

# Attitudes of Pharmacists Toward CE Programs in a Mandated Environment

Gerald R. Donehew  
Vincent W. Bernardi

## INTRODUCTION

Continuing education (CE) for continued proficiency is increasing in importance for pharmacists and has changed from a voluntary activity to a mandatory activity in many states. In 1987, about 44 states had mandatory CE (1). Surveys in several of these states showed that high percentages of pharmacists thought that mandatory CE was professionally helpful and that their CE quality was high; however, the percentage of pharmacists supporting mandatory CE declined as years of practice increased (2, 3). In other surveys, hospital pharmacy directors and members of boards of pharmacy viewed mandatory CE in a positive manner and thought CE was

---

Gerald R. Donehew, Ph.D., is Associate Professor of Pharmacy Administration in the Department of Pharmacy Practice, College of Pharmacy and Allied Health Professions, Northeastern University, Boston, MA 02115. Vincent W. Bernardi, Ph.D., is Assistant Dean of Continuing Education and Associate Professor of Pharmacy Business Administration at the Massachusetts College of Pharmacy and Allied Health Sciences, Boston, MA 02115.

The authors would like to thank the following CE providers for administering and collecting questionnaires at their live CE programs: James Brudnich Wholesale, Massachusetts Respiratory Hospital, Boston Association of Retail Druggists, Massachusetts Society of Hospital Pharmacists, Massachusetts State Pharmaceutical Association, Northeastern University, Massachusetts College of Pharmacy and Allied Health Sciences, Western Massachusetts Society of Hospital Pharmacists, and Western Massachusetts Pharmaceutical Association.

necessary if pharmacists were to remain competent (4, 5). Most board members believed 12-15 hours per year should be the minimum number of required hours, but about 23% thought that 20-30 hours should be required. A survey of nonpracticing licensed pharmacists showed that most thought that participation in continuing education was necessary to remain competent, and a little less than half thought it should be mandatory (6).

In a nationwide survey, pharmacists had neutral or favorable attitudes toward CE, women had more positive attitudes than men, and pharmacists in hospitals had more positive attitudes than pharmacists in other settings (7). Male pharmacists obtained more CE hours than female pharmacists, and pharmacists in states with mandatory CE obtained more CE hours than pharmacists in states with no mandatory CE. Hospital pharmacists were more likely to be voluntary participants in live CE. Pharmacists in chain and discount pharmacies were more likely to be involuntary participants (8, 9). Managers and employees were voluntary participants, while owners and retired pharmacists more often were involuntary participants. Pharmacists who attended a greater number of live CE programs had higher professional attitudes. Those who attended 25 or more hours of live CE scored higher on a competency index exam.

A survey of Connecticut pharmacists in which pharmacists were divided into participants (those who attended three or more live CE activities in the last three years) and nonparticipants (those who attended fewer than three live CE activities in the last three years) showed that two-thirds of the nonparticipants had attended no live CE activity over the past three-year period (10, 11). Almost all participants attended 16 or more hours of live CE, while 20% of nonparticipants attended more than 16 hours. The participant group also had attitudes more favorable toward CE than the non-participant group. In a similar study of Wisconsin pharmacists, those with more favorable attitudes toward CE also participated in more learning activities (12). Pharmacists had almost neutral feelings about mandatory CE; this was similar to their attitude toward CE in general.

A study was conducted of pharmacists in three states: one state had mandatory CE, one had no mandatory CE, and one only had mandatory CE for the past two years (13). The study showed that in

the state that had recently mandated CE, the competency-related curiosity motivation factor fell in importance for attending CE after CE became mandatory, while the compliance with external influence factor increased in motivation. During the same period of time, motivation factors in the other two states remained the same.

Studies of pharmacy students' feelings about CE showed that they had attitude scores of neutral or higher, their perception of CE tended to be more like nonparticipant pharmacists, and they thought that CE was necessary to remain competent (14-16). They had mixed feelings about the role pharmacy schools play in addressing the importance of maintaining competency through CE because the schools place significant importance on obtaining postgraduate degrees.

A study of accountants in New York in which live CE participation and knowledge were compared found that accountants who participated in CE had higher general knowledge than those who did not (17). The study also showed that as participation increased from low to high levels, general knowledge increased and that participation in 17-24 or more hours in a specific subject area resulted in significantly greater specific knowledge than participation at lower levels. As accountants' attitude toward CE became more favorable, their participation in CE increased. Those in firms with five or more accountants had more positive attitudes than those in smaller firms. As accountants' age increased, their attitude became less favorable. Accountants with more positive attitudes toward CE rated the quality of programs higher and tended to think CE was a good investment.

These studies used different survey instruments, had different emphases, and used different procedures for analysis of data. The Research Committee of the Section on Continuing Professional Education of the American Association of Colleges of Pharmacy (AACCP) has developed and tested a series of 24 attitude statements for measuring various attitudinal aspects and the overall attitude of pharmacists toward CE in pharmacy (18). The committee recommended that these statements be used for attitudinal studies of pharmacists.

About 6,000 pharmacists practice in Massachusetts, and since 1 January 1984, they have had to obtain 15 hours of CE—by any

approved method—for relicensure. Starting 1 January 1991, 5 of these 15 hours must come from live CE. Many pharmacists now obtain 15 or more hours of their CE via live CE, and with the new requirement, more pharmacists will be participating in live CE. Mandatory CE can be used as a persuasive agent for changing individual attitudes toward CE in a positive way (19). However, for this persuasion to be effective in improving CE attitude, a supportive atmosphere is necessary during the changing process. The objective of this study, therefore, is to measure the attitude toward CE of pharmacists in Massachusetts (a mandatory CE environment) who attend live CE programs to satisfy their CE requirements partially or completely.

### STUDY PROCEDURE

From September 1990 to June 1991, pharmacists attending live CE programs offered by 9 CE providers in Massachusetts (see acknowledgments) were surveyed on a voluntary basis by questionnaire. Only pharmacists practicing in Massachusetts were asked to complete the questionnaire, and they were asked to complete it only once during the year. The questionnaire solicited demographic information, CE opinions, other data, and responses to the 24 attitudinal statements recommended by the AACP Research Committee (18). Pharmacists responded to each attitudinal statement based on a scale of 1-5, depending on how much the respondent agreed or disagreed with the statement. Demographic information, CE opinions, number of pharmacists worked with, number of live CE hours attended last year, and number of hours of CE thought needed per year were summarized for data analysis, and the sums of the scores on the attitudinal statements were tested, using one-way ANOVA (Scheffé range), against demographic and other variables. In contrast to the committee's recommendation, raw data were analyzed rather than data expressed as a standardized scale. The Statistical Package for Social Sciences (SPSSX) was used for data analysis. Tests were made at the  $\leq .05$  significance level (20).

## RESULTS

During the study period, 884 pharmacists completed questionnaires. Men represented 69.6% of the respondents. The average age was 46 for all respondents, with men having an average age of 49 and women 38, which was significantly different ( $F = 134.15, p = .0000$ ). Most (78.3%) were employed in the more traditional settings such as independent, chain, hospital, and other institutional pharmacies. In the nontraditional settings, 7.8% were retired, 4.3% were in nonpharmacy settings, and 9.7% were in pharmacy-related settings. A total of 688 worked in traditional settings, and only these pharmacists were subjected to further detailed analysis in this article. Pharmacists in traditional settings were distributed among institutional, independent, and chain pharmacies, in decreasing order (Table 1). Most of the respondents held the position of staff pharmacist (44.1%), with supervisors and owners second and third, respectively.

The respondent group included in the study consisted of 470 men (68.5%) and 216 women. They worked in an organization consisting of an average of 4.9 pharmacists, and the highest percentage (28.9%) worked as 1 of 2 pharmacists (Table 2). They attended an average of 12.8 hours of live CE during the last year. The highest percentage (25.1%) attended 6-10 hours of live CE over the last year. Respondents thought an average of 16 hours of CE was needed per year to maintain proficiency, with 49.2% thinking that a total of 15 hours was enough. Respondents were grouped by age, and the greatest percentage of respondents were in the 30-39 age group (33%), with the second largest in the 50-65 age group (27.4%).

Table 1. Respondents by Workplace and Position

Workplace	#	%	Position	#	%
Independent Pharmacy	249	36.1	Owner	96	14.0
Chain Pharmacy	181	26.2	Supervisor+	217	31.5
Institutional Pharmacy*	260	37.7	Staff**	375	54.5
Total	690	100.0	Total	688	100.0

\*Institutional-hospital, hospital ambulatory, consultant, infusion, and nuclear pharmacies

+Supervisor-manager/director, assistant/associate director, supervisor, and prescription department manager

\*\*Staff-employee, clinical pharmacist, and consultant pharmacist

Table 2. Characteristics of Pharmacists

Pharmacist Age		Number Pharmacists in Organization	
Range	%	#	%
< 30	14.5	1	18.0
30-39	33.0	2	28.9
40-49	17.9	3	15.6
50-65	27.4	4-8	25.2
65+	7.1	9+	12.3
Mean	43.6	Mean	4.9
n = 675		n = 634	

  

Number of CE Hours Attended Last Year		Number of CE Hours Thought Needed	
#	%	#	%
0	12.7	0-5	3.9
1-5	8.7	6-14	19.7
6-10	25.1	15	49.2
11-14	7.4	16-20	16.9
15	18.2	21+	10.3
16-20	17.9	Mean	16.0
21+	10.0	n = 610	
Mean	12.8		
n = 677			

A majority (58.1%) of respondents in traditional settings thought that CE was a good investment (Table 3). Answers to the question about quality of attended CE showed that a little over 43% of respondents were satisfied and almost 33.2% were very satisfied with the quality of CE. Answers to the questions about how frequently they look forward to attending live CE showed that the largest percentage of respondents (58.4%) often looked forward to attending live CE, and 45.5% would occasionally attend live CE if CE was not mandatory.

Of a maximum rating of 5, the lowest mean score for an attitudinal item was 3, and the highest was 4.2 (Table 4). Nine of the 24 items had a mean of 4 or more, and the rest had means between 3 and 3.9. The 24 attitudinal statements were summed to measure total attitudinal score. Mean total attitudinal scores for respondents who often looked forward to live CE were the highest (79.1); this was significantly different from the groups answering "occasionally" and "seldom" (Table 5). Mean scores for respondents answering the question about how frequently they would attend live CE if

Table 3. Answers to Opinion Questions

Quality of Attended CE		CE As An Investment	
<u>Opinion</u>	<u>%</u>	<u>Opinion</u>	<u>%</u>
Unsatisfied	23.0	Poor	3.7
Satisfied	43.9	Good	58.1
Very Satisfied	33.2	Very Good	38.3
$n = 579$		$n = 656$	

  

How Anticipate Live CE		Frequency Attend If Not Mandatory	
<u>Frequency</u>	<u>%</u>	<u>Frequency</u>	<u>%</u>
Seldom	6.7	Seldom	17.2
Occasionally	34.9	Occasionally	45.5
Often	58.4	Often	37.4
$n = 656$		$n = 688$	

Table 4. Mean CE Attitude Statements Scores

<u>Statement (Abbreviated)</u>	<u>Mean Score</u>
Participation not essential for competence	3.8*
Mandatory CE less likely upgrade profession	3.7*
CE credits apply toward academic credit	3.4
CE necessary for managerial role	3.3
Participation result in upgrading profession	4.0
CE cost added to health cost	3.2
Mandatory CE beneficial to profession	4.0
Consumers expect pharmacists attend CE	4.2
CE enhances respect among colleagues	3.6
Social interchange greater benefit	3.0*
PharmD requires less CE	4.2*
Mandatory CE improves competence	3.8
Competence requires CE on regular basis	3.8
CE should take in-depth approach	3.4
CE ethical responsibility	3.9
CE unnecessary for clinical role	3.9*
CE important for all pharmacists	4.2
Experience can substitute for CE	3.4*
CE enhances respect among other health people	3.6
Competence improve by CE	4.0
Different settings require different CE	3.6
CE not beneficial to profession	4.2*
CE broaden understanding	4.1
CE not enhance respect among consumers	3.8*

\*Scores are reversed. The lower the original score, the more positive the attitude. See Reference 18 for full description of statements.

Table 5. Mean Scores Differences for Opinion Questions and by Gender\*

How Anticipate Live CE*		Frequency Attend Live CE If Not Mandatory*	
Frequency	Mean	Frequency	Mean
Seldom	73.5	Seldom	75.3
Occasionally	77.1	Occasionally	77.6
Often	79.1	Often	79.8
$F = 18.18$		$F = 19.47$	
$P = .0000$		$P = .0000$	
$n = 609$		$n = 638$	
*All three frequencies different from each other		*All three frequencies different from each other	

  

CE As An Investment*		Gender	
Opinion	Mean	Gender	Mean
Poor	75.1	Men	78.5
Good	77.5	Women	77.0
Very Good	79.2		
$F = 7.04$		$F = 7.32$	
$P = .0009$		$P = .0070$	
$n = 609$		$n = 637$	
*Very good different from good and poor			

attendance was not mandatory were also significantly different from the other two response groups. Those who answered "often" had the highest mean score (79.8). CE as an investment answers were also significantly different. Respondents answering "very good" had the highest mean score (79.2), which was significantly different from the other two response groups. Men had a statistically significant higher mean score (78.5) than women (77), although the absolute difference was minimal. Mean scores did not significantly differ for respondents by organization, age groups, position, number of pharmacists in the organization, number of live CE hours attended last year, or number of CE hours thought needed.

The committee recommended item description categories ranging from low to high (Table 6). Mean total scores were grouped into ranges as recommended by the committee, and 81.2% of the respondents had an attitudinal score in the 60-84 range, which was considered the neutral range. Therefore, a very large percentage of

Table 6. Total Score Ranges and Percentages

Label	24-Item Summed Range*	Item Descriptive Category	#	Percent
Strongly unfavorable	24-35	< 1.5	0	0.0
Unfavorable	36-59	1.5-< 2.5	4	0.6
Neutral	60-83	2.5-< 3.5	519	81.2
Favorable	84-107	3.5-< 4.5	116	18.2
Strongly favorable	108-120	4.5-5.0	0	0.0

\*Mean = 78, Lowest = 54, Highest = 100, Maximum = 120

respondents had a neutral attitude toward CE. Of a maximum possible score of 120, the lowest score was 54 and the highest was 100.

## DISCUSSION

Comparison of this 1990-91 demographic data for pharmacists attending live CE in Massachusetts with 1988 national data reported by Schondelmeyer using total respondents as a basis for calculation of percentages shows that a slightly higher percentage of pharmacists were working in traditional settings, fewer were retired, and fewer were men (21). About the same percentage were working in non-pharmacy-related settings in both studies. In this study, slightly fewer pharmacists were employed in chains, and more were working in independent pharmacies, hospitals or institutions, and pharmacy-related positions. In this study, staff were also slightly over-represented, owners were less well represented, and supervisors were represented in about the same number. In most instances, these differences were small, and proportions remained about the same.

Other forms of CE, such as correspondence courses and journal articles, were not measured but obviously were used by pharmacists because many attended less than 15 hours of live CE. This study did not include other formal CE activities; therefore, it cannot be compared directly with studies in the literature that included all CE activities. This is a shortcoming of the study.

Prior studies seem to support the idea that pharmacists with more positive attitudes toward CE attended more hours of live CE (8, 10-12). In contrast, the attitudes of pharmacists in this study did not influence the number of live CE hours pharmacists attended; however, men in this study—as in other studies—attended more live CE

hours than women (7). Few pharmacists attended 25 or more hours of live CE, which was reported to be the breaking point that caused a change in competency (9). This study showed that many participants with a neutral attitude attended live CE, a finding that agreed with opinions of pharmacists in prior studies (7). The live CE programs had a few attendees with a favorable attitude toward CE, as well as many who were neutral and a few who had attitudes less favorable than neutral. Although the opinions of the respondents prior to the introduction of mandatory CE are not known, these findings might imply that the supportive system has failed to make the pharmacists in this study have positive attitudes toward CE. To a great degree, many may be participating in formal CE activities only to satisfy a relicensure requirement (outside influence) rather than to satisfy a competency/curiosity factor. These pharmacists may only choose live CE over other formal learning activities, such as correspondence courses, because of convenience, scheduling, time constraints, or required effort.

In this study, attitude toward CE in a mandatory environment did not influence the number of hours of live CE pharmacists attended; however, positive attitude did affect whether they viewed CE as an investment and how they anticipated attending live CE programs. These findings were in agreement with those of the study of accountants (17). Pharmacists in this study also agreed with pharmacists in other studies in their opinions about CE quality (7). Number of hours of live CE attended and number of hours of CE needed to maintain and enhance skills seem to be driven by law rather than number of hours pharmacists personally thought they needed.

Demographic variables such as organization, position, age group, and number of pharmacists in an organization did not significantly influence CE attitude. This was in contrast to prior studies, where younger pharmacists and other professionals working with higher numbers of similar professionals had more positive attitudes (3, 17). Also in contrast to other studies, men had a slightly more positive attitude than women (7). Attitude appeared to be an individual characteristic developed by and through other means.

To provide more support for a mandatory CE environment and to develop more positive attitudes in pharmacists about CE, schools of pharmacy should perhaps address CE in a more positive manner so

undergraduate students develop a more positive attitude toward CE. Employers could affect attitude toward CE by taking a more positive leadership role in supporting the value of formal CE and encouraging participation of pharmacists by providing necessary resources and relieving pharmacists from work constraints. CE providers must present programs on topics of interest that obtain and hold pharmacists' attention sufficiently to make live CE a true learning situation affecting knowledge, practice, and attitude through a positive experience. CE providers must be staffed by highly trained, skilled, and motivated personnel. CE faculty must also be carefully selected and evaluated to assure that they meet the unique demands of this scenario.

If all formal CE activities had been measured, perhaps a relationship would have been detected between attitude and CE participation that could be the subject of a future study. Results of this study may only apply to the study population and may not be applicable to other pharmacists elsewhere because of the study's limited scope and opportunistic nature.

### **CONCLUSIONS**

Pharmacists in this study who practice in traditional settings in a mandatory CE situation have a neutral attitude toward formal CE programs. Immediate work environment and demographics do not influence attitude. Attitude does not influence the extent of participation in formal live CE programs but may influence the quality of participation. In the change from voluntary to mandatory CE, the supporting environment has failed to influence pharmacists' CE attitudes in a positive direction.

### **REFERENCES**

1. Appleby JC. Sponsorship of pharmacy CE. *Am Pharm* 1991;NS31(7):5.
2. Anon. Look at hot topics in pharmacy. *Drug Topics* 1988;132(Aug 15):14+.
3. Karlitz K. How hospital pharmacists feel about their mandatory CE. *Pharm Times* 1987;(Oct):110-1.
4. LeRoy ML, DeMuth JE. Attitudes and policies about continuing education among Wisconsin hospital pharmacy directors. *Am J Hosp Pharm* 1987;44:1381-5.

5. Osterhaus JT, Gagnon JP. A survey of state board of pharmacy members and continuing education providers' view on continuing education. *Drug Intell Clin Pharm* 1985;19:134-8.

6. DeMuth JE, Kirk KW, Weinswig MH. Evaluation of a continuing education course for temporarily nonpracticing pharmacists. *Am J Pharm Educ* 1976;40:137-40.

7. Hanson AL. Pharmacists' attitudes toward continuing education: implications for planning curricular CE programs. *J Contin Educ* 1989;9(2):95-113.

8. Gross SM. Demographic study of the relationship of continuing pharmaceutical education to selected attitudinal and competence related criteria. *Am J Pharm Educ* 1976;40:141-8.

9. Rouege AM. An exploratory study of attitudes toward participation in pharmacy continuing education and their relationship to selected variables [Thesis]. Madison, WI: University of Wisconsin, 1972.

10. Bernardi VW. An analysis of pharmacists participation in and attitudes towards continuing education. *Am J Pharm Educ* 1975;40:266-71.

11. Bernardi VW. Continuing education and the pharmacist: an analysis. Part 1. *Apothecary* 1974;86(1):5+.

12. Rouege AM, Kirk KW, Weinswig MH. Continuing education and the pharmacist: an analysis. Part 2. *Apothecary* 1974;86(2):14-6.

13. Mergener MA. The effect of mandatory continuing education on pharmacists' motivations for participating in continuing education. *Am J Pharm Educ* 1981;45:273-7.

14. Hanson AL, Fielding D. Attitudes of pharmacy students in the United States and Canada toward pharmacy continuing education. *J Contin Educ* 1988;8:277-95.

15. Bernardi VW, McCook WM. Analysis of pharmacy student attitudes toward continuing education: a cross sectional study. *Am J Pharm Educ* 1977;41:269-72.

16. Walker VL, Lowenthal W. Perceptions of undergraduate students toward continuing education. *Am J Pharm Educ* 1981;45:268-72.

17. Grotelueschen AD. An analysis of the effectiveness of mandatory continuing education for licensed accountants in public practice in New York State. Champaign, IL: Grotelueschen Associates, Inc., July 1989.

18. Hanson AL, Banerjee AK. Construction of a standardized scale for measuring overall attitude toward continuing education in pharmacy. *Am J Pharm Educ* 1988;52:238-43.

19. Guerin QW, McKeand RL. Attitudes that hinder self improvement. *Adult Leadership* 1967;(Oct):144-6.

20. SPSS staff. SPSSX. 2nd ed. Chicago, IL: SPSS Inc., 1986.

21. Schondelmeyer SW, Mason HL, Schafermeyer KW, Kibbe AH. Pharmacist's compensation and work patterns: overview of 1988 National Survey. *Am Pharm* 1989;NS29(11):25-30.