

# A Scorecard to Rate Curriculum Vitae Predictors of Pharmacy Residency Placement

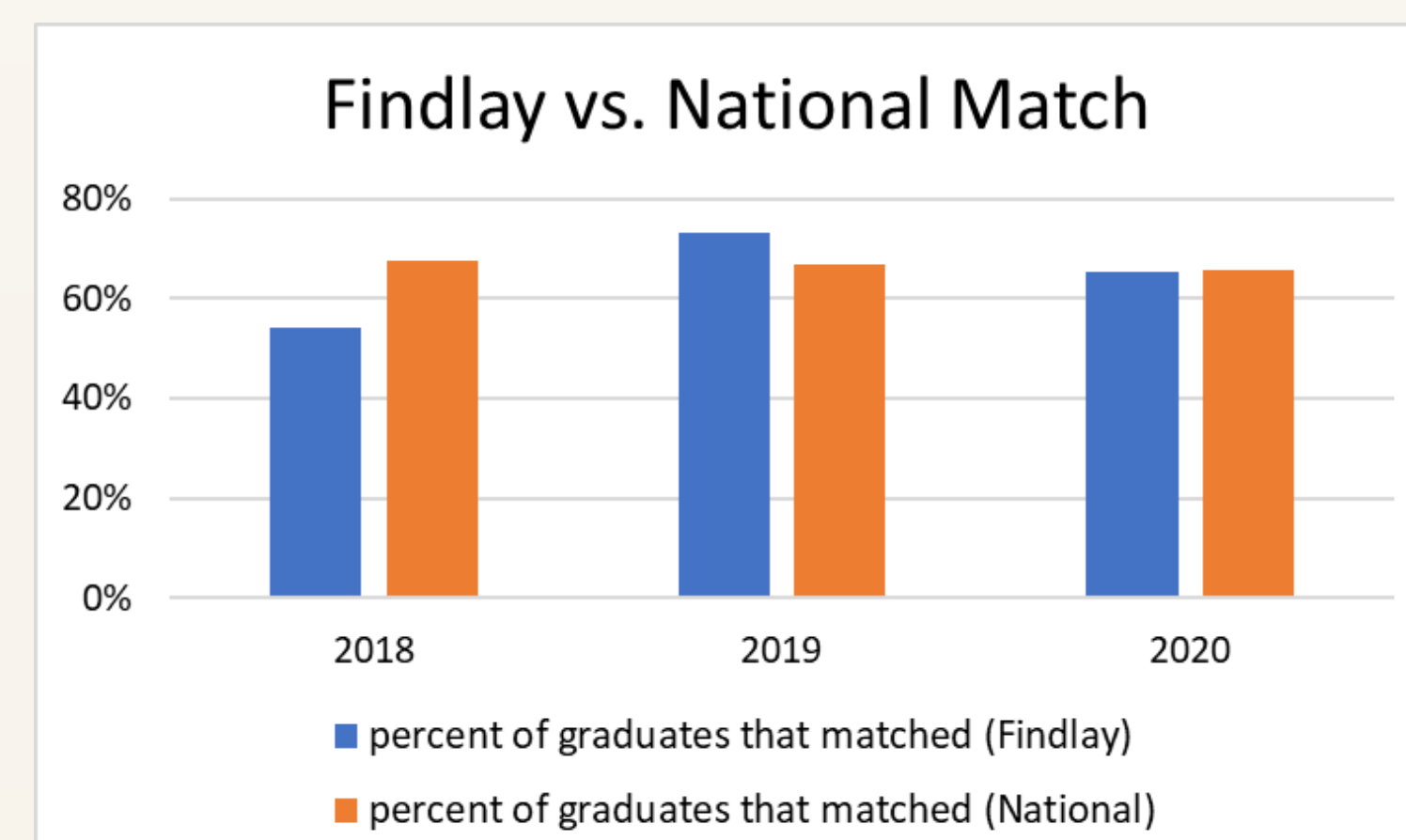
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## Abstract

Competitive pharmacy residency programs select students based on several factors, including the first impression of a student's Curriculum Vitae (CV). The information presented on a CV may include various work experiences, leadership activities, academic honors, research, and publications. Previous literature suggests that certain components of the CV may determine if the student earns consideration. This study compiled CV categories and entries from recent College of Pharmacy graduates to evaluate what information is key to obtaining a residency. Individual CVs were analyzed using point-based rankings and then scores evaluated by nominal regression (SPSS) to identify which attributes predicted a residency position. The optimized scorecard will be validated with two additional cohorts of College of Pharmacy graduates. Ultimately, this project aims to develop a Findlay specific scorecard able to predict what experiences included on a CV increase the likelihood of obtaining a residency.

## Background

The University of Findlay is a 0+6 program; therefore, the distinction was made between pharmacy and non-pharmacy club leadership. Also unique to UF is the requirement of a PHAR590 course, which is intended for all students to gain research and presentation experience. We hypothesized going above this requirement by doing additional research and then highlighting the achievement on a CV would be important to obtaining a residency.



The graph shows the percentage of Findlay students that attempted residency that obtained a residency. This is compared to the ASHP match rate, of graduates from that year matching in that year, excluding students that went back to obtain a residency.

## Data Collection

The class of 2019 was used to build the finalized scorecard and categories were gathered from previous literature. CV's were analyzed using a reiterative process and concluded a final scorecard involving the categories of Pharmacy club leadership, Hospital internship, High GPA indicators, Research Beyond 590, and Overall impression. Removed categories included: non-pharmacy leadership, athletics, retail/other job, and additional publications/presentations.

Included Categories	p-values
Pharmacy Club Leadership	0.09 (2019)
Hospital Internship	0.006* (2018)
Indicators of High GPA	0.003* (2018)
Research Beyond PHAR590	0.01* (2020)
Overall Impression	0.045* (2020)

## Methods

A potential candidate's CV is the first impression on a residency program and the organization. Readability and eye-appeal is key. This was subjective based on the researcher and graded on a scale of 0-3. However, this is applicable to the residency process. A higher score in this category correlated to logical headings, use of bullet points and color, and format.

Also differentiated was pharmacy club leadership vs non pharmacy leadership. This was due to the fact that Findlay students traditionally do not obtain an undergraduate degree and include six years of activities under leadership.

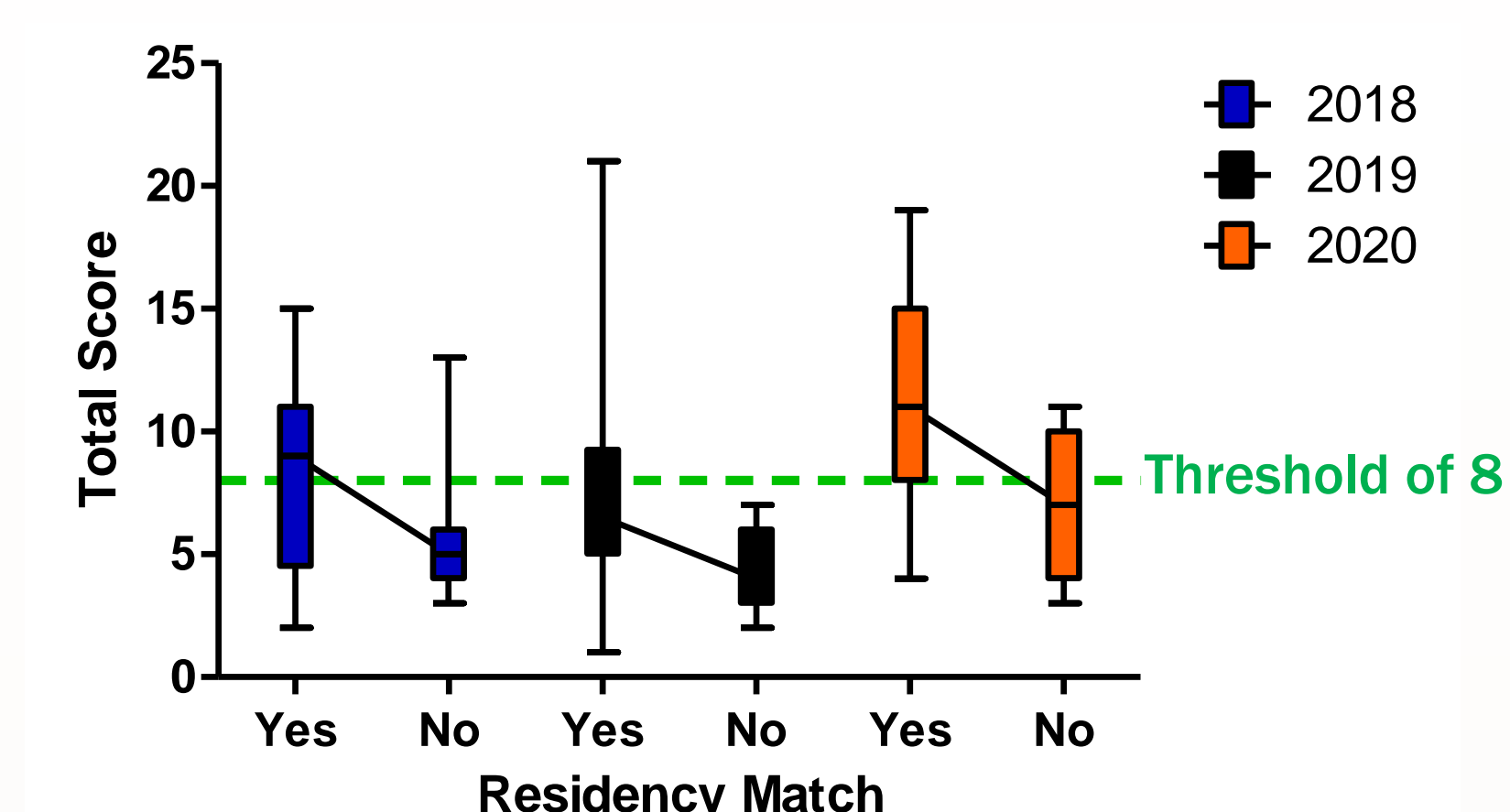
SPSS was used to analyze correlations between categories and multi-nominal regression was used to build a model to predict if a student obtained a residency based off their total score.

## Results

The 2019 cohort data was used to build the final model. The cohorts of 2018 and 2020 were found to be significant with values of 0.019 and 0.048 respectively. This is shown below in table 2.

(Table 2)	2018	2019	2020
Significance	0.019*	0.067	0.048*

The graphic below illustrates the median, IQR, and max/min for each cohort analyzed. Notably, the class of 2019 had the widest variation, with the "Yes Matching" maximum total score of 21 skewing some of our analyses. This highlights a potential limitation. Overall, higher scores for student obtaining residencies are apparent for all years.



A chosen threshold specified for obtaining a residency was a score of 8 or greater. If a student's CV scored 8 points or more, the model should predict their chances of obtaining a residency. Sensitivity and specificity analyses were completed. A score greater than or equal to 8 had an 86.8% probability of predicting if a student would obtain a residency. Likewise, those with a score under 8 had a 41.9% probability of not obtaining a residency. This is shown in table 3.

	2018	2019	2020	All Cohorts Combined
Sensitivity	80%	100%	70%	86.8%
Specificity	28.5%	39%	62%	41.9%

## Discussion

Significant categories included hospital internship, indicators of high GPA, research beyond 590, and overall impression. However, these results were not consistent between years, some categories were only significant in 1 cohort. We selected a final scorecard that incorporated all key parameters and that led to best goodness of fit without violating any assumptions of the model. The strength of our final model is identifying those most likely to obtain a residency (sensitivity = 86.8%). The model was weaker for predicting those unlikely to obtain a residency as some students with a low total score were also successful. One explanation is that students may have matched with their hub site or place of work.



## CONCLUSIONS

This optimized, Findlay specific scorecard can be applied to future cohorts. Also, this can be used to help current students enhance their CV to apply for residency programs. This also helps prove to underclassmen that being involved in leadership, research, and internships, early on in their pharmacy career will help long term. Students can see what activities they should be involved in to help them achieve their goals. The ultimate goal will be to apply this prospectively to a current cohort going through the matching process.

## Student Perspective

By obtaining what data is critical to present on a CV, students can start preparing for residency early on in their education. Furthermore, a Findlay specific method of analyzing the data will be useful to students entering the program. They will have evidence that leadership experience and research are crucial to obtaining a residency and become involved early in the curriculum. This will also be key to keeping Findlay competitive in respect to the national match rate.

## REFERENCES

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