BRIEF

Survey of Pass/Fail Grading Systems in US Doctor of Pharmacy Degree Programs

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Objective. To understand how US schools and colleges of pharmacy use pass/fail grading systems in Doctor of Pharmacy degree programs.

Methods. An electronic survey with 15 selected response items and six open-ended questions was developed to gather qualitative and quantitative data. The convenience survey was distributed in 2020 to the 10 academic pharmacy programs known to use a pass/fail grading system for the majority of their courses.

Results. Leaders from eight of the 10 programs identified responded to the survey. Programs varied regarding the types of courses for which they used a pass/fail grading system and whether they shared numerical scores with their students. A variety of grade designations (honors, pass, no pass, fail, satisfactory, etc) were used, and the minimum pass level varied by program, ranging from 70% to 90%. For those institutions that used post-course remediation, the majority of remediation occurred immediately following the academic term or in the summer. The type of information shared with residency program directors (eg, GPA, class rank, overall percentile, qualitative comments) varied between programs.

Conclusion. How pass/fail grading systems were used was inconsistent across the cohort. Programs that use a criterion-based grading system might benefit from engaging in conversations with other schools that do the same to determine whether and how consistency in terminology, passing level, percentages, grade point averages, and progression might be achieved. Additional insights on postgraduate training requirements and honorary societies are warranted should the use of pass/fail grading expand as it has in medical education. Further research on this topic is needed.

Keywords: pass/fail, grading, assessment, pharmacy student, residency

INTRODUCTION

The evidence behind pass/fail grading systems suggests benefits to students, including increased well-being, cohort cohesion, motivation, and the encouragement of self-regulated learning and decreased anxiety and stress and competition within cohorts.[1-4] Furthermore, studies by Miller,[5] Spring and colleagues[6] have found that pass/fail grading systems do not, by default, negatively impact academic performance. These benefits are exemplified by the fact that the majority of medical schools employ such a grading system; however, widespread adoption of a pass/fail grading system has not occurred within pharmacy education in the United States.[7]

Many programs in academic medicine have migrated toward grading systems that have attempted to relieve student stress, anxiety, and competitiveness while enhancing cooperative learning among students.[8] Such attempts are intended to enhance the overall psychological well-being of the student body. In a multi-institutional study by Reed and colleagues that surveyed over 2,000 first and second year medical students at seven US medical schools, it was concluded that "curriculum reform intended to enhance student well-being should incorporate pass/fail grading."[3] At present, well-over three-quarters of medical schools use a form of a pass/fail grading system in the four years of education.[7]

This study sought to better understand how US Doctor of Pharmacy (PharmD) programs use pass/fail grading, including for what types of courses the model is used, whether numerical scores or grade point averages (GPAs) are shared with students, when remediation occurs, and what type of information is shared with residency programs,

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employers, and honor societies. The authors were also interested in learning how information and data, if any, are communicated to pharmacy residency program directors to ensure students without a GPA or class rank are competitive (or even permitted to apply).

METHODS

Based on firsthand knowledge and a review of program websites, the authors first assembled a list of those schools and colleges of pharmacy known to be using a pass/fail grading system throughout their PharmD program courses. This list was shared with and affirmed by members of the American Association of Colleges of Pharmacy (AACP) Curriculum Special Interest Group via AACP Connect, the Association's online discussion forum.[9] The authors then developed a survey to gather qualitative and quantitative data from the 10 programs identified. The survey instrument was reviewed by the institutional colleagues of the authors but not by external stakeholders. Once finalized, an email with a customized link to the survey was sent to the pharmacy deans and associate deans of each of the 10 institutions so that only one response per institution would be obtained. The survey instrument contained 15 selected response items and six open-ended questions for a total of 21 items, with logic, so the total number of questions varied depending on responses. The survey was divided into four sections: institutional information, pass/fail practices, student communication, and residency information. The survey was distributed using Qualtrics (www.qualtrics.com) in May 2020. Three reminders were sent out over the following six weeks. This study was approved by the Medical College of Wisconsin (Milwaukee, Wisconsin) Institutional Review Board.

The survey responses were interpreted using Qualtrics reports because of the limited sample size and the descriptive nature of the data. The qualitative data were used to support the selected response questions to provide more clarity rather than to identify themes. Information on the institutions, including length of program, curricular delivery, and enrollment was collected as part of the survey and reviewed. The researchers also reviewed questions on pass/fail grading, remediation strategies, and how information was communicated to residency program directors.

RESULTS

Eight (80%) of the 10 schools responded to the survey, and one academic pharmacy leader from each of the eight schools is represented in the data set. Of those, half represented public institutions and the other represented private institutions. The majority (63%) of the schools represented three-year programs. The curricular delivery was split between block (38%), quarter (38%), and semester (25%). Total enrollment for the most recently matriculated group of students ranged from 49 to 340, with an average of 129 students.

All eight institutions used a pass/fail grading system for introductory pharmacy practice experience (IPPE) courses, and the majority (88%) used the system for didactic, elective, laboratory, and interprofessional education (IPE) courses, as well as advanced pharmacy practice experiences (APPEs). Only 63% and 50% used this system on cocurricular courses and activities and experiential education seminars, respectively.

Institutions used various terms for assessments within their pass/fail grading system, including honors (63%), pass (63%), no pass (13%), fail (50%), satisfactory (38%), unsatisfactory (25%), and competency (13%). Additionally, the minimum pass level also varied by institution, ranging from 70% to 90%. Institutions also varied with regards to when, and in what types of courses, grades expressed as a numerical value (percentages) were released to students (Table 1).

Institutions used a variety of remediation strategies, including skills remediation in laboratories (88%), post-course remediation (88%), re-examinations (75%), and skills remediation on practice experiences (50%). For those institutions that used post-course remediation, the majority of remediation occurred immediately following the academic term or in the summer and rarely occurred in another academic term concurrent with or in place of new coursework. The majority of institutions (75%) stated that students could not progress without pausing if they earned a final grade below passing. However, each program had its own remediation and dismissal policies that it followed based on individual student cases.

Only one institution calculated a GPA based on each student's final numerical grade in the class. Other institutions provided a class rank, overall percentile, or qualitative comments from APPE preceptors. Some used the final percentage score in the course to equate to a typical letter grade system and awarded quality points accordingly. Other programs awarded the maximum quality points available to each student who earned a passing grade in the course, a process which was described by one survey respondent as "meaningless." Finally, two institutions stated they used a course average percentage calculation or class rank to determine students' eligibility to participate in the Rho Chi Pharmacy Academic Honor Society.

DISCUSSION

The results suggest that each PharmD program that uses a pass/fail grading system administers it quite

Table 1. US Doctor of Pharmacy Programs That Release Grades to Students as Percentage Scores (N=8)[a]

	Each assignment, %	Each assessment, %[b]	Midterm course grade, %	Final course grade, %
Didactic course	88	88	75	50
Skills or laboratory course	63	75	50	38
Experiential course	25	38	63	50

[a] The survey was distributed in 2020 to 10 US academic PharmD programs known to use a pass/fail grading system. Eight schools responded.
[b] The term *assessment* was defined in the survey as an examination or quiz.

differently from other PharmD programs using a similar approach to student assessment. This is true across various types of programs, be they public or private or three or four years in duration. Future work to address several areas, including the terminology used, passing levels, release of scores to students, grade point average, and progression may lead to increased understanding and incorporation of this grading system across the Academy.

Among the eight programs that responded to the survey, the terminology used to describe student achievement levels (grade designations) varied. Academic programs could work together to unify the language they use to describe performance levels for benchmarking purposes and to help faculty, students, preceptors, residency program directors, and other employers become more familiar with how to interpret such information.

Across the programs surveyed, the variance in minimum pass levels for a course was wide, ranging from 70% to 90%. One program reported that the pass level for each course was determined by the course director. A different program reported that the program used a minimum pass level of 70% but that individual course instructors could choose a higher minimum competency level based on the content of a course. Some programs reported that their minimum pass level had already changed or that they were considering changing it in the future.

Programs varied in whether they provided percentage grades on assignments and assessments to students and the overall course grade before the pass/fail term was assigned. Some programs took into consideration whether the type of the course (eg, didactic, skill, experiential) should influence whether a percentage should be displayed to the student. For example, if the passing score for a didactic course is 75%, and the student sees only "pass" as their examination grade, the student may not know if they barely passed at 75% or if they mastered almost all of the material and earned a grade of 94%.

While most of the PharmD programs surveyed did not calculate a GPA, class rank, or overall numerical percentile for students, some did. The authors hypothesized that those that did calculate GPAs likely did so to be able

to provide the information to residency programs and academic honor societies. Those pass/fail programs that calculated a numeric score also varied in their method of doing so as described in the Results section. Those programs that did not calculate a numeric score for their students each took different approaches to educating residency programs and employers about their grading system and individual student performance.

A primary concern of all academic pharmacy programs is student progression. While some students may experience academic difficulty along the way to earning the PharmD degree, the impact of an academic failure can vary among programs that use a pass/fail grading system. While programs with a traditional letter grade system may permit a maximum number of "D" grades in the program, pass/fail programs must determine if it is appropriate for a student to progress and/or graduate with a "Fail" grade in a course that is not repeated. Furthermore, the outcome of a failing grade can be significantly influenced by other factors, such as the academic calendar and whether the program allows for adequate time between terms for students to complete remediation (a unique challenge for accelerated programs).

Advancements in the widespread adoption of pass/fail grading systems in various facets of medical education and training have continued. In February 2020, it was announced by the Federation of State Medical Boards and the National Board of Medical Examiners (co-sponsors of the United States Medical Licensing Examination [USMLE]), that upcoming policy changes would reflect a movement away from a numerical score on the USMLE Step I to a pass/fail grading system beginning in 2022.[10] This was promulgated by the overwhelming desire to improve student well-being and because the USMLE (Step I and II) was developed for the purpose of licensure rather than evaluation of student academic achievement.[11] There were additional reasons for this change. When USMLE Step I scores are used for screening medical residency applicants, Black, Hispanic, and female students are offered fewer interviews and residency positions.[12]

In December 2020, citing alignment with the current practice of other professional licensure board examinations

and reporting practices, the National Association of Boards of Pharmacy (NABP) announced that both the North American Pharmacist Licensure Examination and the Multistate Pharmacy Jurisprudence Examination would begin reporting test results as pass/fail beginning in January 2021.[13]

Given the prevailing movement in medical education to pass/fail grading systems, as well as the NABP's changes to licensure examination scoring, why has academic pharmacy not embraced such a movement? While this question cannot be fully answered by this study, it certainly is worthy of a conversation within the Academy and across the profession as it looks to enhance student pharmacists' psychological well-being in all aspects of their education and training. Finally, the authors cannot be certain that all schools with this assessment model were surveyed.

CONCLUSION

A pass/fail grading system is known to be used in part by at least 10 PharmD programs in the United States. This project surveyed eight of these programs to gather key information to better understand approaches to this grading system. The results indicated a variety of approaches are used, which may lead to confusion and lack of adoption within the pharmacy Academy. This study suggests that programs that use a pass/fail grading system might benefit greatly from engaging in future conversations with one another to determine whether and how consistency might be realized across institutions. The primary items to consider include terminology, passing level, percentages, GPAs, and progression. As more discussion in academic pharmacy ensues around student wellness, competencies-driven curricula, entrustable professional activities, and criterion-based grading, movement towards pass/fail grading systems is part of this conversation. Work like that described here lays the foundation for a robust discussion about grading systems in pharmacy education, a discussion that is likely to continue and grow.

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