

Do Simulation Roles Really Affect Clinical Decision-Making Accuracy in an Acute Care Scenario?

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Disclosures

Conflict of Interest

- Kristen Zulkosky reports no conflict of interest
- Krista White reports no conflict of interest
- Amanda Price reports no conflict of interest
- Jean Pretz reports no conflict of interest
- Julia Greenawalt (INACSL Conference Administrator & Nurse Planner) reports no conflict of interest
- Leann Horsley (INACSL Lead Nurse Planner) reports no conflict of interest

Successful Completion

- Attend 100% of session
- Complete online evaluation



Learning Outcomes

The learner will be able to:

- articulate the three phases of clinical decision making accuracy addressed in the study.
- discuss two key findings which resulted from the study.
- identify two implications for nursing education.



Making quality decisions is important

Background of Clinical Decision Making

- Cornerstone of professional nursing
- Quality patient care
- Positive patient outcomes (White, 2014)
- Clinical Decision Making (CDM) phases:
 - **Cue acquisition**
 - Relevancy
 - Plausible hypotheses
 - **Diagnosis**
 - **Action**

(Elstein et al., 1978)



Background of CDM (continued)

Simulation Roles

- **Active:**
 - Primary nurse
 - Education nurse
 - Medication nurse
 - **Passive:**
 - Family member
 - Observers
- (Harder et al., 2013)

Theoretical Framework

- Nursing Education Simulation Framework
 - Teacher factors
 - Student factors
 - Educational practices
 - Simulation design characteristics
 - Expected student outcomes

(Jeffries & Rogers, 2007)



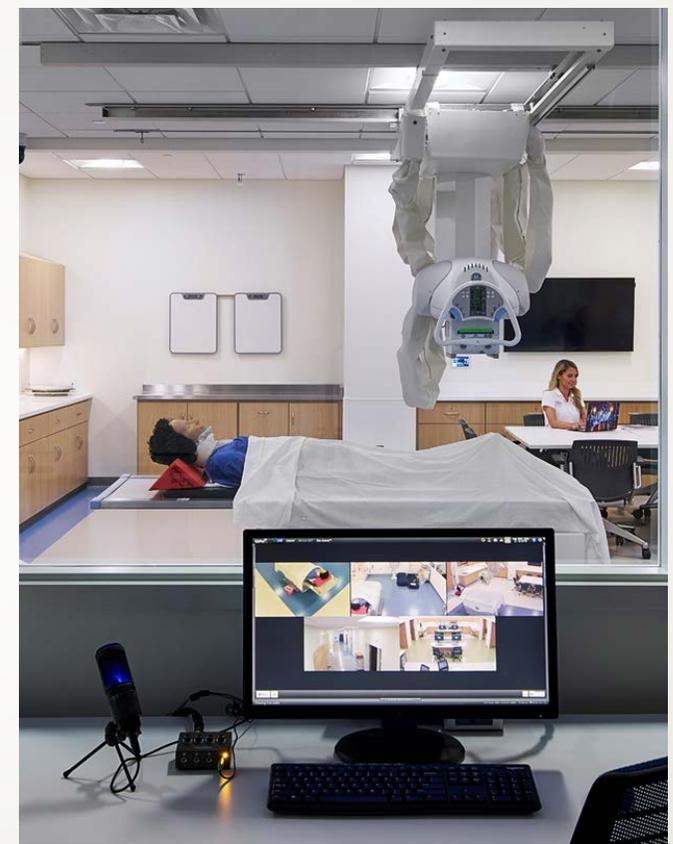
Research Gap & Research Question

Research Gap: No studies have been conducted that compare CDM accuracy between active and passive roles within simulation.

Research Question: Are there differences in CDM accuracy among different roles in an acute care simulation scenario with fourth-semester ASN students?

Methods: Design

- Quantitative, mixed factorial design
- **Within subjects** factors were decision stopping point (SOB and rhythm change) and decision phase (cue acquisition, diagnosis, action)
- **Between subjects** factors were simulation roles (primary, auxiliary, family, observer)



Methods: Participants and Materials



- **Participants**

- 120 fourth-semester students enrolled in weekday ASN program (92% female; 66% under age 30; 87% white; 68% with at least 6 months of healthcare experience)
- Existing groups of 9-10 students participated as part of regular simulation lab day

- **Role in simulation**

- Group members were randomly assigned to primary nurse, medication nurse, education nurse, family, or observer

- **Standardized and scripted pre-brief with instructor**

- Pre-brief covered medications, potential complications, and shift change report

The Scenario: Post Open Heart (POD #2)

- Two distinct and intentional decision stopping points
 - **Stopping point #1**, SOB (a familiar situation)
 - Patient said, "It is getting a little hard to breathe, I cannot get a good breath."
 - **Stopping point #2**, Rhythm change to Afib (a novel situation)
 - Patient said, "I just don't feel right"
 - If needed, patient prompted, "My chest feels funny" "I'm a little dizzy."
- Clinical decision making questions (2 minutes to respond to all at each stopping point)
 - **Cue acquisition**: "What are you noticing about the patient right now?"
 - **Diagnosis**: "What do you think is going on right now with the patient?"
 - **Action**: "What specific action(s) should the nurse take at this time?"

Methods: Data Collection Flow

Familiar – SOB

SOB

- “I can’t breathe right”

CDM phases

- Pause scenario
- Answer 3 questions

Resume

- After 2 minutes
- Resume scenario

Novel - AFib

AFib

- “I just don’t feel right.”

CDM phases

- Pause scenario
- Answer 3 questions

Resume

- After 2 minutes
- Resume scenario

Stopping Point #1 – Scoring Rubric

Shortness of Breath

Question	Right (1 point each)	Wrong (1 point each)	Neutral (zero)
<p>1 and 2</p> <p>What are you observing?</p>	<p>HOB is flat</p> <p>Says he is SOB</p> <p>Working to breath</p> <p>Has no O2 on</p>	<p>Temp 99.8</p>	<p>Lung problem</p> <p>I don't know</p> <p>Complications</p> <p>Abnormal vital signs</p>
<p>What is wrong?</p>	<p>Incision pain</p> <p>Anxiety attack</p> <p>Pulmonary embolus</p> <p>Pleural effusion</p> <p>Pneumonia</p> <p>Is not C & DB</p>	<p>Bleeding</p> <p>Chest tube occlusion</p> <p>Pericarditis</p> <p>Cardiac Tamponade</p> <p>Chest pain (cardiac)</p>	
<p>3</p> <p>What actions to do?</p>	<p>Put HOB up</p> <p>Admin O2 (per prn order)</p> <p>Ask about pain – specifics</p> <p>Admin pain pill</p> <p>Assess lung sounds</p> <p>Assess VS</p> <p>Obtain pulse Ox</p> <p>Give <u>"huggie"</u> pillow</p>	<p>Treat cardiac pain – nitro</p> <p>Admin cardiac meds</p> <p>Obtain 12-lead EKG</p> <p>Assess the chest tubes</p> <p>Check sternotomy incision</p>	<p>Call doctor</p> <p>Ask patient questions</p> <p>Admin meds</p>

Methods: CDM Accuracy Scoring

- Scoring conducted by two doctorally prepared certified nurse educators who were blind to the participant role
- Scale from **1** (completely incorrect or unsafe), **2** (correct but vague or missing important information), **3** (correct but missing minor information), to **4** (correct and complete)
- Due to heterogeneity of variance and violation of normality assumption, scores were recoded as **incorrect** (1-2) or **correct** (3-4).
- Intraclass correlation coefficients (Polit & Beck, 2012) ranged from .81 to .98.



Accuracy Scoring Sheet - Tally

Scoring Legend

1 = Wrong, nothing of value, unsafe

2 = Okay but too vague, too much missing

3 = Got the key element, a bit of missing information

4 = Right on, very complete

Stopping Point #1 & #2 – Krista White

#1: Shortness of Breath

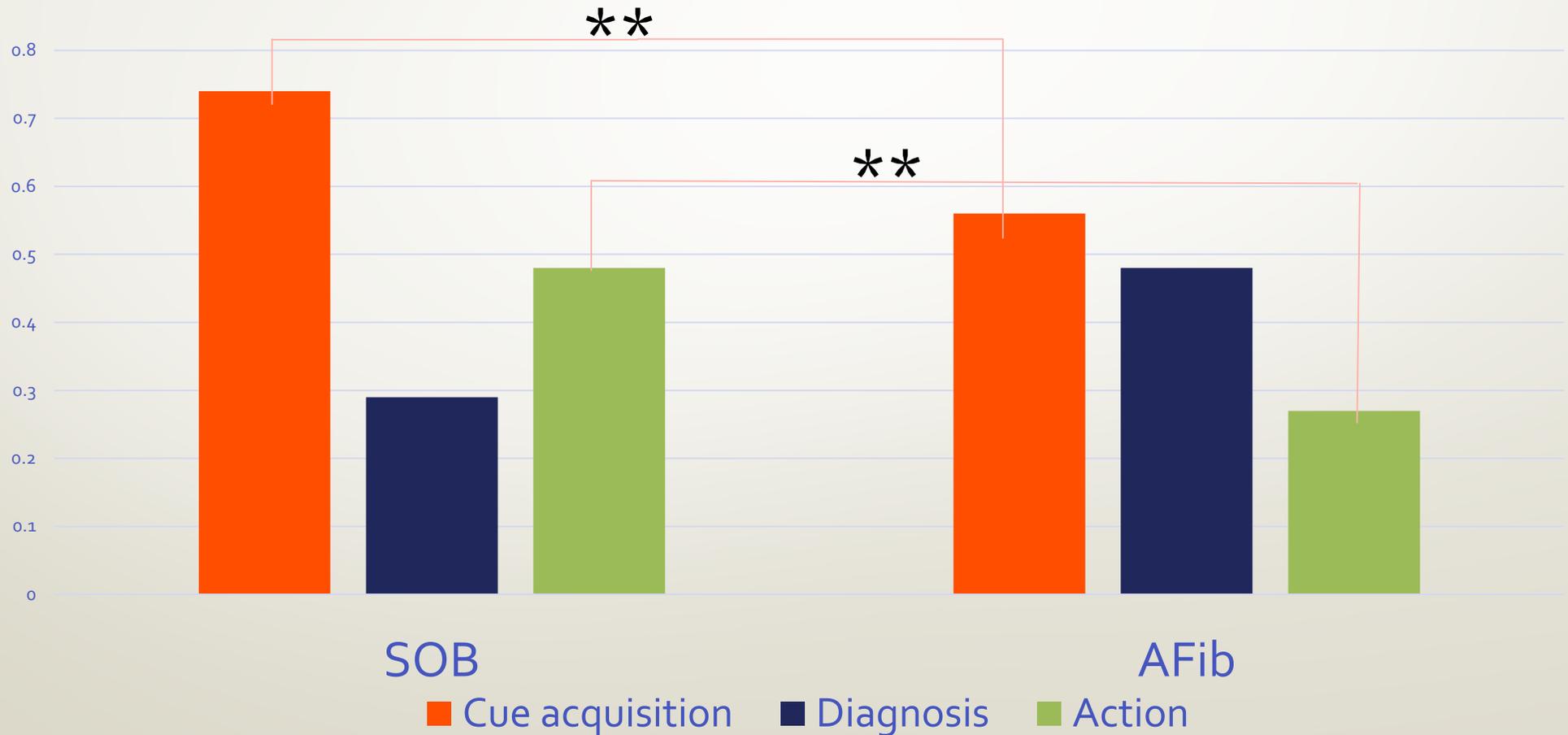
#2: Afib

Student ID	SP1- A	SP1- B	SP1- C	SP2- A	SP2- B	SP2- C
	Cues	Diagnosis	Action			

** Statistically significant; $p < 0.01$

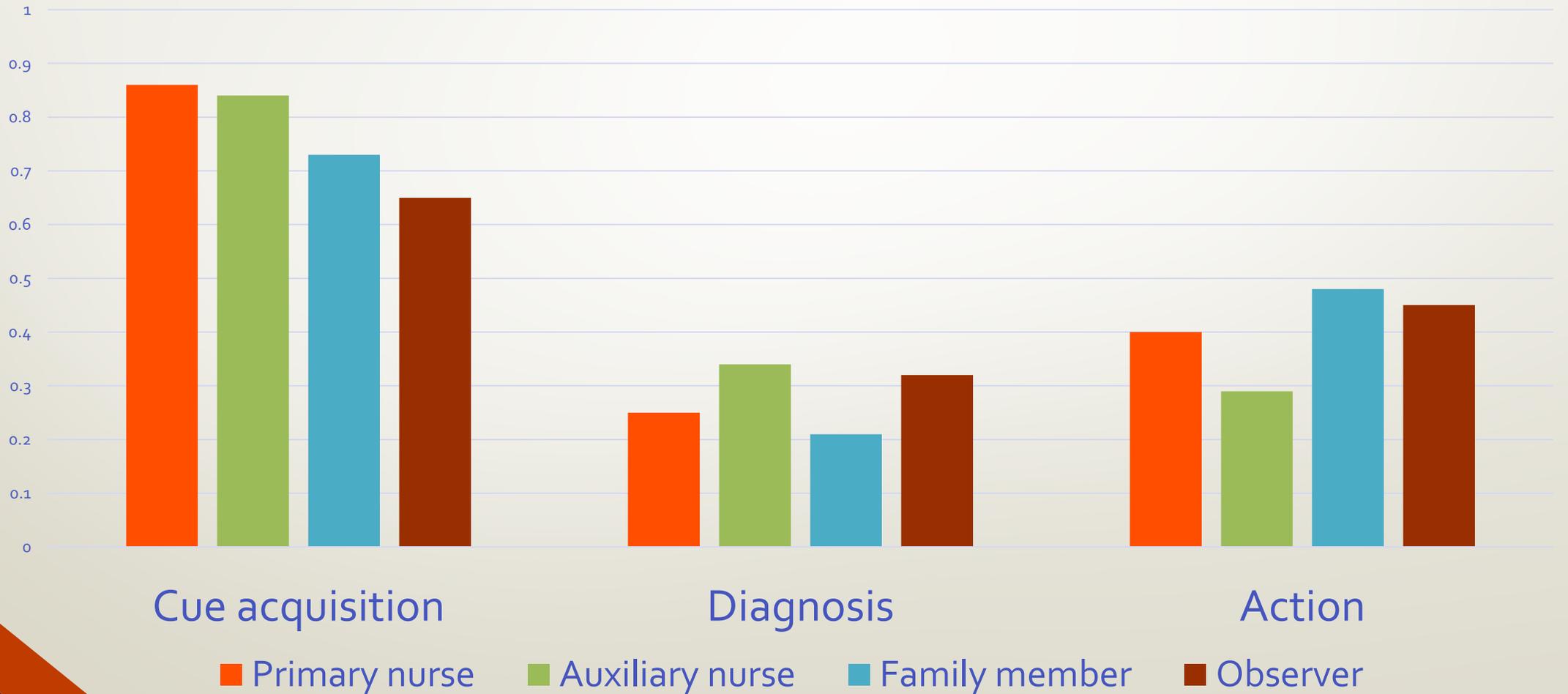
Results

CDM Accuracy by Situation and Question



Results

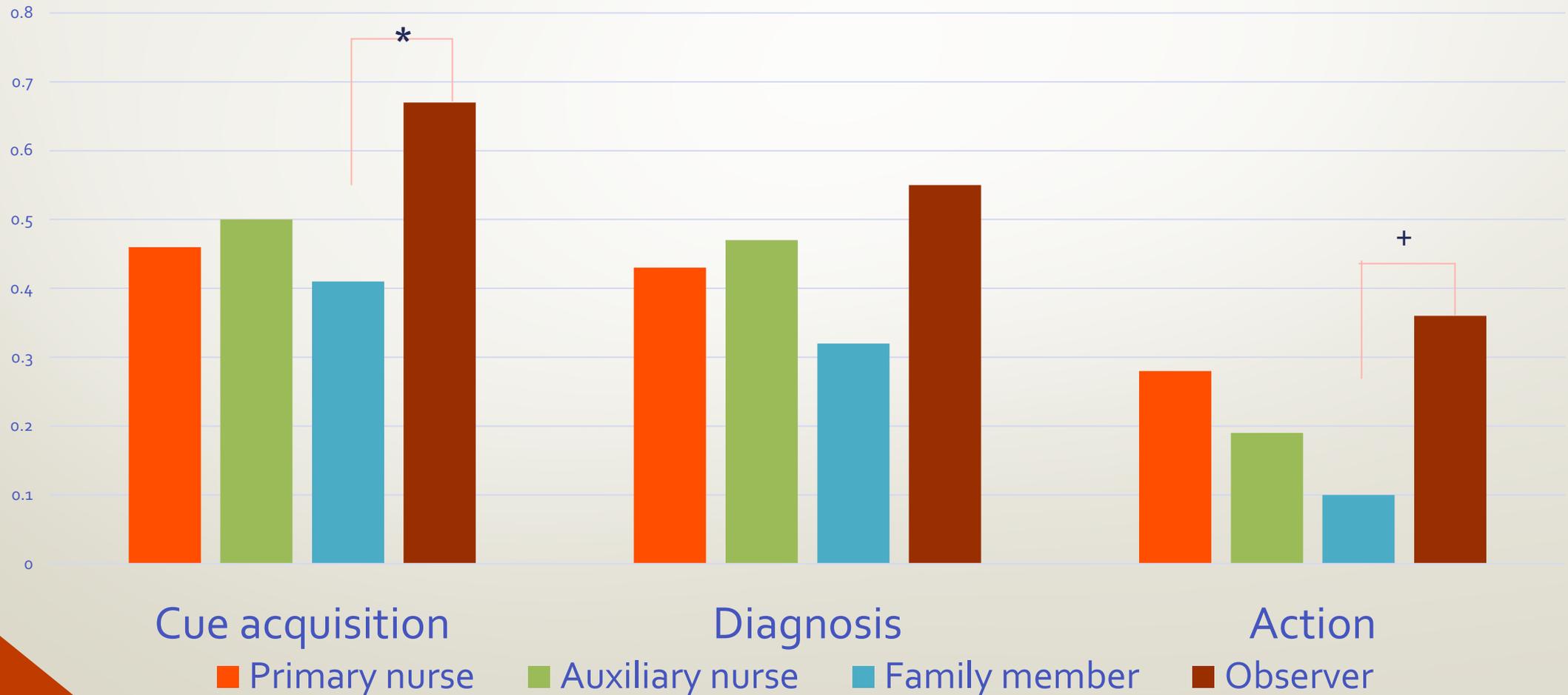
CDM Accuracy By Role: SOB Situation



* $p = 0.046$; + $p = 0.06$

Results

CDM Accuracy By Role: AFib Situation



Implications for Nursing Education & Practice

- Large clinical groups necessitate passive as well as active roles
- **Observer role** is beneficial, especially in novel situations
 - Less scrutiny, less stress, and more ability to collaborate
- **Family member role** is less beneficial, especially in novel situations
 - Instructed to remain “in-role, may not “think like a nurse”



Consider the intent or goal of the simulation when assigning roles.

Implications for Nursing Education & Practice

- **Active roles** in simulation are:
 - more engaged with the scenario
 - Under more scrutinized
 - more stressful overall
 - more like real-life practice

(Kaplan et al., 2012)



Ensure students experience both active and passive roles in simulation.

Strengths & Limitations

- **Strengths**

- Scenario modified slightly to include two distinct stopping points
- Congruence between in-room and out-of-room experience
- Pre-brief was scripted for clinical faculty
- Patient voice the same for ALL groups
- Script for research team for consent and data collection
- Met goal for target sample size
- Randomly assigned to roles

- **Limitations**

- Exactly timing of scenario pause may have varied
- Students may have answered the 3 questions too briefly
- Uneven numbers of students in different roles





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Featured Article

Effect of Simulation Role on Clinical Decision-Making Accuracy

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Thank you for attending!
Any questions?



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