AACP REPORT

Report of the 2016-2017 Student Affairs Standing Committee

Renae J. Chesnut,[a*] Iqbal I. Atcha,[b] Duc P. Do,[c] Kristopher Harrell,[d] Amy Holland,[e] Monica L. Miller,[f] Kelly M. Shields,[g] Kyle Sousa,[h] Rachel A. Van Den Broek,[i] Jacqueline M. Zeeman,[j] Rahul Nohria,[k] Jennifer L. Adams[l]

[a] College of Pharmacy and Health Sciences, Drake University
[b] Walmart
[c] College of Pharmacy, Chicago State University
[d] School of Pharmacy, The University of Mississippi
[e] CVS Health
[f] College of Pharmacy, Purdue University
[g] College of Pharmacy, Ohio Northern University
[h] School of Pharmacy, West Coast University
[i] College of Pharmacy, University of Illinois at Chicago
[j] Eshelman School of Pharmacy, University of North Carolina at Chapel Hill
[k] American Association of Colleges of Pharmacy
[l] American Association of Colleges of Pharmacy

EXECUTIVE SUMMARY. The 2016-2017 AACP Student Affairs Standing Committee addressed charges related to recruitment to the profession of pharmacy and a national awareness campaign for pharmacy careers, as well as promotion of student wellness and stress management. The Committee report provides six recommendations to the American Association of Colleges of Pharmacy (AACP) and one proposed policy statement for the AACP House of Delegates related to recruitment to the pharmacy profession. The Committee report also provides three recommendations to AACP and one proposed policy statement for the AACP House of Delegates related to student wellness and stress management. In addition, this report provides recommendations for future AACP Student Affairs Standing Committee work.

Keywords: Student Affairs, Recruitment, Outreach, Student Stress, Stress Management, Student Wellness

INTRODUCTION AND COMMITTEE CHARGES

According to the Bylaws of the American Association of Colleges of Pharmacy (AACP), the AACP President shall appoint a Student Affairs Standing Committee, which "shall be concerned with issues regarding admissions, recruitment and student affairs related policies and practices and will assist with the development of the Association's relevant research agenda."[1] In his President-elect address to the AACP House of Delegates, President Joseph T. DiPiro outlined one of the most pressing issues for academic pharmacy today: how can we assure sufficient numbers of high quality students coming into our Pharm.D. and graduate programs?[2] DiPiro went on to state that recruitment is "an issue of utmost importance to all of the profession, not only colleges and schools of pharmacy. This is about enriching the applicant pipeline." President DiPiro described Priority 1 of the AACP Strategic Plan, Enriching the Applicant Pipeline, and how it relates to the charge of the Student Affairs Standing Committee. "AACP will partner with stakeholders to increase the Pharm.D. applicant pipeline to ensure there will be an appropriate number and quality of pharmacists to meet society's needs."[3] DiPiro suggested that academic pharmacy's efforts need to combat myths about job availability in pharmacy to attract a talented and qualified applicant pool. In addition, participation by colleges and schools of pharmacy are an essential component of the national recruitment efforts.[2]

President DiPiro also recognized the connection of current student wellness with the potential to negatively impact the applicant pool and charged the Student Affairs Standing Committee to examine student wellness and how it relates to the applicant pool.

President DiPiro charged the 2016-2017 Student Affairs Standing Committee to:

1. Provide recommendations to the Board as part of a national awareness campaign to enhance the visibility

of the pharmacy profession and pharmacy education to potential students and other stakeholders.

- How can colleges and schools contribute to a national campaign?

- How can college and school champions be identified?

2. Prepare a document that describes methods that colleges and schools of pharmacy use to promote student wellness and help students manage stress.

The committee met in person to discuss the charges in October 2016. Prior to the meeting, the committee conducted a literature review on the topics of recruitment to the health professions and student wellness, and used best practices to determine recommendations. The committee discussed the connection between students stress and recruitment. Pharmacy student stress has the potential to not only impact a student's academic performance in the Pharm.D. curriculum but also negatively impact pharmacy recruitment. Current pharmacy students are often utilized in the pharmacy school admissions process, most notably during the on-site interview. Candidates value the opportunity to learn more about the student-life experience at the college or school of pharmacy including leadership opportunities, student organizations, and culture. Significant pharmacy student stress has the potential to negatively impact the perceived culture of the program and deter candidates from attending the college or school, and potentially even deter them from entering the pharmacy profession.

Furthermore, significant pharmacy student stress can negatively impact pharmacy recruitment at the academy level. Family and friends are common support mechanisms for individuals experiencing a stressful life event. Family and friends often serve as unofficial recruiters of the pharmacy profession by sharing stories about their son/daughter, other family member, or friend. Therefore, their perception of the student life experience, specifically as it relates to perceived stress and quality of life, can significantly impact the public perception of the student pharmacist experience. If students' support systems express concern about the well-being of the student pharmacist, this can deter future candidates from pursuing the profession of pharmacy in fear of their own quality of life experience. Thus, the impact of significant student stress extends beyond the immediate student pharmacist experience and has the potential to significantly impact both immediate and future recruitment into the pharmacy profession.

This report, which addresses both committee charges, is divided into two sections. The first section addresses applicant recruitment and the second addresses student stress and wellness.

BACKGROUND – RECRUITMENT

In the last five years, the majority of pharmacy colleges and schools have seen a decrease in the number of applications they have received.[4] This decrease in applications has increased competition among colleges and schools of pharmacy who desire to attract the most qualified applicants to their programs. Pharmacy colleges and schools do not just compete with each other, but also compete with other doctoral and masters level healthcare career programs, such as physicians, physician assistants, dentists, and physical therapists.[5] Research on the factors influencing students' decisions to pursue a Doctor of Pharmacy (Pharm.D.) degree, showed the influence of family members, knowing a pharmacist, prior work in a pharmacy setting, career prestige, earning potential, flexibility of career, and availability of jobs play a role in the decisions.[5,6] Influence from family, knowing a pharmacist, and experience working in a pharmacy played the largest roles in influencing the decision.[5] A survey of pre-pharmacy undergraduates showed that those who decided to pursue pharmacy during or after high school were less likely to pursue a pharmacy career than those who decided prior to high school.[7] This underscores the importance of starting recruitment initiatives to prospective student and their parents early in their education.

There is limited research related to the effectiveness of pharmacy recruitment initiatives. However, one of the effective strategies that some schools have used to develop interest in pharmacy careers is to host pharmacy camps in the summer.[8-10] While effective at increasing and maintaining interest in pharmacy careers, pharmacy camps can be staff and resource intensive and may not be an option for all pharmacy programs. The UNC Eshelman School of Pharmacy established an Office of Recruitment, Development, and Diversity Initiatives (ORDDI) to promote student diversity and engagement. The ORDDI implemented programs to help achieve their recruitment and retention goals, such as: a PCAT Review; a recruitment ambassadors program; a pre-pharmacy club; a development program and a leadership program for underserved and underrepresented high school and undergraduate students; a mentoring academy; and an educators academy for high school administrators and teachers. Although resource intensive, this multi-faceted approach has been successful at centralizing and intensifying recruitment efforts and increasing UNC Eshelman School of Pharmacy's enrollment and retention of diverse students.[11] Collectively, this research suggests that recruitment efforts are resource intensive and there is opportunity for centralized coordination at the national level guiding and assisting local efforts to promote pharmacy careers.

Brand development strategies

A brand is defined as a "name, term, design, symbol or any other feature that identifies one seller's good or service as distinct from those of other sellers."[12] In 2016, Speedie and Anderson provided commentary on a professional brand for pharmacy to the American Pharmacists Association. They posit that, "Pharmacy's failure to adopt a profession-wide brand for pharmacists' services is damaging."[13] The authors suggest that the lack of a consistent, professional brand for pharmacy is not only impacting pharmacists' payment for services provided, but is also negatively impacting the professions' ability to recruit students.[13] Challenges to branding efforts include a lack of a systematic approach to providing patient care services, lack of common terminology around services provided, and colleges not recognizing their responsibility to unify the profession's brand through teaching of common labels for various aspects of pharmacy practice and patient care. Speedie and Anderson indicate that pharmacy's brand "must reflect what we really do, and be concise and understandable."[13] They also urge the national pharmacy associations, pharmacy employers, and pharmacy schools to come together in advancing a single brand for pharmacy practice.[13]

Recognizing the need for a brand for the profession of pharmacy, AACP staff worked to develop a draft positioning and messaging document defining the brand for the profession of pharmacy.[14] At the 2015 AACP Interim Meeting, the first draft of brand for the profession of pharmacy was presented to academic pharmacy leaders with the positioning statement, "Pharmacists are essential healthcare professionals, who enhance patient care and promote wellness," in essence, "Pharmacists help people live healthier, better lives." Since that time, the positioning and messaging has been presented to national pharmacy leaders at the Joint Commission of Pharmacy Practitioners (JCPP) meetings and the organizations have been invited to come together to further refine the brand. One of the key messages in the branding campaign is "Pharmacy is a diverse and rewarding career, with opportunities for patient care, scientific research and innovation."[14] In addition, social media campaigns such as the #HealthyStartsHere campaign highlighting how pharmacists help people live healthier, better lives, have been launched. This work is a step in the right direction, but additional coordinated efforts across the profession to promote the role of the pharmacist are needed.

Pharm4Me recruitment campaign

The *Pharmacy is Right for Me* (Pharm4Me) recruitment campaign is a national effort to promote the field of pharmacy and answer the demand for trained pharmacy and healthcare professionals. Pharm4Me provides students, parents, and educators with interactive tools, resources, and first-person testimonials that give insight into the exciting and diverse career opportunities that exist within the field of pharmacy. The Pharm4Me campaign is a collaborative effort led by AACP, a national organization representing pharmacy education in the United States, the American Pharmacists Association (APhA), the largest association of pharmacists in the country; and other national pharmacy associations. Content for the Pharm4Me website, www. pharmacy4me.org is overseen by the Pharmacy Career Information Council (PCIC), a collaboration of national pharmacy organizations committed to promoting the pharmacy profession and the pharmaceutical sciences.[15] The campaign also involves social media efforts on Facebook, Instagram, and Twitter using #Pharm4Me.

For the Pharm4Me campaign to be successful, the profession of pharmacy, as a whole, must be involved. This includes colleges and schools of pharmacy, national pharmacy associations, pharmacy employers, pharmacists in all practice settings and current student pharmacists. Through activity in the PCIC, the national pharmacy associations are involved in recruitment for pharmacy careers, and the Pharm4Me campaign will continue to partner with these organizations to promote pharmacy careers. The campaign has also engaged with colleges and schools of pharmacy through the Pharm4Me Recruitment Champion program. Each school has been asked to appoint a pharmacist on their faculty to serve as a Pharm4Me Recruitment Champion. The Champions have been charged with hosting one to two events per year, in their community, promoting the profession of pharmacy and pharmacy careers. The Pharm4Me Champions efforts are targeted toward high school students, and recruitment resources have been developed for them and posted to the AACP website for them to access. In addition, Pharm4Me has engaged with student pharmacists by launching the Pharm4Me Innovation Challenge, a competition where high school students and student pharmacists partner to identify medication or health related problems in their communities as well as innovative solutions to solve those problems.[16] While the most innovative solutions from participants are awarded, however, the overarching goal of the program is to encourage interaction of student pharmacists with high school students. This interaction exposes high school students to the profession of pharmacy and it exposes student pharmacists to the importance of recruitment activities. Those who have not been actively engaged yet in the campaign are currently practicing pharmacists. Do they have the tools to effectively recruit future pharmacists? The Student Affairs

Standing Committee believes that more can be done to provide resources to pharmacy employers and to practicing pharmacists to help them promote pharmacy careers with a consistent message.

Outreach

In their study on the influences on pharmacy students' decision to pursue a Pharm.D. degree, Anderson and colleagues concluded that public awareness campaigns about the benefits of being a pharmacist have the potential to influence future applicants, their families, and those close to them. Recruitment efforts that allow for contact with the pharmacy profession and ensure a positive experience are likely to be the most valuable recruiting tools. They also suggest that outreach to middle school/junior high students may be the best target audience.[6] This research underscores the need for a coordinated branding campaign that is used by all facets of the profession, including the national pharmacy associations, state pharmacy associations, colleges and schools of pharmacy, pharmacy employers, individual pharmacists, and student pharmacists. It also highlights the need for coordination to ensure that interactions with the pharmacy profession are positive experiences. The commentary from Speedie and Anderson stresses the need for a concise and understandable brand that can be used in an awareness campaign and recruitment efforts.[13] According to Rupp, "A clear, consistent and compelling brand represents a significant competitive advantage for an organization in any economic climate,"[17] which emphasizes the need for a strong brand always, not just during a decline in applicants.

The work toward branding the profession of pharmacy has begun. The following key messages of the profession positioning and messaging framework will help to support a concise and understandable brand:

- "When pharmacists are involved in patient care, outcomes improve and costs decline.
- Current pharmacy graduates receive a minimum of six years of rigorous professional education, leading to the Doctor of Pharmacy degree.
- Pharmacy is a diverse and rewarding career, with opportunities for patient care, scientific research and innovation."[14]

These key messages as part of the brand for pharmacy are a step in the right direction, but additional outreach is needed. These messages have been shared within the pharmacy community, but have not yet been communicated more broadly. Broad outreach to the public using effective brand development strategies will be imperative to helping the public understand what pharmacists do and to attracting a qualified and a diverse applicant pool.

RECOMMENDATION 1 – RECRUITMENT

The Student Affairs Standing Committee recommends that AACP explore brand development strategies including but not limited to: a national television and other media ad campaigns promoting the profession of pharmacy; engage with monthly disease state campaigns to promote pharmacists role in disease state management; a toolkit for profession stakeholders to promote positive aspects of pharmacy; and implement quarterly social media campaigns that promote pharmacy (e.g. #healthystartshere)

RECOMMENDATION 2 – RECRUITMENT

The Student Affairs Standing Committee recommends that AACP allocate additional staff resources to support recruitment efforts.

RECOMMENDATION 3 – RECRUITMENT

The Student Affairs Standing Committee recommends AACP staff engage with the AACP Walmart Scholars to develop a social media strategy for the Pharm4Me campaign.

RECOMMENDATION 4 – RECRUITMENT

The Student Affairs Standing Committee recommends that AACP staff work with pharmacy employers and other pharmacy associations to develop toolkits for pharmacists to use to promote the profession of pharmacy.

RECOMMENDATION 5 – RECRUITMENT

The Student Affairs Standing Committee recommends that AACP have a pharmacy recruitment-focused article in each issue of *Academic Pharmacy Now.*

RECOMMENDATION 6 – RECRUITMENT

The Student Affairs Standing Committee recommends that AACP perform a baseline assessment of current recruitment activities at the schools and colleges of pharmacy.

POLICY STATEMENT – RECRUITMENT

To ensure an appropriate number and quality of pharmacists to meet society's needs, AACP and colleges and schools of pharmacy should engage in activities to promote and advance the profession of pharmacy. [Referred to the AACP 2017-2018 Strategic Planning Committee]

BACKGROUND - STUDENT WELLNESS AND STRESS MANAGEMENT

Mental health among health professional students has garnered increased attention in recent years, especially as related to both perceived and real stress and the

potential impact on student success and burnout.[18] A growing body of literature is developing, particularly in medical students and residents that aims at identifying and discussing the stress students are experiencing; which appears to be different and more common than previous generations of student have encountered.[19-20] As with other health professions, the pharmacy literature on this topic is emerging. Recent reports have documented that the current generation of student pharmacists are indeed exhibiting high levels of stress as early as matriculation and throughout the duration of their enrollment in pharmacy school.[21] Consequently, pharmacy accreditation standards now encourage schools to "provide a comprehensive range of services" and "develop, implement, and assess policies and procedures" that promote student success and well-being.[22] To this end, many colleges and schools of pharmacy are currently assessing perceived stress in students to determine if negative academic outcomes can be attributed to such and what interventions are being applied to mitigate them. To support these efforts, the AACP Student Affairs Standing Committee surveyed existing and emerging literature on student pharmacist stress to develop recommendations centered on: 1) increasing awareness of perceived and experienced student pharmacist stress among the Academy; 2) recommending routine monitoring of perceived and experienced stress among student pharmacists; and 3) developing a toolkit that includes best practices for stress management.

Awareness

The Committee discussed the importance of increasing awareness among members of the Academy towards the prevalence of stress and its impact on student pharmacist outcomes. It was proposed that professional programming be included at AACP interim and annual meetings and that these meetings provide a forum for colleges and schools of pharmacy to share existing data on the evaluation of student stress, the latest techniques and best practices in stress management, and the incorporation of best practices into curricula. It was also discussed that stress management awareness and mitigation topics could be embraced by several different SIGs, the Council of Faculties, and perhaps even be made part of the Academic Leadership Fellows Program, the Teacher's Seminar, or a special focus topic within the Walmart Scholars program. It was also suggested that *Academic Pharmacy Now* would be an excellent resource to disseminate any "stress-related" information. At the individual college or school level, there was discussion about employing a layered mentoring approach and finding faculty and preceptor champions that are accessible to students. These advisors could be extensions of student affairs personnel

and would most likely need training and development. Professional programming could be geared towards training of identified champions. Although there was discussion about increasing the awareness of faculty and staff stress levels as well, no specific suggestions were made.

Monitoring

The Committee discussed several validated instruments that can be used for monitoring and assessing student stress levels (e.g., Perceived Stress Scale, Brief COPE, SF-36 Health-Related Quality of Life scale). While many colleges and schools of pharmacy already utilize these tools, it remains unclear how consistently, and to what degree, these instruments are employed to decrease student stress. To ensure all colleges and schools of pharmacy assessed stress among student pharmacists consistently, it was suggested that several targeted questions be incorporated into the AACP Graduating Student Surveys and that these questions could serve as benchmarks. Based on data emerging from these surveys, colleges and schools of pharmacy could create and/or augment stress-related programming offered to enrolled students. The Committee also recognized the importance of assessing stress in student pharmacists early in the pharmacy program and recommends that individual colleges and schools enhance their own plans, especially as they relate to overall student outcomes.

Tools

There was significant discussion about various methods and tools utilized for stress management. These ranged from formal wellness programs to brief, minute "reflective" breaks. Committee members shared anecdotally that they were aware some schools sponsor morale building events (i.e., Pharmacy Olympics/Pharmentine's Positivity Campaign), as well as other coping strategies (gratitude journals, mindfulness activities, summer reading programs). It was discussed that many of the ideas for stress management come from students themselves and that they should be included in the development of stress management programs. Upon review, while there were some specific techniques identified, the Committee did not find that the literature captured all of these techniques comprehensively. Thus, it was recommended that a survey of best practices be distributed to all colleges and schools of pharmacy, from which information could be added to create a toolkit. Based on the results of this best practice survey (along with references and other resources), a toolkit could be provided to colleges and schools of pharmacy via the AACP website. The toolkit would be updated as more information became available and could continue to aid colleges and schools with

developing healthy coping strategies for stress, as well as ways to increase self-awareness among student pharmacists. Lastly, it was decided that a future White Paper on stress management would greatly benefit members of the Academy.

RECOMMENDATION 1 – WELLNESS

The Student Affairs Standing Committee recommends programming on stress management at AACP Meetings.

RECOMMENDATION 2 – WELLNESS

The Student Affairs Standing Committee recommends that AACP include a mindfulness/stress management tip in each issue of *Academic Pharmacy Now.*

RECOMMENDATION 3 – WELLNESS

The Student Affairs Standing Committee recommends that questions such as the following be added to the AACP surveys:

Graduating Student Survey
- Did you experience stress during pharmacy school that impeded your academic performance?
- Did your pharmacy school provide resources that help to mitigate student stress?

Faculty Survey
- Do you experience stress in the workplace that impedes your performance?
- Did your pharmacy school provide resources that help to mitigate faculty stress?

POLICY STATEMENT – WELLNESS

AACP encourages schools and colleges of pharmacy to proactively promote overall wellness and stress management techniques to students, faculty, and staff. [Adopted by the AACP 2017 House of Delegates]

CONCLUSION (or CALL TO ACTION)

While much has been accomplished in the area of recruitment, there are additional coordinated efforts across the pharmacy profession needed to ensure an adequate number and quality of applicants who want to be future pharmacists. AACP can, and must, be the leader in coordinating the profession's efforts to share the message that pharmacy is a diverse and rewarding career. Furthermore, student stress levels can negatively impact the pharmacy recruitment pipeline at both the Academy and institutional level. Further development of available resources and programming to promote overall wellness and stress management techniques are needed to improve current student pharmacist experiences and enrich the applicant pipeline. Regarding the committee charge related to preparing a document on how colleges and schools approach stress management and wellness, see Appendix A. In addition, the Student Affairs Standing Committee recommends the following be addressed by a future Student Affairs Standing Committee:

- The Student Affairs Standing Committee recommends a future white paper on stress management; and
- The Student Affairs Standing Committee recommends a future toolkit with additional stress management resources.

REFERENCES

1. Bylaws for the American Association of Colleges of Pharmacy, Inc. Approved by AACP House of Delegates, July 2016 http://www.aacp.org/governance/HOD/Documents/AACP%20Bylaws%20Revised%20Aug%202016.pdf. Accessed February 14, 2017.
2. DiPiro, JT (2016). Strategic Priorities for AACP: Address of the 2015-2016 President-elect to the AACP House of Delegates. *American Journal of Pharmaceutical Education*: Volume 80, Issue 7, Article S5.
3. AACP Strategic Plan http://www.aacp.org/about/Pages/StrategicPlan.aspx. Accessed February 14, 2017.
4. AACP Trend Data, *Pharm.D. Application Trends*. https://public.tableau.com/profile/aacpdata#!/vizhome/StudentTrendDataDashboard/StudentDataTrends. Accessed 05/26/2017.
5. Lobb WB, Shah M, Kolassa EM. Factors influencing the selection of a major: a comparison of pharmacy and nonpharmacy undergraduate students. *J Pharm Teach*. 2004;11(2):45-64.
6. Anderson DC, Sheffield MC, Hill AM, Cobb HH. Influences on pharmacy students' decision to pursue a doctor of pharmacy degree. *Am J Pharm Educ*. 2008;72(2):Article 22.
7. Cline RR, Mott DA, Schommer JC. Relationship between attitudes, demographics and application decisions among prepharmacy students: an exploratory investigation. *Am J Pharm Educ*. 1999;63(4):394-401.
8. Myers TL, DeHart RM, Dunn EB, Gardner SF. A Summer Pharmacy Camp for High School Students as a Pharmacy Student Recruitment Tool. *Am J Pharm Educ.* 2012;76(4):Article 60. doi:10.5688/ajpe76460
9. Langridge SM, Stensland SL, Warholak TL, Mattingly L. Impact of the career explorers program on high school students' perceptions of the pharmacy profession. *Am J Pharm Educ*. 2008;72(3):Article 68.
10. Goldsmith CA, Tran TT, Tran L. An Educational Program for Underserved Middle School Students to Encourage Pursuit of Pharmacy and Other Health Science Careers. *Am J Pharm Educ*. 2014;78(9):Article 167. doi: 10.5688/ajpe789167
11. White C, Louis B, Persky A, Townsend Howell D, Griffin LM, Simmons-Yon A, Scolaro KL.(2013). Institutional Strategies to Achieve Diversity and Inclusion in Pharmacy Education. *Am J Pharm Educ*. 2013;77(5):Article 97. doi: 10.5688/ajpe77597
12. Bennett PD. *AMA Dictionary of Marketing Terms*. New York, NY; 1988.
13. Speedie MK, Anderson LJ. A consistent professional brand for pharmacy—the need and a path forward. *J Am Pharm Assoc.* 2016;57(2):256-260. doi: http://dx.doi.org/10.1016/j.japh.2016.10.011
14. AACP Positioning and Messaging Framework http://www.aacp.org/governance/HOD/Documents/positioning-BOD-June2016.pdf. Accessed 05/26/2017.

15. *Pharmacy is Right for Me*. http://pharmacyforme.org/about-us/. Accessed 05/26/2017.

16. *Pharmacy is Right for Me*. Innovation Challenge. http://pharmacyforme.org/innovation-challenge/. Accessed 05/26/2017.

17. Rupp MT. (2012). Branding a College of Pharmacy. *Am J Pharm Educ.* 2012;76(9):Article 166. doi: 10.5688/ajpe769166

18. Carroll, AE. "Silence Is the Enemy for Doctors Who Have Depression." *New York Times* [New York, NY] January 14, 2016: A3, https://www.nytimes.com/2016/01/12/upshot/silence-is-the-enemy-for-doctors-who-have-depression.html. Accessed February 28, 2017

19. Mata DA, Ramos MA, Bansal N, Khan R, Guille C, Di Angelantonio E, Sen S. Prevalence of Depression and Depressive Symptoms Among Resident PhysiciansA Systematic Review and Meta-analysis. *JAMA.* 2015;314(22):2373-2383. doi:10.1001/jama.2015.15845

20. Goebert D, Thompson D, Takeshita J, Beach C, Bryson P, Ephgrave K, Kent A, Kunkel M, Schechter J, Tate J. Depressive symptoms in medical students and residents: a multischool study. *Acad Med*. 2009 Feb;84(2):236-41. doi:10.1097/ACM.0b013e31819391bb. PubMed PMID: 19174678.

21. Votta RJ, Benau EM. Sources of stress for pharmacy students in a nationwide sample. *Curr Pharm Teach Learn* 2014;6(5):675-681

22. Accreditation Council for Pharmacy Education. *ACPE Standards 2016*; Standards 14 and 15

Appendix A. Stress Management Articles

This table includes and summarizes all available pharmacy literature. These articles are organized chronologically.

Summary	Strengths	Limitations
Pharmacy:		
This review describes and summarizes student pharmacists' substance use behavior in the United States. Sixteen studies met inclusion criteria and were reviewed. The Alcohol Use Disorders Identification Test (AUDIT) was used in two studies to evaluate alcohol use patterns and found approximately 25% of participants reported hazardous or harmful drinking. Approximately 30% – 36% of student pharmacists had at least one binge-drinking episode during the preceding two weeks. Rates of current marijuana use ranged from 6% – 21% and rates for lifetime use ranged from 14% – 33%. Studies reported that 5% – 19% of respondents disclosed nonmedical use of prescription stimulants. Reported lifetime rates of prescription opioid misuse among student pharmacists ranged from 8% – 15%. A majority of studies found no more than 3% of student pharmacists reported lifetime or current use of cocaine, ecstasy, heroin, or hallucinogens. Male gender was a significant predictor of substance use behaviors in most studies reviewed, including hazardous or harmful alcohol use and opioid use. Student pharmacists indicated that prescription stimulants were primarily used to enhance performance (alertness or concentration) at school or work. Self-treatment was the most commonly reported reason for using prescription opioids. Student pharmacists reported using opioids to relieve stress or relax (29%), deal with chronic pain (23%), improve sleep (20%), and manage depression (11%). Approximately 34% of student pharmacists believed prescription drug misuse is a critical issue that needs to be seriously reviewed. A substantial proportion of student pharmacists reported their knowledge about substance use and substance use disorder was insufficient. Citation: Al-Shatnawi SF, Perri M, Young HN, Norton M. Substance use attitudes, behaviors, education and prevention in colleges of pharmacy in the United States. *Am J Pharm Educ.* 2016;80 (9): 160.	Comprehensive literature review of student pharmacists' substance use behaviors including rates or levels (quantity and frequency of substance consumption), motives for substance use, and substance-use related problems (negative outcomes).	All reviewed studies relied on self-reported data. Previous research was not consistent in defining and measuring substance use behaviors (ie, binge drinking definition, substance use behavior evaluated over different time periods).
Two hundred and forty-two first-, second-, and third-year pharmacy students (68.4%) voluntarily completed the 10-item Perceive Stress Scale (PSS-10) during the spring 2012 semester. Bimodal distribution in mean PSS scores was noted with students under 22 years of age and students over 32 years of age reporting higher mean-perceived stress scores. Female students reported higher levels of perceived stress compared to males. No significant difference was found between ethnicities and program year. Class assignments and completing electronic portfolios were the top reported stressors. The most common reported stress coping mechanism was spending time with family and friends. There were gender differences among preferred coping mechanisms.	Identifies specific curricular stress triggers.	One private, church-based institution studied at a single time point. Program studied utilized a horizontally integrated curriculum.

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Summary	Strengths	Limitations
Citation: Beall JW, DeHart RM, Riggs RM, Hensley J. Perceived stress, stressors, and coping mechanisms among doctor of pharmacy students. *Pharmacy* 2015;3:344-354.	Implemented new student orientation and first-year programming to address stress triggers identified (i.e. financial aid, student wellness, nontraditional student needs).	Surveys were administered to different program years at different times in the semester.
Three hundred and four P1-P4 students (68.6%) voluntarily completed a paper survey at the conclusion of the Spring 2011 semester. This survey was divided into four sections: attitudes and academic help-seeking behavior, health status, demographics, and an open section for school-related comments. P4 students had higher mental health scores compared to P1-P3 students. There was no observed difference in physical health scores across the four classes. Factors associated with health-related quality of life included confusion regarding how to study, ego orientation, satisfaction with the chosen college of pharmacy, and career satisfaction.	Identifies specific factors and attitudes that correlate both positively and negatively with health-related quality of life.	Limited to one institution at a single time point.
Citation: Payakachat N, Gubbins PO, Ragland D, Flowers SK, Stowe CD. Factors associated with health-related quality of life of student pharmacists. *Am J Pharm Educ.* 2014;78(1): 7.		
The 10-item version of the Perceived Stress Scale (PSS-10) was emailed to 16,000 randomized student members of American Pharmacists Association (APhA) enrolled in P1-P4 years between March – April 2010. A total of 2607 students completed all or part of the survey and 2232 participants were included in data analysis.	Identifies most common selected stressors throughout the professional program.	
Most students selected 4 out of 10 available stressors, with coursework being selected most frequently followed by lack of sleep, finances, and grades. P1s-P3s selected similar numbers of stressors while P4s selected fewer stressors. The "job market" stressor increased as professional year increased while grades, coursework, and lack of sleep decreased as professional year increased.	Large, randomized sample size of pharmacy students across the United States.	
Citation: Votta RJ, Benau EM. Sources of stress for pharmacy students in a nationwide sample. *Curr Pharm Teach Learn* 2014;6(5):675-681.		
The 10-item version of the Perceived Stress Scale (PSS-10) was emailed to 16,000 randomized student members of American Pharmacists Association (APhA) enrolled in P1-P4 years between March – April 2010. A total of 2607 students completed all or part of the survey and 2232 participants were included in data analysis.	Large, randomized sample size of pharmacy students across the United States.	The sample is significantly overrepresented by Asian students relative to the profile of students enrolled at the time of data collection.
Self-reported stress was a strong predictor of PSS scores. Women reported higher levels of stress than men and age significantly predicted stress levels. Direct entry students reported significantly higher stress than both traditional 2–4 year and post-baccalaureate students. P1 and P2 students did not significantly differ but both reported being more stressed than P3 and P4 year students. Professional year was a better predictor of stress than age. Asian students reported higher stress than Caucasian students. Students with higher GPAs reported lower stress levels than did students with lower GPAs.	Evaluated a variety of demographic factors including gender, ethnicity, program year, age, and GPA.	Limited response rate (14.0% of all invited participants).

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Summary	Strengths	Limitations
Citation: Votta RJ and Benau EM. Predictors of stress in doctor of pharmacy students: results from a nationwide survey. *Curr in Pharm Teach and Learn* 2013;5:365-372.	Specifically evaluated and compared student entry stress levels among direct entry students, traditional 2-4 year students, and those students who received a baccalaureate degree prior to entry into a Pharm.D. program.	Timing of survey administration; survey was administered over a 3-week period prior to final examinations at the end of the spring 2010 semester.
This study compared student stress in a three-year to a four-year Pharm.D. program. Ninety-five of 135 second-year Pharm.D. students (70.4%) in a three-year program completed the 14-question Perceived Stress Scale (PSS) in addition to a questionnaire created by the research team. The questionnaire encompassed demographic information, stressful events and stress-relieving activities possible stress-causing and stress-relieving activities and medication use habits. Students enrolled in the 3-year program were found to have higher average perceived-stress scores. There was no statistically significant difference in gender stress levels found within the 3-year program, unlike the 4-year program, which reported higher stress levels among female students. Citation: Frick LJ, Frick JL, Coffman RE, Dey S. Student stress in a three-year doctor of pharmacy program using a mastery learning educational model. *Am J Pharm Educ.* 2011;75(4): 64.	Direct comparison of three-year and four-year Pharm. D. program student stress levels.	The three-year Pharm.D. program assessed utilizes a block curriculum and a mastery learning model, which requires students to achieve a score of 90% or better on all summative assessments. Only one institution represented for each of the program types (three-year vs. four-year) evaluated.
Two hundred thirteen of the 320 Pharm.D. students (66.6%) participated in this study assessing perceived stress and mental health across the three preclinical curriculum years. Students completed the 10-item version of the Perceived Stress Scale (PSS-10), the SF-36 Health-Related Quality of Life (HRQOL), and Brief COPE. Students entering pharmacy school had physical and mental HRQOL scores similar to age-adjusted US norms. The second year of the curriculum had significantly higher levels of stress and lower levels of mental HRQOL than the first year. The mental HRQOL for all 3 preclinical years was significantly lower than the US age-adjusted norms and lower than the score used as a cut-off screener for major depression or dysthymia. Lower mental HRQOL scores were associated with increased stress and use of maladaptive coping strategies. Students used adaptive coping skills more frequently than maladaptive coping skills during these preclinical years.	Measured perceived stress, health-related quality of life, and coping strategies across the preclinical curriculum.	Small sample size of students participating throughout all 3 years of the preclinical curriculum.
Citation: Hirsch JD, Do AH, Hollenbach KA, Manoguerra AS, Adler DS. Students' health-related quality of life across the preclinical pharmacy curriculum. *Am J Pharm Educ.* 2009;73(8): 147.		Limited to only one institution.

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Summary	Strengths	Limitations
One hundred nine of 135 third-year Pharm.D. students (80.7%) at a private university in a large metropolitan area voluntarily completed the Perceived Stress Scale (PSS) and the SF-12 Health-Related Quality of Life (HRQOL) surveys. Females were found to have significantly higher levels of perceived stress and lower levels of mental health compared to male students. There was no significant difference in mental health scores based on subset analysis by age, prior degree, GPA, exercise habits, extent of daily commute, alcohol use, or tobacco use. The sample of pharmacy students' mental HRQOL was significantly lower than the mental HRQOL and the physical HRQOL significantly higher than the physical HRQOL of the general US population, aged 18+ years. The three most commonly reported stress triggers were linked to the curriculum: examinations, Monday morning examinations, and outside-of-class assignments. Citation: Marshall LL, Allison A, Nykamp D, Lanke S. Perceived stress and quality of life among doctor of pharmacy students. *Am J Pharm Educ.* 2008;72(6): 137.	Identifies specific curricular stress triggers.	Limited to only one institution measured at a single time point. Institution studied employs block scheduling; stress and HRQOL may be different with a traditional semester schedule, at a public university, or in a rural setting.
Six hundred twenty-nine first-, second-, and third-year students (90.9%) at the founding campus and three distance campuses completed the Maslach Burnout Inventory (MBI) in spring 2004 to evaluate students' perceptions of burnout resulting from the stresses of their educational experience. Students in all three professional years reported feeling moderately burned out from school and school. P2 students reported more intense feelings of emotional exhaustion. Founding campus students reported feeling more emotionally drained, burnt out, and frustrated at school. Founding campus students reported more emotional exhaustion than distance students. Females reported more emotional exhaustion than males while males reported more symptoms of depersonalization. Citation: Ried LD, Motycka C, Mobley C, Meldrum M. Comparing self-reported burnout of pharmacy students on the founding campus with those at distance campuses. *Am J Pharm Educ.* 2006;70(5): 114.	Reports burnout of pharmacy students.	The majority of student respondents were P1s (47%). Remaining student respondents were P2s (36%) and P3s (17%). Study does not assess reasons for student stress. Limited to one institution at a single time point.
Two hundred eighty-three second-year pharmacy students from four schools of pharmacy completed the Derogatis Stress Profile (DSP). Minority students were significantly less stressed. Gender, marital status, prior degree, and type of school did not significantly contribute to an increase in overall stress score. Financial burden, unsupportive faculty, absence of counseling services, excessive study load, English as a second language, and not being a minority student were found to be significant stressors. Students reporting these stressors were also found to be at greater risk in experiencing high or excess levels of stress. Citation: Dutta AP, Pyles MA, Miederhoff P. Measuring and understanding stress in pharmacy students. In: Landow MV, ed. *Stress and Mental Health of College Students.* New York: Nova Science Publishers; 2006:1-28.	Multiple schools of pharmacy were assessed and included two public and two private institutions; two MidAtlantic, one Southeastern, and one Midwestern institution. Identified specific stressors.	Data collection limited to a single time point.

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Summary	Strengths	Limitations
Four hundred seventy-seven pharmacy, nursing, medical, and dental students completed a questionnaire that included the Brief Symptom Inventory (BSI), the Multidimensional Perfectionism Scale (MPS), and the Clance Imposter Phenomenon Scale (CIPS) in Spring 1996. These health profession students did not report significantly more perfectionism than has been observed in other student samples. Approximately 30% of students were found to be in clinical range for imposter phenomenon, with more women than men reporting imposter feelings. Clinically relevant levels of psychological distress were found in 27.5% of students, approximately 2.5 times more than the normative data. Pharmacy students (50.1%) were found to be more distressed than the other health profession disciplines (21.3 – 29.7%).	Directly compares multiple health profession disciplines. Over half (50.1%) of baccalaureate pharmacy students reported psychological distress. Possible this proportion of students has increased given the educational shift from a baccalaureate degree to a doctoral degree.	Limited to one institution at a single time point. Evaluated a baccalaureate pharmacy program. Low response rate (48%).
<u>Citation</u>: Henning K, Ey S, Shaw D. Perfectionism, the imposter phenomenon and psychological adjustment in medical, dental, nursing and pharmacy students. *Medical Education* 1998;32:456-464.		
Nursing:		
A seven-week stress management and mindfulness program was piloted as a learning support and stress reduction method for ten undergraduate nursing and midwifery students. Despite irregular attendance and numerous challenges, students reported positive impacts on personal, academic, and professional functioning.	Outlines specific findings summarized in three main themes: attending to self, attending to others, and attending to the program.	Limited to one institution. Program studied outside the United States.
<u>Citation</u>: van der Riet P, Rossiter R, Kirby D, Dluzewska T, Harmon C. Piloting a stress management and mindfulness program for undergraduate nursing students: Student feedback and lessons learner. *Nurse Education Today* 2015;35:44-49.	Summarizes key challenges and lessons learned for future programs.	
An eight-session stress management program meeting twice a week for two hours/sessions significantly reduced depression, anxiety, and stress in baccalaureate nursing students compared to placebo.	Describes a stress management program and outlines the eight sessions topics.	Limited to one institution. Program studied outside the United States.
<u>Citation</u>: Yazdani M, Rezaei S, Pahlavanzadeh. The effectiveness of stress management training program on depression, anxiety and stress of the nursing students. *Iranian Journal of Nursing and Midwifery Research* 2010;15(4):208-215.		
An eight-session stress coping program was found to significantly decrease stress scores and anxiety scores in nursing students. No significant difference was found in depression scores. A stress coping program based on mindfulness meditation was found to be an effective intervention for nursing students to decrease their stress and anxiety.	Stress coping program based on mindfulness meditation is outlined.	Limited to one institution.
<u>Citation</u>: Kang YS, Choi SY, Ryu E. The effectiveness of a stress coping program based on mindfulness meditation on the stress, anxiety, and depression experienced by nursing students in Korea. *Nurse Education Today* 2009;29:538-543.		Program studied outside the United States. Small sample size (n=41)

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Summary	Strengths	Limitations
A ten-session, five-week, group-administered stress management program for nursing students reduced anxiety and reduced test-taking anxiety. The program included sessions on progressive relaxation, deep muscle relaxation, autogenic training, visual imagery, and modified systematic desensitization.	Describes a stress management program	Small sample size (n=18)
Citation: Charlesworth EA, Murphy S, Beutler LE. Stress management skill for nursing students. *Journal of Clinical Psychology* 1981;37(2):284-290.		
Other:		
A psycho-education resilience program involving four resilience sessions was designed to build practical skills-based resilience capacities in health science (physiotherapy) students. The research suggests that replacing stressful challenges with positive coping strategies offers a potentially powerful tool to build self-efficacy and cognitive control as well as greater self-awareness as a learner and future health practitioner.	Outlines resilience program steps and facilitation methods.	Small sample size (n=6).
Citation: Delany C, Miller KJ, El-Ansary D, Remedios L, Hosseini A, McLeod S. Replacing stressful challenges with positive coping strategies: a resilience program for clinical placement learning. *Adv in Health Sci Educ.* 2015;20(5):1303-1324.		