

Enhancing student-pharmacists' professional development through community outreach with dementia population

Brianne Mosley, PharmD¹; Kelly Reilly Kroustos, PharmD, BCGP, CDP²;
Kristen Finley Sobota, PharmD, BCPS, BCGP³; Rebecca Brooks, MA⁴

How to cite: Mosley B, Reilly Kroustos K, Finley Sobota K, Brooks R. Enhancing student-pharmacists' professional development through community outreach with dementia population. *Ment Health Clin* [Internet]. 2020;10(1):6-11. DOI: 10.9740/mhc.2020.01.006.

Abstract

Introduction: Misinterpreted or minimized sensations related to progressive neuronal loss are predictive of the prominent behavioral and psychological symptoms (BPSD) observed in dementia. Guidelines recommend nonpharmacologic interventions via sensory engagement be included in the standard of patient care. To facilitate implementation, collaboration with health care students equipped with nonpharmacologic strategies to manage BPSD should be encouraged. The aim of this study was to determine the impact of outreach participation on student-pharmacists' comfort levels and perceived communication ability when interacting with patients with dementia.

Methods: During the sensory stimulation outreach, pharmacy students were paired with a patient with dementia to encourage fidget blanket use through patient-specific directions and demonstration. A single-group, pretest-posttest design was utilized to assess changes in students' comfort level and perceived communication ability prior to and immediately following outreach participation.

Results: Twenty-six students attended between 1 and 5 outreaches. Students reported a statistically significant increase in comfort level while interacting with patients with dementia after attending their first ($n=26$, $Z=2.754$, $P=.006$), second ($n=16$, $Z=2.124$, $P=.034$), and third outreach ($n=12$, $Z=2.449$, $P=.014$). Students' weighted composite communication scores showed a statistically significant increase after their first ($n=26$, $Z=3.309$, $P=.001$) and third outreach experiences ($n=12$, $Z=2.375$, $P=.018$).

Discussion: Participation in this sensory stimulation outreach improved students' comfort level and ability to communicate while interacting with patients with dementia. Greater exposure to the population through continued outreach participation was associated with a further increase in comfort level and perceived communication ability.

Keywords: sensory stimulation, BPSD, pharmacy student, dementia, fidget blanket, comfort, communication

¹ (Corresponding author) PGY1 Pharmacy Resident, The Johns Hopkins Hospital, Baltimore, Maryland, b-mosley@onu.edu, ORCID: <https://orcid.org/0000-0001-7216-3739>; ² Associate Professor of Pharmacy Practice, Ohio Northern University Raabe College of Pharmacy, Ada, Ohio, ORCID: <https://orcid.org/0000-0001-9446-2377>; ³ Associate Professor of Pharmacy Practice, Ohio Northern University Raabe College of Pharmacy, Ada, Ohio, ORCID: <https://orcid.org/0000-0001-9333-383X>; ⁴ Professor of Sociology and Public Health, Ohio Northern University Getty College of Arts and Science, Ada, Ohio, ORCID: <https://orcid.org/0000-0002-9482-9914>

Disclosures: The authors have no disclosures of interest.

Approximately 5.8 million adults are living with dementia in the United States.¹ The expected growth in the worldwide elderly population in the decades ahead has been projected to lead to a tripling of dementia cases by 2050.¹ This trend is sure to be reflected in the US population as individuals aged 65 years and older are the fastest-growing cohort.^{1,2}

In addition to cognitive and functional decline, up to 90% of patients with dementia will experience neuropsychiatric manifestations referred to as behavioral and psychological

symptoms of dementia (BPSD).³ BPSD may present as agitation, anxiety, irritability, apathy, and sleep or appetite changes.^{4,5} The symptoms are associated with poor outcomes, including long-term hospitalizations, patient and caregiver distress, and increased health care costs.^{3,6} The use of psychotropics to diminish BPSD in the dementia population has been common practice despite Food and Drug Administration warnings of increased risk of extrapyramidal side effects, falls, cerebrovascular events, arrhythmias, and even death.^{7,8} To preserve independence, improve quality of life, and avoid medication-related adverse effects, the American Geriatric Society and American Academy of Neurology recommend nonpharmacologic interventions, such as sensory engagement, be included in the standard of patient care.⁹⁻¹¹ Sensory engagement may be targeted at a specific sense or utilized for multisensory stimulation (MSS). Fidget blankets (FBs), a form of MSS, are lap-size blankets that provide intentional and guided stimulation for patients experiencing BPSD. Blankets contain items that stimulate visual (ie, bright colors, patterns), auditory (ie, bells, whistles), olfactory (ie, scented air fresheners), and tactile (ie, zippers, belts, buttons, toy tools) sensations (Figure 1).

Although sensory stimulation is recommended and benefits patients with BPSD, implementing this standard of care has barriers.⁹⁻¹¹ Health care providers may lack the time, training, and resources required to engage patients in sensory stimulation techniques. To overcome these obstacles, collaboration with health care students equipped with nonpharmacologic strategies to manage BPSD should be encouraged.

In addition to increasing the availability of patient care services, incorporation of health care students provides a unique opportunity for professional development. The American Council for Pharmacy Education (ACPE) states experiential learning opportunities, in the form of community outreach, play an important role in student development.¹² Previous research¹³⁻¹⁷ has demonstrated hands-on patient care experiences increase health care students' knowledge, self-confidence, comfort level during clinical activities, and communication skills. Completed interventions with nursing, dental, medical, and pharmacy students include student-run clinics, patient counseling, and clerkships. Outreaches often target the general medicine population, but a few published works focus on geriatric patients or providing care to individuals with low-socioeconomic status. In studies reporting increased communication ability, students provided health-related information to patients about their chronic medical conditions (ie, hypertension, diabetes, dyslipidemia) via group presentations or one-on-one, in-person or telephone counseling. Most commonly, a postintervention survey with self-reflection questions was provided to

analyze the effect of participation on professional development.¹³⁻¹⁷

Although the current body of literature supports the beneficial nature of these projects, research pertaining to the impact of an MSS outreach completed by pharmacy students with patients with dementia has yet to be evaluated. The aim of this study was to determine the impact of outreach participation on student-pharmacists' comfort levels, perceived communication ability, and leadership and mentorship skills.

Methods

Study Design and Setting

A single-group, pretest-posttest design was utilized to record changes in students' comfort levels and perceived communication ability prior to and immediately following outreach participation. The study was completed at 2 long-term care facilities (LTCF1 and LTCF2) in northwestern Ohio. LTCF1 provided care for individuals diagnosed with moderate-to-severe dementia within a secured memory care unit, monitored by specially trained health care personnel. LTCF2 was the primary residence for seniors with complex health care issues, including mild-to-severe dementia.

Selection of Participants

Students attending the Ohio Northern University Raabe College of Pharmacy were enrolled in the study between September 2017 and April 2018. The College of Pharmacy has a 6-year doctor of pharmacy program, admitting qualifying students immediately upon graduation from high school. Students from all grade levels (P1 to P6) were encouraged to participate in the sensory stimulation outreach and data collection. Prior to attending the outreach, students were trained in-person utilizing a presentation developed by the primary investigator and two board-certified geriatric pharmacists. The 30-min presentation was given in a group lecture format and reviewed the pathophysiology of dementia, BPSD, nonpharmacologic therapies, appropriate verbal and nonverbal communication techniques, signs of agitation, and strategies to diffuse difficult situations (ie, emotionally labile patient). Student polling and think-pair-share active learning strategies were used for case discussion.

Measurement Methods

A survey consisting of 15 Likert-type statements with responses on a 7-point scale was administered to students prior to and immediately following each outreach event. Surveys aimed to (1) detect a change in comfort level

Participant Demographics						
<ul style="list-style-type: none"> ○ I have experience interacting with patients diagnosed with dementia in a professional setting. ○ I understand how a fidget blanket works to decrease symptoms of dementia. ○ I understand how to assist a patient in using a fidget blanket. 						
Comfort						
<ul style="list-style-type: none"> ○ I feel comfortable interacting with patients diagnosed with dementia. 						
Communication						
<ul style="list-style-type: none"> ○ I effectively communicate healthcare information to patients diagnosed with dementia. ○ I have strong verbal communication skills (patient-friendly language, slow rate of speech). ○ I have strong nonverbal communication skills (eye contact, posture, body language, touch). 						
Leadership and Mentorship						
<ul style="list-style-type: none"> ○ (P1s/P2s/P3s only) Working with an upperclassman during this outreach experience allowed me to learn and grow in confidence more than working alone would. ○ (P4s/P5s only) Working with a lowerclassman during this outreach experience provided me with the opportunity to enhance my mentorship and leadership abilities. ○ I would prefer to collaborate with another pharmacy student during this outreach experience. 						
Professional Development						
<ul style="list-style-type: none"> ○ Participating in this outreach experience enhanced my ability to apply what I have learned in the classroom. ○ Participating in this outreach experience helped me to hone skills I will use as a pharmacist. ○ Nondrug therapy is an important component of patient care. ○ Having knowledge about, and access to, a fidget blanket enhances my ability to provide patient care. ○ Interacting with pharmacy students during this outreach improves a patient's quality of life. 						
Likert Scale						
1	2	3	4	5	6	7
<i>Strongly Disagree</i>	<i>Disagree</i>	<i>Somewhat Disagree</i>	<i>Neutral</i>	<i>Somewhat Agree</i>	<i>Agree</i>	<i>Strongly Agree</i>

FIGURE 2: Survey administered prior to and immediately following sensory stimulation outreach to measure participant demographics and change in primary outcome variables

nonverbal communication skills (eye contact, posture, body language, appropriate touch). Alpha was set at 0.05, with *P* values less than that indicating statistical significance. This research was granted exempt status by the Ohio Northern University Institutional Review Board.

(*n* = 26, *Z* = 3.309, *P* = .001) and third outreaches (*n* = 12, *Z* = 2.375, *P* = .018). Both variables increased in a linear fashion as students participated in more outreach events. After participating in 4 outreaches, students' communication and comfort scores plateaued. See Figure 3.

Results

Study Population Characteristics

Twenty-six student-pharmacists (6 males and 20 females, average age 22 years) took part in the study. Participants in their P3 to P5 year (7 P3, 11 P4, and 8 P5) attended between 1 and 5 outreach events. At baseline, students reported having little experience interacting with patients with dementia (*n* = 26, *M* = 3.08, *SD* = 1.65). Before participating in their first outreach, students strongly agreed they understood the mechanism by which FBs decrease BPSD (*n* = 26, *M* = 6.31, *SD* = 1.65) and how to assist a patient in using an FB (*n* = 26, *M* = 5.88, *SD* = 0.95).

Comfort Level and Communication Ability

Students reported a statistically significant increase in comfort level while interacting with patients after their first (*n* = 26, *Z* = 2.754, *P* = .006), second (*n* = 16, *Z* = 2.124, *P* = .034), and third outreach (*n* = 12, *Z* = 2.449, *P* = .014). Students' communication scores also showed a statistically significant increase after their first

Leadership and Mentorship

After each outreach, students agreed participating in the experience enhanced their abilities to apply classroom knowledge (*n* = 66, *M* = 6.12, *SD* = 0.89) and hone pharmacist skills (*n* = 66, *M* = 6.42, *SD* = 0.68). Students strongly agreed having knowledge about and access to FBs would enhance their ability to provide patient care (*n* = 66, *M* = 6.65, *SD* = 0.60) and that their interactions during the outreach improved patients' qualities of life (*n* = 66, *M* = 6.56, *SD* = 0.59). When asked about the structure of the outreach, students agreed they prefer to collaborate with a peer (*n* = 65, *M* = 6.23, *SD* = 1.17). Upperclassmen agreed working in a pair gave them the opportunity to enhance their mentorship and leadership abilities (*n* = 47, *M* = 5.81, *SD* = 0.99), and lowerclassmen strongly agreed the structure allowed them to learn and grow in confidence (*n* = 17, *M* = 6.70, *SD* = 0.47).

Discussion

Utilizing students in the provision of nonpharmacologic interventions with the dementia population affords a

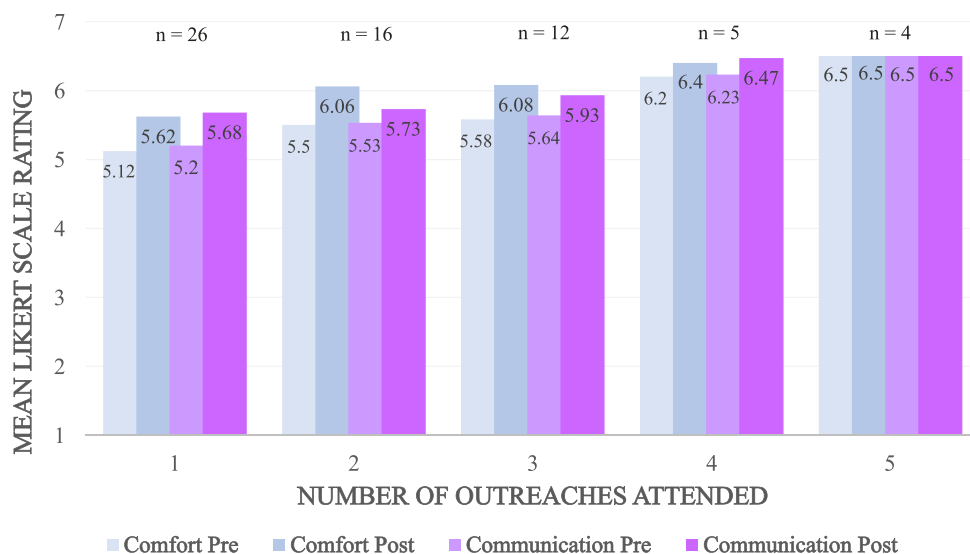


FIGURE 3: Depiction of change in comfort level and perceived communication ability related to number of outreaches attended by student-pharmacists

unique experience for future medication-centered professionals. During the outreach, students became more comfortable completing patient care activities, sharpened their verbal and nonverbal communication skills, and developed their leadership ability. Of note, students showed a statistically significant increase in outcome measures after participating in only 1 sensory stimulation outreach. With further involvement, students' comfort levels and perceived communication ability continued to improve. This trend held true until students had participated in 4 outreaches, when no further improvement was seen.

Prior to study participation, most students reported having little professional experience with patients with dementia. To bridge this gap, a 1-time training session incorporating case-based scenarios and active learning strategies was provided prior to patient interactions. It is likely that this preparation played a role in students reporting comprehension of the mechanism by which FBs decrease BPSD and how to appropriately engage patients in using blankets prior to their first outreach. The significant increase in comfort level after outreach completion may also be partially attributed to this preparation. It is likely that pairing an upperclassman and lowerclassman lessened the pressure associated with interacting 1-on-1 with this unique population.

Further complementing classroom knowledge, this experience afforded a creative setting for a hands-on approach to a patient care challenge. The study integrated CAPE outcome domains 3 and 4 set forth by ACPE. Domain 3 focuses on developing an approach to practice and patient care including problem-solving, communication, and patient advocacy.¹² Students applied creative solutions

to solve problems while working with challenging patients, some of whom were blind, nonverbal, or developmentally delayed. The innovative practice enhanced students' perceived verbal and nonverbal communication skills and bettered their ability to engage patients. Domain 4 involves personal and professional growth, including self-awareness, leadership, and professionalism.¹² By pairing an upperclassman and lowerclassman, students were able to work as a team, utilizing the strengths of each individual during patient interactions. Through this structure, upperclassmen reported enhanced leadership and mentorship abilities.

Interpretation of these findings is limited by a small sample size, mostly reflective of upperclassmen (P4 and P5) responses. Although students had little professional experience with the dementia population at baseline, it is possible that upperclassmen were more comfortable engaging patients as a result of greater exposure to patient care experiences and therapeutic coursework. Despite this possible advantage, all participants reported a statistically significant increase in the outcome variables from baseline. Survey data contained self-reported changes in comfort and communication; therefore, results are reflective of perceived skill enhancement. Findings are correlational and incapable of establishing causation given the lack of control group and quasi-experimental design. Finally, the sensory stimulation outreach was only accessible to pharmacy students, so results cannot be extrapolated to other health care professional students.

Conclusion

Our research findings provide greater evidence to support the beneficial nature of pharmacy students participating

in hands-on patient care activities. The sensory stimulation outreach provided an opportunity for students to embrace nonpharmacologic interventions for BPSD. Students became more comfortable providing individualized patient care to a unique population, enhanced their perceived communication skills, and developed leadership and mentorship abilities. Future research in collaboration with health care professional students from a variety of disciplines should explore the impact of outreach participation on professional development.

Acknowledgments

We acknowledge Ohio Northern University Raabe College of Pharmacy student chapter of the American Society of Consultant Pharmacists for blanket assembly and outreach participation. We thank Drs Karen Kier and Phillip Zoladz for guidance regarding statistical analyses.

References

1. Alzheimer's Association. Alzheimer's disease facts and figures. *Alzheimers Dement*. 2019;15(3):321-87.
2. He W, Goodkind D, Kowal P; US Census Bureau. An aging world: 2015. International population reports. Washington: US Government Publishing Office; 2016.
3. Kar N. Behavioral and psychological symptoms of dementia and their management. *Indian J Psychiatry*. 2009;51 Suppl 1:S77-86. PubMed PMID: [211416023](#).
4. Kroustos KR, Trautwein H, Kerns R, Sobota KF. Fidget blankets: a sensory stimulation outreach program. *Consult Pharm*. 2016; 31(6):320-4. DOI: [10.4140/TCP.n.2016.320](#). PubMed PMID: [27250073](#).
5. Turner S. Behavioural symptoms of dementia in residential settings: a selective review of non-pharmacological interventions. *Aging Ment Health*. 2005;9(2):93-104. DOI: [10.1080/13607860512331339090](#). PubMed PMID: [15804626](#).
6. Cerejeira J, Lagarto L, Mukaetova-Ladinska EB. Behavioral and psychological symptoms of dementia. *Front Neur*. 2012;3:73. DOI: [10.3389/fneur.2012.00073](#). PubMed PMID: [22586419](#); PubMed Central PMCID: [PMC3345875](#).
7. Schneider LS, Dagerman K, Insel PS. Efficacy and adverse effects of atypical antipsychotics for dementia: meta-analysis of randomized, placebo-controlled trials. *Am J Geriatr Psychiatry*. 2006;14(3):191-210. DOI: [10.1097/01.JGP.0000200589.01396.6d](#). PubMed PMID: [16505124](#).
8. Nazarko L. Dementia care: the use and abuse of anti-psychotic drugs. *Nurs Resid Care*. 2009;11(3):138-42. DOI: [10.12968/nrec.2009.11.3.39660](#).
9. Barton C, Yaffe K. A guide to dementia diagnosis and treatment. In: Pacala JT, Sullivan GM, editors. *Geriatrics review syllabus: a core curriculum in geriatric medicine*. 7th ed. New York: Geriatrics; 2010. p. 274-85.
10. Reuben DB, Herr KA, Pacala JT, Pollock BG, Potter JF, Semla TP. *Geriatrics at your fingertips*. 13th ed. New York: Geriatrics; 2010.
11. Doody RS, Stevens JC, Beck C, Dubinsky RM, Kaye JA, Gwyther L, et al. Practice parameter: management of dementia (an evidence-based review): report of the Quality Standards Subcommittee of the American Academy of Neurology. *Neurology*. 2001;56(9):1154-66. DOI: [10.1212/WNL.56.9.1154](#). PubMed PMID: [11342679](#).
12. Medina MS, Plaza CM, Stowe CD, Robinson ET, DeLander G, Beck DE, et al. Center for the Advancement of Pharmacy Education 2013 educational outcomes. *Am J Pharm Educ*. 2013; 77(8):162. DOI: [10.5688/ajpe778162](#). PubMed PMID: [24159203](#); PubMed Central PMCID: [PMC3806946](#).
13. Neafsey PJ, Shellman J. Senior nursing students' participation in a community research project: effect on student self-efficacy and knowledge concerning drug interactions arising from self-medication in older adults. *J Nurs Educ*. 2002;41(4):178-81. PubMed PMID: [11954970](#).
14. Elkind A, Blinkhorn AS, Blinkhorn FA, Duxbury JT, Hull PS, Brunton PA. Developing dental education in primary care: the student perspective. *Br Dent J*. 2005;198(4):233-7. DOI: [10.1038/sj.bdj.4812092](#). PubMed PMID: [15731807](#).
15. Mobley Smith MA, Koronkowski MJ, Petersen NM. Enhancing student learning through integrating community-based geriatric educational outreach into ambulatory care advanced practice experiential training. *Am J Pharm Educ*. 2004;68(1):20. DOI: [10.5688/aj680120](#).
16. Vijn TW, Fluit CRMG, Kremer JAM, Beune T, Faber MJ, Wollersheim H. Involving medical students in providing patient education for real patients: a scoping review. *J Gen Intern Med*. 2017;32(9):1031-43. DOI: [10.1007/s11606-017-4065-3](#). PubMed PMID: [28600753](#); PubMed Central PMCID: [PMC5570739](#).
17. Batra P, Chertok JS, Fisher CE, Manseau MW, Manuelli VN, Spears J. The Columbia-Harlem Homeless Medical Partnership: a new model for learning in the service of those in medical need. *J Urban Health*. 2009;86(5):781-90. DOI: [10.1007/s11524-009-9386-z](#). PubMed PMID: [19585243](#); PubMed Central PMCID: [PMC2729872](#).