Doctor of Pharmacy Students' Preferences for the Attributes of Pharmacoeconomics Workshop: A Discrete Choice Experiment

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Background and Objective

- The preferences of Doctor of Pharmacy (PharmD) students towards learning modalities are not well understood and rarely considered in practice and educational design.
- Pharmacoeconomics is a workshop in the PharmD Program Practice Ready Curriculum (PRC) at Harrison College of Pharmacy (HCOP), Auburn University.
- **Objective**: To investigate the preferences of third-year PharmD students for various attributes of the Pharmacoeconomics Workshop.

Methods

Study design:

- A discrete choice experiment (DCE) was conducted upon Pharmacoeconomics Workshop completion.

DCE survey development:

- Attributes and levels were defined based on a literature review and in consultation with experts at Auburn University.
- A D-efficient design was used to generate 12 choice tasks using NGENE software.
- Each choice task contained two workshop alternatives that differed on six characteristics: number of instructors, class hours, instructional approach, in-class group works, individual homework exercises, and the presence of a final exam.
- These workshop attributes and levels were reflective of the current Pharmacoeconomics Workshop offered at Harrison College of Pharmacy, Auburn University.

Data collection:

- The DCE was administered to 132 third-year PharmD students at Harrison College of Pharmacy, Auburn University, who enrolled in the PYPD 9440 Workshop 5 (Pharmacoeconomics) in the Fall 2023 semester.

Data analysis:

- We used an error-component logit model to analyze the choice data.
- The number of class hours students were willing to spend for the change of attributes was calculated.

Results

Respondent characteristics:

- Fifty students from Auburn and Mobile campuses constituted the analytical sample.
- The majority of these student participants were female (69.39%) and from the Auburn campus (87.76%).
- Most students have between 1 to 5 years of work experience, with 30.61% having 1 to less than 3 years and 34.69% having 3 to less than 5 years.

Error-component logit model results:

- Most attribute coefficients were statistically significant and had expected signs.

Table 1: Error-component logit model results

Attributes and levels	Coefficient	Standard error	Z-score	*p*-value
Number of instructors (vs 1 instructor)				
3 instructors	-0.327	0.135	-2.42	0.015
2 instructors	-0.186	0.126	-1.48	0.139
Number of class hours (vs 4 hours)				
8 hours	-0.665	0.150	-4.42	0.000
6 hours	-0.246	0.136	-1.81	0.070
Instructional approach (vs in-person)				
Online	0.194	0.144	1.35	0.178
Hybrid	0.028	0.132	0.21	0.832
Number of in-class groupworks (vs none)				
4 assignments per day	-0.469	0.157	-2.99	0.003
2 assignments per day	-0.249	0.168	-1.48	0.139
No group assignment	-0.307	0.166	-1.85	0.064
Individual homework exercise (vs none)				
1 assignment every other day	0.064	0.159	0.40	0.690
1 assignment every day	0.075	0.158	0.48	0.634
1 assignment for the whole workshop	-0.029	0.157	-0.19	0.852
No final exam (vs yes)	0.548	0.102	5.39	0.000
Alternative specific constant (ASC) [Mean]	0.046	0.111	0.42	0.675
ASC (SD)	0.461	0.149	3.09	0.002
Model diagnostics				
LL at convergence	-375.910			
Number of observations	1200			
Number of respondents	50			

- The results indicated a preference towards:
  - One instructor over three instructors per day.
  - Four-hour class over eight-hour or six-hour class per day.
  - One in-class group work over four in-class group works or "no in-class group works" per day.
  - No final exam over the presence of final exam.
- Neither hybrid/online instructional methods (compared to an in-person approach) nor the frequency of individual homework (compared to its absence) significantly influenced students' preferences.

Table 2: Willingness to spend hours (WTSH)

Attributes and levels	WTSH (Hours)	[95% Confidence Interval] [LL	UL]
Number of instructors (vs 1 instructor)			
3 instructors	-1.839	-3.764	0.087
Instructional approach (vs in-person)			
Online	1.576	-0.559	3.711
Number of in-class groupworks (vs none)			
1 assignment per day	2.154	-0.163	4.472
Final exam (vs yes)			
No final exam	3.306	1.778	4.833

- Students were willing to be compensated by 1.84 hours reduction if the number of instructors increased from one to three.
- Students were willing to spend 1.576 additional hours for the workshop to be conducted online instead of in-person.
- Students were willing to spend an additional 2.154 hours if there is one group assignment per day compared to none.
- Students were willing to spend an additional 3.306 hours of class if the final exam was removed.

Conclusions

- The main contribution of this study is the use of a DCE to elicit students' preferences for various possible attributes of Pharmacoeconomics Workshops.
- PharmD students preferred the Pharmacoeconomics Workshop with one instructor per day, a four-hour class per day, one in-class group work per day, and the omission of the final exam.
- We can use these students' preferences to redesign the Pharmacoeconomics Workshop.

Limitations:

- The experiment was conducted in class, so there might be an issue of sample selection within our estimates.
- Small sample sizes could reduce statistical power, making it harder to detect significant differences between attribute levels.