Assessment of Professional Identity Formation and Influencing Factors in Student Pharmacists

College of Pharmacy
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BACKGROUND

- Professional Identity Formation (PIF) is the transformative process of internalizing and demonstrating the behavioral norms, standards, and values of a professional community.[1]
- In the context of pharmacy education, PIF is when a student begins to "think, act, and feel" like a pharmacist.[1]
- The Academy has called to action the need to foster PIF among student pharmacists.[2]
- Previous studies investigating PIF in student pharmacists primarily used qualitative assessments, although a quantitative assessment of PIF is more feasible.[1,3]
- A systematic review of eight PIF survey tools found that the Macleod Clark Professional Identity Scale (MCPIS-9) has the largest volume of psychometric evidence and is suitable for use in interprofessional contexts.[4,5]

OBJECTIVES

- To determine if PIF varies among student pharmacists based on class year in a Doctor of Pharmacy program and to identify predictors of PIF.

METHODS

- The 9-item MCPIS-9 was used to measure PIF[5]
  - Items are ranked on a 5-point Likert scale
  - Scores range from 9 to 45 (higher score = higher PIF)
- Instrument also assessed demographics, previous work experience, research experience, service-learning, leadership, and mentorship

Figure 1. Flow Chart of Survey Development, Administration, & Analysis

Survey instrument developed & piloted to establish content validity
12 faculty | 8 students

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Cross-sectional survey sent to all enrolled students in Spring 2024
443 students at University of Houston College of Pharmacy

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MCPIS-9 scores ranked into 3 categories (tertiles)
Raw scores were left-skewed and ranking eliminated skewness

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Kruskal-Wallis test
Determine if MCPIS-9 scores differed between class years

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Ordinal logistic regression with stepwise selection
Identify characteristics associated with higher MCPIS-9 scores

RESULTS

Figure 2. Distribution of MCPIS-9 Scores

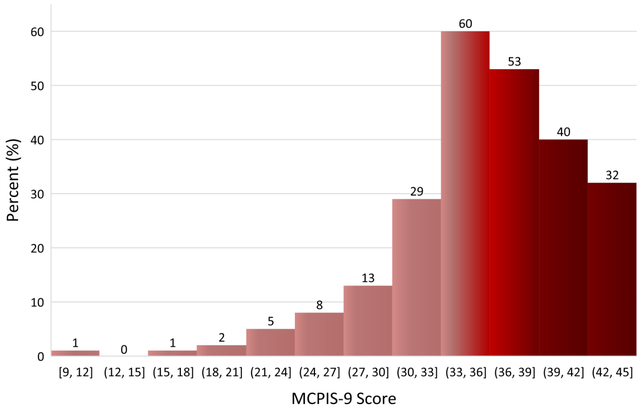

Table 1. Tertile Rankings of MCPIS-9 Scores

PIF Category Based on Rank	MCPIS-9 Score Minimum	MCPIS-9 Score Maximum
1	9	34
2	35	38
3	39	45

Table 2. Comparison of MCPIS-9 Scores by Class Year

Class Year	Number (N)	Median MCPIS-9	P value
P1	67	37	0.091
P2	65	36	
P3	65	36	
P4	47	38	
55.1% response rate			

Cronbach's alpha = 0.86

Table 3. Ordinal Logistic Regression with Stepwise Selection Adjusted For Age and Gender

Participant Characteristic	Odds Ratio	95% Confidence Interval
Age	1.00	0.95 – 1.06
Gender (female versus male)	1.09	0.62 – 1.91
Gender (other versus male)	0.13	0.01 – 1.32
Race (white)	1.93	1.05 – 3.58
Pharmacy conference experience	1.79	1.10 – 2.91
Pre-matriculation pharmacy work experience	1.94	1.12 – 3.36

Scan to view survey instrument questions

Table 4. Unadjusted Bivariate Analysis of Mean MCPIS-9 Scores For Other Characteristics

			MCPIS-9 Score		PIF Category 1		PIF Category 2		PIF Category 3	
Participant Characteristic	N	%	Mean	P value	N	%	N	%	N	%
Pharmacy work experience during matriculation	171	71.25	36.16	0.3161	50	29.24	65	38.01	56	32.75
Research experience	71	29.58	36.72	0.3520	17	23.94	27	38.03	27	38.03
Participation in an organized pharmacy internship	57	23.75	36.88	0.3070	10	17.54	23	40.35	24	42.11
Participation in a pharmacy health fair	134	55.83	36.60	0.3465	37	27.61	46	34.33	51	38.06
Peer mentor	128	53.33	36.81	0.0873	31	24.22	48	37.50	49	38.28
Pharmacist mentor	105	43.75	36.93	0.1422	27	25.71	38	36.19	40	38.10
Number of leadership positions in pharmacy organization(s)										
None	78	32.50	36.83	0.7457	24	30.77	25	32.05	29	37.18
1	69	28.75	35.88		26	37.68	21	30.43	22	31.88
2	59	24.58	36.36		13	22.03	24	40.68	22	37.29
3 or more	34	14.17	37.12		8	23.53	12	35.29	14	41.18

CONCLUSIONS

- Class year in a Doctor of Pharmacy program was not associated with an improvement in PIF.
- Ordinal logistic regression demonstrated that students who are white, have attended a pharmacy conference, and with pre-matriculation pharmacy work experience had higher PIF.
- Promoting and creating equal accessibility for professional opportunities to all students may strengthen PIF.
- Existing PIF frameworks may have limitations owing to the exclusion of marginalized identities as a layer of professional identity.[6]
- At face value, one would predict that many of the measured variables would positively correlate with PIF.
- This brings into question the sensitivity of the MCPIS-9 as a measure of PIF and if there is a better way to objectively measure PIF in student pharmacists.

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