

# Escape room exercise: A prospective study of physician assistant students' understanding of team dynamics and communication

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## BACKGROUND

Teaching the essentials of interprofessional practice has become pivotal in medical education as this is an important aspect of delivering patient-centered care. Accreditation standards, such as those outlined by the Accreditation Review Commission, highlight the necessity for physician assistant (PA) programs to equip students with skills for collaborative patient care (B2.10.1).<sup>1</sup> Consequently, PA programs are evolving to incorporate interprofessional education into their curricula.<sup>2</sup> To meet these standards effectively, various didactic methods are being explored, including the integration of game theory.<sup>3</sup> This study employs a game theory as an educational tool to facilitate the understanding of team dynamics and formation, with the goal of enhancing interprofessional education. Integrating game theory into PA education presents a promising strategy for preparing future healthcare professionals to thrive in collaborative practice settings. This innovative approach not only enhances teamwork skills but also aligns with the evolving demand of patient-centered care, contributing to improved healthcare outcomes.

## PURPOSE

The aim of this research project was to immerse PA students in an active learning experience, specifically an escape room activity, aimed at imparting knowledge on team formation and team dynamics, fundamental principles pertinent to interprofessional practice.<sup>2</sup> We hypothesized that participation in the active learning exercise, coupled with a subsequent debriefing session, would help students successfully internalize these concepts.

## METHODS

For this study, 34 PA students were recruited and consented from Creighton University- Phoenix. These PA students were first year students in the didactic phase of their education. Participants engaged in the escape room activity and subsequently participated in a debrief discussion. All participants completed an anonymous, 4-point Likert scale questionnaire aimed at evaluating their comprehension of team dynamics and communication. Additionally, the survey gauged students' perception of their knowledge of interprofessional teamwork both before and after the learning exercise. Data was analyzed using the R programming language, with RStudio as the designated development environment. The questionnaire's consistency was assessed using the Cronbach's alpha, while paired t-tests were employed to evaluate differences in means between pre- and post- activity responses.

## RESULTS

A total of 33 out of 34 (97.1% response rate) participants completed the survey post-event. All participants indicated some level of benefit from the escape room (Strongly Agree = 90.9%, Agree = 9.1%). This is supported by the findings located in Table 1 comparing the participants understanding of interprofessional skills and experiences before and after the activity. Participants reported statistically significant increases in their understanding of the skills and components of IPE post-event with large effect sizes. Furthermore, participants reported a better understanding of the IPE competencies and a team's contribution to effective interprofessional practice. Assessment of IPE competencies, characteristics, and benefits of the escape room can be found in Table 2. Cronbach's alpha metric was found to be approximately 0.82, indicating an acceptable level of data consistency.

## FUTURE RESEARCH

Future investigations should employ a genuine pre-event survey in contrast to a post-event survey to help remove unintentional biases. Moving forward, future research may delve into the retention of interprofessional skills acquired through active learning exercises and their implications on clinical practice and patient outcomes.

## DISCUSSION

Our research contributes to the expanding body of evidence endorsing the effectiveness of active learning methods, specifically game-based activities, in supporting interprofessional competencies among healthcare students. Our statistical analysis of survey data confirms that student involvement leads to heightened understanding of teamwork, team dynamics, and practical application of these in interprofessional settings. Through dynamic and immersive learning experiences, we successfully showcase the potential of such interventions to bridge the divide between theoretical learning and practical application. In summary, our results emphasize the importance of integrating innovative pedagogical techniques, like escape room activities, into PA education to foster interprofessional collaboration.

## REFERENCES

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Table 1. Comparison of Means, Effect Sizes, and Paired Samples t-test Post-event Compared to Pre-Event

IPE Prompt (n = 33)	Mean Difference (Post - Pre)		Paired Samples <i>t</i> -test			
	<i>M</i>	<i>SD</i>	<i>t</i>	<i>df</i>	<i>p</i> -value	<i>Cohen's d</i>
Identify the importance of teamwork	0.5455	0.5057	6.197	32	< .001*	1.079
Identify effective team communication	0.6970	0.5855	6.838	32	< .001*	1.190
Identify and define beneficial team characteristics	0.6364	0.5488	6.662	32	< .001*	1.160
Identify barriers to effective team communication	0.7576	0.5607	7.762	32	< .001*	1.351
Understand the importance of role recognition in teamwork	0.4546	0.5641	4.629	32	< .001*	.806
Describe the methods through which teams form	0.9063	0.7344	6.981	31	< .001*	1.204

\*Indicates significant difference (p < .05)

Table 2. Assessment of IPE Competencies, Characteristics, and Benefits of the Escape Room

IPE Competency (n = 33)	Strongly Agree	Agree	Disagree	Strongly Disagree
Teamwork	81.8%	18.2%		
Role Recognition	81.8%	15.2%	3.0%	
Communication	84.8%	15.2%		
Trust	87.9%	12.1%		
Mindfulness	93.9%	6.1%		
Respectful Interaction	90.9%	9.1%		
Benefit from Escape Room	90.9%	9.1%		



Picture 1: Escape Room