

## Medication Barriers

These resources may be helpful to utilize as reading material for learners and in developing didactic or experiential learning. The resources are organized into medication barriers related to medication access, adherence, and health literacy.

***A5. The pharmacy workforce should partner with patients and the interprofessional care team to identify, assess, and resolve barriers to medication access, adherence, and health literacy.***

## Learner Resources

### Medication Access

#### [Access to Care: Development of a Medication Access Framework for Quality Measurement](#)

- This document reviews an Access to Care Roundtable which was organized by the Pharmacy Quality Alliance (PQA), with support from the National Pharmaceutical Council (NPC), to “develop a conceptual framework that better defines medication access and to identify priority gaps for future quality performance measurement based on commonly identified barriers.”

Sobeski LM, Schumacher CA, Alvarez NA, et al. Medication access: Policy and practice opportunities for pharmacists. *J Am Coll Clin Pharm.* 2021;4: 113–125. <https://doi.org/10.1002/jac5.1373>.

- This white paper on improving medication access was developed by the 2020 Task Force on Medication Access of the American College of Clinical Pharmacy (ACCP). The objective of this paper is to “describe major barriers and highlight important considerations for clinical pharmacists to assist in preventing, navigating, and resolving medication access challenges at the policy and practice levels.”

#### [RxAssist Patient Assistance Program Center](#)

- The website provides a comprehensive and searchable directory of pharmaceutical company Patient Assistance Programs. Information on program eligibility and the application process is provided for both healthcare professionals and patients.

### Medication Adherence

Anderson LJ, et al. Members of the PHARM-DC Group. A systematic overview of systematic reviews evaluating medication adherence interventions. *Am J Health Syst Pharm.* 2020 Jan 8;77(2):138-147. doi: 10.1093/ajhp/zxz284. PMID: 31901098; PMCID: PMC6946938.

- This systematic overview summarizes multiple systematic reviews of the efficacy of interventions to address medication nonadherence for adult patients with one of the following: diabetes and prediabetes, heart conditions, hypertension and prehypertension, stroke, and cognitive impairment.

Osterberg L, Blaschke T. Adherence to medication. *N Engl J Med.* 2005 Aug 4;353(5):487-97. doi: 10.1056/NEJMra050100. PMID: 16079372.

- This article provides a review on medication adherence. It reviews definitions of medication adherence, measures of adherence, behaviors related to medication taking, identification of and barriers to adherence, interventions and challenges to medication adherence.

CDC. Public Health Grand Rounds (Feb 21, 2017). Overcoming Barriers to Medication Adherence for Chronic Diseases [Video]. <https://www.cdc.gov/grand-rounds/pp/2017/20170221-medication-adherence.html>; <https://youtu.be/zMIJDa2R-fo>

- This video is part of the CDC public health grand rounds series where speakers discuss research, interventions, education, and emerging tools and technologies that may help overcome the barriers to medication non-adherence.

Merks P, Cameron J, Bilmin K, Świeczkowski D, Chmielewska-Ignatowicz T, Haręźlak T, Białoszewska K, Sola KF, Jaguszewski MJ, Vaillancourt R. Medication Adherence and the Role of Pictograms in Medication Counselling of Chronic Patients: a Review. *Front Pharmacol*. 2021 Aug 19;12:582200. doi: 10.3389/fphar.2021.582200. PMID: 34489688; PMCID: PMC8417421.

- This review outlines different medication counseling and education approaches that have been used to improve medication adherence and health outcomes using graphic illustrations-called pictograms.

Kini V, Ho PM. Interventions to Improve Medication Adherence: A Review. *JAMA*. 2018;320(23):2461–2473. doi:10.1001/jama.2018.19271.

- This review summarizes 49 randomized studies of interventions to improve medication adherence. Categories of interventions and characteristics of successful interventions within each category are described.

## **Health Literacy**

Johnson JL, Moser L, Garwood CL. Health literacy: a primer for pharmacists. *Am J Health Syst Pharm*. 2013 Jun 1;70(11):949-55. doi: 10.2146/ajhp120306. PMID: 23686601.

- This primer reviews literature on health literacy; including risk factors for low health literacy, the impact of low health literacy, communication techniques, and tools to assess health literacy.

[U.S. Department of Health and Human Services, Office of Disease Prevention and Health Promotion. \(2010\). National Action Plan to Improve Health Literacy. Washington, DC.](#)

- The National Action Plan to Improve Health Literacy “seeks to engage organizations, professionals, policymakers, communities, individuals, and families in a linked, multisector effort to improve health literacy.” The action plan includes seven goals and suggested strategies to improve health literacy.

## **Inclusion in Pharmacy Didactic Curriculum**

### **Medication Access**

Hsia SL, Landsfeld A, Lam K, Tuan RL. Implementation and Evaluation of a 10-Week Health Equity Curriculum for Pharmacy Students. *Am J Pharm Educ*. 2021 Oct;85(9):8579. doi: 10.5688/ajpe8579. Epub 2021 Jul 22. PMID: 34301552; PMCID: PMC8655148.

- This article describes and evaluates a health equity curriculum developed within a neuropsychiatric theme for second-year pharmacy students. The curriculum was delivered remotely and included didactic material, an asynchronous forum, synchronous online video discussions, and an objective structured clinical examination (OSCE).

Jann MW, Penzak S, White A, Tatachar A. An Elective Course in Lesbian, Gay, Bisexual, and Transgender Health and Practice Issues. *Am J Pharm Educ.* 2019 Oct;83(8):6967. doi: 10.5688/ajpe6967. PMID: 31831892; PMCID: PMC6900814.

- This article reviews the design, implementation, and assessment of a lesbian, gay, bisexual, and transgender (LGBT) health and practice elective course for second- and third-year pharmacy students. Course components included topic discussions, reading assignments, guest speakers, active-learning, and an objective structured clinical examination (OSCE).

Zweber A, Roche VF, Assemi M, Conry JM, Shane-McWhorter L, Sorensen TD; American Association of Colleges of Pharmacy and Pharmaceutical Services Support Center Task Force. Curriculum recommendations of the AACP-PSSC task force on caring for the underserved. *Am J Pharm Educ.* 2008 Jun 15;72(3):53. doi: 10.5688/aj720353. PMID: 18698398; PMCID: PMC2508729.

- This article reviews a curriculum framework developed by a task force of the American Association of Colleges of Pharmacy (AACCP) and the Pharmaceutical Services Support Center (PSSC) to guide pharmacy programs in education related to caring for underserved populations.

### **Medication Adherence**

Goggin K, Hawes SM, Duval ER, Spreser CD, Martínez DA, Lynam I, Barnes A, Hinton-Dampf AM, Murphy ME, Marken PA, Catley D. A motivational interviewing course for pharmacy students. *Am J Pharm Educ.* 2010 May 12;74(4):70. doi: 10.5688/aj740470. PMID: 20585431; PMCID: PMC2879121.

- This article describes a 3-hour elective course to train pharmacy students in conducting patient-centered counseling regarding health issues using motivational interviewing skills.

Hamrick J, Augustine JM, Pinkerton D, Klein CM, Elliott J. Simulated medication adherence: First and second-year pharmacy students' perceptions of adhering to a multi-drug medication regimen. *Curr Pharm Teach Learn.* 2020 Jul;12(7):858-863. doi: 10.1016/j.cptl.2020.02.009. Epub 2020 Mar 18. PMID: 32540048.

- This article describes a two-month medication adherence activity for first- and second-year pharmacy students. Students were required to adhere to a pre-specified medication regimen. A pre- and post-survey was completed related to perceived activity success and difficulty, adherence challenges, and lessons learned.

Witry MJ, Urick BY. Knowledge and comfort change with an active learning activity on medication adherence calculations. *Curr Pharm Teach Learn.* 2019 Feb;11(2):155-159. doi: 10.1016/j.cptl.2018.11.008. Epub 2018 Nov 22. PMID: 30733011.

- This article describes the design and evaluation of a calculation activity on medication adherence metrics in a didactic endocrine therapeutics course for second-year pharmacy students. Students calculated the proportion of days covered and medication possession ratios and reviewed a simulated adherence dashboard.

## Health Literacy

Earl GL, Harris EM, Dave M, Estriplet-Jiang J. Implementing a health literacy module fostering patient-centered written communication in a cardiovascular prevention elective course. *Curr Pharm Teach Learn*. 2019 Jul;11(7):702-709. doi: 10.1016/j.cptl.2019.03.008. Epub 2019 Mar 23. PMID: 31227093.

- This article describes a health literacy module included within an elective course. Team-based learning and a community health fair activity was utilized to improve student understanding and application of health literacy concepts.

Mnatzaganian C, Fricovsky E, Best BM, Singh RF. An Interactive, Multifaceted Approach to Enhancing Pharmacy Students' Health Literacy Knowledge and Confidence. *Am J Pharm Educ*. 2017 Mar 25;81(2):32. doi: 10.5688/ajpe81232. PMID: 28381892; PMCID: PMC5374921.

- This article reviews the inclusion and assessment of a health literacy module into a self-care course for first-year pharmacy students. The module included a lecture and workshop with active-learning activities.

Trujillo JM, Figler TA. Teaching and learning health literacy in a doctor of pharmacy program. *Am J Pharm Educ*. 2015 Mar 25;79(2):27. doi: 10.5688/ajpe79227. PMID: 25861108; PMCID: PMC4386748.

- This article describes and evaluates the addition of health literacy active learning activities into a required patient-centered communication course for first-year pharmacy students.

Ha H, Lopez T. Developing health literacy knowledge and skills through case-based learning. *Am J Pharm Educ*. 2014 Feb 12;78(1):17. doi: 10.5688/ajpe78117. PMID: 24558285; PMCID: PMC3930241.

- This article evaluates the inclusion of a health literacy patient case in a case-based learning laboratory to improve pharmacy student health literacy knowledge and skills.

Grice GR, Gattas NM, Sailors J, Murphy JA, Tiemeier A, Hurd P, Prosser T, Berry T, Duncan W. Health literacy: use of the Four Habits Model to improve student pharmacists' communication. *Patient Educ Couns*. 2013 Jan;90(1):23-8. doi: 10.1016/j.pec.2012.08.019. Epub 2012 Sep 17. PMID: 22995596.

- This article reviews the use of the Four Habits Model (FHM), a validated framework for assessing health care provider communication skills with patients, to improve communication skills for third-year pharmacy students. After practicing the FHM and receiving feedback, students were evaluated during a standardized patient encounter.

Devraj R, Butler LM, Gupchup GV, Poirier TI. Active-learning strategies to develop health literacy knowledge and skills. *Am J Pharm Educ*. 2010 Oct 11;74(8):137. doi: 10.5688/aj7408137. PMID: 21179248; PMCID: PMC2987277.

- This article reviews the implementation of active-learning exercises related to low health literacy in a required pharmacy course in cultural competency, health literacy, and health beliefs.

Poirier TI, Butler LM, Devraj R, Gupchup GV, Santanello C, Lynch JC. A cultural competency course for pharmacy students. *Am J Pharm Educ*. 2009 Aug 28;73(5):81. doi: 10.5688/aj730581. PMID: 19777096; PMCID: PMC2739064.

- This article describes the design and evaluation of a course on health promotion and literacy. Course objectives were taught with team-based learning and activities that included group presentations, reflections, and panel discussions.

Zagar M, Baggaly S. Simulation-based learning about medication management difficulties of low-vision patients. *Am J Pharm Educ.* 2010 Oct 11;74(8):146. doi: 10.5688/aj7408146. PMID: 21179257; PMCID: PMC2987286.

- This article describes the implementation and evaluation of a simulation activity/assignments within a geriatric elective related to medication management challenges in low-vision patients.

## **Inclusion in Pharmacy Experiential Curriculum**

### **Medication Access**

Li A, Minshew LM, Williams C, White C, Fassett KT, McLaughlin JE. Investigating preceptor experiences with cultural intelligence in pharmacy education. *Res Social Adm Pharm.* 2023 Apr;19(4):622-627. doi: 10.1016/j.sapharm.2023.01.003. Epub 2023 Jan 4. PMID: 36621397.

- This study was designed to explore preceptor experiences teaching cultural intelligence in an experiential setting. Preceptor teaching strategies included case discussions, reflection, and simulation.

### **Medication Adherence**

Witry MJ, LaFever M, Gu X. A Narrative Review of Medication Adherence Educational Interventions for Health Professions Students. *Am J Pharm Educ.* 2017 Jun;81(5):95. doi: 10.5688/ajpe81595. PMID: 28720923; PMCID: PMC5508094.

- This narrative review describes twenty studies describing educational interventions and learning assessments for students focused on medication non-adherence.

Darbshire PL, Mashrah D. Comparison of Student and Patient Perceptions for Medication Non-adherence. *Am J Pharm Educ.* 2018 Nov;82(9):6444. doi: 10.5688/ajpe6444. PMID: 30559498; PMCID: PMC6291675.

- This study evaluated differences in students on experiential rotation vs patient perceptions for medication non-adherence in community pharmacies.

### **Health Literacy**

Chen AMH, Cailor SM, Wicker E, Harper NG, Franz TT, Pahl B. Integrating Health Literacy and Cultural Competency Concepts Across the Doctor of Pharmacy Curriculum. *Am J Pharm Educ.* 2020 Oct;84(10):ajpe7764. doi: 10.5688/ajpe7764. PMID: 33149324; PMCID: PMC7596614.

- This article reviews the impact of integrating health literacy and cultural competency content throughout a four-year pharmacy curriculum.

Grice GR, Tiemeier A, Hurd P, Berry TM, Voorhees M, Prosser TR, Sailors J, Gattas NM, Duncan W. Student use of health literacy tools to improve patient understanding and medication adherence. *Consult Pharm.* 2014 Apr;29(4):240-53. doi: 10.4140/TCP.n.2014.240. PMID: 24704893.

- This article evaluates curricular changes related to health literacy in an introductory pharmacy practice experience (IPPE) for third-year pharmacy students.