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Education of pharmacy students with geriatric sensitivity training exercise

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Abstract

Background: The older adult population is increasing rapidly which will have an impact on the future of pharmacy. Therefore, it is important for pharmacists to be exposed to the challenges experienced by older adult patients.

Aim: The objective was to evaluate pharmacy students' attitudes and perceptions of a geriatric sensitivity training (GST) exercise.

Method: The GST exercise was administered as a pilot program in 2009 to first year pharmacy students. Once a new pharmacy curriculum was implemented, the activity was incorporated into an application-based laboratory course for second-year students. A Likert-scale assessment was administered to both groups at the completion.

Results: More than 90% of all participants (n=198) "Strongly Agreed" or "Agreed" that the exercise challenged them to think critically when approaching geriatric patients.

Conclusions: The GST exercise is a useful tool in pharmacy education to make students aware of the barriers faced by older adults.

Keywords: *Older Adult, Pharmacy Education, Sensitivity Geriatric Training*

Introduction

In most countries throughout the world, the older adult age groups of 60 and older are expected to double by 2050 (United Nations, Department of Economic and Social Affairs, Population Division, 2013). In the United States (U.S.), approximately 14% of the population was over 65 years of age in 2012. However, the United States Census Bureau is projecting that by the year 2040 this number will increase to approximately 21%. During that time, the population of adults 85 years of age and older is expected to increase from 5.9 to 14.1 million (U.S. Census Bureau, 2012). According to the Administration on Ageing, older adults averaged more office visits with doctors. Among adults greater than 74 years of age, 21% had more than ten visits with a doctor or other healthcare professional in the previous year compared with only 14% of persons between 45 and 64 years of age (Administration on Ageing, 2012). Based upon this information, student pharmacists must have a thorough understanding of the needs and limitations of the older adult population. The American Society of Consultant Pharmacists recommends instructing pharmacy students on how to recognise the barriers to effective communication with older adults (The American Society of Consultant Pharmacists, 2015). Some of these barriers or challenges to effective communication may include memory impairment, decreased manual dexterity, decreased vision, hearing impairment, and other changes in perception (Elsawy & Higgins, 2011).

Students are more likely to interact effectively with patients for whom they have understanding and empathy (Wright *et al*., 2014). Therefore, educational opportunities structured to develop positive attitudes toward older adults should prepare students for effective interactions with their patients. Furthermore, simulation-based exercises appear to be more effective for fostering attitude changes in students than just presentation of geriatrics information (Bensadon *et al*., 2013; Samra *et al*., 2013). In a systematic review of attitude-focused interventions of doctors' and medical students' attitudes toward older adult patients, it was demonstrated that of 16 interventions involving an empathy-building component, such as an aging simulation exercise, 11 demonstrated a positive attitude change. In contrast, when merely knowledge of geriatrics issues was addressed, only three of 11 studies demonstrated a positive change (Samra *et al*., 2013). A three-day geriatric simulation exercise (loss of vision and speech or use of a hand) with 20 second-year pharmacy students showed significant increase in their empathy scores on the Jefferson Scale of Empathy Health Profession Student Version at seven days post-intervention; however, no difference was noted at 90 days post-intervention compared to a control group (Lor *et al*., 2015). Health-professional students who participated in the Medication Geriatric Game™ (Office of Research on Ageing, 2015) demonstrated understanding of the challenges faced by older adults. Although the utilisation

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of geriatric-sensitivity exercises has been studied in various health-care professionals, the literature concerning pharmacy students is limited.

The geriatric sensitivity training (GST) simulation exercise was piloted in a communications course in 2009 then incorporated into an application-based laboratory setting course once the new curriculum was developed. Incorporation of the activity was based on the 2007 Centre for the Advancement of Pharmaceutical Education (CAPE) Pharmacy Practice Supplemental Educational Outcomes statement that suggests pharmacy students should demonstrate sensitivity and empathy during communication with patient and/or caregivers (AACP Pharmacy Practice Education Outcomes and Objectives Supplements Task Forces, 2007). In the 2013 CAPE outcomes (Medina *et al*., 2013) and the Accreditation Council for Pharmacy Education guidance for 2016 standards, fostering empathy remains a component. (Accreditation Council for Pharmacy Education, 2015)

Methods

The objective was to evaluate pharmacy students' attitudes and perceptions of the GST simulation exercise. The GST kit contains a detailed instructor's manual and items designed to mimic some common older adult disease states and syndromes (Table I). There are glasses that simulate glaucoma, cataracts, and macular degeneration. Gloves demonstrate the decreased manual dexterity associated with arthritis. There is also an audio simulation of hearing impairment. During the exercise, students watch an instructional video that is periodically stopped to allow students to complete a series of tasks such as reading, threading a needle, opening pill boxes, and sorting small, coloured pieces of paper that represent medications. After each task, the video commentary is resumed, and there is a discussion of ways in which students can improve their interactions with patients who have the condition being simulated.

Table I: Description of the simulations in the geriatric sensitivity training kit.

Simulations	Materials	Simulated Disease
Visual	Five different special glasses Newspaper or other reading materials Number game card with pen Prescription bottle with colored paper	Glaucoma Macular degeneration Hemianopsia Cataracts Yellowing of the lens
Hearing	Video	Hearing loss
Impaired Manual Dexterity	Special gloves Sewing kit (Optional: add special glasses)	Arthritis Lack of sensation
Confusion	Video Handouts	Depression Delirium Dementia

Use of the GST kit with pharmacy students was studied as a pilot program funded by a University Faculty Development Grant of US$1700. The grant was used to purchase 34 individual GST kits. The pilot program was initiated in spring 2009 with a follow-up assessment in spring 2014. The delay between the pilot program and the follow-up was the implementation of a new pharmacy curriculum and the development of a laboratory course. The new pharmacy curriculum design required some minor changes to the instructional setting of the GST simulation exercise. It was relocated to a required three hour laboratory course designed to integrate content with application. In addition, the GST simulation exercise was moved to the second year of the pharmacy curriculum to align with current geriatric instruction. These groups are described below.

The spring 2009 pilot study was conducted during a required one-hour didactic communications class in a large classroom which accommodated approximately 130 students. The participants were in their first professional year of a four-year Doctor of Pharmacy degree program. The students were divided into groups of approximately four, and each group shared one GST kit. The session lasted approximately 60 minutes which included both the exercise and questionnaire. This group had no previous exposure to geriatrics subject matter.

In the spring 2014 active learning sessions, the GST exercise was reevaluated in an application-based laboratory course. The laboratory course is a one-credit hour course that is designed to integrate course content by a combination of learning strategies such as simulations, skills assessments, and case discussions to augment student learning. The course is designed to divide the class into four groups with a maximum of 32 students enrolled per laboratory session. The activity was required as part of the laboratory course activity for all students in the second professional year of the four-year Doctor of Pharmacy degree program. Each student was provided with their own GST kit. All sessions in the active learning laboratory lasted approximately 90 minutes. Both the 2009 and 2014 groups completed the same exercises; however, the active learning group had more time for the hands-on activities and discussion. In contrast to the 2009 group, these students were receiving didactic content on common disease states of older adults in a pharmacotherapy course within the same semester.

Students in both sessions completed a six-question survey in paper format with a scantron answer sheet. The same survey instrument was used in both sessions; however, an additional question and comment section was added for the 2014 active learning group. The survey was voluntarily and anonymous. The questionnaire utilised a Likert scale (Likert, 1932) (5="Strongly Agree" to 1="Strongly Disagree") to assess the students' level of agreement with statements describing various aspects of the exercise. DataLink Connect 4.2.0.2 (2009-2014 Apperson Educational Products) was used to report descriptive data. The University's Institutional Review Board approved the study.

Results

A total of 233 students participated in the GST exercise. Of those, 198 students completed the survey assessment after the exercise for an overall response rate of 85%. The pilot study group (n=122) was comprised of more participants than the active learning group (n=111); however, more participants in the active learning sessions completed the survey compared to the pilot study group (99% versus 72%, respectively). The higher response rate in the active learning sessions was probably associated with a longer length of time to complete the activity and assessment.

Table II: Students' reported perceptions after the geriatric simulation exercise[a]

Survey Question	Type of Instructional Setting	Level of Agreement				
		5	4	3	2	1
The instructions of the aging sensitivity exercise were easy to follow.	P1 Pilot Study	73	27	0	0	0
	P2 Active Learning	82	17	0	1	0
The exercise enhanced my problem-solving skills (related to geriatric population).	P1 Pilot Study	47	32	18	3	0
	P2 Active Learning	59	40	1	0	0
The exercise challenged me to think critically about my approach to geriatric patients.	P1 Pilot Study	60	36	4	0	0
	P2 Active Learning	60	38	2	0	0
The exercise helped me to prepare for real-life counseling of geriatric patients.	P1 Pilot Study	54	39	7	0	0
	P2 Active Learning	62	36	2	0	0
The exercise is an useful learning tool (for pharmacy students).	P1 Pilot Study	62	31	7	0	0
	P2 Active Learning	74	25	1	0	0
The exercise should be made available to students in the future.	P1 Pilot Study	65	28	7	0	0
	P2 Active Learning	75	23	2	0	0
I feel the exercise helped me gain knowledge about the geriatric patient.	P1 Pilot Study	(this item not assessed during the session)				
	P2 Active Learning	75	24	1	0	0

5=Strongly Agree; 4=Agree; 3=Neutral; 2=Disagree; 1=Strongly Disagree

[a]*Numbers reported as percentages.*

P1 = First professional year students

P2 = Second professional year students

For the quantitative component, Table II illustrates the survey instruments and percentages of the participants' responses to the questions. More than 90% of all participants either "Strongly Agreed" or "Agreed" that the exercise challenged them to think critically about their approach to the older adult patient. Ninety-six percent of all participants "Strongly Agreed" or "Agreed" that the exercise was a useful learning tool and should be made available for future pharmacy students. For the assessment of students' attitudes on problem-solving skills, 99% of the active learning group "Strongly Agreed" or "Agreed" that the session enhanced their problem-solving skills compared to only 79% of the pilot study group. Overall, the majority of the participants believed that the activity enhanced their problem-solving skills related to the older adult population. Lastly, 99% of the active learning group "Strongly Agreed" or "Agreed" that the exercise helped them gain knowledge about the older adult patient.

Regarding the qualitative component, only the active learning group had the opportunity to include comments. Of the group, 26% (n=29) provided comments about the GST exercise. All of the comments were positive, although one participant did express some concern about retention of the material based upon the placement of the activity in the curriculum. A majority of the comments described the exercise as a very useful (N=11), informative (n=10), and fun way of learning (n=7). Several participants commented that the exercise helped them learn patience regarding the older adult population and more effective ways to communicate. Some of the comments addressed a better understanding of the limitations of the elderly such as "I have a better understanding of how debilitating vision impairment can be [in the elderly]," and "the glasses are especially helpful to show the importance of accommodations to the vision impaired". One participant wrote "I feel that I am, now, better at being able to empathise with how the elderly may feel in the pharmacy." As for perceptions, one participant commented that they did not put too much thought into the care of the elderly, but this laboratory session with the GST kit "really opened my eyes for their care". Lastly, participants' comments mentioned their desire to incorporate what they learned into their pharmacy practice experiences.

Discussion

At the conclusion of both the pilot study and active learning sessions, a majority of participants reported positive attitudes about the GST simulation exercise. These results are similar to other studies showing that exposure to simulation exercises during the pharmacy curriculum fosters positive attitudes toward the older adult (Kennedy *et al*., 2004; Sauer, 2006; Zagar, 2010; Chen *et al*., 2011; Woelfel *et al*., 2011; Adkins *et al*., 2012). The majority of the active learning group reported that they believed that they gained knowledge about the older adult population. Even though our study did not assess knowledge gained, the positive attitudes associated with the active learning sessions are consistent with other studies that did assess knowledge gained by elective participants in a geriatric-focus course (Augustine *et al*., 2014). However, the advantage of using the GST simulation exercise within a required course is that all

pharmacy students are exposed to barriers faced by older adults, not just students with a specific interest in geriatrics.

One advantage of the GST simulation exercise is the ability to adapt it to either a small group exercise or a large classroom setting. Our results demonstrate the applicability of the GST exercise in the first or second professional year of training. Some studies have shown improvement in students' attitudes after conversations with an older adult patient either alone or with an interdisciplinary group (Estus *et al*., 2010; Sharder *et al*., 2013; Dacey *et al*., 2014). Early exposure to GST exercises may help students to develop empathy, which may enhance practice setting interactions and conversations with older adults.

This activity requires only a minimum allocation of resources. The master GST kit contains all simulation activities and guidelines including the DVD to guide the instructor(s) during the exercise. The exercise is primarily student-led. Estimated baseline cost for the simulation materials used in this activity was US$1350 for the master kit materials plus 30 full kits (Lee Memorial Health System, 2015). This will accommodate approximately 120 students with no more than four students needing to share one kit.

This survey assessment did have several limitations. The sample size may contribute to some bias in the answers on the survey; however, with an 85% response rate the bias should be minimal (Draugalis & McCloskey, 2014). In addition, the authors did not obtain baseline information to assess the students' attitudes about the older adult population prior to the exercise. Due to this, we do not know if the students already had a positive mind set about interacting with older adults. The survey also did not account for work experience with the older adult outside of pharmacy school; this may change students' perceptions. Even though the exercise evaluated students' perceptions about problem-solving skills and perceived knowledge gained, the exercise did not specifically evaluate an increase in students' geriatrics knowledge base or students' interactions with older adults. Further study should be conducted to characterise students' attitudes related to the problem-solving and whether true knowledge was gained.

Conclusion

The GST simulation exercise is a useful tool in pharmacy education to make students aware of the barriers faced by the older adult population. By incorporating the exercise into the Doctor of Pharmacy curriculum, students have the opportunity to assess and modify their behaviour when caring for older adult patients.

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