

# Pre-Decisional Information Distortion Between OTC And Prescription Hearing Aids

Ava Moran<sup>a</sup>, Piper Clark<sup>b</sup>, Paul Windschitl<sup>b</sup>, Yu-Hsiang Wu<sup>b</sup>, Jeremy Strueder<sup>b</sup>, Todd Ricketts<sup>c</sup>  
University of Florida<sup>a</sup>, University of Iowa<sup>b</sup>, Vanderbilt University Medical Center<sup>c</sup>

## INTRODUCTION

- Despite ongoing efforts to improve accessibility, hearing aid adoption remains low (< 40-50%).<sup>1</sup>
- Over-the-counter (OTC) hearing aids were expected to improve accessibility; however, early data suggests large increases in adoption have not yet materialized.<sup>1,2</sup>
- One factor that may affect accessibility is the manner in which essential decision-making information about hearing aids is presented and framed given the complexity of information.
- Consumers may interpret information in ways that support emerging preference, based on order, rather than evaluating attributes objectively, a phenomenon known as pre-decisional information distortion.
- In a series of 6 stages, we presented people with information about attributes of two hearing aid options (AuD option vs OTC option). By varying which attribute we described first (Stage 1), we were manipulating whether early information set up a preference for one of the options. Our main interest was in whether a participants' early preference (driven by the order manipulation) might distort how they evaluated new attribute information about the two options in subsequent stages, and whether this might ultimately bias which of the two options they chose (after Stage 6).

## PURPOSE

The purpose of this study was to explore the possibility that pre-decisional information distortions affect consumer choices between factors that commonly differ across OTC and prescription hearing aids. This exploration was completed without OTC and prescription labels. An overriding goal was to explore a potential psychological barrier of hearing aid adoption.

## METHODS

### Participants

- N= 350 adults recruited via online survey platform (Prolific)
- Participants were asked to imagine having a mild-to-moderate hearing loss

### Procedures

- Participants evaluated two unlabeled devices (Hearing Aid 1 vs. Hearing Aid 2)
- Six attributes describing characteristics of OTC and prescription hearing aids were presented sequentially (see table 1)
- Attribute order was counterbalanced across participants

- Two attributes strongly favored one option ("steer" attributes: cost, warranty)
- Four attributes weakly favored one option and were relatively balanced (professional assistance, device setup, follow-up, buying process)
- Strong ("steer") attributes appeared in positions 1 and 4
- At the end of the study, participants were asked to make a final choice between the two hearing aid options

Order 1	Order 2
Strong (favoring HA 1)	Strong (favoring HA 2)
Neutral	Neutral
Relatively neutral (slightly favoring HA 1)	Relatively neutral (slightly favoring HA 2)
Strong (favoring HA 2)	Strong (favoring HA 1)
Relatively neutral (slightly favoring HA 2)	Relatively neutral (slightly favoring HA 1)
Neutral	Neutral

## RESULTS

### Early attribute presentation distorted initial preferences but did not persist through later stages

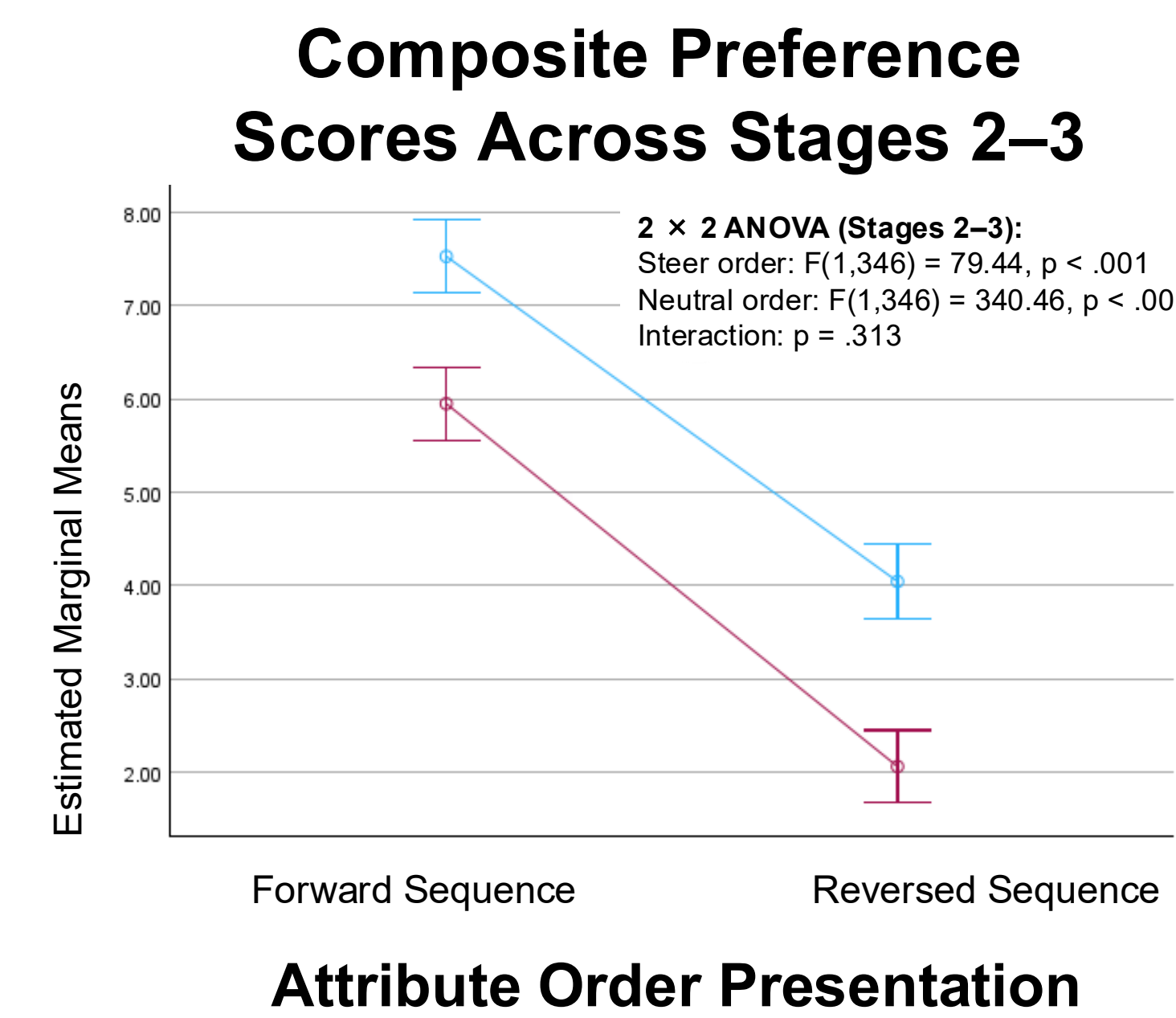


Figure 1a: Effect of first steer attribute on early-stage preference (STAGE 2-3)

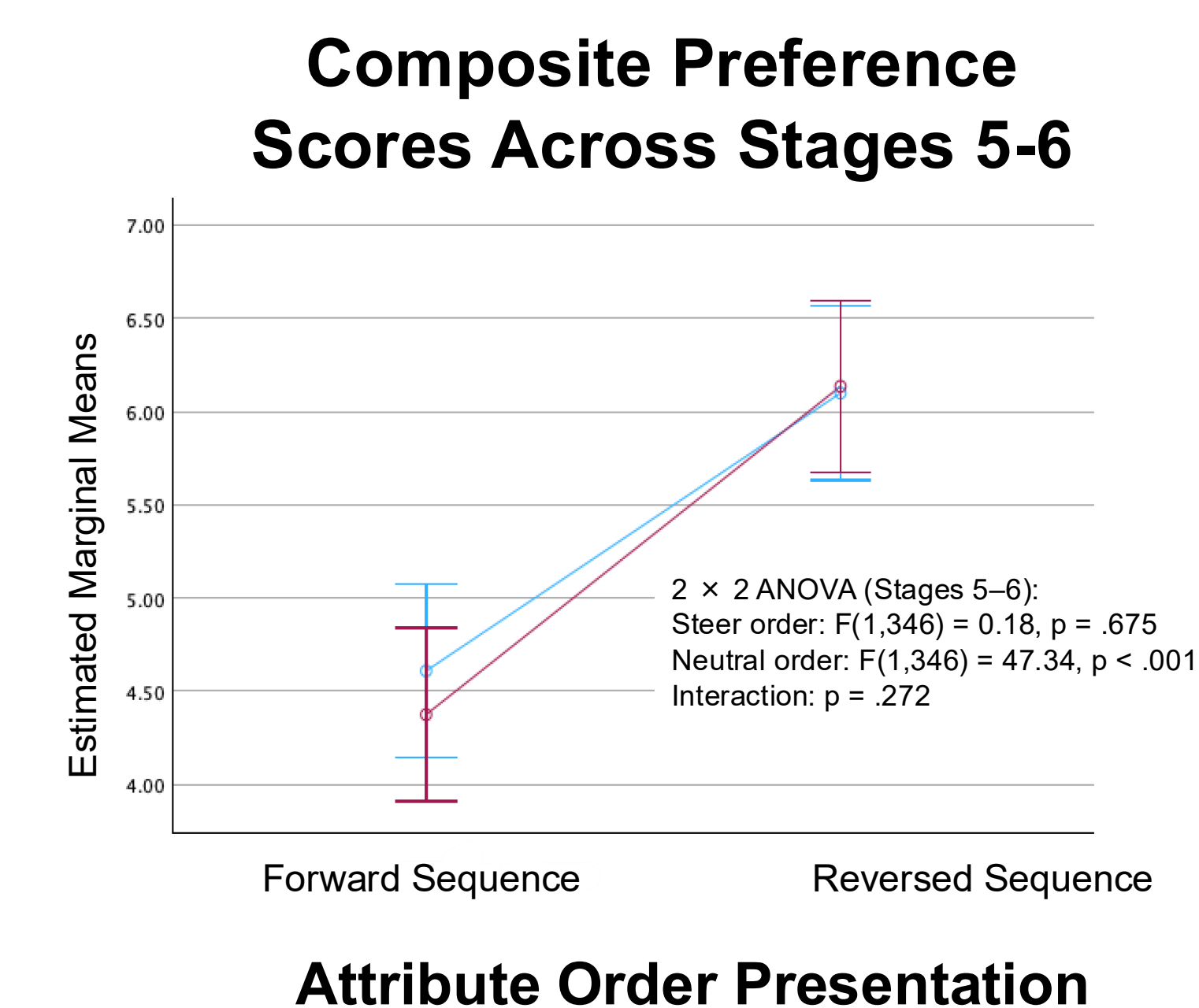


Figure 1b: Effect of first steer attribute on later-stage preference (STAGES 5-6)

### Distortion effects were transient and did not influence final choice

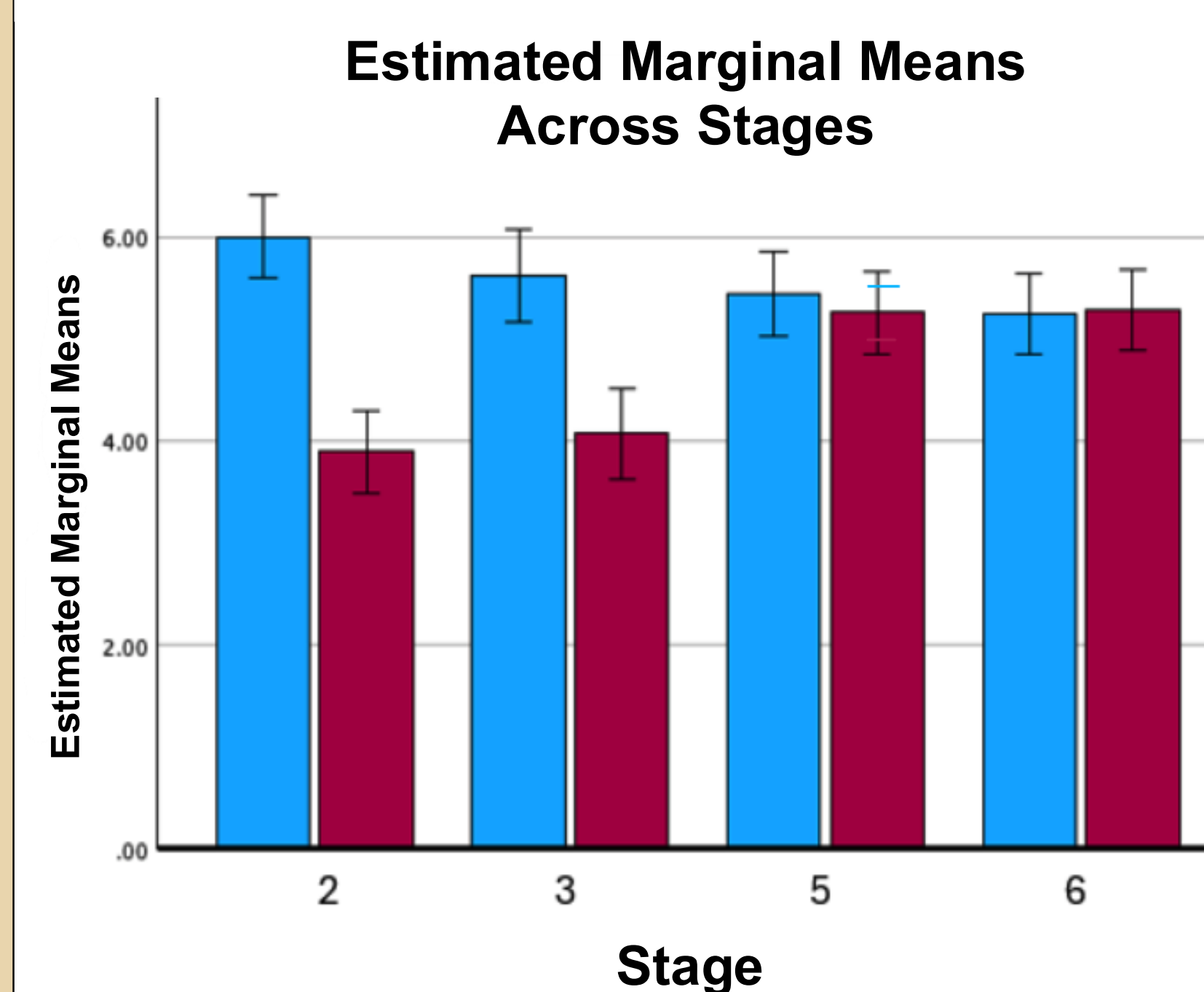


Figure 2a. Change in device preference across attribute presentation stages

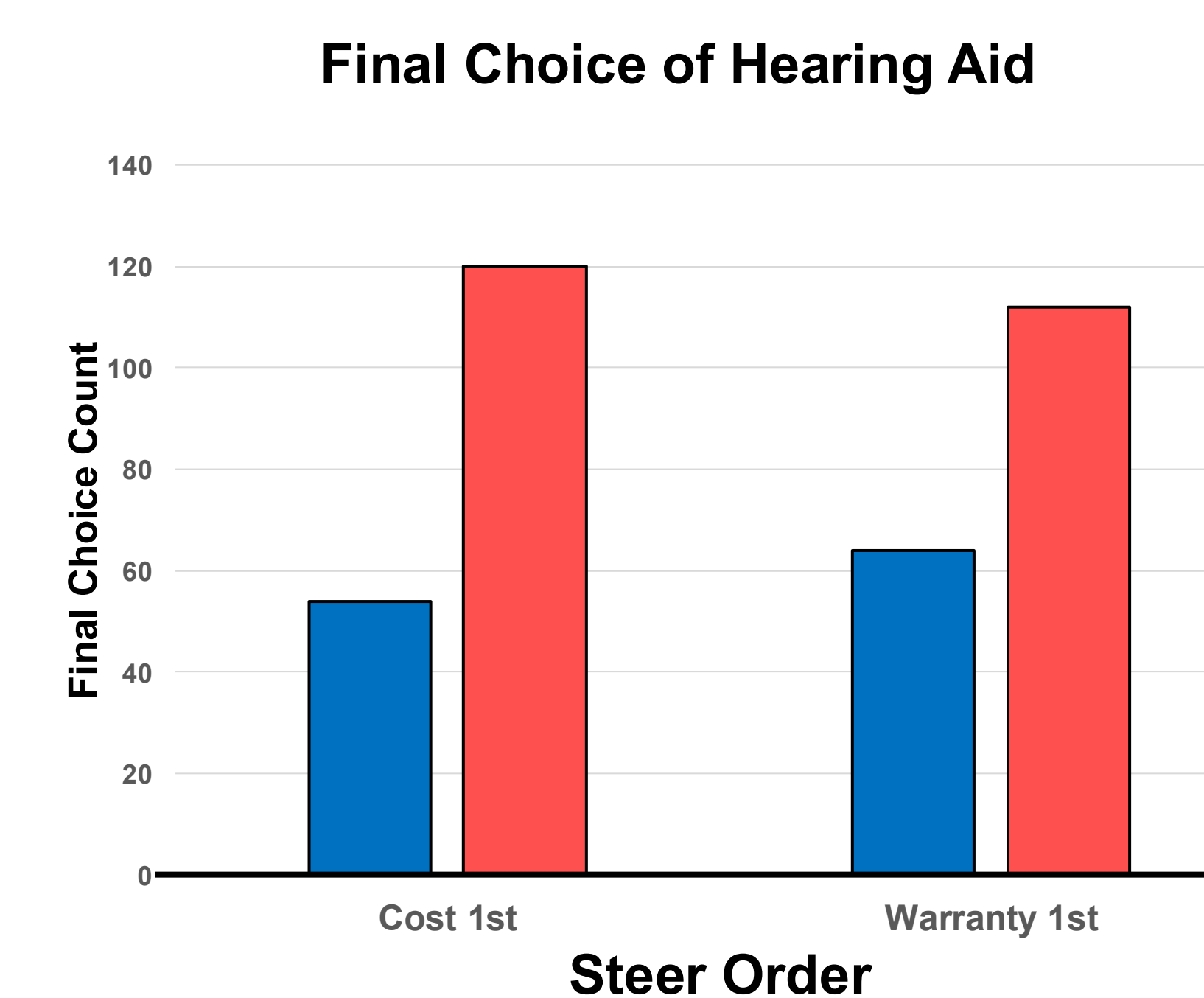


Figure 2b. Final choice of hearing aid after all stages were presented

No significant association between steer order and participants' final choice  
( $\chi^2(1, N = 350) = 1.11, p < .292$ )

Steer Order: For all figures, **blue** is associated with OTC (cost first), **red** is associated with prescription (warranty first).

## RESULTS AND DISCUSSION

- Early exposure to strongly favoring information biased evaluations of subsequent, more balanced hearing aid attributes, consistent with pre-decisional information distortion.
  - There was a significant interaction in that the effect of steer order on preference for the targeted hearing aid differed between the early stage (2-3) and the later stage (5-6).
- Distortion effects diminished after presentation of all attributes, including information favoring the opposing option.
- Interaction effects did not persist through later stages or influence final device choice.
- Results indicated that early information can momentarily bias evaluations, but sustained distortion is mitigated by balanced attribute presentation.
- Clinically balanced presentation of hearing aid information may reduce bias and support patient-centered decision making

## TAKEAWAY

Pre-decisional information distortion can influence subsequent hearing aid evaluations but dissipates when consumers receive balanced information.

## FUTURE DIRECTION

Future research will explore additional barriers affecting decision-making between OTC and prescription hearing aids.

## KEY REFERENCES

- <sup>1</sup> Jilla, A. M., & Jorgensen, L. (2025, October). Hearing aid adoption in the OTC hearing aid era: market trends and consumer insights from MarkeTrak 2025. In *Seminars in Hearing*. Thieme Medical Publishers, Inc..
- <sup>2</sup> Zheng, H., Wong, L. L., & Hickson, L. (2022). Barriers to hearing aid adoption among older adults in mainland China. *International Journal of Audiology*, 62(9), 814–825. <https://doi.org/10.1080/14992027.2022.2105263>

## ACKNOWLEDGEMENTS

Research supported by NIH NIDCD T35DC008763 (LJH) and NIH NIDCD 2R01DC015997-06 (YHW). The authors also thank the participants and members of the Dan Maddox Memorial Hearing Aid Research Laboratory (DMHARL) for their contributions