

# Relationship between Faculty Evaluation Scores and Qualifications on Education Outcomes in Continuing Pharmacy Education Activities

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## Objective

To determine if speaker credentials and audience evaluations of speaker effectiveness and knowledge is associated with improved knowledge assessment scores, changes in audience-reported confidence in ensuring successful transitions of care in ACS patients, and intent to change practice following pharmacist-led continuing education programs.

## Background

- Continuing pharmacy education (CPE) programs play an important role in educating providers and maintaining current and evidence-based practices.
- Speakers for CPE programs must be well qualified and provide accurate content that has often been peer-reviewed; however, this does not guarantee effective delivery, improvement in understanding, retention of knowledge, nor clinical application.
- Little information is available comparing whether audience members learn more when more highly credentialed speakers are instructing compared to those with less credentials but more dynamic, effective teaching skills.
- The purpose of this study is to evaluate whether speaker delivery and speaker expertise, or credentials, correlate with pre- and post-session knowledge following a pharmacist taught CPE session.

## Methods

- Pharmacist-lead CPE sessions regarding the utilization of P2Y12 inhibitors following acute coronary syndromes (ACS) were developed and hosted in several cities throughout the US in 2014.
- CPE sessions consisting of the same educational content were led by 4 pharmacists. Attendees completed a knowledge-based pre- and post-assessment as well as a 6 week follow-up.
- Attendees also evaluated speaker performance based on a 4 point Likert scale following the CPE session.
- Speaker credentials were compiled using Curriculum Vitae and included: years of clinical experience, number of peer-reviewed publications, number of topic-relevant publications in prior two years, author h-index, number of certifications, number of national/international presentations, and faculty rank.

- Change in attendee knowledge from pre-session to post-session was quantified by summing correct responses for both knowledge assessment questions, then individual scores were aggregated by educational session event for pre- and post-assessments.
- Spearman correlation analysis was conducted on mean session rating of speaker effectiveness and post-assessment performance as well as mean session rating of speaker knowledge and post-assessment performance.
- One way ANOVA testing was conducted to compare the distribution of knowledge improvement from pre- to post-session across speakers.

## Results

- 14 educational sessions were performed in cities across the US
- A total of 319 pharmacy professionals participated (average of 23 attendees per session).
- Speaker effectiveness was highly rated by attendees (all sessions global mean=3.93), with limited variation (lowest session mean rating=3.76, highest session mean rating=4.00). Speaker knowledge was rated even higher by attendees (all sessions global mean=3.95), with no individual session having a mean rating less than 3.82.
- 36.69% completed the follow-up assessment and the average correct response rate was 62.62%.
- Knowledge assessment scores improved substantially between pre- and post-assessment
- No statistically significant relationship between audience rating of speaker effectiveness and post-test performance ( $p=0.373$ ); or, between audience rating of presenter knowledge and post-test performance ( $p=0.500$ ). ANOVA testing to compare knowledge improvement across speakers revealed no statistically significant differences in knowledge improvement by speaker ( $p=0.429$ ).

Table 1: Knowledge Improvement from Pre-Assessment to Post-Assessment, by Speaker

Speaker ID	Aggregate Pre-Assessment Score	Aggregate Post-Assessment Score	P-value
A	30.67%	84.81%	<0.001
B	28.10%	82.14%	<0.001
C	22.50%	67.74%	<0.001
D	26.86%	65.34%	<0.001

Approved by the University of Kentucky Institutional Review Board (IRB # 15-0946-X4).  
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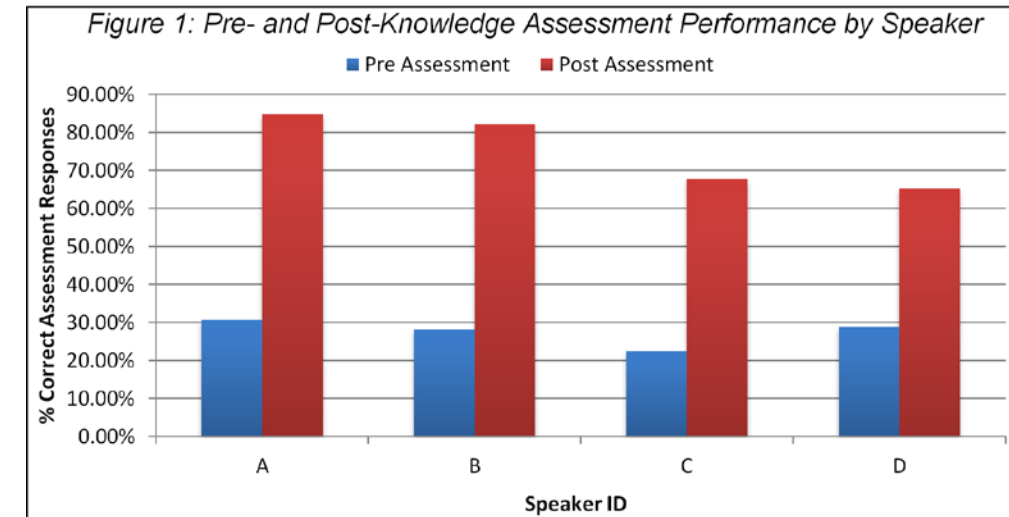


Table 2: Knowledge Improvement from Pre-Assessment to Post-Assessment, by Session

Session Location (Speaker ID)	Pre-Assessment Score	Post-Assessment Score	P-value	Knowledge Improved?	Speaker Effectiveness
	% Correct	% Correct	Pre vs. Post	Yes or No	Mean Rating (1-4)
Scottsdale (A)	36.96%	80.43%	0.001	Yes	3.82
Houston (A)	23.53%	78.13%	<0.001	Yes	4.00
San Diego (A)	31.58%	92.86%	<0.001	Yes	4.00
Miami (A)	28.13%	86.84%	<0.001	Yes	3.93
Cincinnati (B)	14.29%	83.67%	<0.001	Yes	3.84
Detroit (B)	39.13%	87.18%	<0.001	Yes	3.76
Chicago (B)	17.50%	73.33%	<0.001	Yes	4.00
Atlanta (B)	75.00%	80.00%	0.687	No	3.90
Dallas (C)	6.67%	63.41%	<0.001	Yes	4.00
Baltimore (C)	32.00%	76.19%	0.003	Yes	3.94
San Antonio (D)	28.13%	86.84%	<0.001	Yes	3.93
Philadelphia (D)	16.28%	80.00%	<0.001	Yes	4.00
New York City (D)	29.22%	82.00%	<0.001	Yes	4.00
Tampa (D)	25.00%	45.76%	<0.001	Yes	3.85

## Limitations

- Retention of participant knowledge following the CPE activity were not assessed since follow-up assessment scores were collected in aggregate and not directly linked to individual assessment scores.
- Little variance in speaker evaluations limit ability to analyze differences or correlations in speaker knowledge, content delivery, retention rates.

## Conclusions

- There was no significant correlation between speaker evaluation scores and post-assessment performance or between speaker credentials and pre- and post-assessment scores; however, certain speaker characteristics such as age and gender did not appear to have an impact on the learning rates of the audience suggesting that speakers with similar credentials can be equally effective educators for CPE regardless of speaking styles, age, and gender.
- Analysis comparing audience retention rates with specific speaker credentials needs to be performed.