

Impact of Prescription Verification Activities in a Skills-Based Laboratory Course

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Background

- Prescription verification is one of the essential roles of a community pharmacist. Pharmacists in this setting must be able to accurately determine if a prescribed medication is appropriate and safe to dispense to a patient, and if the medication has been filled in accordance with the prescriber's order.
- During the first 3 professional years, students at the University of Maryland School of Pharmacy are enrolled each semester in an Abilities Lab course which provides exposure to both community and institutional pharmacy skills.
- Motivated by the 2016 ACPE Standards, a skills-based laboratory course further incorporated prescription verification activities (PVA). These activities activity focused on verifying the accuracy and appropriateness of a filled prescription, and determining the appropriate course of action to resolve any errors or omissions.

Objectives

To determine how a progression in the number and complexity of PVA in a skills-based laboratory course affects students' confidence during introductory community pharmacy rotations (IPPE).

Methods

- Students in the class of 2017 had 1 semester of PVA prior to their IPPEs, students in the class of 2018 had 2 semesters, and students in the class of 2019 had 3 semesters. For students in the classes of 2018 and 2019, the number and complexity of prescriptions to be verified increased in subsequent semesters.
- Over the course of 3 years, students who recently completed their IPPE community pharmacy rotation were asked to fill out an anonymous survey. We evaluated the effects of class year and professional pharmacy experience on student responses using the two-way ANOVA and Turkey-Kramer test.
- Least squares (LS) means were calculated if primary factors (year or professional pharmacy experience) were significant; otherwise arithmetic means were calculated.

Results

Over a 3-year period, 395 students completed the survey. The majority (89.4%) had professional pharmacy experience.

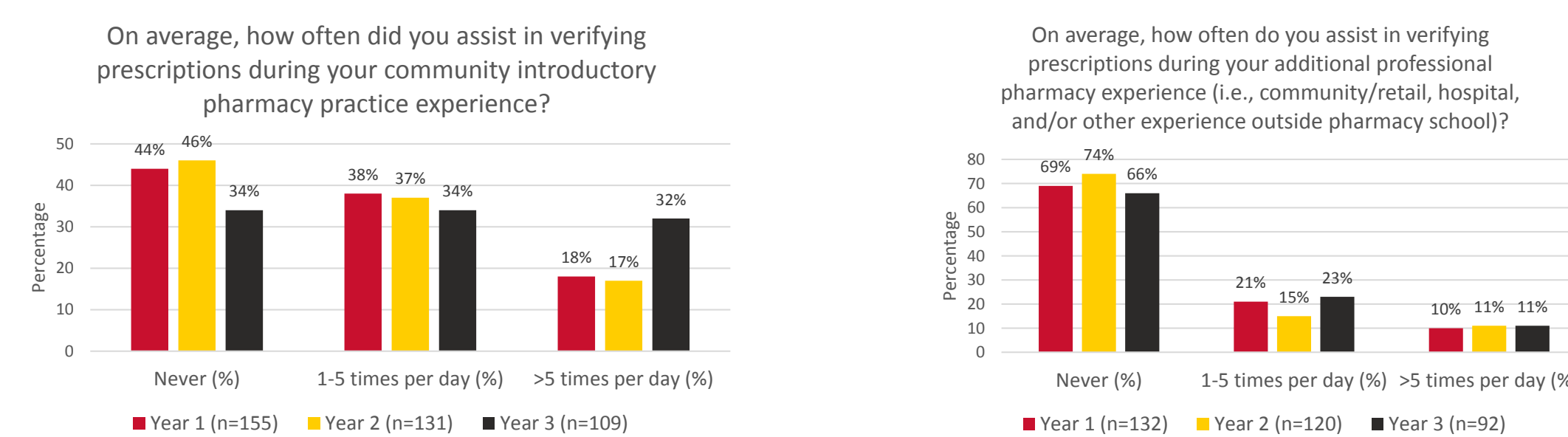


Table 1. Arithmetic means and the comparisons of LS means for question 8 & 9 after two-way ANOVA

Question: Please rate how well you agree with the following questions from 1 (strongly disagree) to 5 (strongly agree)	Mean(SD)	LS means(95% CL)		p value
		Pharmacy experience		
		Yes	No	
Q8 The Abilities Lab dispensing activities prepared me to accurately and confidently verify prescriptions while on my IPPE community pharmacy rotation.	3.62(0.99)	3.61 (3.51, 3.72)	3.97 (3.65, 4.28)	0.04
		Year		
		2017	2019	
Q9 I feel confident if/when asked to verify prescriptions during my IPPE community pharmacy rotation.	3.57(1.0)	3.57 (3.34, 3.80)	4.03 (3.72, 4.34)	0.046

Table 2. Arithmetic means and the comparisons of LS means for question 10 to 17 after two-way ANOVA

Question: As a pharmacist, it is your responsibility to verify a prescription prior to giving it to the patient. Please rate your ability to perform the following tasks on a scale of 1 (very low) to 5 (very high):	Mean(SD)	LS means(95% CL)		p value
		Year		
		2017	2019	
Q10 Determine that the prescription is legal and valid	4.07(0.83)	3.79 (3.60, 3.99)	4.25 (3.99, 4.51)	0.01
Q11 Determine that the prescription is appropriate and safe for the patient to receive	3.73(0.82)	na	na	na
Q12 Determine that the label matches the prescription	4.60(0.65)	na	na	na
Q13 Determine that the Prescription Expiration Date on the label is correct	4.56(0.65)	na	na	na
Q14 Determine that the Discard After Date on the label is correct	4.52(0.69)	na	na	na
Q15 Determine that the quantity of drug dispensed matches prescription quantity	4.66(0.61)	na	na	na
Q16 Determine that the drug dispensed is expired	4.62(0.68)	na	na	na
Q17 Determine that the auxiliary labels are appropriate	3.99(0.86)	na	na	na

Table 3. Arithmetic means and the comparisons of LS means for question 18 to 25 after two-way ANOVA

Question: As a pharmacist, it is your responsibility to verify a prescription prior to giving it to the patient. Rate your ability (1=very low and 5=very high) to address each of the following concerns:	Mean(SD)	LS means(95% CL)		p value
		Pharmacy experience		
		Yes	No	
Q18 The prescription is NOT VALID. You will call the prescriber for clarification.	4.20(0.86)	na	na	na
Q19 The prescription is NOT APPROPRIATE/SAFE for the patient to receive. You will call the prescriber with a recommendation.	3.88(0.97)	na	na	na
Q20 The prescription has an ERROR or OMISSION. You will call the prescriber for clarification.	4.24(0.85)	4.29 (4.20, 4.39)	3.98 (3.71, 4.26)	0.036
		Year		
		2017	2018	
Q21 The label's content does NOT match the hardcopy prescription. You will fix the label.	4.51(0.76)	4.19 (4.01, 4.37)	4.67 (4.43, 4.92)	0.004
		2017	2019	
		4.19 (4.01, 4.37)	4.55 (4.31, 4.79)	0.04
Q22 The label's Prescription Expiration Date and/or Discard After Date is NOT correct. You will fix the label.	4.47(0.74)	4.24 (4.07, 4.42)	4.63 (4.39, 4.87)	0.026
Q23 The quantity dispensed does NOT match the prescription quantity. You will correct the quantity dispensed.	4.59(0.70)	na	na	na
Q24 The drug dispensed is expired. You will get the stock bottle that is not expired and re-fill the medication vial.	4.57(0.71)	na	na	na
Q25 The auxiliary label(s) is/are NOT correct. You will obtain the correct auxiliary label(s).	4.16(0.87)	na	na	na

Conclusions

This study showed that PVA had a positive impact on student confidence in several areas pertaining to prescription verification. Students without pharmacy experience found greater value in these activities. Future research will focus on whether performance indicators agree with student self-assessment of confidence.