

Interprofessional Attitude and Perception Differences in a Simulation-Based Crisis Team Training Program

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INTRODUCTION

During crisis team training (CTT), concepts from aviation industry crew resource management (CRM) are used to improve team performance.

CTT differs from CRM in several ways:

1. The hierarchy is flat
2. There are assigned roles and each role has pre-assigned tasks
3. Organizational and therapeutic tasks must be completed within a pre-determined time frame
4. Patient care skills are emphasized over professional background

These concepts may be challenging to the team members who have different professional backgrounds and cultures, which include values, beliefs, attitudes, and behaviors.

The purpose of this study is to evaluate differences in the attitude and perception of trainees of multiple disciplines, and whether any perceptions changed after participation in a simulation-based multidisciplinary crisis team training program.

The CTT course is comprised of:

1. Web-based pre-course curriculum
2. Brief didactic lecture reviewing key concepts of team performance
3. Simulation scenarios for skills performance with Laerdal SimMan UPS with video-recording
4. Facilitated team de-briefing using web-based interactive debriefing tool

METHODS

We analyzed the data obtained from a web-based course evaluation instrument for a simulation-based multidisciplinary medical emergency team training program (CTT course) conducted in WISER at University of Pittsburgh from Jan 2008 to Dec 2009.

Grouping for analysis: 4 groups by the trainees' discipline

1. Group I: Physicians
2. Group II: Nurses
3. Group III: Respiratory Therapists
4. Group IV: Others

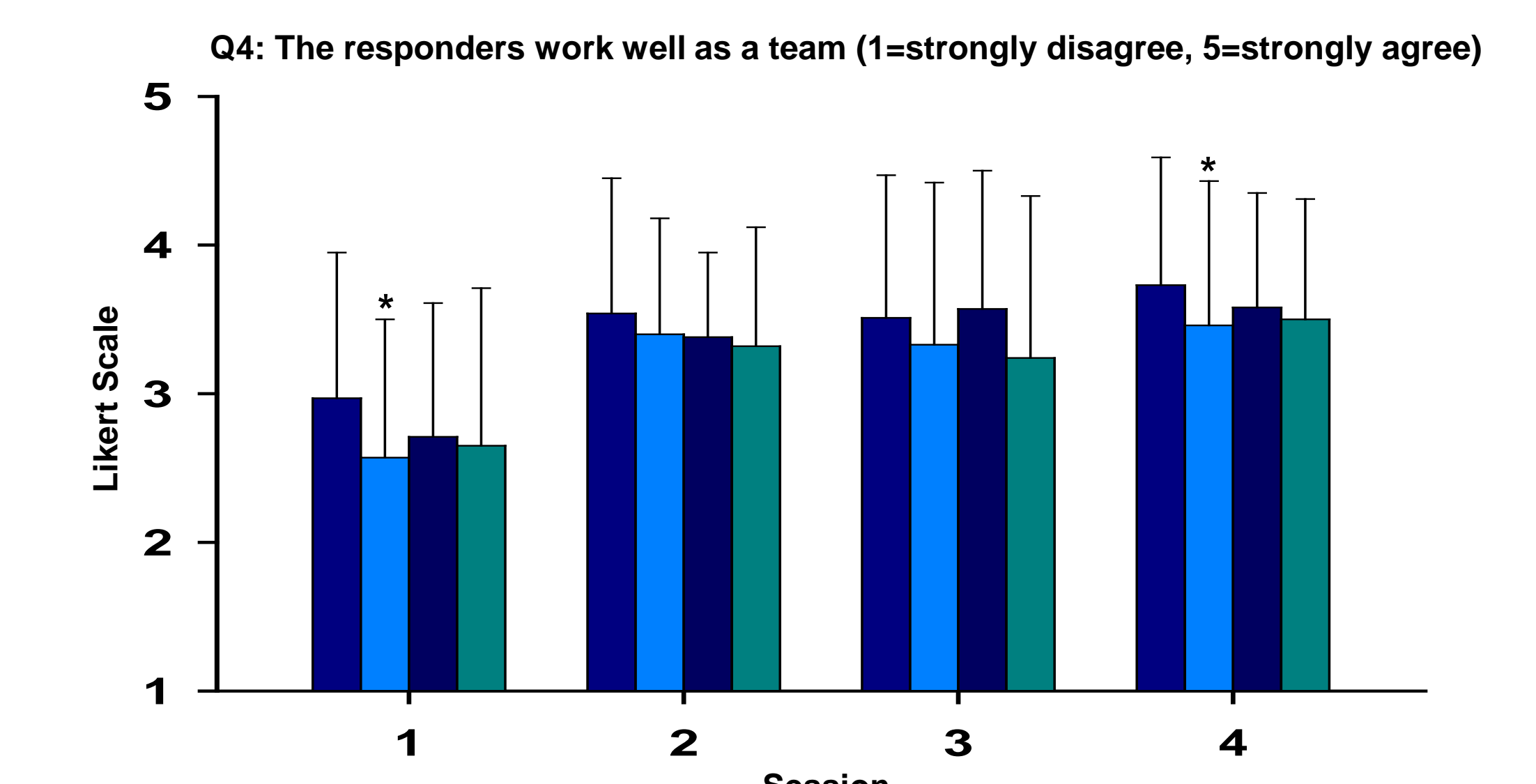
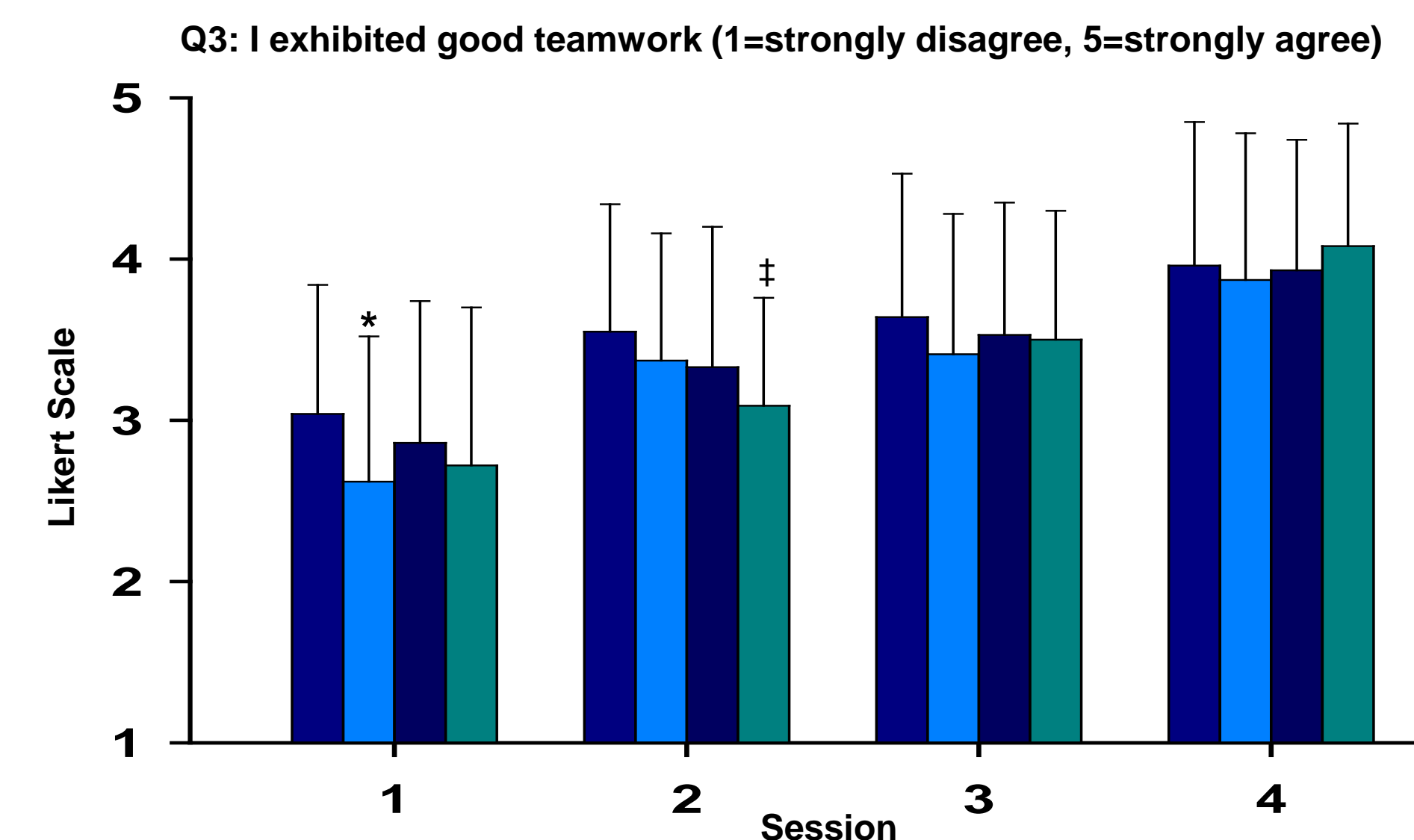
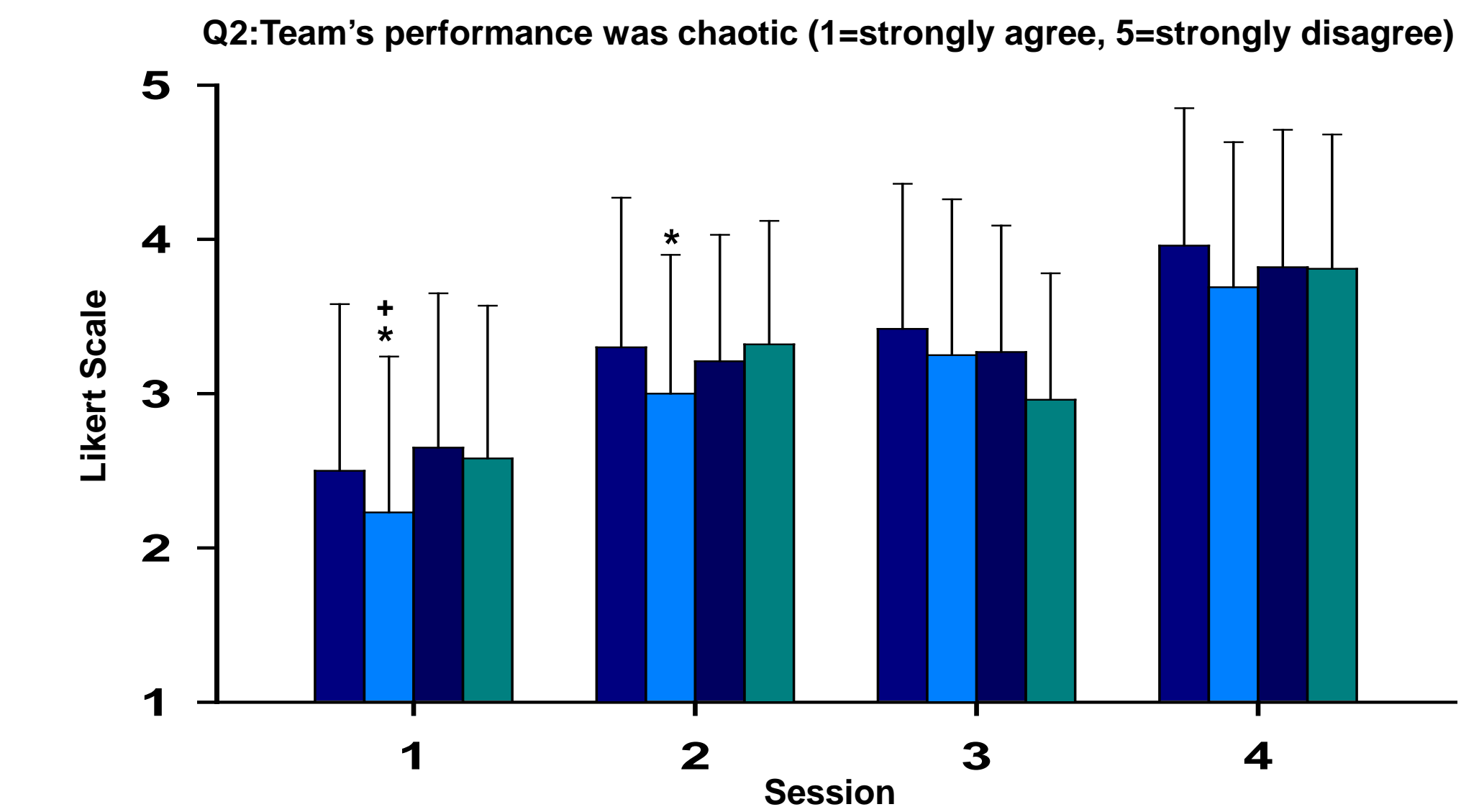
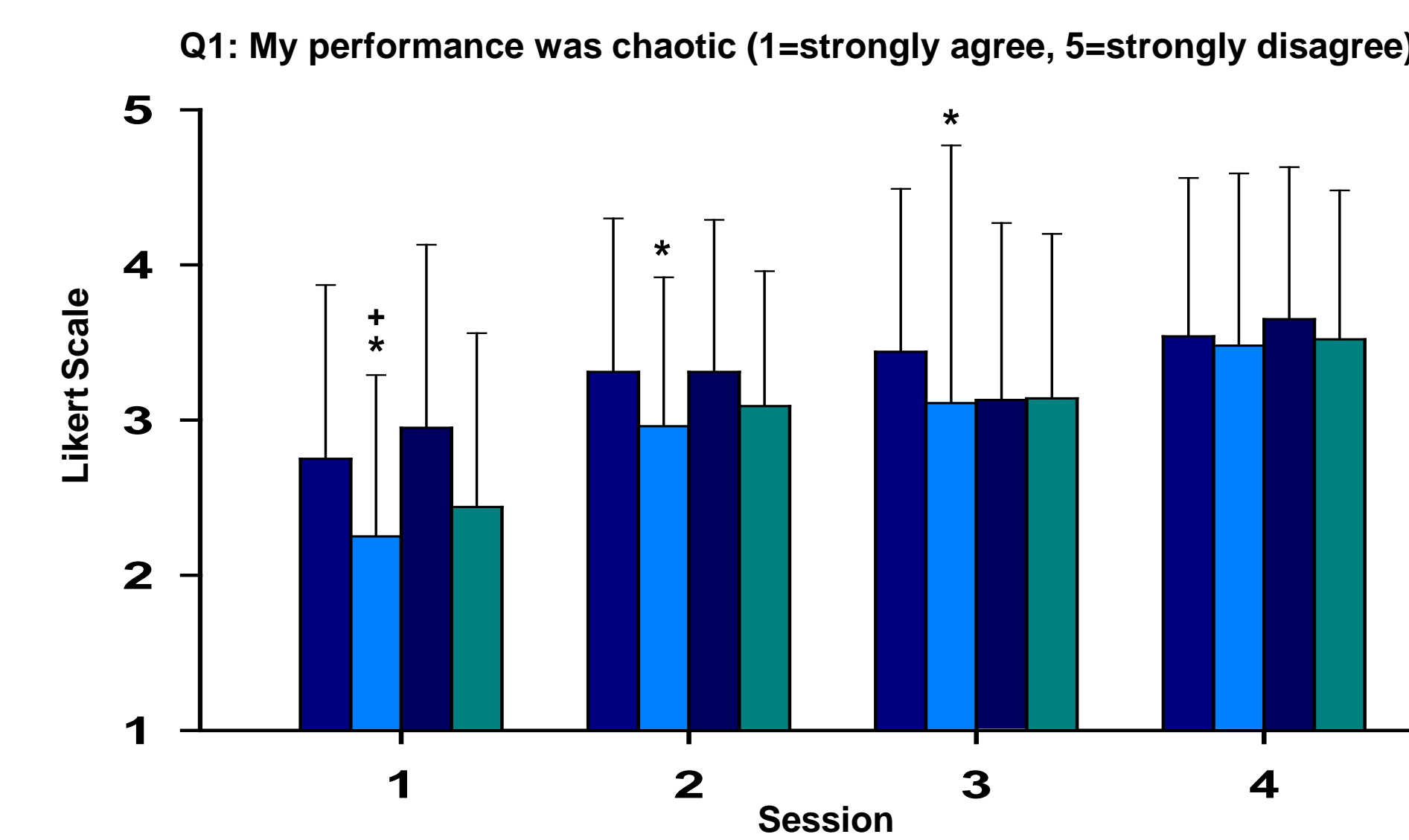
We compared the data of a pre-class survey (12 questions), pre-test knowledge score (26 questions), during-class performance evaluation (4 questions during each simulation session), and post-class evaluation questionnaire (51 questions) of each group.

Statistical analysis:

- SPSS version 13.0 for Window
- Fisher's exact test with Monte Carlo method for categorical variables
- ANOVA test and subsequent post hoc analysis with Tukey method for numerical variables
- Significant level: p -value < 0.05

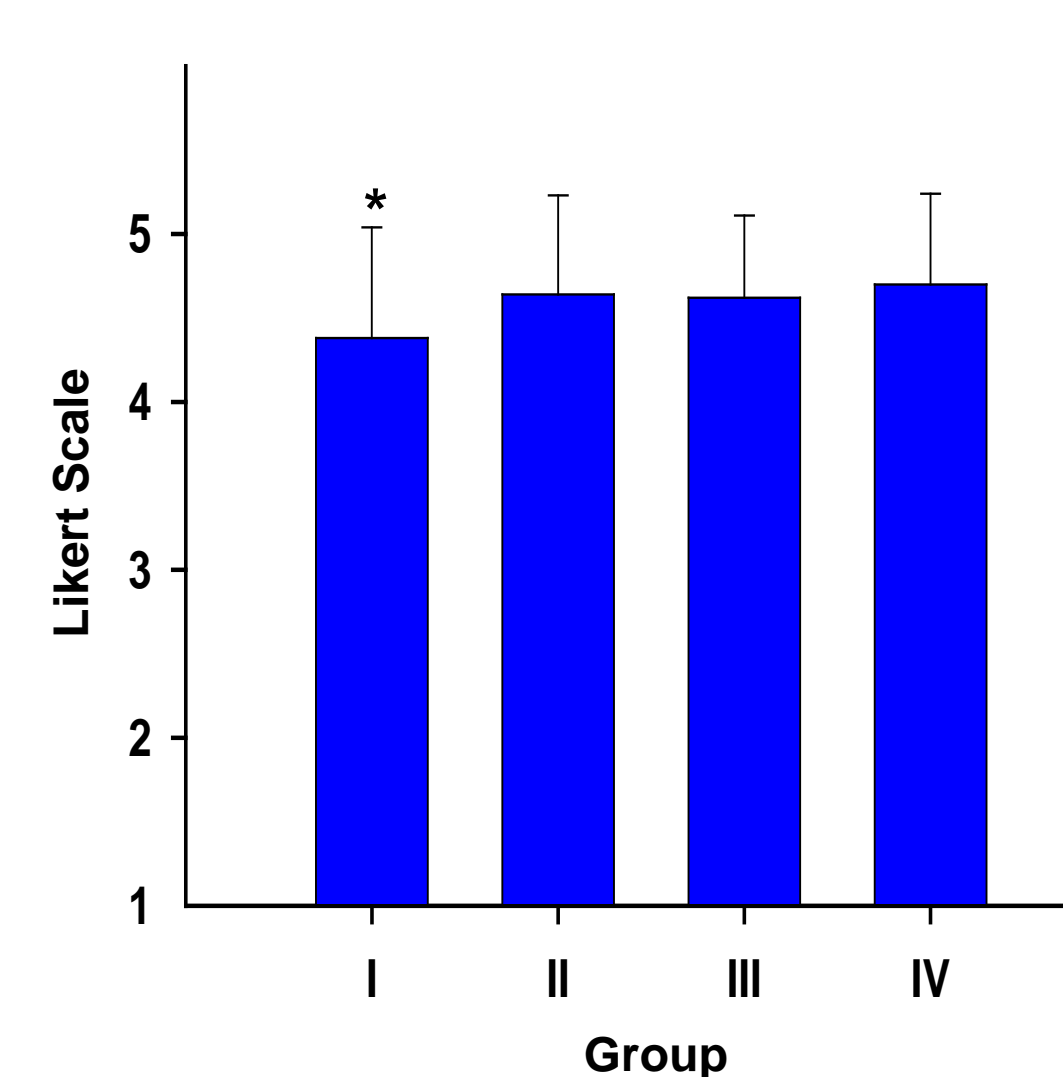
RESULTS

During-class performance evaluation of four groups

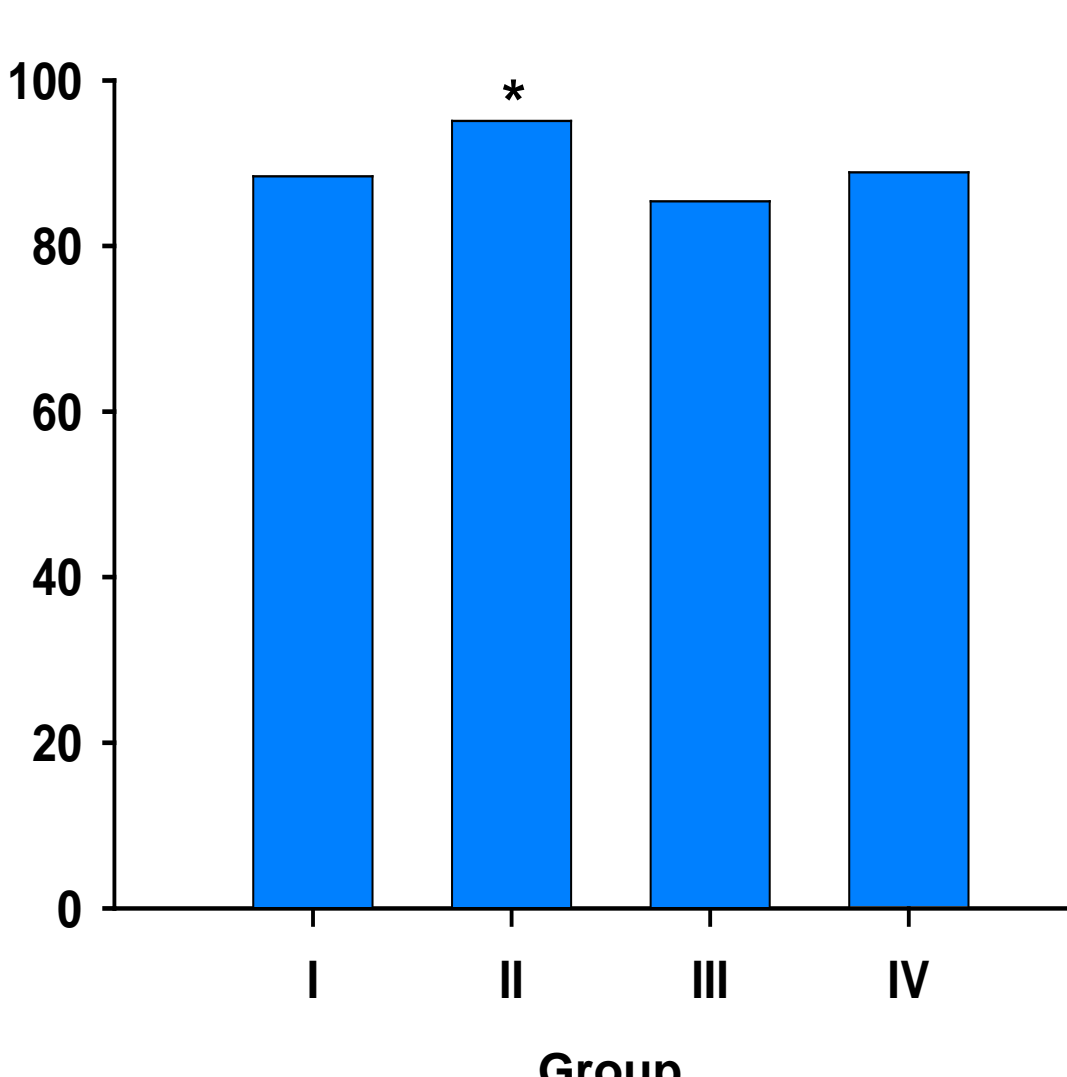


Post-class evaluation of four groups

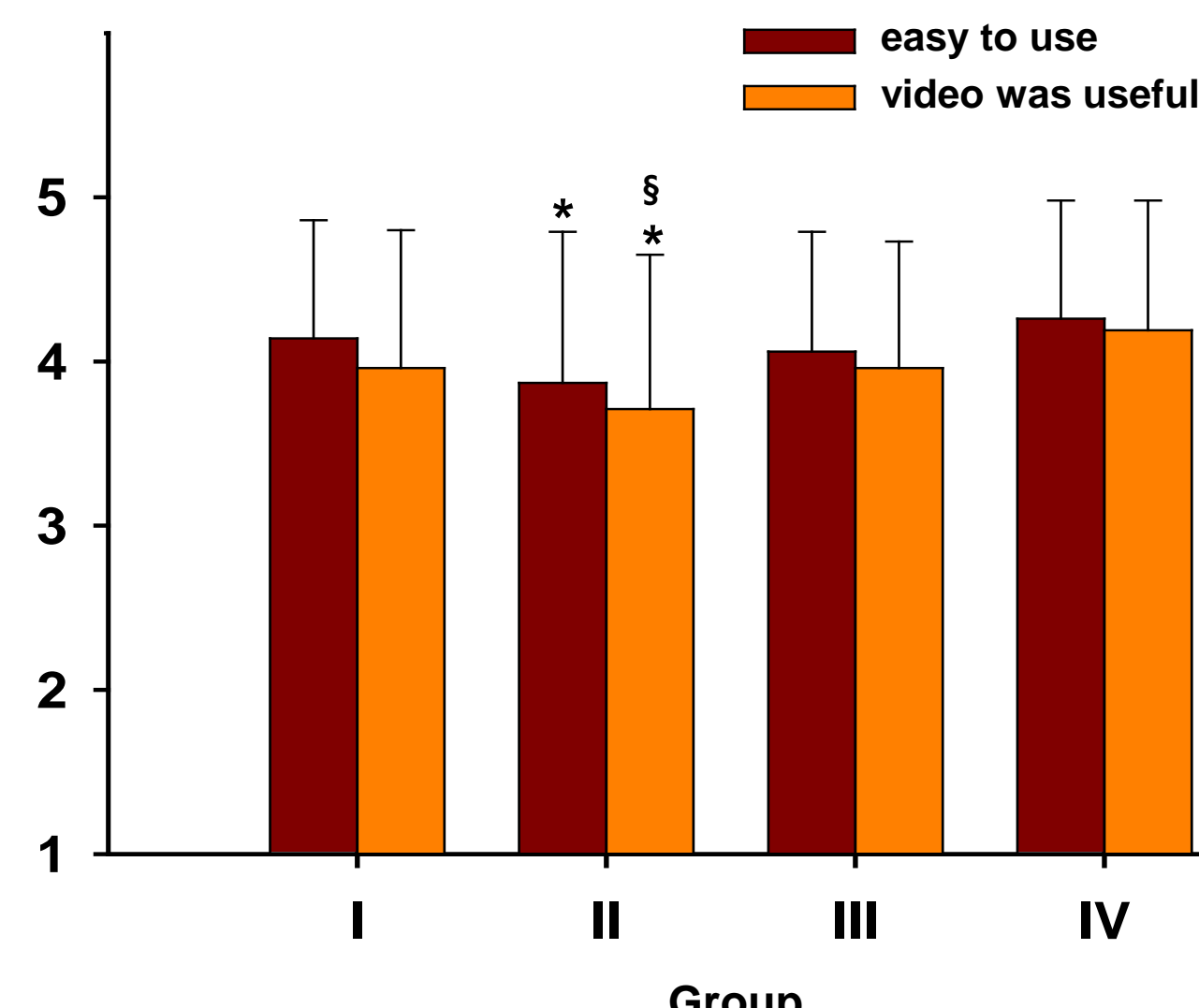
I. General
Q5: Overall course rating (1=very low, 5=very high)



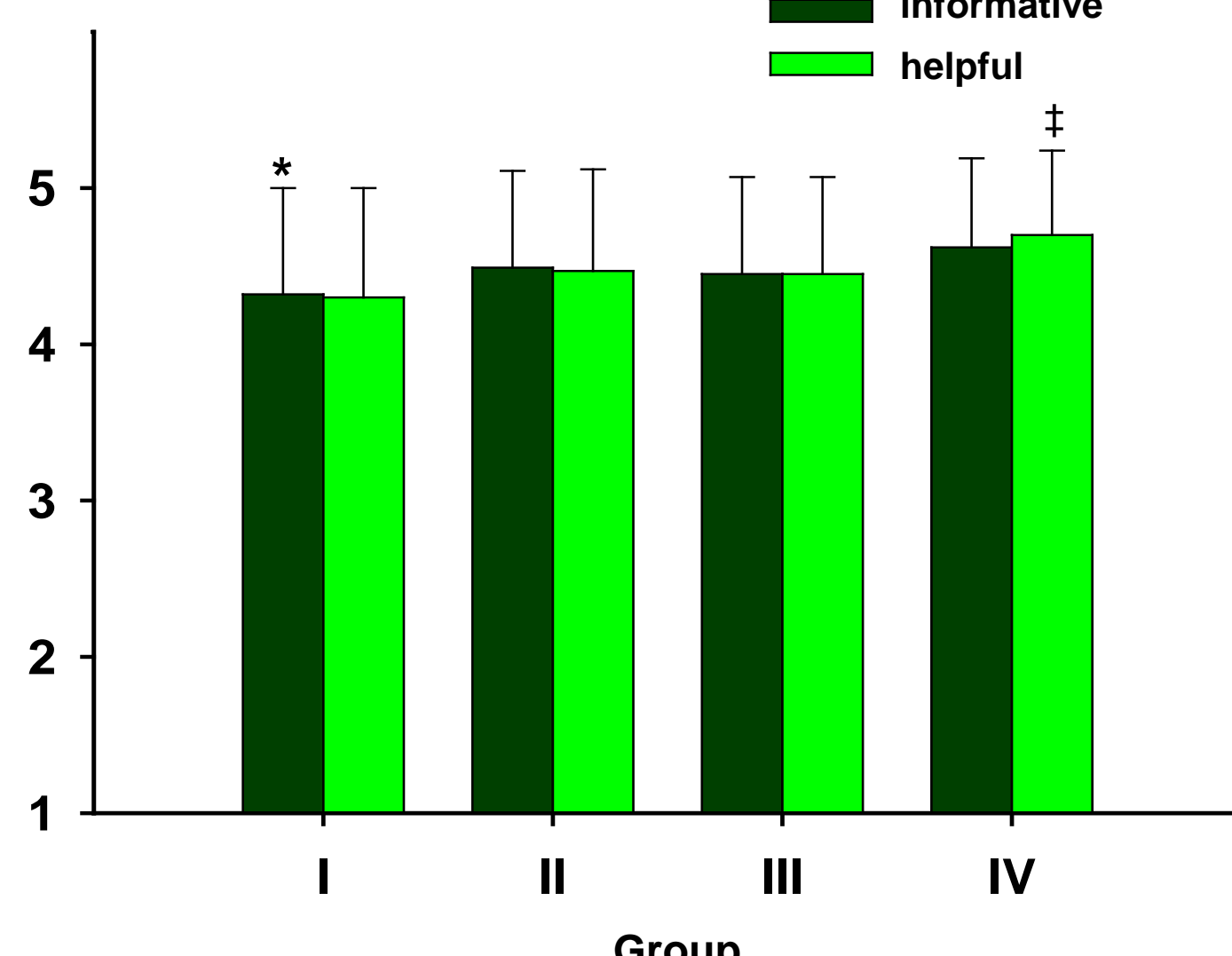
II. Simulation
Q1: The simulation scenarios were realistic (percentage of "yes" answer)



III. Curriculum
A: The web-based pre-course curriculum was... (1=strongly agree, 5=strongly disagree)



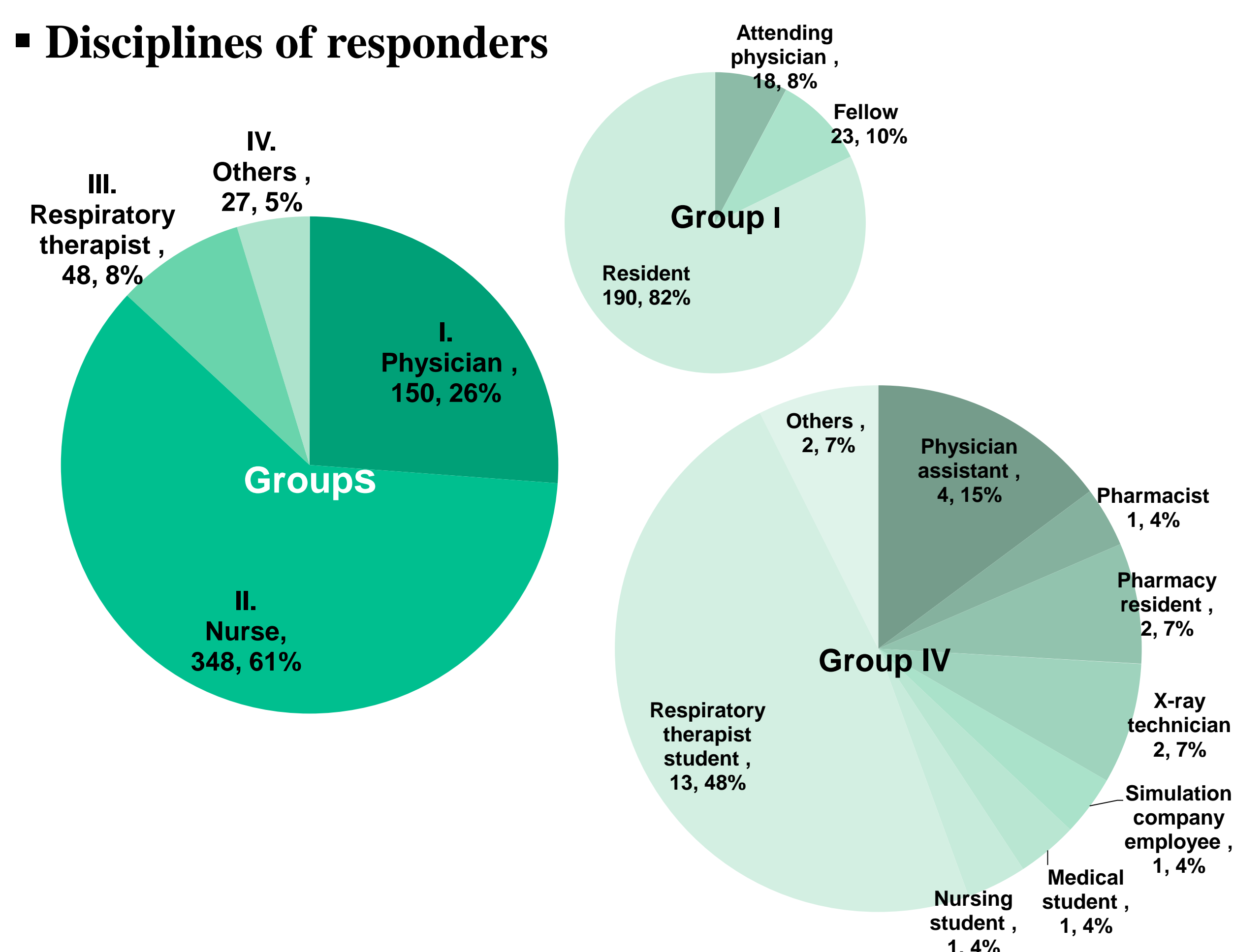
III. Curriculum
B: The lecture and materials were... (1=strongly agree, 5=strongly disagree)



RESULTS

613 trainees participated in one of 51 courses. 576 (94%) completed the pre-class survey and post-class evaluation. Responses of 150 doctors (26.2%), 348 nurses (60.6%), 48 (8.4%), and 27 others (4.7%) were compared.

Disciplines of responders



Pre-course attitude toward full-scale patient simulation (5-point Likert scale; 1=strongly disagree, 5=strongly agree)

	Group I	Group II	Group III	Group IV	P-value
I am uncomfortable with simulation-based competency training.	2.07±0.84	2.29±0.77 ⁺	1.98±0.81	1.96±0.81	0.001
....because I am embarrassed to perform in front of others	2.20±0.92	2.53±0.97 ⁺	2.15±0.97	2.04±0.85	0.000
....because I do not believe it is valid	1.89±0.87	1.80±0.71	1.69±0.59	1.41±0.50 ^{‡,§}	0.014
....because it is unrealistic	2.11±0.98	1.98±0.81	1.77±0.66	1.56±0.58 [‡]	0.004

All values are presented as mean ± SD; ^{*} p <0.05, Group I vs. Group II; ⁺ p <0.05, Group II vs. Group III; [‡] p <0.05, Group I vs. Group IV; [§] p <0.05 Group II vs. Group IV

CONCLUSIONS

In a simulation-based multidisciplinary medical emergency team training program, trainees in various disciplines may have slightly different attitudes toward simulation-based training and perception of their performance and teamwork at the beginning of a sequential multiple simulation based curriculum.

However, by the end of the program, differences were not detectable, reflecting improved perceptions of their performance and teamwork.

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