Pharmacists' Reasons for Participating in Continuing Education

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INTRODUCTION

About 6,000 pharmacists practice in Massachusetts. To remain eligible for relicensure, each must obtain 15 contact hours of continuing education (CE) each year. These hours may be obtained by any method accredited by either the American Council of Pharmaceutical Education or the Massachusetts Board of Registration in Pharmacy that includes attending live CE programs.

The issues of adult attendance of live CE programs have been examined with the assumption that educators can foster better attendance if they better understand what motivates them to attend live CE programs. One study found that, under voluntary conditions, adults who attended live CE programs demanded high-quality programs (1). They voted with their feet if programs did not meet

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their expectations because they had control over what they wanted to learn and CE providers had to assure that the programs were of high quality. Under mandated conditions, the fear was that programs would become more uniform in curricula structure and standards, that the curricula would be determined by someone other than the learners, and that learning opportunities would be planned toward the median needs of all. In effect, learners would lose control of their own CE choices.

Under voluntary or mandated conditions, pharmacists and other professionals have many reasons for attending live CE programs. In one study, a participation reasons scale (Appendix 1) was used to assess reasons for CE attendance by pharmacists, accountants, physicians, and judges. The scale was comprised of 30 potential reasons with Likert-type response options (2, 3). The respondents rated the relative importance of the 30 reasons for attending live CE programs. The reasons, when subjected to a factor analysis (a procedure that identifies underlying factors to explain correlations among many variables), were clustered into five basic underlying factors for participation: professional development and improvement, professional services, collegial learning and interaction, professional commitment and reflection, and personal benefits and job security (personal). Reasons for participation, within a profession, differed by demographics such as career stage, practice setting, and years in the profession. Overall, professionals rated the skills and services factors higher than the peers, professional, and personal factors. Knowing which factors affect professionals' attendance may help identify CE program priorities and procedures.

Under mandated CE conditions, all pharmacists who desire to maintain their licenses must obtain CE credits each year, including those pharmacists working in less traditional pharmacy settings such as education and industry sales, those in nonpharmacy-related positions, and those who are retired or unemployed. While CE programs are normally designed to meet the needs of pharmacists in traditional settings (chain, independent, hospital, and institutional pharmacies), pharmacists in nontraditional settings must also attend these programs, and these pharmacists may have very different needs. According to a recent national survey by Schondelmeyer of 1,448 pharmacists, 26% of the total number of licensed pharmacists

were working in nontraditional settings (4). Because this is a substantial number of pharmacists, the CE needs of these pharmacists in nontraditional settings should be studied; therefore, the objective of this study was to determine if pharmacists in nontraditional settings have different reasons for attending live CE programs in Massachusetts.

METHODOLOGY

Pharmacists attending live CE programs offered by the College of Pharmacy and Allied Health Professions at Northeastern University, the Massachusetts College of Pharmacy and Allied Health Sciences, the Boston Association of Retail Druggists, the Massachusetts State Pharmaceutical Association, and the Massachusetts Society of Hospital Pharmacists during one academic year were surveyed on a voluntary basis. The questionnaire solicited demographic information, reasons for attending CE programs, and topics of preference, but only the reasons data are presented in detail. Only pharmacists practicing in Massachusetts completed the questionnaire; they were asked to complete it only once, regardless of how many live CE programs they attended.

The number, percentage, and average ages by gender were determined. Demographic answers were summarized by traditional and nontraditional settings for type of pharmacy and type of position. The reasons were factor analyzed by traditional and nontraditional settings to determine the clustering of reasons into the basic underlying factors. Default settings to include principal components analysis, Kaiser criteria, and varimax rotation were used (5). An average reason score was calculated for each reason, and the average reason scores for each factor were summed and averaged to determine the average strength score for each factor. The average strength scores for factors common to both types of settings were also subjected to the *t*-test, two-tailed probability, to measure differences between the settings. A discriminant analysis (a procedure for predicting the classification of respondents into several mutually exclusive groups based on responses) was performed on the reasons by place of employment for each setting (5). Default settings were used except for the PRIORS subcommand, where actual group

probabilities were specified. Based on the average score, reasons for both settings were sorted into descending order. The average scores for each reason were subjected to the *t*-test, two-tailed probability, by setting to measure differences. SPSS was used to perform the statistical analysis. All tests were made at the .05 or less level of significance.

RESULTS

A total of 507 questionnaires were completed by 364 men (72.4%) and 139 women (27.5%). The average age was 43.2 years, with a minimum of 23 years and a maximum of 79 years. The average ages for men and women were 45.3 and 34.7, respectively, which were statistically different by *t*-test (*t* value = 8.31). Staff pharmacists represented 42.5% of the pharmacists by type of position held, which was the highest percentage. Except for the "other" category, all other positions had 11.1% to 16.2% of the pharmacists in each type of position (Table 1). The place of employment with the highest representation was independent pharmacies, with 30.1% of the pharmacists surveyed (Table 2). In other traditional settings, the percentage ranged from 24.4% down to 9.9%, while the nontraditional setting represented 15.4% of the pharmacists. In the nontraditional settings, 4.8% of the pharmacists were in nonpharmacy-related positions (Table 3). Each of the other nontraditional settings represented 2.2% or less of the pharmacists.

The reasons for participation for pharmacists in traditional settings were factor analyzed and clustered into four basic underlying factors (Table 4). The factors were service reasons, personal professional skills reasons, personal benefit reasons, and peers interaction reasons. The titles were shortened to service, skills, personal, and peers in subsequent comments. Out of a possible maximum score of 7, skills had the highest factor strength score, with a 5.72 average value. In descending strength score, the remaining factors were service, peers, and personal.

The analysis of reasons for the pharmacists in nontraditional settings by factor analysis identified five basic factors to include four in common with pharmacists in traditional settings; these were service, skills, personal, and peers (Table 5). The analysis identified

TABLE 1. Number and Percentage of Respondents by Type of Position

Position	N	Percentage
Pharmacy owner	63	12.6
Manager/director/supervisor	71	30.4
Staff	212	42.5
Specialty*	55	11.1
Other†	17	3.4
Total	508	100.0

*Pharmacists listed as clinical pharmacists, special staff, or consultant pharmacists
†Pharmacists listed as other, retired, or unemployed

TABLE 2. Number and Percentage of Respondents by Place of Employment

Place	N	Percentage
Independent pharmacy	152	30.1
Chain pharmacy	102	20.2
Hospital pharmacy	123	24.4
Institutional pharmacy*	50	9.9
Nontraditional settings†	78	15.4
Total	505	100.0

*Pharmacists in hospital ambulatory, managed health care, or long-term care pharmacies
†See Table 3 for a listing of nontraditional settings.

TABLE 3. Number and Percentage of Total Respondents by Place for Nontraditional Settings

Setting	N	Percentage
Pharmacy Related		
Corporation position	5	1.0
Industry sales	9	1.8
Industry nonsales	9	1.8
Education position	6	1.2
Government position	6	1.2
Subtotal	35	7.0
Not Pharmacy Related		
Other	6	1.2
Retired	11	2.2
Nonpharmacy position	24	4.8
Unemployed	2	0.4
Subtotal	43	8.6
Total	78	15.4

TABLE 4. Factor Loadings and Means for Reasons for Participation of Pharmacists in Traditional Settings

Reason	Loading	Mean
Service		
Better service to patrons	.844	5.13
Accommodate to patron needs	.840	5.00
Increase proficiency with patrons	.821	4.86
Improve service to public	.711	5.27
Better meet patron expectations	.712	5.13
Review commitment to profession	.537	4.82
Reflect on values of responsibilities	.446	4.94
Factor strength		5.15
Skills		
Develop new skills	.734	5.53
Match knowledge with demands	.735	5.61
Become more competent	.782	5.68
Keep abreast	.673	6.15
Maintain quality performance	.683	5.50
Maintain abilities	.632	5.71
Help be more productive	.632	5.60
Sharpen role perspective	.575	5.20
Maintain quality service	.578	5.49
Factor strength		5.72

Personal		
Changing responsibilities	.765	3.85
Professional advancement	.766	4.18
Enhance security	.703	3.95
Increase financial gain	.699	3.33
Develop leadership	.643	4.22
Limitation of role	.538	4.09
Assess where profession going	.423	4.91
Enhance image of profession	.366	4.88
Factor strength		4.26
Peers		
Exchange ideas with colleagues	.866	4.39
Learn from other pharmacists	.759	4.57
Relate ideas to peers	.718	4.43
Challenged by peer ideas	.609	4.45
Maintain identity with profession	.516	5.14
Increase benefits	.422	4.22
Factor strength		4.599

Average strength calculated by summing and averaging scores of reasons making up the factors

TABLE 5. Reason Loadings and Means for Factors for Pharmacists in Nontraditional Settings

Reason	Loading	Mean
Service		
Better meet patron expectations	.869	3.97
Better service to patrons	.859	3.91
Accommodate to patron needs	.773	3.71
Increase proficiency with patrons	.755	3.73
Improve service to public	.666	4.24
Match knowledge with demands	.622	4.67
Help be more productive	.591	4.70
Factor strength		4.08
Skills		
Maintain abilities	.837	5.47
Maintain quality performance	.804	4.45
Keep abreast	.783	6.01
Develop new skills	.740	5.19
Maintain quality service	.644	5.03
Become more competent	.614	4.84
Reflect on values of responsibilities	.461	4.51
Factor strength		5.06

Profession		
Maintain identity with profession	.822	5.24
Enhance image of profession	.731	4.41
Review commitment to profession	.693	4.64
Assess where profession going	.681	4.71
Challenged by peer ideas	.600	4.09
Limitation of role	.579	3.80
Sharpen role perspective	.540	4.90
Factor strength		4.51
Personal		
Increase financial gain	.878	3.03
Develop leadership	.743	3.52
Enhance security	.658	3.14
Changing responsibilities	.604	2.87
Professional advancement	.589	3.58
Increase benefits	.560	4.15
Factor strength		3.31
Peers		
Exchange ideas with colleagues	.836	4.27
Relate ideas to peers	.676	4.13
Learn from peers	.557	4.26
Factor strength		4.16

Average strength calculated by summing and averaging reasons making up each factor

one additional factor for pharmacists in nontraditional settings which dealt with professional commitment and reflection (profession). The strongest factor strength score was for skills, which had an average of 5.06 out of a possible 7. The other factor strengths, in descending order, were profession, peers, service, and personal. The four factors common to both groups of pharmacists were compared using a *t*-test, and the factor strength scores for traditional pharmacists were significantly higher for all four factors (Table 6).

The responses of the pharmacists in traditional settings by place of employment were correctly classified 54.08% of the time using the discriminant analysis procedure (Table 7). Except for pharmacists in hospitals, pharmacists rated the reasons more as if they worked in independent pharmacies. Hospital pharmacists rated the reasons as predicted 65.7% of the time. In contrast, the responses of the pharmacists in nontraditional settings by place of employment were correctly classified 96.49% of the time using the discriminant analysis procedure (Table 8). The retired and "other" categories had 100% predictable answers, and the pharmacy-related and nonpharmacy-related groups had very high predictability.

The highest scoring reason was "to keep abreast," with an average of 6.15 points (out of a possible 7) for pharmacists in traditional settings and 6.01 for pharmacists in nontraditional settings (Table 9). Pharmacists in traditional settings had higher averages for all reasons except 1, and 17 were significantly higher. The rankings of the reasons were somewhat different between the groups but were not significantly different.

DISCUSSION

Pharmacists in traditional settings showed no need to identify with the profession, whereas pharmacists in nontraditional settings showed a greater need to identify with the profession via the profession factor and rated it second. Pharmacists in nontraditional settings also had weaker factor strengths. Thus they were less motivated by the reasons in general and may have attended only because of the mandatory requirement.

For both groups of pharmacists, the skills development factor was most important, so live CE programs should emphasize topics

TABLE 6. Common Factor Scores Between Traditional and Nontraditional Settings

Group	N	Mean	SD	T-Value	Two-Tailed Prob.
Service					
Traditional	335	5.15	1.24		
Nontraditional	52	4.08	1.72	4.68	.0000
Skills					
Traditional	387	5.72	.90		
Nontraditional	53	5.06	1.38	3.66	.0000
Personal					
Traditional	390	4.25	1.20		
Nontraditional	52	3.31	1.47	4.83	.0000
Peers					
Traditional	395	4.46	1.14		
Nontraditional	57	4.16	1.53	1.99	.0500

TABLE 7. Percentage of Answers Predicted by Place for Pharmacists in Traditional Settings

Place # (Place of Employment)	N	Percentage Answers by Place			
		1	2	3	4
1 Independent pharmacy	126	74.6	14.3	7.9	3.2
2 Chain pharmacy	89	56.2	27.0	11.2	5.6
3 Hospital pharmacy	102	25.5	5.9	65.7	2.9
4 Institutional pharmacy	38	39.5	15.8	26.3	18.4

Correctly classified--54.08%

TABLE 8. Percentage of Answers Predicted by Place for Pharmacists in Nontraditional Settings

Place # (Place of Employment)	N	Percentage Answers by Place			
		1	2	3	4
1 Pharmacy related*	29	91.6	3.4	0.0	0.0
2 Nonpharmacy related†	18	5.6	94.4	0.0	0.0
3 Retired	5	0.0	0.0	100.0	0.0
4 Other	5	0.0	0.0	0.0	100.0

Correctly classified--96.49%
*Pharmacy related: pharmacists in chain corporate positions, industry sales, industry nonsales, education, and government
†Nonpharmacy related: pharmacists in nonpharmacy positions and unemployed

TABLE 9. Ranking of Participation Reasons, Nontraditional vs. Traditional

Reason #	Nontraditional		Traditional	
	Rank	Average	Rank	Average
18	1	6.014	1	6.152
5	2	5.471	2	5.707
8	3	5.243	12	5.143
16	4	5.186	6	5.534*
27	5	5.030	7	5.498*
17	6	4.892	10	5.202
21	7	4.836	3	5.676*
20	8	4.710	16	4.905
3	9	4.696	5	5.598*
1	10	4.676	4	5.610*
10	11	4.642	19	4.815
30	12	4.508	15	4.936*
29	13	4.453	8	5.483*
24	14	4.413	17	4.878*
2	15	4.268	23	4.385
12	16	4.261	20	4.567
25	17	4.242	9	5.265*
6	18	4.145	24	4.219

7	19	4.132	22	4.430
23	20	4.091	21	4.450
4	21	3.970	11	5.132*
19	22	3.906	13	5.067*
26	23	3.800	27	4.092
14	24	3.727	18	4.851*
9	25	3.708	14	4.996*
22	26	3.576	26	4.177*
13	27	3.515	25	4.217*
28	28	3.143	28	3.951*
11	29	3.031	30	3.330
15	30	2.862	29	3.851*

*Significantly different
Reason # corresponds to Reason # on questionnaire (Appendix 1).
Ranking of reasons correlated, Spearman rank correlation value .7934, prob. .0000

that increase professional skills. In the context of this study, professional skills were those skills needed for interaction with the patient. Other professional skills that might be management oriented were not included. Therefore, professional management skill training (motivation, interpersonal communication, and human relations) that could be applicable to pharmacists in both settings was not a consideration. Not reported here, but part of the overall study, was a topics of preference portion. Pharmacists in both settings selected administrative topics—with few exceptions—a very low percentage of the time.

The service factor was also important for pharmacists in traditional settings. Thus service-oriented topics would also be important for them. Pharmacists in nontraditional settings, in contrast, had a strong profession factor and thus had needs to relate to the profession. They desired an opportunity to interact with other pharmacists and to be identified as members of the profession in spite of being employed in nontraditional settings.

Pharmacists in traditional settings appeared homogeneous in their reasons for attending live CE programs. They may be considered as a single market for planning live CE programs relative to their reasons. However, pharmacists in nontraditional settings showed differences among settings. Thus, each group represents a distinctive market, and as a whole, they appeared to be a different market from pharmacists in traditional settings.

Unlike findings in other studies, the findings of this study indicated that pharmacists in traditional settings showed no differences by demographic variables. However, the factor findings in this study for pharmacists in traditional settings matched findings of other studies (less professional) respective to their relative importance, whereas pharmacists in nontraditional settings viewed the factors differently and less strongly. The employed pharmacists in nontraditional settings may have CE activities specific to their employment. Thus pharmacy CE may represent an imposed CE that has little relevance. Unemployed and retired pharmacists may place little value on pharmacy CE programs because they are not currently practicing pharmacy. These findings might also raise questions about the value of arbitrarily applying a mandatory CE requirement to all licensed pharmacists irrespective of their employment

status as well as planning live CE programs only for pharmacists in traditional settings. This presents a task for CE providers because pharmacists in nontraditional settings represent a small but significant minority of all pharmacists. Only in live CE programs of longer duration where several topics and a variety of activities can be planned could pharmacists in nontraditional settings be specifically considered.

Although these findings only directly apply to pharmacists in this study, their relevance to pharmacists in general should be considered.

CONCLUSION

The live CE needs of pharmacists in this study who work in nontraditional settings are different from those of pharmacists in traditional settings. The former attend live CE programs for similar but weaker motivations and show a stronger need to identify with the profession, a factor that should receive special consideration during live CE programs. They also may represent a population of unique subgroups, each with its own needs. If CE is required, CE providers need to specifically address this group of pharmacists, both in determining their needs and in providing more appropriate live CE programs.

REFERENCES

1. Rockhill K. Mandatory continuing education for professionals: trends and issues. Adult Educ 1983;33:106-16.

2. Grotelueschen AD. Assessing professionals' reasons for participation in continuing education. In: Cervero RM, Scanlon CL, eds. Problems and prospects in continuing professional education. San Francisco: Jossey-Bass Inc., 1985.

3. Cervero RM. Effective continuing education for professionals. San Francisco: Jossey-Bass Inc., 1988.

4. Schondelmeyer SW, Mason HL, Schafermeyer KW, Kibbe AH. Pharmacists' compensation and work patterns: overview of 1988 national survey. Am Pharm 1989;ns29:695.

5. SPSS Inc. Staff. SPSS^x users' guide. 3rd ed. Chicago: SPSS Inc., 1987.

APPENDIX 1: PARTICIPATION REASONS

Other than regulatory reasons, pharmacists have many reasons for attending CE programs. Below is a list of reasons; please circle the number that best represents the degree of importance you attach to each reason.

Reason	Not Important		Moderately Important			Very Important	
1. Further match my knowledge or skill with the demands of my pharmacy practice	1	2	3	4	5	6	7
2. Mutually exchange thoughts with pharmacy colleagues	1	2	3	4	5	6	7
3. Help me be more productive in my professional role	1	2	3	4	5	6	7
4. Enable me to better meet patron expectations	1	2	3	4	5	6	7
5. Maintain my current abilities	1	2	3	4	5	6	7
6. Increase the likelihood of benefits for family and friends	1	2	3	4	5	6	7
7. Relate my ideas to those of my professional peers	1	2	3	4	5	6	7
8. Maintain my identity with my profession	1	2	3	4	5	6	7
9. Accommodate more effectively to the needs of my patrons	1	2	3	4	5	6	7
10. Review my commitment to my profession	1	2	3	4	5	6	7
11. Increase the likelihood of personal financial gain	1	2	3	4	5	6	7
12. Learn from the interaction with other pharmacists	1	2	3	4	5	6	7

13. Help me develop leadership capabilities for my profession	1	2	3	4	5	6	7
14. Increase my proficiency with patrons	1	2	3	4	5	6	7
15. Consider changing the emphasis of my present pharmacy responsibilities	1	2	3	4	5	6	7
16. Develop new professional knowledge and skills	1	2	3	4	5	6	7
17. Sharpen my perspective of my professional role or practice	1	2	3	4	5	6	7
18. Help me keep abreast of new developments in pharmacy	1	2	3	4	5	6	7
19. Help me increase the likelihood that patrons are better served	1	2	3	4	5	6	7
20. Assess the direction in which my profession is going	1	2	3	4	5	6	7
21. Help me be more competent in my pharmacy work	1	2	3	4	5	6	7
22. Increase the likelihood of professional advancement	1	2	3	4	5	6	7
23. Be challenged by the thinking of my pharmacy colleagues	1	2	3	4	5	6	7
24. Enhance the image of my profession	1	2	3	4	5	6	7
25. Improve my individual service to the public as a pharmacist	1	2	3	4	5	6	7
26. Consider the limitations of my role as a pharmacist	1	2	3	4	5	6	7

APPENDIX 1 (continued)

Reason	Not Important		Moderately Important			Very Important	
27. Develop proficiencies necessary to maintain quality performance	1	2	3	4	5	6	7
28. Enhance my individual security in my present pharmacy position	1	2	3	4	5	6	7
29. Maintain the quality of my pharmacy service	1	2	3	4	5	6	7
30. Reflect on the value of my pharmacy responsibilities	1	2	3	4	5	6	7