INSTRUCTIONAL DESIGN AND ASSESSMENT

Professional Development Webinars for Pharmacists

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Objectives. To evaluate pharmacists' satisfaction with and reasons for enrolling in a series of continuing education webinars.

Design. Webinars intended to provide timely and practical information for practicing pharmacists on a specific therapeutic area were created and presented monthly throughout 2011.

Assessment. Survey responses of volunteers who completed at least 1 webinar were positive regarding the quality of the programming and the method of delivery. No significant differences were found in demographics or reasons for enrolling between participants who completed a single webinar and those who completed 2 or more.

Conclusions. While the webinars received positive evaluations for quality, value, and relevance, the limited average number of webinars attended by each pharmacist was a concern, and several tactics will be implemented to address scheduling conflicts and other deterrents to repeat participation.

Keywords: assessment, continuing education, professional development, distance learning, webinar, lifelong learning

INTRODUCTION

Over the past decade there has been a shift from the traditional classroom to the virtual classroom, especially within the area of continuing professional education and among nontraditional adult learners.¹ With this technology-centric focus, many in higher education have looked for successful methods for delivering online education to adult learners. Experiences with online credit courses for adult learners have implications for the continuing professional development (CPD) model for pharmacists, especially the action portion of the model.² The literature suggests that adult learners may experience a higher level of academic success when the learner is intrinsically motivated, there is a presence of a formal learning community, and the material that is being presented has a focus on real-world applicability.³ Many suggest that within the community of online learners, the instructors and students have a responsibility to support and interact with each other in a manner similar to a more traditional setting.⁴ This sense of community among learners is vital due to the community's presumed understanding and sharing of everyday requirements (eg, family obligations, work pressures). Garrison and colleagues developed the Community of Inquiry, an e-learning model

that combines social presence, teaching presence, and cognitive presence as essential components of a successful educational experience.⁵ Their model predicts that social presence (as opposed to both a social and physical presence in a traditional classroom) plays a major role in establishing an educational climate by encouraging discourse. However, the single session format of many continuing education opportunities prevents students from forming social connections with each other. The lack of discourse may discourage students from enrolling in multiple courses even if the content is intellectually rewarding.

Many professionals are required to complete continuing education to meet state and federal licensure requirements. This mandate is a key differentiator of this group from the general population of adult learners when considering effective tactics for delivery and which topics to offer.^{1,6-8} For professionals, completion of a degree is the start of their learning, not the end, especially when the field such as pharmacy, impacts society.⁹⁻¹³ Today, all states except for Hawaii and the District of Columbia require licensed pharmacists to participate in continuing education. Continuing education requirements are dictated by the states and the Accreditation Council for Pharmacy Education (ACPE), which accredits the providers of continuing education.

There is a lack of research on what makes effective webinars within the contexts of professional development

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and continuing education. Buxton and DeMuth performed an exploratory analysis of local vs online attendees at a conference plenary session and found that both groups tended to choose the format that best fit their needs and preferences and that there was no difference in level of satisfaction with the session between local and distant learners.¹⁴

Extension Services in Pharmacy, a division of the School of Pharmacy at the University of Wisconsin-Madison, has a long history of innovations in and evaluation of distance learning experiences, providing pharmacists with convenient, ACPE accredited, and timely professional development opportunities.¹⁵⁻¹⁹ A new series of webinars was designed for non-degree-seeking pharmacy professionals who were completing continuing education courses to increase their professional development and in some cases to complete state licensure requirements.

A study was conducted in early 2012 to evaluate the webinar series. The objectives of this study were to: (1) evaluate pharmacists' experiences with University of Wisconsin pharmacy webinars; and (2) determine why pharmacists participate in a limited number of webinars offered through the University of Wisconsin School of Pharmacy. Based on the results of the study, methods could be identified to increase pharmacists participation in future webinars.

The research questions for the study included: (1) What was the overall level of 2011 participants' satisfaction with the webinars? (2) Why did pharmacists only participate in 1 or 2 webinars and not enroll in subsequent offerings? (3) Will pharmacists who have taken more than 1 webinar respond at a higher rate to the survey and have more positive evaluations of the webinars than non-repeat participants? (4) Based on characteristics of the pharmacists enrolled in the webinars, do certain demographics characterize repeat participants? (5) Would package rates (separate fee for multiple webinars) influence enrollment?

DESIGN

In 2011, Extension Services in Pharmacy began offering a webinar series of scientific presentations to provide timely and practical information on different therapeutic areas to practicing pharmacists. Each lecture provided brief background information, discussion of newer therapeutic agents or recent applications for more traditional agents, and tips on patient counseling to help with compliance and avoidance of drug misadventures (Table 1). The online material did not include any commercials or other forms of advertising. The webinars were intended to attract younger pharmacists and those unable to attend live continuing education offerings. Rather than attending an entire lecture series, pharmacists could register for individual offerings that met their needs.

Table 1. Subject Matter Covered in Monthly Webinars in 2011

Topic
Methadone Dosing for Analgesia
Potential Interactions with Antiarrhythmic Agents
Evidence Based Update on Heart Failure Management
Pharmacologic Management of Panic Disorder
Current Therapies for Urinary Tract Infections
Issues and Potential Problems with Antiepileptic Generics
Antipsychotics: Uses, New Products and Formulations, Monitoring
Update on New Oral Anticoagulants
Antibiotic Resistance: No Longer Just a Hospital Problem
Incidence and FDA's Response to Counterfeit Pharmaceuticals ^a
Antithrombotic Options for Acute Coronary Syndromes
Antibiotic Dosing in Obesity

^a Last minute change in topic was required because the release of the new hypertension guides (original topic) was delayed.

Webinars are presentations, lectures, workshops, or seminars transmitted over the World Wide Web and are usually live and interactive. Webinar software usually incorporates chat functions and the ability to ask and receive questions and answers in real time.²⁰ Presentations that are viewed online but prerecorded (not live) are Web casts. Adobe Connect software includes an electronic audience response system, and most of the speakers used this option to increase interaction with their audience by asking questions throughout the lecture to assess learning at the end of the program.

One new lecture was presented on the second Wednesday of each month in 2011 at 7:00 PM Central time using Adobe Connect software. Each lecture lasted approximately 60 minutes, followed by a 30-minute discussion session during which the lecturer addressed typed questions submitted by participants. The speaker's PowerPoint presentation was posted on a Web site prior to the lecture so pharmacists could download and print the slides for note-taking purposes. The fee for each webinar was \$35. Pharmacists participating in the program and completing the lecture evaluation/assessment online were eligible to receive 1.5 hours or 0.15 continuing education units. The lectures were marketed through e-mail blasts to all pharmacists on the Extension Services in Pharmacy Listserv. An announcement was e-mailed approximately 2 weeks prior to the webinar, and then a reminder was sent 48 hours before each lecture. Upcoming offerings also were posted on the Extension Services in Pharmacy Web site at least 3 months prior to each lecture, and the majority of participants registered within 24 hours of the presentation, suggesting that participation was often a last minute decision.

EVALUATION AND ASSESSMENT

The sample population for the post-intervention study consisted of pharmacists who were non-degree-seeking adult learners working within various pharmacy environments. The pharmacists surveyed were those who registered for at least 1 of the course offerings during 2011 and completed at least 1 webinar, submitted the course evaluation, and received continuing education credit for participation.

Pharmacists completing at least 1 webinar but no course evaluation were surveyed separately. This secondary population was used to determine reasons for not completing the entire program. To determine if: (1) they had no need of continuing education credit and participated for the sake of learning; or (2) if there were technical or personal reasons for not participating.

Certain demographics were captured on the evaluations completed after each webinar. If a pharmacist completed at least 1 webinar, the following information was obtained: (1) academic degree; (2) total years in pharmacy practice; and (3) reasons for participating in the program.

Surveys of the primary and secondary populations were administered online using Qualtrics (<http://www.qualtrics.com/>). Nonresponders to an initial e-mail were sent up to 2 follow-up e-mails requesting their participation in the study. Per Institutional Review Board (IRB) guidelines, responders were told that participation was optional and that they did not need to answer all questions and could withdraw at any time. The study was reviewed and approved by the University of Wisconsin Social and Behavioral Sciences IRB.

As an incentive to participate in the study, pharmacists in both the primary and secondary populations who

completed the study instrument were awarded 1 complimentary registration for any webinar in 2012. In addition, those completing the survey were pooled for a random drawing of a \$100 Visa gift card.

Data were analyzed using Minitab 16 (<http://www.minitab.com>) with *t* tests and ANOVAs for continuous outcomes and chi-square test of independence for nominal data. Where appropriate, data were evaluated using Kruskal-Wallis test and Wilcoxon signed-rank test (for paired data) for ordinal variables. An *a priori* level of significance of 0.05 was set for all tests.

Ninety-seven pharmacists completed (defined as finishing the course evaluation) at least 1 webinar in 2011. Fifty completed the survey instrument, for a response rate of 51.5%; of which the response rate for pharmacists attending a single webinar was 53.5% (38/71) and the response rate for those completing more than 1 webinar was 48.0% (12/26). Demographics for the 2 groups were similar (Table 2).

In comparing the demographics (obtained on the course evaluation) for survey responders and non-responders, no significant differences were found based on the information presented in Table 2. Therefore, results for respondents to this study should be considered good indicators for all pharmacists completing at least 1 webinar in 2011.

A secondary population for this study was the 24 pharmacists who registered for at least 1 webinar in 2011, but did not complete the entire course (eg, did not complete the evaluation/assessment form to receive continuing education credit). Ten pharmacists in this secondary group completed an abbreviated survey instrument (response rate of 41.7%). No significant differences were found between the primary population and the secondary

Table 2. Demographics for Respondents Completing One or Multiple Webinars

	Single (n=38)	Multiple (n=12)	P
Degree			
BS	18	5	0.786
PharmD	15	6	
Masters	5	1	
Years of Practice (mean $\pm$ SD):	20.1 $\pm$ 11.7	19.1 $\pm$ 13.2	0.809
Practice setting:			
Retail Setting	4	1	0.554
Hospital or Long Term Care	27	7	
Other (incl. academia, industry, retired)	7	4	
Reason for Attending (from Survey):			
To study a given topic in depth and detail	32	10	0.726
To enhance my general knowledge with new information and developments	14	3	
To get help with a specific problem or exchange ideas with other pharmacists	1	1	
To develop a specific area of practice, a "specialty," in my practice	13	3	
To fulfill mandatory continuing education requirements	23	4	
To help me to be a responsible pharmacy professional	19	9	

group based on years of experience ($p = 0.768$) or practice setting ($p = 0.728$). The major question of interest for this secondary group was why they did not complete the entire program. Seven of the 10 respondents did not listen to the webinar, either because of technical difficulties (57.1%) or a scheduling conflict that came to their attention after registering (42.9%). For the remaining 3 respondents who listened to the webinar, 2 did not complete the evaluation because it was difficult to access and the other did not need CE credit.

Five questions on the study survey instrument were identical to questions appearing on the webinar evaluation form. The median response to the following 4 questions was “very satisfied”: subject matter of the webinar, video and audio quality of the webinar, user friendliness, and convenience and clinical relevance. The only question to receive a “satisfied” median response was the value of the webinar to practice. No significant differences were found between pharmacists completing only 1 webinar and those completing multiple webinars (Table 3). For survey items on the subject matter, the audio and video quality, and the convenience of the technique, those attending multiple webinars rated the programs slightly lower, but not significantly different from those attending only 1 webinar. The perceived value to practice and the user friendliness of the webinars were rated slightly higher by those who attended multiple webinars.

Additional comparisons were made between the pharmacists’ initial responses to the questions on the evaluation completed immediately after each webinar and their “reflective” responses to the same questions on the survey instrument. There was a slight decrease in the score for each question on the survey instrument, but only the mean rating for the value of the webinars to practice was significantly reduced (Table 4).

Responses to the evaluation questions were evaluated based on academic degree (BS vs PharmD), practice setting (hospital vs all others), and years of practice (below vs

above the median number of years). No significant differences were identified except that those pharmacists above the median years of experience (presumably older practitioners) rated the video and audio quality lower ($p = 0.045$) and the user friendliness of the system lower ($p = 0.015$).

The majority of respondents (75.5%) had participated in webinars offered by other organizations/institutions; of those, 13.5% rated the Extension Services in Pharmacy webinars as superior to other webinars; 35.1% as better than other webinars, and 51.4% as about the same as other webinars they had experienced.

The majority of respondents indicated they were likely to participate in similar future webinars offered by the university (46.9% very likely and 40.8% likely). Only 4% gave a response of unlikely or very unlikely.

When asked what factors might limit their participation in future webinars, the results in order of importance were: (1) time of the program (evenings); (2) topics may not be of interest and/or useful to their practice; (3) the cost of the webinar; (4) too much time required to complete the evaluations; (5) standalone topics offered rather than a series (Table 5). Reasons receiving the fewest responses were the format used (presentation followed by a question-and-answer session), and technology issues (Internet requirements). Most pharmacists responding to a related question about scheduling indicated that they preferred asynchronous offerings because they better fit their schedules (68% agreed or strongly agreed, and 26% were uncertain).

When asked if they would register for future multiple webinars offered at a decreased price per lecture, the majority (69.4%) of respondents indicated they would be more likely to attend while 30.6% were uncertain. No one responded that they would be less likely to attend.

Finally, when asked if they would likely attend webinars in the future if they were presented as a series of several topics that were therapeutically related (eg, 4 sequential webinars on the management of arthritis),

Table 3. Comparison Evaluations of Pharmacist Completing One or Multiple Webinars

	Single Webinar (n = 38)		Multiple Webinars, (n = 12)		<i>P</i> ^b
	Mean (SD) ^a	Median Rating	Mean (SD) ^a	Median Rating	
The subject matter of the webinar	4.5 (0.7)	Very Satisfied	4.5 (1.2)	Very Satisfied	0.50
The value of the webinar to your practice.	4.2 (0.8)	Satisfied	4.6 (0.9)	Very Satisfied	0.06
The video and audio quality of the webinar.	4.5 (0.7)	Very Satisfied	4.3 (1.1)	Very Satisfied	0.86
The webinar was user friendly.	4.4 (0.9)	Very Satisfied	4.4 (1.2)	Very Satisfied	0.47
The webinar delivery technique as a means of obtaining convenient and clinically relevant continuing pharmacy education.	4.7 (0.6)	Very Satisfied	4.3 (1.2)	Very Satisfied	0.28

^a Responses based on a 5-point Likert scale on which 1=very dissatisfied to 5=very satisfied

^b Significance determined by Kruskal-Wallis using correction for ties

Table 4. Comparison of Immediate and Reflective Responses to Questions

	Survey (n = 50)		Evaluation, (n = 50)		<i>P</i> ^b
	Mean (SD) ^a	Median Rating	Mean (SD) ^a	Median Rating	
The subject matter of the webinar	4.5 (0.8)	Satisfied	4.7 (0.4)	Very Satisfied	0.12
The value of the webinar to your practice.	4.3 (0.8)	Satisfied	4.6 (0.6)	Very Satisfied	0.011
The video and audio quality of the webinar.	4.4 (0.6)	Satisfied	4.6 (0.6)	Satisfied	0.35
The webinar was user friendly.	4.4 (1.0)	Satisfied	4.6 (0.6)	Very Satisfied	0.18
The webinar delivery technique as a means of obtaining convenient and clinically relevant continuing pharmacy education.	4.6 (0.8)	Very Satisfied	4.7 (0.5)	Very Satisfied	0.38

^a Responses based on a 5-point Likert scale on which 1=very dissatisfied to 5=very satisfied

^b Significance determined by Kruskal-Wallis using correction for ties.

pharmacists were less enthusiastic, with only 12.2% responding very likely, 44.9% responding likely, and 30.6% uncertain.

DISCUSSION

Results from both the webinar evaluations of and survey questions on the webinars were positive for the quality of the programming efforts and the method of delivery, fulfilling the first objective and answering the initial research question for this study. The lack of continued pharmacist participation in subsequent webinars is a concern. The second objective was to determine why pharmacists only participate in a limited number of these webinars. There are probably multiple reasons why continued enrollment has not occurred with these online professional development opportunities; however, the data from this study suggest that the quality of the materials and participant satisfaction are not among them. The levels of satisfaction between single and multiple webinar participants indicate that each group was “very satisfied” with the subject matter, value of the contents, technical quality, delivery, and depth of content for the webinar(s) in which they participated. With the level of satisfaction high, other aspects of the delivery model were explored to determine what might be inhibiting retention. The practice settings of the participating pharmacists may account for some pharmacists’ lack of continued participation. The majority

of participants were from hospital and long-term care practices, and the most commonly stated reason for attending the webinars was to study a given topic in depth and detail (Table 2). Those pharmacists who worked in a hospital or long-term care setting may have worked in more specialized or focused practice settings. Thus, if a program was offered in their area of practice, they might be inclined to sign up, but would not sign up for topics outside their area of practice. This higher proportion of hospital pharmacist participants may have been due to limited internal development opportunities within their respective hospitals. In contrast, the reason for the small proportion of participants from retail pharmacy may have been because more internal training opportunities were available to these pharmacists, especially those working in chain pharmacy environments. Another possibility for the low number of enrollees in multiple webinars is that the remote nature of distance learning prevents a solid social and professional connection from occurring between the learner and instructors. This may make the webinars seem more transactional in nature, and though they are considered worthwhile, they do not foster feelings of loyalty or dependence upon this method as the sole means of continuing education. Thus, the participants may be comfortable with the format, but because of the transactional nature of the program, this comfort may not result in registering for subsequent webinars.

Table 5. Factors Limiting Participation in Webinars

Factors	First Choice	Second Choice	Third Choice	Rank ^a
Time of program (Wednesday evenings)	17	12	4	1
Topics are not interesting and/or useful for my practice	16	7	5	2
Cost (\$35)	9	6	9	3
Too much time is required to complete evaluation format	1	2	3	4
Would rather spend time on focused series of webinar rather than standalone programs.	0	4	3	5
Format (Presentation followed by question and answer session)	1	1	2	6
Technology issues (Computer/internet requirements)	1	1	2	6

^a Ranking based on weighting first choices by 3, second by 2 and third by 1.

Fulfilling mandatory continuing education requirements was important, but not the major reason for participants attending the webinars described here. Pharmacists are free to choose when, where, and how they will complete their mandatory requirements. The relatively few hours required for licensure renewal allow the pharmacist to obtain continuing education credit with little advanced planning. There are many continuing education opportunities available, both live and distance offerings, and the chosen webinar may have been the only one available that offered the right topic at the right time. With the wide variety of specialty practices and interest areas, it is difficult, if not impossible, to accommodate all pharmacists with the same program. The majority of registrants for these webinars may have planned to take only the topics that interested them rather than make them a monthly enrichment experience. Also, a year-long timeframe may have been too short to accurately evaluate multiple registrations. Pharmacists have a 2-year window to complete the necessary CE requirements; thus, a single year may have not accurately reflected their retention with this webinar program.

Scheduling was the major factor limiting respondents' participation in future webinars. Evening broadcasts most likely incurred conflicts with pharmacists' family or relaxation time. Offering webinars during traditional practice time may prove to be more convenient and may also offer the opportunity for multiple pharmacists to participate together at a single practice site. The camaraderie of such experiences might remove some of the isolation associated with webinars. The timing issue will be examined in the near future by offering the webinar both on Wednesday evenings and Thursday or Friday mornings to accommodate those who may have conflicts with evening sessions.

An initial goal for the webinar series was to attract younger pharmacists. However, a slightly older audience attended (based on average years of practice in Table 2). During 2011, only 13% of the attendees had less than 10 years of practice. A similar "aging" of attendees at live programs has been observed; thus, it would be interesting to identify where younger practitioners are obtaining their continuing education credits. Hopefully, with the new CPE Monitor service being implemented by the National Association of Boards of Pharmacy, which allows individual pharmacists to electronically track their CPE credits earned from ACPE-accredited providers, such information will be available in the near future.²¹

The final objective was to identify methods to increase pharmacists' participation in future webinars. More than 87% of the respondents indicated they were likely or very likely to enroll in future webinars. Offering

each webinar multiple times would reduce the most important factor limiting participation, ie, scheduling conflicts. Using participants' suggestions for future webinar topics (currently requested on all evaluations) will help to identify topics useful to practice. Simplifying the evaluation process (required to receive continuing education credit) may reduce another factor limiting respondents' participation. Other popular suggestions included offering a reduced fee for enrolling in multiple webinars and presenting a series of related webinars rather than individualized programs.

SUMMARY

The webinars developed and presented through the University of Wisconsin's Extension Services in Pharmacy received positive evaluations for the quality of the content, perceived value and relevance, and acceptance of the online delivery method. The limited numbers of webinars attended by individual pharmacists are a concern but appear to be related to factors other than the quality of the presentations and format. Future modifications in the program, including repeat offerings at different times of the day, a reduced fee for multiple webinars, and/or a series of webinars with a common theme may result in increased participation. Although hospital and long-term pharmacists make up the largest proportion of participants in these webinars, future program will continue to try to attract professionals from all practice environments.

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