INSTRUCTIONAL DESIGN AND ASSESSMENT

A Quantitative Professionalism Policy in a Community Pharmacy Introductory Pharmacy Practice Experience

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Objective. To determine whether implementing a quantitative professionalism policy would lead to improved behaviors in an introductory pharmacy practice experience (IPPE) and to evaluate students' attitudes about professionalism expectations in the IPPE.

Design. A policy using quantitative parameters for assessing unprofessional behaviors was developed and implemented in the community pharmacy IPPE after discrepancies were identified in the way professional expectations were assessed.

Assessment. The quantitative professionalism policy reduced the number of assignments submitted post deadline ($p < 0.05$). There was no change in students' attitudes towards professional behaviors after the implementation of the policy.

Conclusion. The quantitative professionalism policy was effective in changing some of the students' professional behaviors in an IPPE.

Keywords: experiential, quantitative assessment, professionalism, community pharmacy, practice experience

INTRODUCTION

Instilling and fostering professional behaviors in students is considered one of the primary objectives of pharmacy curricula. While professionalism can be defined in many ways, numerous definitions have been provided in pharmacy academia such as the "A's and B's" of Professionalism,¹ and numerous specific expectations outlined in White Paper on Pharmacy Student Professionalism.^{1,2} Standards 13 and 23 of the Accreditation Council for Pharmacy Education's Accreditation Standards and Guidelines for the Professional Program in Pharmacy Leading to the Doctor of Pharmacy Degree make it clear that professionalism is an essential expectation of pharmacy students and pharmacists.³ Holding pharmacy students to the high standards of professional expectations is challenging. Instruments available for assessment of these attitudes and behaviors are frequently subjective and rely on students' self-assessment or preceptors' and instructors' global assessments based on their overall experience with students. There is little guidance on how to objectively assess professionalism or how to quantify unprofessional behaviors.

When students participate in the experiential portion of the pharmacy curriculum, assessing professionalism becomes even more necessary. At the Arnold and Marie Schwartz College of Pharmacy and Health Sciences, Long Island University (AMSCOP LIU), the challenge of assessing students' professionalism is most apparent during the 5-week community pharmacy IPPE completed during the summer after the second year. Community pharmacists at chain and independent pharmacies serve as preceptors for this IPPE. They are responsible for evaluating students on all daily activities, including participation in related tasks and professional behaviors. A full-time faculty member also oversees each IPPE, visits most students at least once during the experience, and grades required assignments.

Prior to 2011, pharmacist preceptors were asked to evaluate students' professional behavior during the IPPE with a "yes" or "no." This type of assessment allowed for much variability among different preceptors and did not clarify which events and how many led to yes or no equating to a pass or fail grade for the community pharmacy IPPE (Table 1).

As a result, several situations of unprofessional behavior arose, including lateness, absences without prior notification, inappropriate dress, and significantly late

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Table 1. Comparison of Professionalism Policies in the Community Pharmacy Introductory Pharmacy Practice Experience in 2010 and 2011

Summer 2010	Summer 2011
Student arrives on time and is properly attired.	On-site preceptor
Student gets along well with others.	Student arrived 15 or more minutes late. (-1 point per occurrence)
Student demonstrates legal/ethical behavior, including protecting the confidentiality of patient information.	Student did not notify on-site preceptor of absence the morning of occurrence (no later than 8 am). (-1 point per occurrence)
Student demonstrates initiative, is motivated, and undertakes assignments with professionalism.	No professional attire/lab coat/name badge worn during assigned shift. (-1 point per occurrence)
Student conveys information accurately and professionally.	Faculty preceptor
	Student did not notify college of absence the morning of occurrence (no later than 8 am). (-1 point per occurrence)
	Student did not have completed assignments at the site when faculty preceptor came to visit. (-1 point per occurrence)
	Designated deadlines for assignments missed.
	Midpoint deadline (-1 point)
	Intervention deadline (-1 point)
	Endpoint deadline (-1point)
	Outstanding resubmissions after block ended (-1point)

assignment submission or resubmission (as much as 162 days after the final deadline). Lack of a quantitative professionalism evaluation resulted in ambiguity for preceptors and led to inconsistencies with student assessments. Preceptors and faculty members involved in the program wanted to create a professionalism policy that outlined the basic expectations for both preceptors and students and had a structured assessment scale. The goal was to clearly state behavioral expectations, diminish instances of unprofessional behavior among students, and standardize professional behavior assessment among various community practice sites and settings. The professionalism policy was implemented in summer 2011.

The primary objective of this study was to evaluate whether implementing a quantitative professionalism policy would lead to improved professional behaviors by students enrolled in the community pharmacy IPPE. The secondary objective was to evaluate students' attitudes about professionalism expectations in the community pharmacy IPPE.

DESIGN

A Medline search for the terms "pharmacy professionalism assessment" and "pharmacy student professionalism" yielded 13 articles on these topics, but these articles did not provide us with a policy and/or an assessment tool that suited our specific needs. We then sent a request through the American Association of Colleges of Pharmacy experiential education listserv to gather

information on various ways other colleges and schools of pharmacy evaluated courses similar to our community pharmacy IPPE, especially with respect to professionalism. The model that was identified as the most useful to our program came from the University of Texas College of Pharmacy (UTCOP). Their policy used a points system to document unprofessional behavior.

We modified UTCOP's policy for our college's needs by adding unprofessional behavior occurrences specifically relating to the community pharmacy IPPE. Criteria in the new policy were revised to reflect measurable behaviors (Table 1). A 1-point deduction per occurrence was assigned to each behavior deemed unprofessional with a maximum allowable deduction of 10 points. If a student exhibited behavior(s) deemed to be unprofessional, the occurrence would be documented. The accumulation of more than the maximum allowable points related to unprofessional conduct over the duration of the IPPE resulted in a failing grade, irrespective of other performance factors. The study design and procedures were reviewed by the Long Island University Institutional Review Board and exempt status was granted.

EVALUATION AND ASSESSMENT

The effect of the new professionalism policy was assessed using a quasi-experimental design. The intervention was the professionalism policy. Students who completed the community pharmacy IPPE in summer 2010 served as the control group and students who completed

the community pharmacy IPPE in 2011, when the policy was implemented, served as the experimental group. For each group, 2 outcomes were assessed: students' timeliness of assignment submission and students' attitudes toward professional behaviors. Although the new professionalism evaluation assessed multiple professional behaviors, timeliness of assignment submissions was the only objective parameter captured in 2010 that was available for comparison with the 2011 experimental group.

Data on student attitudes towards professional behaviors were collected using a survey instrument consisting of a newly developed scale measuring attitudes towards professional behaviors. The control group completed the survey instrument only once whereas the experimental group completed the survey instrument twice to enable both between and within group effects analysis. Data on students' timeliness in submitting their assignments were collected from the electronic submission system, LiveText Electronic Portfolio (LiveText Inc, La Grande, IL).

Submission records for 22 required assignments for 204 students who completed the IPPE in 2010 (control group) were extracted from LiveText Electronic Portfolio. Submission records for 18 required assignments for 171 students who completed the IPPE in 2011 (experimental group) were also extracted. A graduate assistant coded these records for student behaviors related to students who met or missed the initial deadline and the final deadline. The initial deadline referred to the first time an assignment required submission (13th day, 19th day, 23rd day of experience). Final deadline referred to the 25th day of the experience when all assignments, including any revisions, needed to be submitted.

Data collected from student submissions were analyzed using SPSS, version 19.0 (SPSS Inc, Chicago, IL). Given that the number of assignments varied between the 2 groups, percentages, rather than absolute numbers, were used for analysis. Descriptive statistics were calculated to identify the percentage of assignments for which students missed the initial deadline, percentage of assignments for which students missed their final deadlines, percentage of students who submitted 100% of their assignments before the initial deadline, and percentage of students

who submitted 100% of their assignments before the final deadline. Next, *t* tests were conducted to identify if the mean percentages were significantly different between the experimental and control groups.

Students who completed the IPPE in 2010 missed the initial deadline for 3 of the 22 (3.4 ± 4.8) assignments they had to complete. Students who completed the IPPE in 2011 missed the initial deadline for 1 of the 18 (1.1 ± 2.3) assignments they had to complete. ($p \leq 0.001$). The 2010 IPPE students submitted 85% of their assignments before the initial deadline, whereas the 2011 IPPE students submitted 94% of their assignments before the initial deadline (Table 2) ($p \leq 0.03$). Of the students who completed the 2010 IPPE, 75 (38.3%) submitted 100% of their assignments before the initial deadline, while 105 (61%) of students from the 2011 IPPE submitted 100% of their assignments before the initial deadline ($p \leq 0.001$). Approximately one-third (34.7%) of the 2010 IPPE students submitted 100% of their assignments before the final deadline whereas approximately two-thirds (71.5%) of the 2011 IPPE students submitted 100% of their assignments before the final deadline ($p \leq 0.001$).

In the 2010 control group, only 1 student received a failing grade with several comments from the preceptor regarding unprofessional behavior. Similarly, in the 2011 experimental group, only 1 student received a failing grade for accumulating more than 10 points on the professionalism assessment. Of the 2010 IPPE students, 19 received an incomplete because of outstanding assignment submissions while only 5 of the 2011 IPPE students received an incomplete ($p = 0.003$).

Items for the Attitude Towards Professional Behavior (APB) scale were developed based on the elements of new policies in effect; ie, lateness, reporting absence, dress code, assignment submission deadlines, and entitlement. For each element of the policy, several items were written and reviewed by the authors, who represented 3 diverse areas of the pharmacy profession (pharmacy practice, social administrative science, and experiential education). Each item was anchored on a 5-point Likert scale (1-strongly disagree to 5-strongly agree). A group of graduate students further reviewed the items to establish face and content validity. Construct validity was performed using

Table 2. Comparison of Timeliness of Assignment Submissions Before and After Implementation of a Professionalism Policy in an Introductory Pharmacy Practice Experience

	Summer 2010, %	Summer 2011, %	<i>P</i>
All assignments submitted before the initial deadline.	85	94	≤ 0.03
Students who submitted all assignments before the initial deadline.	38.3	61	≤ 0.001
Students who submitted all assignments before the final deadline.	34.7	71.5	≤ 0.001

exploratory factor analysis. The exploratory factor analysis identified the number of dimensions underlying the 31 questionnaire scale items and the level of association between the items and the factors. Several well-recognized criteria for the factorability of a scale were used. Correlations between items from the same subscale had to be at least 0.3 with at least 1 other item, suggesting reasonable factorability. To examine whether the sample was adequate for conducting factor analysis, the Kaiser-Meyer-Olkin (KMO) statistic, with values ranging from 0 to 1, was calculated, and the Bartlett test of sphericity was evaluated for significance. The diagonals of the anti-image correlation matrix for each scale were examined to support the inclusion of each item in the factor analysis. The communalities were examined to confirm that each item shared some common variance with other items in scale. Consistent with recommendations from the literature, a KMO value greater than 0.6, significance of the Bartlett test of sphericity and anti-image correlation matrix diagonals above 0.5, and communalities above 0.3 were considered an acceptable measure for sampling adequacy and inclusion of items in the factor analysis.⁴ Factor analysis was conducted on all scale items in 2 stages: factor extraction and factor rotation. Factor extraction involved using the Kaiser criterion of eigenvalues over 1 for retaining factors.⁵ Additionally, factor extraction was based on a predetermined number of factors. At the time of scale development, it was determined that the scale would measure 5 aspects of attitudes towards professionalism behaviors: arriving on time/lateness, absence, dress code, submission deadlines, and student demands. Thus, a 5-factor solution was examined during factor extraction. Factor rotation was conducted using varimax rotation. Decisions about the number of factors to be retained were made based on the maximum variance explained by the minimal number of factors.

Administration of the survey to the students was done in 3 different time frames and participation was voluntary. In May 2011, a survey instrument consisting of the 31-item APB scale and questions on demographics was administered to students who had completed the community pharmacy IPPE in summer 2010. The survey was administered by staff members not involved in the study to the entire class in the beginning of a scheduled session with required attendance. Students were given an instruction memorandum and the survey instrument. All students who participated in the survey signed a consent page. No student identifiers were collected.

The same survey instrument was administered to students who were scheduled to complete the community pharmacy IPPE in summer 2011. It was administered by staff members not involved in the study at the beginning

of the community pharmacy IPPE orientation prior to students being debriefed about the new professionalism policy. After all survey instruments were completed, the policy was explained to the students along with all other course requirements and expectations. During the community pharmacy IPPE in summer 2011, students were assessed according to the new professionalism policy. After students completed the experience, the survey instrument was administered to them again during a required attendance session.

Data collected from the survey instruments were entered and analyzed using SPSS, version 19.0. Reliability of the APB scale was assessed using the Cronbach alpha for testing the internal consistency of the scale. Content validity was assessed by review of items by graduate students and construct validity was done by exploratory factor analysis. Descriptive analysis was conducted to analyze patterns of participant responses to the scale. Bivariate and multivariate analyses were conducted to analyze patterns of relationship between the study variables. For both analyses, summated APB scale scores and subscale scores were calculated.

Of the 204 students who completed the 2010 IPPE, 161 (78.9%) returned a survey instrument, while 170 (99.4%) of 171 students who completed the 2011 IPPE returned a survey instrument. Table 3 presents the demographics of the 2 groups of students who participated in the study. Approximately 60% of the participants were female, had worked in chain pharmacy settings, and worked 20 to 30 hours per week. Less than 20% of students had a pharmacist in the immediate family or a prior degree. There were no significant differences in the demographics of the students from the 2 groups.

The Cronbach alpha for the APB scale for all 3 times it was administered was 0.93, 0.93, and 0.94, respectively, indicating it was a reliable scale. Most subscales had moderate to high reliability (lateness subscale: 0.6, reporting absence subscale: 0.8, dress code subscale: 0.9, submission deadlines subscale: 0.8, and entitlement subscale: 0.7.) To demonstrate construct validity of the scale, factor analysis was conducted. Prior to conducting factor analysis, correlations between items from the same subscale were examined for being at least 0.3 with at least 1 other item, suggesting reasonable factorability. The KMO measure of sampling adequacy was 0.89, above the recommended value of 0.6, and the Bartlett test of sphericity was significant ($p < 0.001$). The diagonals of the anti-image correlation matrix for each scale were all over 0.5, supporting the inclusion of each item in the factor analysis. The communalities were all above 0.3, further confirming that each item shared some common variance with other items in scale.

Table 3. Demographics of the 2 Groups of Students Who Participated in the Study

Demographic	Group 1, No. (%) (N=161)	Group 2, No. (%) (N=170)
Gender		
Female	91 (56.5)	107 (66.5)
Currently work or have worked in the past 6 months		
Yes	124 (80)	127 (79.4)
Work setting		
Independent pharmacy	34 (25.4)	18 (10.6)
Chain pharmacy	81 (60.4)	90 (66.2)
Hospital pharmacy	12 (9.0)	23 (16.9)
Other pharmacy setting	1 (0.7)	1 (0.7)
Other non-pharmacy setting	6 (4.5)	4 (2.9)
Work length		
Less than 3 months	14 (8.7)	6 (3.5)
3-6 months	6 (3.7)	6 (3.5)
6 months-1 year	12 (7.5)	16 (11.7)
1-2 years	25 (15.5)	36 (26.3)
More than 2 years	75 (46.6)	72 (52.6)
Hours worked		
Less than 10 hours	0	0
10-20 hours	30 (22.4)	41 (30.4)
20-30 hours	79 (59.0)	75 (55.6)
30- 40 hours	23 (17.2)	18 (13.3)
More than 40 hours	2 (1.5)	1 (0.7)
Pharmacists in immediate family		
Yes	23 (20.5)	27 (21.6)
Prior degree		
Yes	17 (15.0)	15 (11.9)

An initial 7-factor structure, with the 7 factors explaining 38%, 7%, 6%, 5%, 4%, 4%, 3% of the variance, respectively, was achieved. This solution explained 68% of the variance in attitude towards professional behaviors. To improve the parsimony of the final solution, a 5-factor solution was examined because theoretically items belonging to 5 different scales were introduced in the analysis. The 5-factor structure, with the 5 factors explaining 38%, 7%, 6%, 5%, 4% of the variance, respectively, explained 61% of the variance in attitude towards professional behaviors and had improved loading of the items on the factors. Thus, exploratory analysis of the APB scale showed that a 5-factor solution was acceptable and that the APB scale had excellent construct validity. Table 4 provides frequencies, mean and standard deviation for each item of the 31-item APB scale, and the total score for each subscale and the overall scale score for all participants. The mean total professional behaviors attitude score was 109.8 ± 19.8 (out of 155), indicating mildly positive attitudes towards professional behaviors. Subscale scores indicated that participating students had neutral attitudes towards arriving on time at the site, whereas they were mildly positive about notifying preceptors and

college personnel before time about their absence, following a dress code, and submission deadlines. Students had mildly negative attitudes towards their entitlements. We examined the difference in subscale scores and total scale scores between and within the 2 student groups (Table 5). There was no significant difference in the APB subscale and total scale scores between the groups.

DISCUSSION

At our institution, assessment of professionalism became an area of concern in the community pharmacy IPPE. Although all students participated and completed multiple courses and discussions addressing professional behaviors, some were not able to exhibit those behaviors outside the classroom. Whether professionalism can even be taught is a topic of debate.⁶ The 3 factors that play important roles in professional socialization are effective role models, the settings where students are learning, and the fundamental values or morals that students already have.⁶

Because experiential education offers abundant opportunities for proper mentoring, it is frequently more effective in developing and shaping desirable professional attitudes

Table 4. Participant Responses on the Attitude Towards Professional Behaviors Scale (N=498)

Items	SD, No. (%)	D, No. (%)	N, No. (%)	A, No. (%)	SA, No. (%)	Mean (SD)
Lateness Subscale Score (out of 20)						12.8 (7.6)
It is necessary to come to the site on time every day	10 (2.0)	4 (0.8)	26 (5.2)	135 (27.1)	323 (64.9)	4.5 (0.8)
It is OK to be little late on certain occasions ^a	50 (10.1)	152 (30.6)	95 (19.1)	122 (24.5)	78 (15.7)	3.1 (1.3)
It is OK to be late on some occasions if we have a valid excuse	136 (27.3)	244 (49.0)	66 (13.3)	32 (6.4)	20 (4.0)	2.1 (1.0)
It is OK for my lateness to reflect negatively on my final evaluation	53 (10.7)	92 (18.6)	144 (29.1)	146 (29.6)	59 (11.9)	3.1 (1.2)
Reporting Absence Score (out of 30)						22.8 (4.8)
If I am absent, it is necessary to notify the on-site/faculty preceptor BEFORE my scheduled time of arrival at the site	7 (1.4)	11 (2.2)	30 (6.1)	156 (31.6)	289 (58.6)	4.4 (0.8)
If I am absent, it is OK to notify the on-site /faculty preceptor AT ANY TIME during the day of the absence ^a	44 (8.9)	63 (12.8)	82 (16.6)	195 (39.6)	109 (22.1)	3.5 (1.2)
If I am absent, it is necessary to notify the college BEFORE my scheduled time of arrival at the site	21 (4.3)	45 (9.2)	70 (14.3)	155 (31.6)	200 (40.7)	4.0 (1.1)
If I am absent, it is OK to notify the college AT ANY TIME during the day of the absence ^a	35 (7.1)	79 (16.1)	100 (20.4)	177 (36.0)	100 (20.4)	3.5 (1.2)
As long as I can provide supporting documentation upon my return, I do not need to notify the on-site/ faculty preceptor that I will be absent on that day ^a	37 (7.5)	42 (8.5)	83 (16.8)	208 (42.2)	123 (24.9)	3.7 (1.2)
As long as I can provide supporting documentation upon my return, I do not need to notify the college that I will be absent on that day ^a	28 (5.7)	46 (9.3)	99 (20.1)	202 (41.0)	118 (23.9)	3.7 (1.1)
Dress Code Subscale Score (Out of 50)						38.7 (9.2)
It is acceptable to wear jeans to the site ^a	23 (4.7)	26 (5.3)	66 (13.4)	188 (38.2)	189 (38.4)	4.0 (1.1)
It is acceptable to wear jeans to the site if others at the site are wearing jeans ^a	32 (6.5)	53 (10.7)	78 (15.8)	160 (32.4)	171 (34.6)	3.8 (1.2)
It is acceptable to wear sneakers to the site ^a	39 (7.9)	54 (10.9)	80 (16.2)	167 (33.8)	154 (31.2)	3.7 (1.2)
It is acceptable to wear sneakers to the site if others at the site are wearing sneakers ^a	49 (9.9)	64 (13.0)	97 (19.6)	135 (27.3)	149 (30.2)	3.5 (1.3)
It is acceptable to wear casual shirts /T-shirts to the site ^a	27 (5.6)	36 (7.5)	75 (15.6)	185 (38.4)	159 (33.0)	3.9 (1.1)
It is acceptable to wear casual shirt/T-shirt to the site if others at the site are wearing casual; shirts/T-shirts ^a	27 (5.6)	57 (11.9)	77 (16.0)	168 (35.0)	151 (31.5)	3.7 (1.2)
It is acceptable to wear a lab coat while at the site	14 (2.9)	38 (8.0)	71 (14.9)	178 (37.3)	176 (36.9)	4.0 (1.0)

(Continued)

Table 4. (Continued)

Items	SD, No. (%)	D, No. (%)	N, No. (%)	A, No. (%)	SA, No. (%)	Mean (SD)
It is acceptable to NOT wear a lab coat at the site if others at the site do not wear a lab coat ^a	23 (4.8)	42 (8.8)	72 (15.1)	181 (38.0)	158 (33.2)	3.9 (1.1)
It is acceptable to NOT wear a name badge while at the site ^a	14 (2.9)	28 (5.9)	65 (13.6)	187 (39.2)	183 (38.4)	4.0 (1.0)
It is acceptable to NOT wear a name badge at the site if others at the site do not wear a name badge ^a	14 (2.9)	28 (5.9)	67 (14.1)	194 (40.8)	173 (36.3)	4.0 (1.0)
Submission Deadlines Subscale Score (Out of 30)						21.2 (5.1)
It is acceptable to NOT have completed assignments at the site ^a	19 (4.0)	31 (6.5)	62 (13.1)	201 (42.3)	162 (34.1)	4.0 (1.0)
It is acceptable to NOT have completed assignments at the site as long as I have them at home ^a	26 (5.4)	51 (10.7)	85 (17.8)	171 (35.8)	145 (30.3)	3.7 (1.2)
It is acceptable to miss assignment submission deadlines ^a	16 (3.3)	22 (4.6)	74 (15.5)	194 (40.6)	172 (36.0)	4.0 (1.0)
It is acceptable to miss assignment deadlines if I have a valid reason for submitting them past deadlines ^a	47 (9.9)	134 (28.2)	111 (23.4)	102 (21.5)	81 (17.1)	3.1 (1.3)
At the completion of course, it is acceptable to have assignment which still need to be submitted ^a	26 (5.5)	58 (12.2)	96 (20.2)	177 (37.2)	119 (25.0)	3.6 (1.1)
I should not be asked by my preceptor to complete assignments which are not in my syllabus ^a	88 (18.7)	99 (21.0)	142 (30.1)	89 (18.9)	53 (11.3)	2.8 (1.3)
Entitlement Subscale Score (out of 25)						14.0 (3.4)
It is the preceptor responsibility to address all of my concerns as soon as they arise ^a	73 (15.4)	138 (29.2)	154 (32.6)	76 (16.1)	32 (6.8)	2.7 (1.1)
If I complete all of my assignments with a passing grade, I should be given a Pass for the rotation even if it was not motivated at the site ^a	120 (25.2)	131 (27.50)	145 (30.5)	55 (11.6)	25 (5.3)	2.4 (1.1)
If I complete all my assignment with a passing grade, I should be given a Pass for the rotation even if I acted like I did not want to be at the site most or all of the time ^a	84 (17.7)	110 (23.2)	145 (30.6)	102 (21.5)	33 (7.0)	2.8 (1.2)
If points were assigned for each unprofessional behavior, it would be OK for me to lose some professionalism points as long as I would still pass the course ^a	44 (9.2)	108 (22.7)	153 (32.1)	116 (24.4)	55 (11.6)	3.1 (1.1)
It is NOT OK to lose any points for unprofessional behavior ^a	63 (13.2)	105 (22.0)	138 (28.9)	102 (21.4)	69 (14.5)	3.0 (1.2)
Total Attitude towards Professional Behaviors Scale Score (Out of 155)						109.8 (19.8)

Abbreviations: SD=strongly disagree; D=disagree; N=neither agree nor disagree; A=agree; SA=strongly agree.

^a Reverse coded when calculating mean and standard deviation to facilitate interpretation that higher scores reflect positive attitudes towards professional behaviors.

Table 5. Comparison of Attitude Towards Professional Behavior Scale Scores

	2010 Control Group, Mean (SD)	2011 Experimental Group Prepolicy, Mean (SD)	2011 Experimental Group Postpolicy, Mean (SD)	<i>P</i>
Lateness attitude subscale score	12.6 (2.7)	12.9 (2.8)	12.9 (2.7)	0.613
Reporting absence subscale score	22.2 (5.1)	23.2 (4.3)	23.2 (4.9)	0.110
Dress code subscale score	38.2 (9.2)	38.9 (9.0)	38.9 (9.4)	0.740
Submission deadline subscale score	20.8 (5.0)	21.5 (5.3)	21.4 (5.1)	0.384
Demands subscale score	13.7 (3.6)	13.9 (3.3)	14.4 (3.3)	0.152
Total professional behavior attitudes scale score	108.2 (20.1)	110.1 (19.4)	111.1 (20.1)	0.473

and behaviors in pharmacy students. It is also where assessment of those behaviors becomes especially challenging. Many aspects of professionalism are mostly internal and may not be expressed in a universal fashion by all students. This is why most assessment scales, such as those developed by Chisholm and colleagues⁷ and Kelley and colleagues,⁸ were designed to be used by students to reflect on their own attitudes. Unlike attitudinal aspects of professionalism, behavioral aspects are more transparent, and mentors, preceptors, or faculty members can directly assess some of them. The professionalism assessment scale developed by Boyle and colleagues was more aligned with our needs and focused on preceptor-driven assessment of professional behavior during introductory and advanced pharmacy practice experiences (APPEs).⁹ The 4 domains of professionalism assessment discussed in their paper were somewhat different from our problem areas. In their study, students had to display professional behavior 90% of the time to receive a passing grade for the experience. While this is expected in the professional work environment, our students were allowed to make some mistakes, and we gave them the chance to improve their professional behavior.

The quantitative parameter of late assignment submission and resubmission, which we tracked before and after implementation of the professionalism policy, was significantly impacted by the policy implementation. Because attitudes towards this parameter were not changed, it is hard to know why the behavior was impacted. The most likely explanation is that there was a direct point deduction that, if repeated enough times, could tangibly result in failure of the course which in turn could have other repercussions.

Students' attitudes towards professional behavior did not change after the new professionalism policy was implemented. We were not surprised to see the same results between the 2010 control group and 2011 experimental group (prior to policy implementation). However, the 2011 control group reported the same attitudes towards professionalism after working under the new policy, which

was a surprising finding. Because these attitudes develop gradually, if this policy and assessment is used in all subsequent IPPEs and APPEs, students' attitudes may undergo a gradual transformation. Another possibility for the lack of change in attitudes is that it is more difficult to change attitudes than behaviors, or it could be that this professionalism policy was more effective in changing behaviors than attitudes.

Our study had some limitations. Because parameters other than timeliness of assignments were not quantified or measured in the year prior to the professionalism policy implementation, it is unknown whether other behaviors were affected by the new policy. According to the Office of Experiential Education staff, in summer 2011, no phone calls were received from preceptors to clarify how to assess students' professionalism or whether issues students were having at the experience site should result in a failing grade, a marked change from summer 2010. Additionally, the policy did not assess attitudinal aspects of professionalism. Unprofessional attitudes, lack of commitment, and lack of empathy are less measurable despite being just as important as behavioral aspects in pharmacists.

While we designed our policy to successfully capture behaviors that were problematic in our students, other colleges and schools of pharmacy may find additional behaviors that were not assessed with this scale. If consideration is given to implementing this policy, others are encouraged to explore their own problematic professionalism issues. Our institution will continue with its efforts to improve student professionalism through a multitude of approaches. The quantitative professionalism policy will continue to be used in the community pharmacy IPPE and potentially in other experiential courses.

CONCLUSION

Implementing a quantitative professionalism policy and assessment in the community pharmacy IPPE demonstrated a significant improvement in the timeliness of

students' assignment submissions. The policy was not effective in changing students' attitudes towards professionalism. Additional tools may be needed to enhance development and facilitation of attitudinal aspects of professionalism in the community pharmacy IPPE.

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