

INTRODUCTION

- This study aimed to measure the consistency of hearing aid troubleshooting for common hearing aid complaints across audiology clinicians.
- The first goal of this study was to determine the consistency of clinician responses across experience level. Specifically, consistency changes with increase in education level and supervision were evaluated.
- The second goal was to explore if certain complaints about hearing aids are more clearly defined or leave room for fewer fine tuning options in the clinician's mind.

METHODS

Participants

- 15 audiology clinicians at the University of Iowa:
 - Three Supervisors (with over 10 years of experience with hearing aids)
 - Three 4th year student clinicians
 - Three 3rd year student clinicians
 - Three 2nd year student clinicians
 - Three 1st year student clinicians

Hearing Aid Complaints

- Five complaints were presented in the form of written narratives from hypothetical patients describing their length and degree of hearing loss, length of hearing aid use, and description of specific times they have been unhappy with their hearing aids. No additional information was given even upon clinician request.
- The five complaints chosen for these prompts are among the top ten most frequent complaints as listed by audiologists in an open-ended survey from Jenstad et al. (2003).
- Complaints addressed the following topics:
 - Tinnitus
 - Background Noise
 - Speech in Noise
 - Own Voice
 - Music Quality
- Each clinician was asked to read the five given complaints and name up to three fine tuning suggestions to resolve the problem.
- These responses were then coded by a single researcher and analyzed for consistency.

Data Analysis

- Each clinician response was compared to the other fourteen participants' responses.
- Example 1. Clinician A and Clinician B gave only one response: "Decrease high frequency gain." The consistency for Clinicians A and B is 100%.
- Example 2. Clinician C gives three responses, one of which is "Decrease high frequency gain." The consistency for Clinicians A and B compared to Clinician C is 100%, but the consistency for Clinician C compared to Clinicians A and B is only 33%.
- Data was then classified by clinician peer group (year in program or supervisor) then analyzed in three ways.
 1. Compared each peer group to all other peer groups.
 2. Compared only the responses within one peer group.
 3. Compared each peer group to the supervisors' responses.

RESULTS

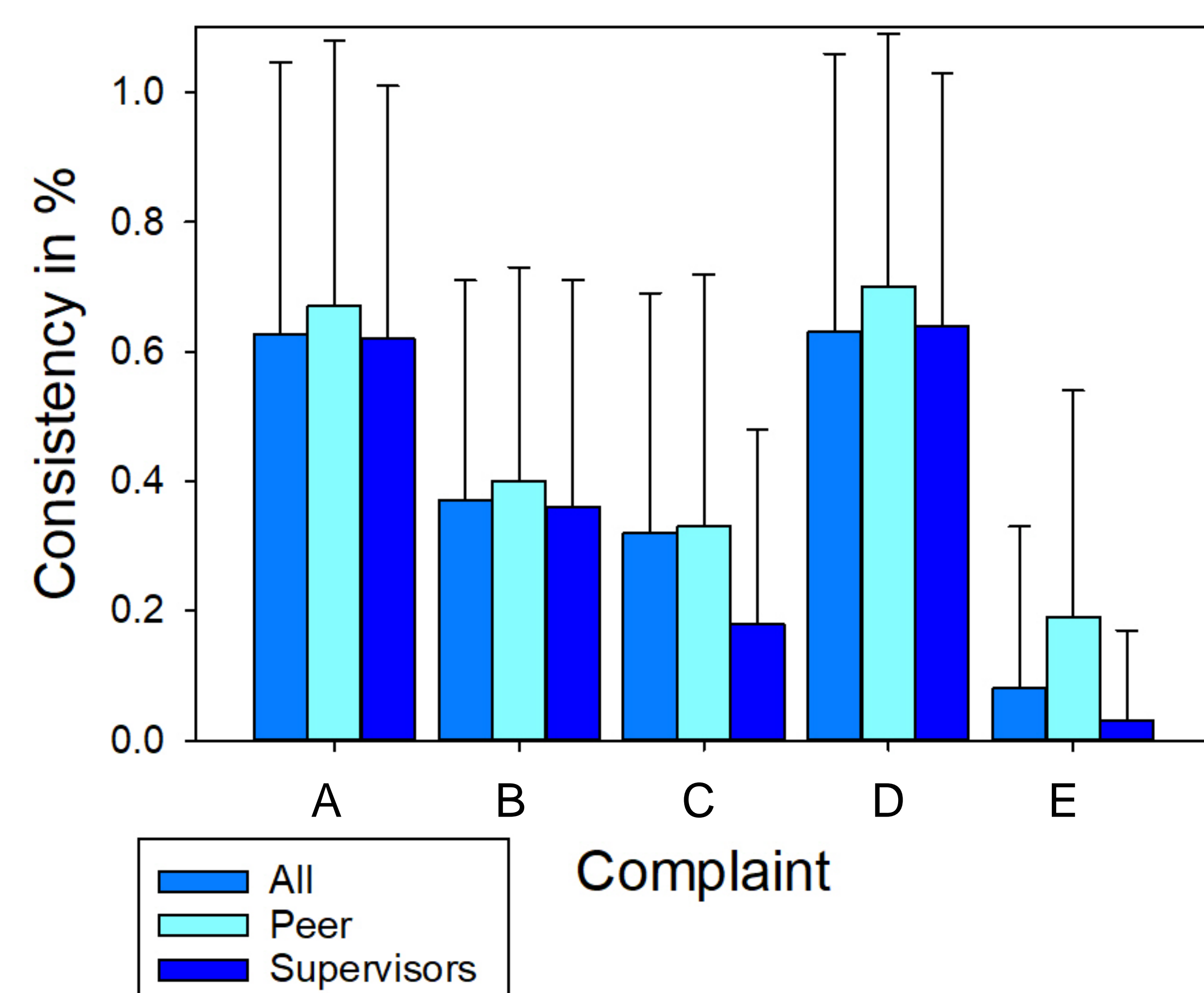


Figure 1. Average percent consistency with standard deviation for all responses given for each of the five complaints.

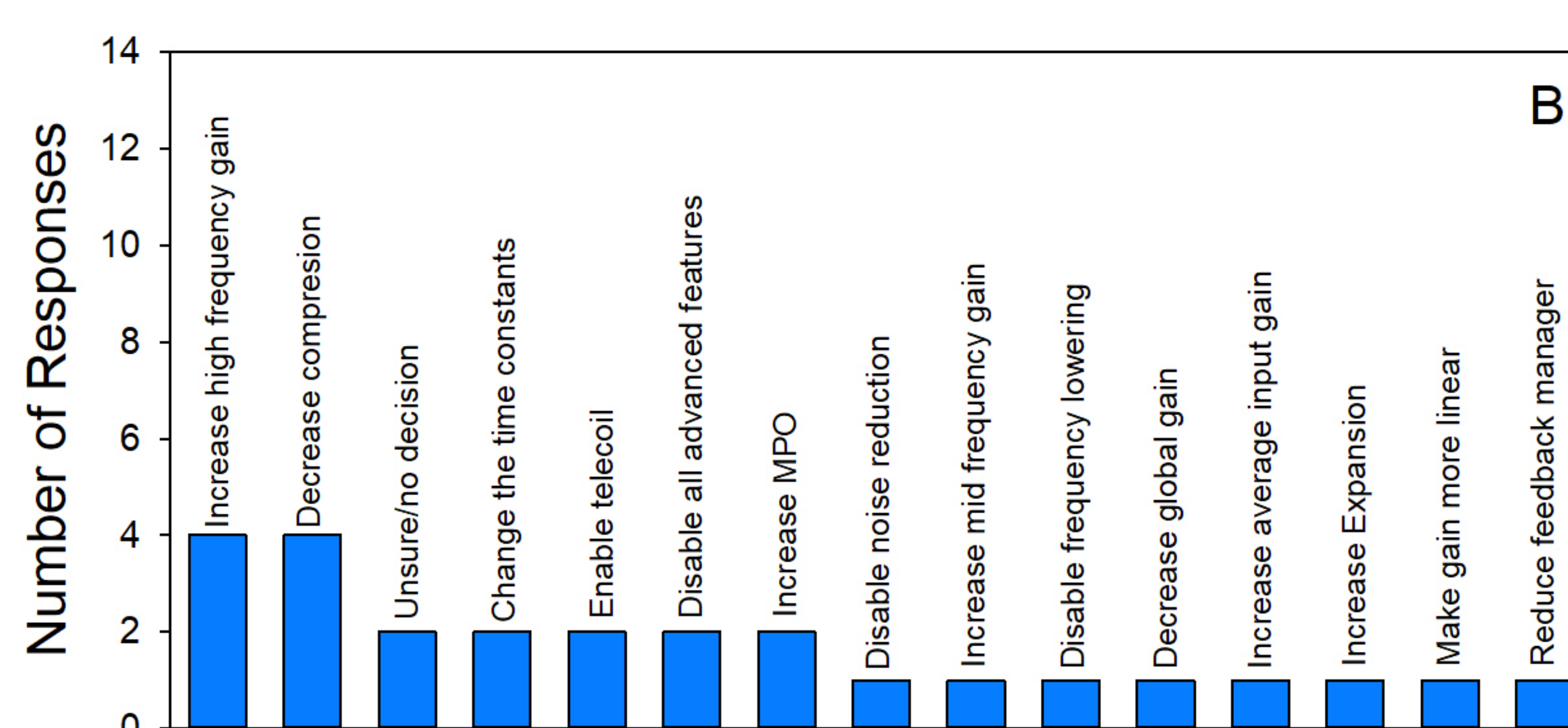
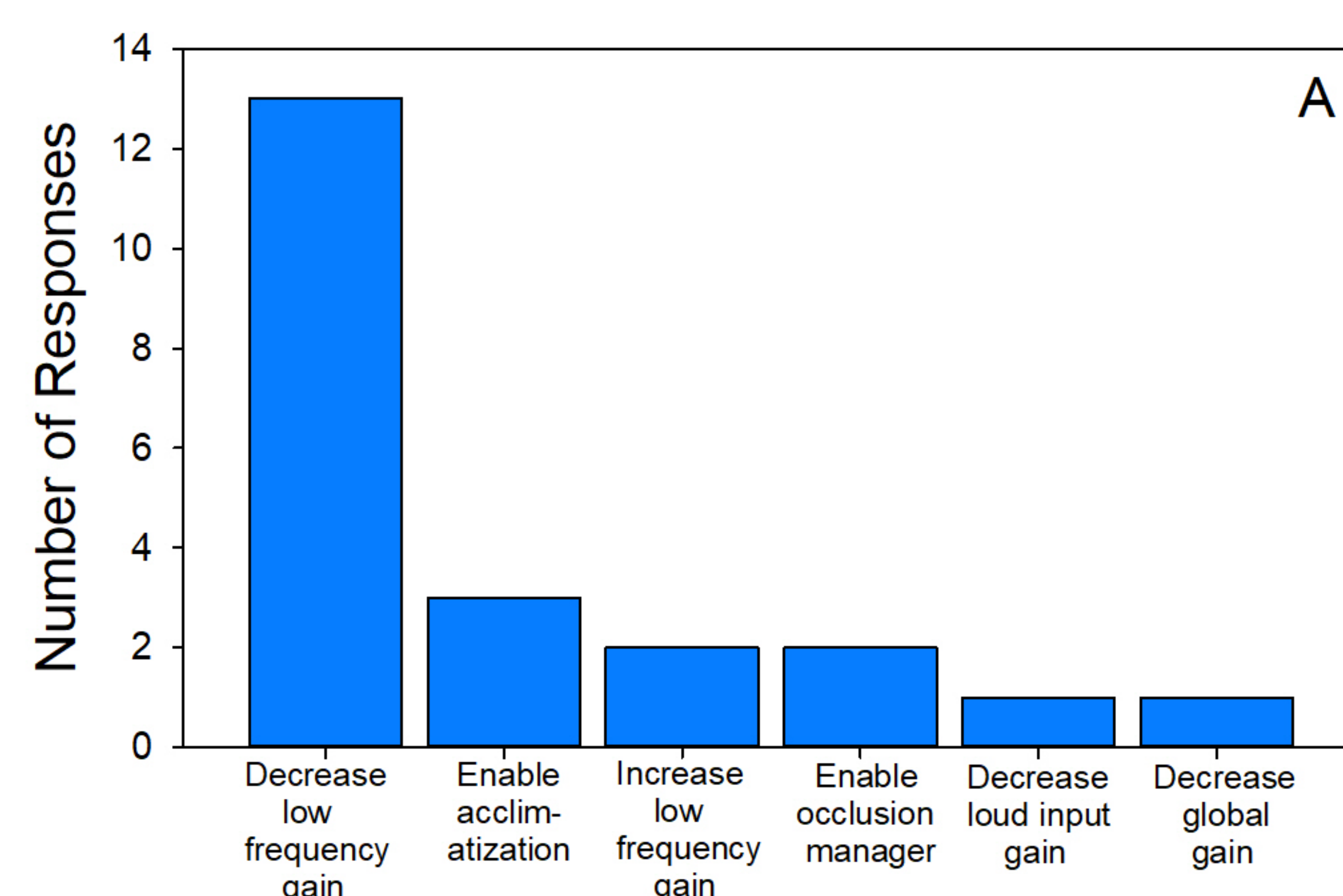
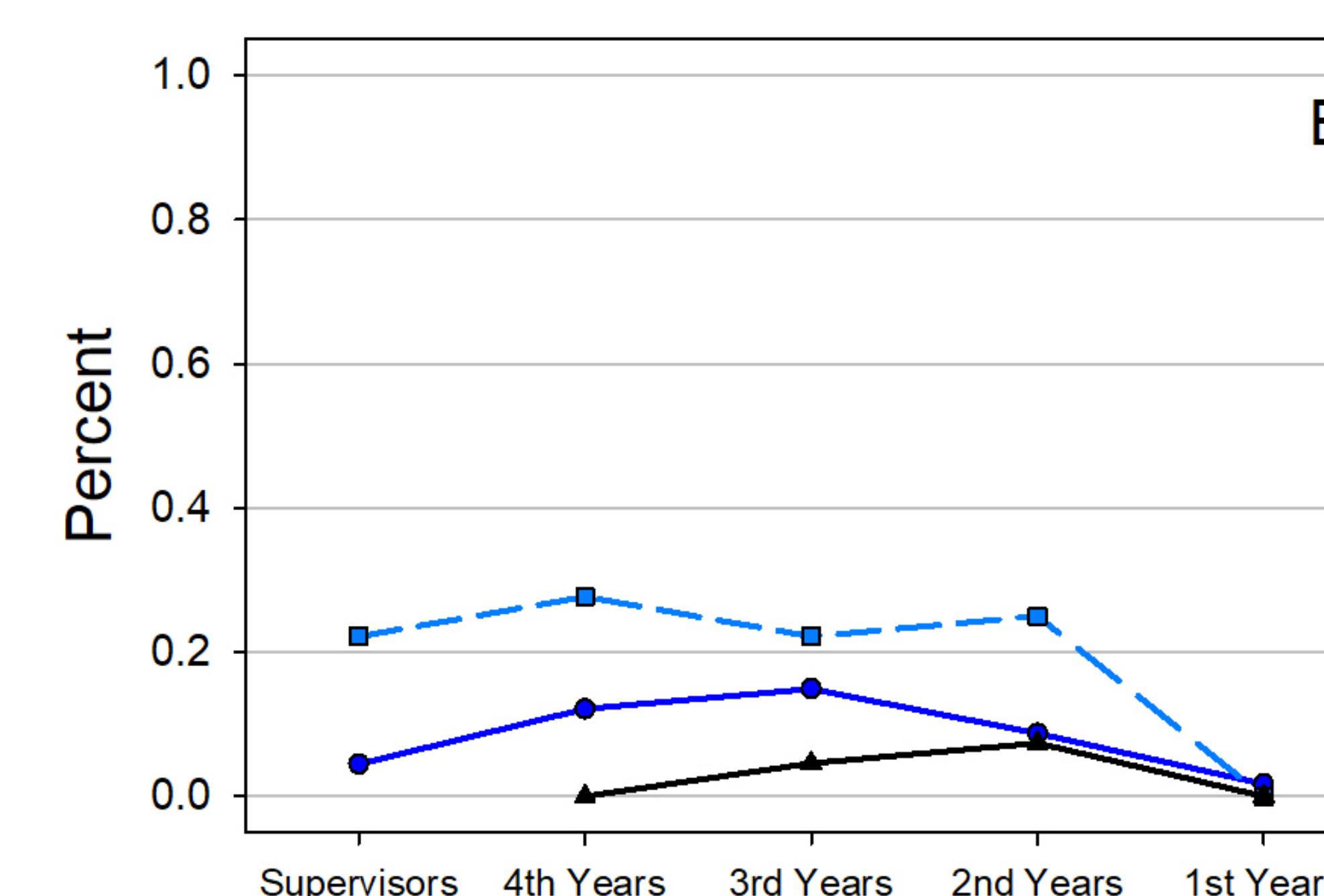
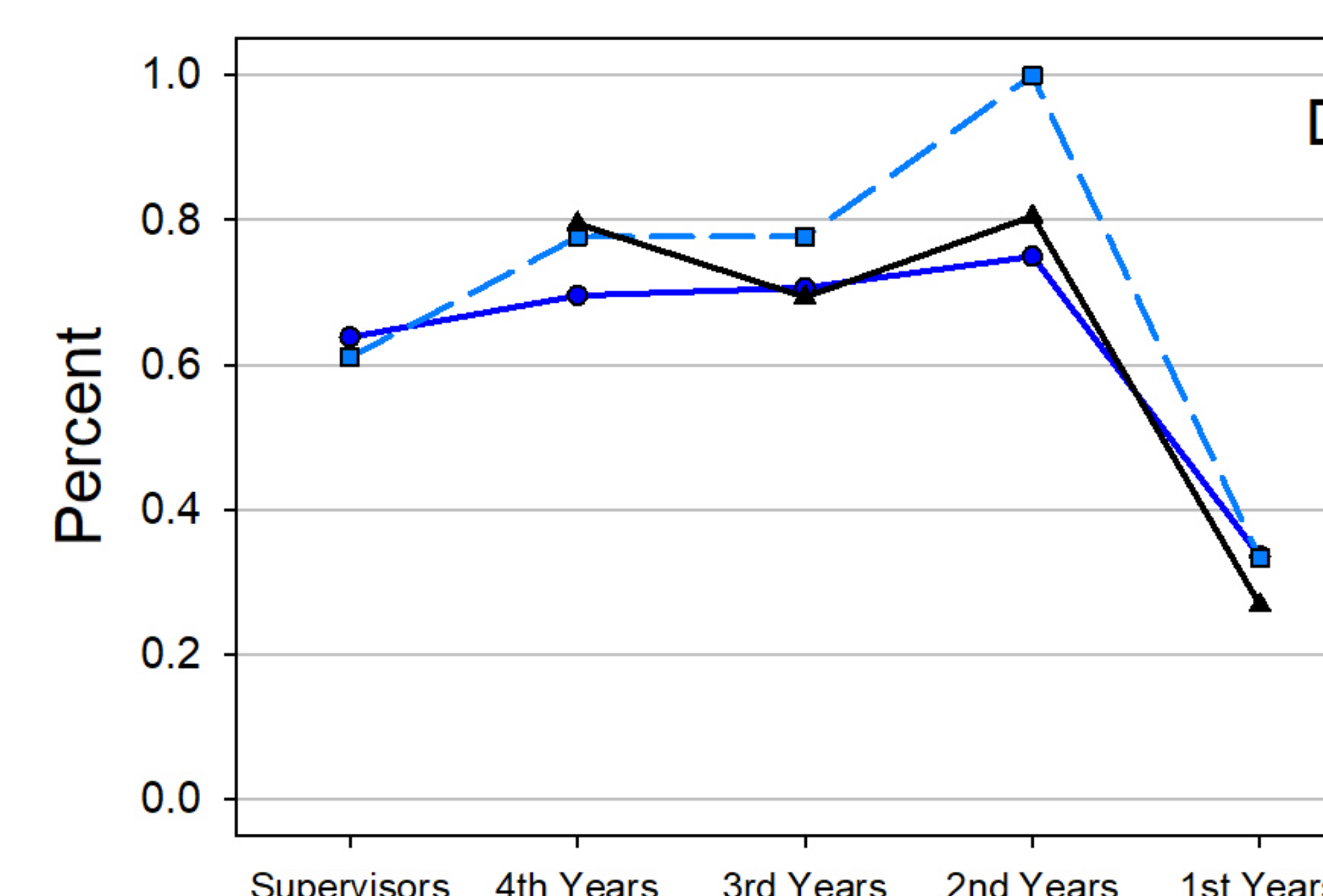
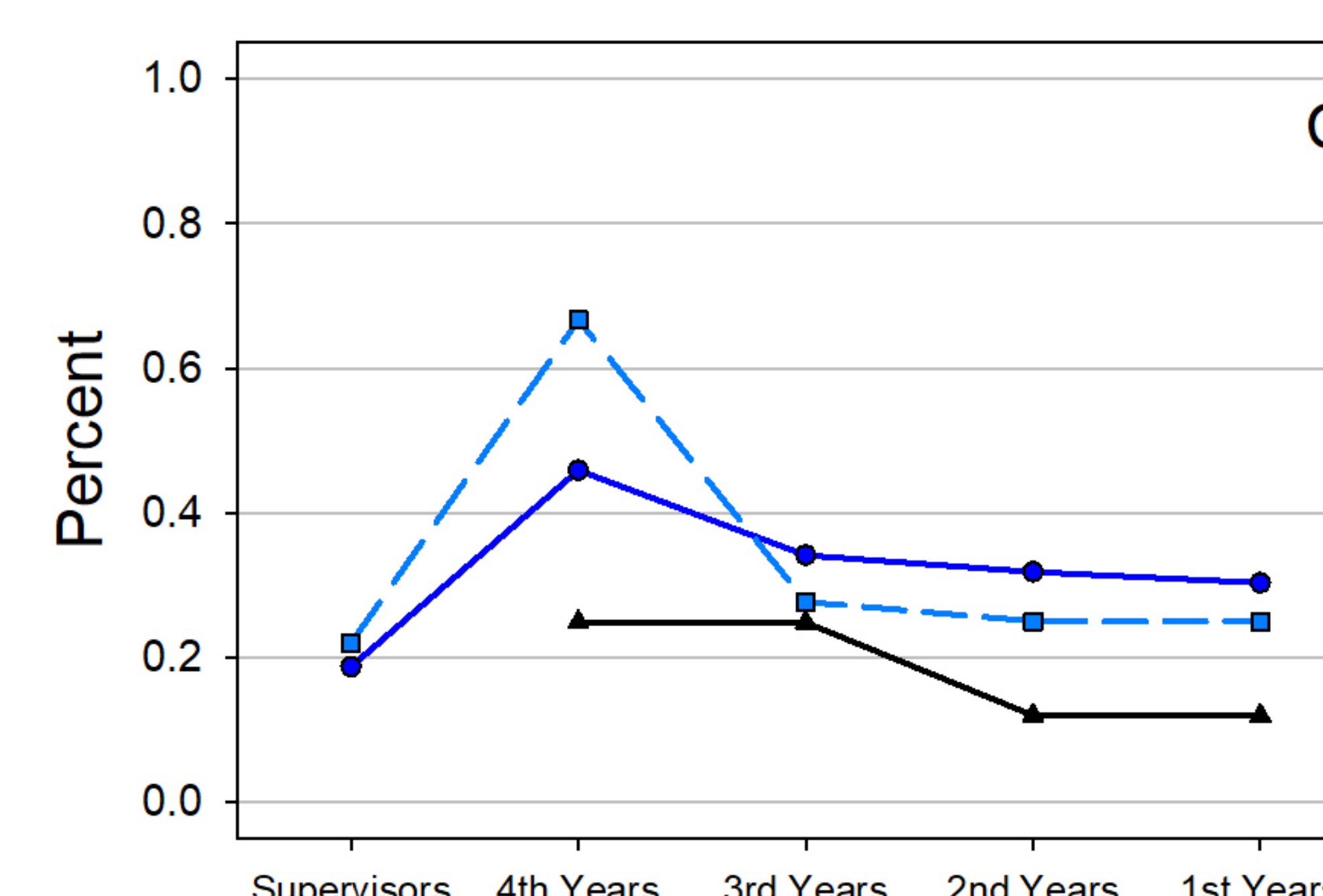
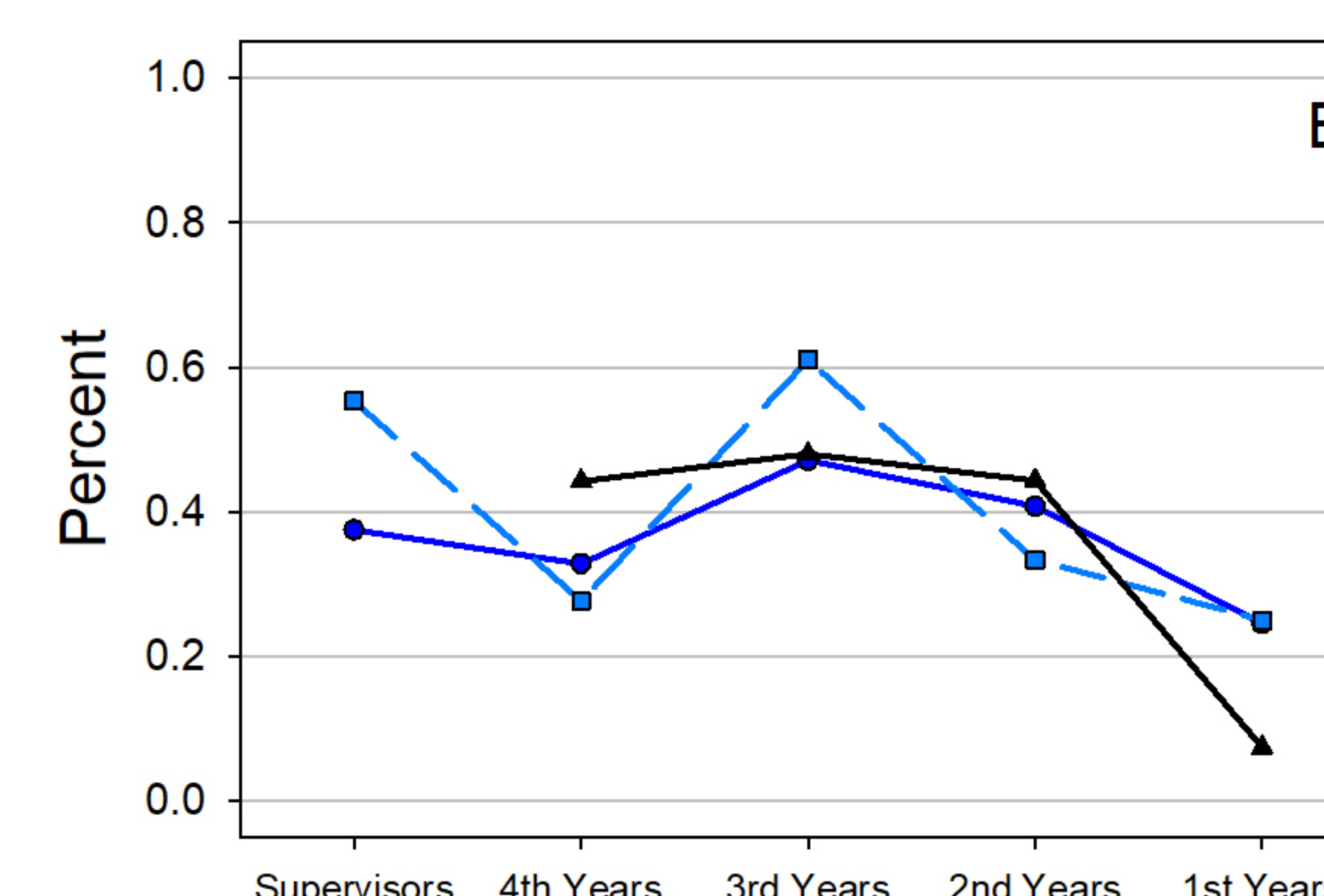
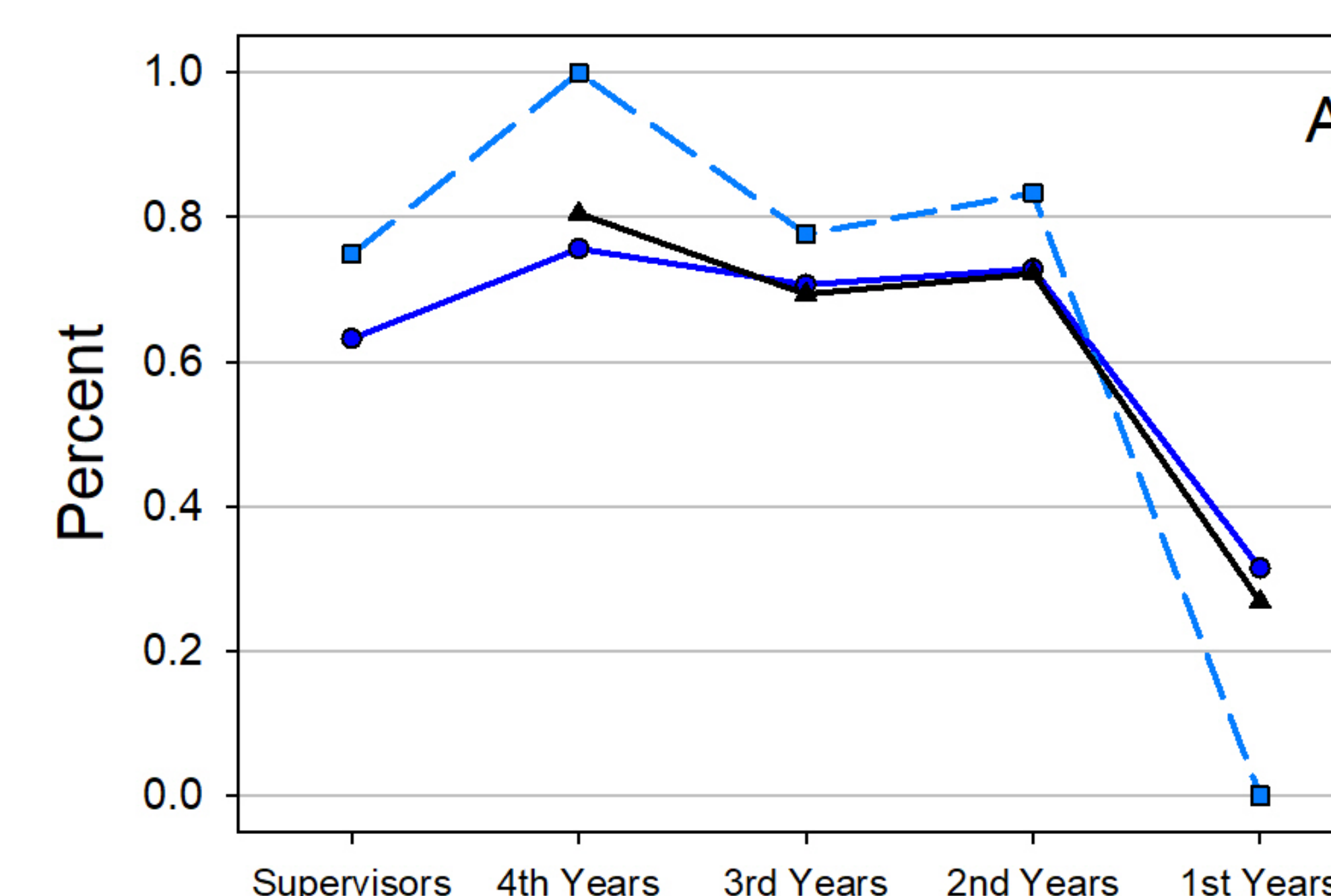


Figure 2A. Frequency of all responses given for the most consistent complaint (Complaint D) regarding own voice quality.

Figure 2B. Frequency of all responses given for the least consistent complaint (Complaint E) regarding music quality.

Figures 3A-3E (Right). Percent consistency of responses as shown by peer group for all three data comparison types.



DISCUSSION

- Consistency greatly increased from first to second year of the program for all five complaints.
- Second and third years were fairly similar in their consistency overall.
- Fourth years consistency when compared to supervisors was lower than expected, especially compared to the other years, perhaps due to the fact that they have gone to individual sites and learned from other supervisors more recently than those involved in this study.
- Supervisors tended to have lower consistency between each other likely due to establishing personal preferences with experience over time.
- Consistency between clinicians is dependent on the complaint made by the hearing aid user.
- Consistency was highest within peer groups for all complaints.
- The complaint with the most consistent responses overall was the complaint that the patient's own voice was too loud. For this complaint, only six responses were given from the fifteen clinicians.
- The complaint with the least consistency was that music quality was poor. Fifteen responses were given for this complaint, including two clinicians who said they did not know what to do and could not give an answer at this time, not even a guess.

CONCLUSIONS and IMPLICATIONS

- Consistency of hearing aid troubleshooting is variable across clinicians.
- Certain hearing aid complaints have more clearly defined troubleshooting options.
- This study indicates a need for student clinicians to learn from various supervisors to ensure that multiple techniques for troubleshooting are learned and can be applied for patients with specific complaints. This will also promote independent clinician thought rather than parroting of individual supervisors.
- This study also indicates that more instructional time could be devoted to hearing aid troubleshooting for more difficult, but equally common complaints, and such instruction could begin earlier in the AuD program.

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REFERENCE

Jenstad, L. M., Van Tasell, D. J., & Ewert, C. (2003). Hearing aid troubleshooting based on patients' descriptions. *Journal of the American Academy of Audiology*, 14(7), 347-360.