent and the child for the following conversations. Offer a breakdown of the frequency of emotional tones expressed by each participant. Highlight any noteworthy patterns or differences between the English and non-English pairs.

Chat GPT Prompt 2

# **RESULTS**

Figure 1. Example findings from sentiment analysis using ChatGPT



- Q1 Results: United States-born dyads' feelings were relatively balanced (positive emotions n = 21; negative emotions n = 16). In contrast, immigrant dyads' feelings were only positive (positive emotions n = 21; negative emotions n = 0; Table 1).
- Q2 Results: Feelings differed significantly by immigrant status ( $\chi^2$  = 101.96; df = 3; p < .0001). When confronted with a language-related microaggression, immigrant dyads were more likely to express positive feelings such as gratitude whereas United States-born dyads expressed more mixed feeling such as discomfort and concern.

# **United States-born:**

"...if that happened to you now, I guess I would be surprised...
ust because I think people should or are maybe more educated
now, hopefully, probably depends on which part of the country
you live in and the demographics of that. But I would mainly
feel surprised"

- Parent

"I would probably feel a little bit uncomfortable... I would probably just say I grew up in the U.S. I would probably want to like yell at them, but that's kind of not what I do...Because that's like kind of a weird assumption to make, just because I look Chinese or something"

- Teenager

#### **Immigrant:**

"When I first moved to the United States... there would be situations where people would look at you with strange eyes, and some would say, 'Hey, your English is very good.' This became a way for us to make friends and expand our social circle. In such an environment, my English started to improve. If they asked where I learned English or how I became so good, I would tell them."

-Parent

"I feel very good; he actually praised me. He said my English is very good, much better."

- Teenager

#### **DISCUSSION & CONCLUSION**

#### **Contributions**

- Findings supported our hypotheses that parent-teen dyads would express a variety of feelings but that feelings would vary across immigrant status.
- Immigrant dyads whose primary language is Mandarin may be more likely to view themselves as adapting to a new environment and thus more likely to interpret the comment as a compliment.
- United States-born dyads whose primary language is English may be more likely to interpret the comment as a microaggression that assumes their foreigner status.
- Results underscore the heterogeneity of responses to microaggressions in the Chinese American community, informing intervention approaches.

# **Limitations**

- The preliminary data presented here only includes 6 families from MA, which might not represent the whole population.
- Most interviews are conducted between a mother and child, so father experiences are not represented here.
- Sentiment analysis through AI is still a developing methodology.

## Future Directions

 Other dyad-level characteristics such as relationship quality, child sex, child age and child and parent ethnic/racial identity will be considered in future research for their association with emotional expression and responses to racially-related microaggressions.

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