TEACHERS' TOPICS

Teaching Geriatrics to Generation Y

Susan W. Miller, PharmD

Southern School of Pharmacy, Mercer University

The course, *Geriatric Pharmacy*, has been a component of the elective curriculum at Mercer University Southern School of Pharmacy for more than 20 years. The evolution of the course from one of traditional lectures and assessment to one of multimedia presentations, learning activities, web-based assignments, and case-study assessments is described. The content of the course has also evolved from that of primarily clinical topics in geriatrics to include the social and emotional issues of aging, and areas and issues of pharmacy practice for geriatric patients.
Keywords: geriatrics, generations X and Y, active learning, medication related problems

INTRODUCTION

Topics in geriatrics are an integral part of the curriculum at Mercer University Southern School of Pharmacy and were introduced into the experiential curriculum in 1974 and into the didactic curriculum in 1983. General principles of geriatrics and therapeutics are integrated into the required (core) disease state modules of the pharmacy curriculum. An elective course entitled *Geriatric Pharmacy* is offered once per academic year as a 2-semester-hour-credit course. The course is limited to third professional year (P3) students and the average enrollment is 75% of the 130-member P3 class. (The P3 requirement is in place in order to allow the students to complete the core disease state module coursework in nervous system, cardiovascular, and renal disorders.) The elective course was originally offered in 1983 and has evolved from one of primarily clinical topics in geriatrics to a course that includes social, ethical, legislative, and pharmacy practice issues, as well as clinical syndromes common in the geriatric adult, such as medication-related problems, falls, urinary incontinence, and confusion.

INSTRUCTIONAL METHODS AND CONTENT

The elective course, *Geriatric Pharmacy*, has been traditional in nature, with required readings either from a textbook or journal articles, slide/lecture delivery of content, and assessment of learning via completion of assignments and multiple-choice examinations. Formal student feedback on the course, measured on a 5-point Likert scale, has usually been favorable. Because it is an elective course, students with an interest in the area of geriatrics select to register for it. Following the fall 2000 offering, 2 comments written by students in the course evaluation were noted. The comments were that the information presented was useful to a pharmacist, but the course format itself was boring and presented at a slow pace. Furthermore, although the students seemed to learn the principles and practice issues of geriatric pharmacy, rarely did they develop empathy for older patients. This lack of empathy for older patients was evident following an annual survey of the students using validated instruments to determine attitudes towards older people and their health status. The surveys revealed that most students had neutral to negative attitudes in these areas. The results of the survey and the comments on the student evaluations led to a reengineering of the course.

An overriding consideration in reengineering the *Geriatric Pharmacy* course was that the student learner enrolled in the course in 2003 is a different type of learner than was enrolled in the course at its inception. Most students enrolled in pharmacy schools are members of either "Generation X," people born between 1968 and 1976, or increasingly, "Generation Y," people born between 1977 and 1994. Much has been studied and written about Generation X.[1,2] Pedagogical research involving Generation X pharmacy students has revealed that they are accustomed to receiving information in an entertaining format and that their technological prowess and attraction to multimedia, which stimulate multiple senses, make those the preferred learning methods in the classroom.[3] Generation X pharmacy students learn more from lectures designed especially for their learning styles than from traditional lectures.[4]

Corresponding Author: Susan W. Miller, PharmD. Address: Mercer University Southern School of Pharmacy, Department of Clinical and Administrative Sciences, 3001 Mercer University Drive, Atlanta, GA 30341-4155. Tel: 678-547-6217. Fax: 678-547-6384. E-mail: miller_sw@mercer.edu.

Table 1. Terminology of Aging[10]

Aging Term	Definition
Aging	Functional decline which begins at the end of the growth and development stage of life
Agesim	Prejudice against the elderly. Blaming old age for all physical problems (impaired vision and hearing, etc)
Senescence	Deterioration with age; Decrease in vitality; Time when age-associated effects are manifested; Decrease in biologic efficiency and vigor, leading to an increase in vulnerability
Societal aging	The stage of life when a person loses interest in new things and stops relating to the present; Disengagement
Primary aging	Physiologic changes of increasing age
Secondary aging	Pathophysiologic changes of disease
Tertiary aging	Sociologic and behavioral changes of increasing age
Life span	Greatest age reached by any member of a species (Humans: 120 years)
Life expectancy	The average age reached by members of a population (In the U.S., 47 years in 1900, 76.9 years in 2000)

Members of Generation Y, the "Millennials," are now in college and entering the work force. Millennials are described as family-oriented, accepting of differences in people, deeply committed to authenticity and truth-telling, heavily stressed, and living in a no-boundaries world where they make short-term decisions and expect paradoxical outcomes (choices result in both good and bad consequences).[5] Also called "echo-boomers," members of Generation Y are strong advocates for social responsibility and care about the world, the environment, poverty, and global issues in general. They have grown up with technology at school and at home, and are more comfortable with technology than their parents. They feel they have control over the Internet and use the Internet frequently to research topics and obtain information. Millennials are comfortable with the changes brought about by new technology and communications methods that will transform business, education, health care, entertainment, government, and other institutions in our society.[6]

With these attributes of Generation X and Generation Y in mind, the goals in making innovations to this course were 3-fold: (1) change the students' neutral or negative attitudes toward older people to positive ones; (2) create empathy for geriatric patients among the students; and (3) relieve the boredom reported by a minor number of students. For the fall 2001 offering of the course, a re-engineering of *Geriatric Pharmacy* was accomplished. The course was divided into 3 major sections, which were presented in the following order: social and emotional issues of aging, clinical syndromes and health issues of aging, and areas and issues of pharmacy practice for geriatric patients. Additional considerations in re-engineering *Geriatric Pharmacy* were to provide more opportunity for interactive learning among the students, and to design the content delivery and assessments to fit the learning styles and technological expertise of Generation X and Generation Y students.

Social and Emotional Issues of Aging

At the first class meeting, the students anonymously completed 2 validated surveys regarding opinions on aging and geriatrics. These 2 surveys were "Kogan's Attitudes Towards Aging Scale" and "Palmore's Facts on Aging Quiz."[7-9] Class time is allotted for discussion of the items on the surveys and any opinions the students expressed that were surprising or revealing to them personally regarding their thoughts on older people. Information on terms important in the study of aging and geriatrics and information on theories of aging were presented in lecture format. Table 1 summarizes the information contained in the terminology lecture.[10] Table 2 summarizes the aging theories discussed in the course.[11]

One activity added to encourage empathy in the students for geriatric patients was having them watch video clips from motion pictures and then reflect, through journaling, on the story line of the scene from the film. Film scenes can substantially enrich the education of students of geriatrics, and the availability and illustrative power of many films make them ideal adjunct tools to the more traditional forms of teaching.[12] The video clips were selected based on the story line of the film, in that it portrayed geriatric-related issues and problems experienced by older characters in the film. This activity allowed the students to experience events in the lives of older people who were coming to grips with issues such as loss of independence, sexuality in seniors, symptoms of memory loss, managing medications, financial loss, death of their spouse, disease, overbearing family members, interfamily and intergenerational conflicts, and facing end-of-life issues. Source films for the video clips included, *To Dance with the White Dog*,[13] *On Golden*

Table 2. Theories of Aging[11]

Aging Theory	Description
Programmed Senescence Theory	Aging is the result of the sequential switching on and off of certain genes, with senescence being defined as the time when age-associated deficits are manifested
Endocrine Theory	Biological clocks act through hormones to control the pace of aging
Immunological Theory	A programmed decline in immune system functions leads to an increased vulnerability to infectious disease and thus aging and death
Wear and Tear Theory	Cells and tissues have vital parts that wear out
Rate of Living Theory	The greater an organism's rate of oxygen basal metabolism, the shorter the life span
Crosslinking Theory	An accumulation of crosslinked proteins damages cells and tissues, slowing down bodily processes (Tissues toughen, allowing for development of cataracts and arterial resistance, among other problems.)
Free Radical Theory	Accumulated damage caused by oxygen radicals causes cells and eventually organs to cease functioning
Error Catastrophe Theory	Damages to mechanisms that synthesize proteins results in faulty proteins that causes catastrophic damage to cells, tissues, and organs
Somatic Mutation Theory	Genetic mutations occur and accumulate with increasing age, causing cells to deteriorate and malfunction

Pond,[14] *Grumpy Old Men*,[15] *Cocoon*,[16] and *Hanging Up*.[17] Following viewing of the film clips, the students wrote/recorded their thoughts regarding the events portrayed in a journal. Class discussions regarding the emotional and social issues revealed in the video clip followed.

A second activity added to create empathy in the students was an adaptation of a game entitled, *Into Aging: A Simulation Game*.[18] The game is designed to help health care staff and volunteers develop a personal understanding of the aging process. Players encounter conditions associated with aging that may hinder the accomplishment of their goals and/or break down their self-image. These difficulties come in different forms, including physical disabilities, social judgments, financial setbacks, and the loss of loved ones. Players gain the insight necessary to respect the concerns of daily living that the elderly must face. The game promotes meaningful discussion and encourages participants to employ a new set of values in everyday practice. The game is published in a book format; however, we adapted it into an interactive slide presentation in which students actually assumed the persona of an older person. When it was a player's turn, the next slide was revealed, the situation was read, and a die was rolled; an odd number determined one particular consequence and an even number determined an alternate consequence. The player then had to accept the social, economic, and/or health care fate of the older person they were portraying. The players in the game moved from independent living, to semi-dependent living, to long-term care. For some, death was the ultimate consequence. Students had the opportunity to experience "virtual-reality aging" by donning eye-glasses with tape on the lenses to blur their vision, placing cotton balls in their ears to distort their hearing, taping their fingers together to experience loss of dexterity, and tying full soup cans to their legs to simulate muscle weakness and bradykinesia. During the game, the lighting in the lecture hall was set on dim for the purpose of interfering with vision. One class period was spent on this exercise, with a small number of students actually playing the game and the remaining students aligned with each of the volunteer players. Consequences of falls, lack of insurance, death of a spouse, financial problems, loss of control of situations, discrimination based on age and finances, and death were all experiences that were a part of this exercise. Students were required to journal their reactions regarding the activity, and class time was spent discussing the issues and emotions that were revealed.

The final activity related to the social and emotional issues of aging involved critiquing advertising targeted at older people. Students were required to collect advertisements that were either aimed at seniors or depicted older persons in them, and to describe the types of products being advertised and how the senior was portrayed in the advertisement. The students were also asked to comment on the appropriateness of these advertising campaigns. Direct-to-consumer advertising of medications, advertising to medical professionals, and nonmedical advertisements were critiqued.

Clinical Syndromes and Health Issues of Aging

One traditional lecture was presented on the general principles of aging. This was actually a review of a 3-hour lecture presented in the P2 year as part of the

Table 3. Assessment of the Geriatric Patient[23]

Geriatric Assessment	Description
Mental status	Screen for cognitive impairment, psychosis, depression, anxiety
Functional status	Screen for ability to live independently via measurement of activities of daily living and complex activities of daily living
Social status	Availability of spouse, family, or friends to provide care
Values	Decisions regarding complex ethical decisions such as Advance Directives or Living Will, Durable Power of Attorney for Health Care, and Do No Resuscitate orders
Economic status	Ability to pay for or finance care and treatments
Physical status	Review of disease states and medications
Health maintenance and disease prevention	Primary Prevention - forestalling disease Secondary Prevention - early detection of disease and treatment Tertiary Prevention - avoidance of negative consequences

General Principles of Pharmacotherapy course. This lecture reviewed the changes in pharmacokinetics (absorption, distribution, metabolism, and excretion) that occur with aging, as well as the pharmacodynamic changes that occur with aging, such as enhanced or diminished response to medications.[19] Other topics reviewed included the importance of the following in geriatric patients: altered homeostasis, estimating creatinine clearance, and reviewing for medication-related problems.[19] This lecture was followed by a lecture on medication-related problems in the geriatric patient, using the Beers' Criteria as a basis for the discussion.[20-22] These criteria were first published in 1991 and have been updated twice, most recently in December 2003. The students solved 2 case studies and had the opportunity to evaluate the cases and make recommendations based on the Beers' Criteria. Identification of medication-related problems and knowledge of which medications were more often associated with problems, and subsequently considered inappropriate, in older patients or in certain situations are the cornerstones of geriatric pharmacy practice. Additional topics presented in the lecture on medication-related problems included the incidence of medication-related problems in seniors across the continuum of care, from the ambulatory care setting to the acute care setting, and finally to the long-term care setting. The pharmacoeconomics of medication-related problems in this population were also discussed, as well as the role of the pharmacist in the prevention, identification, and resolution of medication-related problems.

A discussion on the assessment of the geriatric patient followed the presentation on medication-related problems. The importance of assessment in this population was discussed and various aspects of assessment were described. Geriatric assessment was defined as a multidimensional diagnostic process designed to quantify an elderly person's medical, psychosocial, and functional capabilities and problems, to aid in the formulation of a comprehensive plan for therapy and long-term follow-up.[23] Indicators of the need for geriatric assessment included a change in mental or emotional status, a decline in functional status, potential change in the living situation, receipt of multiple medications with possible adverse effects, and the occurrence of frequent geriatric problems, such as falls, incontinence, confusion, or anxiety. Table 3 lists the important concepts of the assessment lecture.[23]

Students were made aware of the many assessment tools for use in the geriatric population and were given the opportunity to work with some of these tools in learning activities.[24] An educational video describing the process of geriatric assessment and depicting actual geriatric patients in need of and undergoing assessment was shown.

Additional lecture periods covering the topics of gait disorders, depression, psychosis, confusion, and infectious disease followed. These lectures included videos depicting geriatric patients with gait disorders as well as those with depression and psychosis. Students were required to complete case studies in these areas. An active-learning exercise, "The Empty Outline,"[25] was required for the lecture on infectious disease. (The P3 students had not completed the core curriculum coursework in infectious disease at the time of this lecture, therefore an intensive learning activity was used to present the infectious disease portion of the course.) The case studies were designed for the students to utilize patient communication skills, review patient profiles, design prescription and nonprescription drug therapy, and display empathy for the older patient. The final case study was developed to use as a method to teach pharmacy students topics in geriatric pharmacy. It is a modified version of a published case entitled, "Mrs. I.M. Olde," and emphasizes the pharmacokinetic and pharmacodynamic

changes associated with aging, as well as medication errors, the importance of patient counseling, and frequent and regular medication review for geriatric patients.[26]

For the fall 2002 class, Internet-based activities were added. These included having the students visit several Web sites of pharmaceutical companies and review and evaluate them for their usefulness to both geriatric patients and practitioners. Not only are Generation X and Millennials comfortable with using the Internet as a source of information; many seniors are, too. It is important for pharmacy students to know what types of information are available to the geriatric patient or to the caregiver of an older patient, and how the Internet is used by consumers of medications. The Web sites selected for review were those of pharmaceutical manufacturers that market medications for use in diseases common in geriatrics, such as Alzheimer's disease, behavior disorders, psychosis, depression, osteoporosis, and wounds. The sections of the sites promoted to both consumers and professionals were reviewed and discussed.

Areas and Issues of Pharmacy Practice for Geriatric Patients

The third section of the course was designed to provide the students with information related to the current issues and opportunities for the practice of geriatric pharmacy. Educational videos were presented depicting pharmacists providing pharmaceutical care to geriatric patients along the continuum of health care. In the videos, pharmacists are shown providing patient counseling to ambulatory geriatric patients, conducting "Brown Bag Reviews" for seniors, providing pharmacy services to assisted-living facilities, and providing pharmacy vendor services and consultant pharmacist services to long-term care facilities. To encourage class attendance and organize the students' note taking, the learning activity, "The Empty Outline," was again used.[25] Class time was used for journaling, reflection, and group discussions of the video presentations. Other sources of drug and consumer information for geriatric patients were provided to the students. These included information sheets and patient education materials produced by the National Institute on Aging,[27] the United States Pharmacopeia,[28] and the National Council on Patient Information and Education.[29]

Another activity posed the students with the problem of a geriatric patient who had a prescription for a specific medication, but could not afford the medication. The students were to provide a solution for the patient obtaining the medication. This allowed the students to explore the issue of medication use in indigent patients. Current issues such as mail-order-pharmacy providers, prescription discount cards, and obtaining prescription medications from outside of the United States were also discussed. Class time was allotted for the students to present their finding in these areas. An additional activity had the students explore the topic of crushing medications. Students were asked to describe what characteristics of medications or dosage forms either allow them to be crushed or prohibit them from being crushed and the methods of administering crushed medications, and most importantly, to identify resources in this area to assist them in their practice of pharmacy.[30,31] This activity was a short answer "Empty Outline" format and the assignment was submitted for grading. A video showing the proper administration of medications accompanied this class period. The video used is entitled *Principles of Medication Administration* and is available from the American Society of Consultant Pharmacists (ASCP) through their Web site.

Students were referred to the ASCP Web site at www.ascp.com and were assigned to review the resources available for pharmacists practicing in senior care. Class time was spent reviewing the ASCP Web site (online) and a class discussion followed. An assignment was given that required the students to use portions of the ASCP Web site. The students were asked to review the policy statements published by ASCP.[32] The complete assignment consisted of the students selecting 5 policy statements from those listed, writing a short summary of each, and commenting on the purpose of the ASCP having a published policy statement in this area. Class time was reserved for discussing these policy statements and their usefulness. As a result, the students became aware of the many practice and regulatory issues regarding senior care in pharmacy practice.

The final set of lectures was centered on the role of the consultant pharmacist in a long-term care facility and the process of drug regimen review (DRR) in the long-term care facility. Many of the components of DRR are modeled after the components of pharmaceutical care.[33] The role of the consultant pharmacist was described using the Guidelines for Consultant Pharmacists Serving Nursing Facilities published by ASCP.[32] The history, evolution, and process of DRR was also described.[34-36] The important concepts from these lectures are included in Tables 4 and 5.

The lecture section on DRR introduced the students to the use of the Nursing Facility Survey Procedures and Interpretive Guidelines, and the State Operations Manual, Appendix N, which are referred to as "The

Table 4. Drug Regimen Review Framework[34-36]

Criterion	Description
Drug Use without Indication	The resident is taking a medication for no medically valid indication
Untreated Indication	The resident has a medical problem that requires drug therapy but is not receiving a drug for that indication
Improper Drug Selection	The resident has a drug indication but is taking the wrong drug, or is taking a drug that is not the most appropriate for the special needs of the resident
Subtherapeutic Dosage	The resident has a medical problem that is being treated with too little of the correct medication
Overdosage	The resident has a medical problem that is being treated with too much of the correct medication
Adverse Drug Reaction	The resident has a medical problem that is the result of an adverse drug reaction or adverse effect
Drug Interaction	The resident has a medical problem that is the result of a drug-drug, drug-food, or drug-laboratory test interaction
Medication Errors	A deficiency or weakness of the medication use process of the facility has resulted in an actual or potential medication error
Medication Monitoring	Evaluation of medications for effectiveness and toxicity or adverse effects
Medication Costs	Intervention is needed to assist the resident with obtaining access to a lower cost medication or overcoming a barrier to medication access, such as a formulary restriction or prior authorization

Indicators" and "Apparent Irregularities" in the drug regimen review process.[37] (In the P4 year at the School of Pharmacy, students may elect to complete an advanced practice experience in the area of geriatrics and long-term care, and have the opportunity to work with these practice guidelines in more detail in a clinical nursing facility setting.)

The lecture series on the role of the consultant pharmacist and the process of DRR has been revised over the last few years. The lectures were repositioned to the end of the course and activities were developed that allowed the students to practice the skills and apply the knowledge that had been presented over the entire course. This was truly the capstone lecture series and activity of the course. The final activity or assessment of the course was a comprehensive, multiple-choice examination that was crafted around the process of DRR and providing pharmaceutical care for geriatric patients. The ability of the student to practice pharmaceutical care, defined as the process of preventing, identifying, and/or resolving drug-related problems in the geriatric patient population, was evaluated.

OUTCOMES

The course has evolved from use of lectures and examinations to the use of multimedia presentations, web-based lectures, nontraditional assessments, and interactive activities that account for the course grade.

Student evaluations of the re-engineered course have continued to be favorable, and we have received written comments from about one third of the students stating they appreciate the opportunity to complete activities and participate in types of learning other than traditional lecture. Students also comment, in the journal writing process, on the insight gained into the social and emotional issues of aging. One student who completed the

Table 5. Drug Regimen Review Checklist[34-36]

Criterion	Description
Drug indications	1. Does each prescribed medication have a current and valid indication?
	2. Does the resident have conditions or indications for which medications may be appropriate but are not being used?
Medication effectiveness	3. Is the medication appropriate for the indication being treated?
	4. Is the dose of medication adequate?
Medication safety	5. Is the dose of medication excessive?
	6. Is the resident experiencing signs or symptoms of adverse medication effects?
	7. Is the resident experiencing a problem resulting from a drug-drug, drug-food, or drug-laboratory test interaction?
Medication monitoring	8. Are monitoring parameters in place to evaluate medication effectiveness and safety?
	9. Do results of medication monitoring indicate a need for intervention?
Medication errors	10. Is there evidence of a medication error?
Medication cost	11. Do any issues related to medication cost need to be addressed?

course in the fall of 2002 used the information learned during the activity on medications for indigent patients to enroll 60 patients in an indigent rural community in such programs. After the first year of innovation, 89% of the P3 class enrolled in the course, despite more choices of elective courses offered for the P3 students that semester. (This is up from the usual 75% of the P3 student enrollment.)

Course Logistics

The re-engineering of *Geriatric Pharmacy* occurred over a period of 2 years and is still a work in progress. The activities, assessment scales, video clips, and simulation games were acquired by searching the literature and more recently, the World Wide Web. The author exercised her freedom under the fair use law to adapt these activities for use in the classroom. This class is scheduled over a 2-hour block, once per week. This type of schedule allows uninterrupted time for discussions, engaging in role-playing activities, and journaling in response to an activity. The purpose of having the students write in a journal is to encourage them to reflect on the topics and describe their reactions and emotions. The reflective writing activities are considered "do or not-do" activities and are not graded per se. The students receive credit for keeping a journal simply by submitting one. Although the course enrollment ranges from 75 to 110 students each time it is offered, no teaching assistants to assist in assessing and grading the students' work have been assigned to the class. However, an administrative secretary enters the grades into an electronic grade book, which allows students to keep a running account of their grades. The case studies are not truly graded in the sense that the students submit their write-up and then we discuss the case in class. Students are allowed to keep a copy of the work they submit and make additions or corrections to their work based on the class discussion. Students submit their assignments and activities and these are reviewed and graded and returned within a week. (Appendix 1) All of the videos used in the course, as well as the *Into Aging Game* are available online from Amazon.com (Appendix 2).

SUMMARY

The course reflects the author's teaching philosophy and contains a personal learning-centered approach to teaching in efforts to include skill development and opportunities for experience and discovery in the course. Students learn the most by engaging in active learning and applying what has been presented to them in lecture. The design of lecture delivery, activities, and assessments to fit the generational learning styles of students can be beneficial in the educational process of future pharmacists. Through the provision of activities that cause the student to take action or think through a concept or a problem, the student can actually learn by doing, and therefore, learn for a lifetime. The process of discovery is also important in a learning-centered approach to teaching. Discovering how to think in a critical manner and analyze situations and problems enables the student to again learn by doing and develop skills useful for a lifetime of learning and problem solving. This can be applied to the practice of pharmacy in that, when given facts, the student will be successful on examinations; when given the opportunity to solve problems and make discoveries, the student will be a successful practitioner of pharmacy in a continually changing environment.

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Appendix 1. Grading/Assessment Scheme.

Activity	Assessment	Percent of Grade
Survey Attitudes on Aging	Survey	5
Perceptions of Aging	Journaling	5
Reflections on Aging (film clips)	Journaling	5
Into Aging - Simulation Game	Journaling	5
Introduction to Aging	Quiz	5
General Principles of Geriatric Pharmacotherapy	Quiz	5
Beers' Criteria	Quiz	5
Medication Related Problems	Case	5
Medication History of a Geriatric Patient	Case	5
Medication Use Guidelines for Geriatric Patients	Empty Outline	5
Cases in Infectious Disease	Case	5
Mrs. I.M. Olde	Case	10
Which Medications Can be Crushed?	Empty Outline	5
Medications for Indigent Patients	Empty Outline	5
ASCP Policy Statements	Journaling	5
Drug Regimen Review	Exam	20

*Assessment totals: survey, 5%; journaling, 20%; quizzes/exam, 35%; empty outline, 15%; case studies, 25%.

Appendix 2. Learning resource availability.

1. The survey of attitudes on aging is a combination of the following two published surveys: Kogan's Attitudes Towards Aging Scale (available in reference #7) and Palmore's Facts on Aging Quiz (available in references #8 and #9). (An updated "Facts on Aging Quiz" is available from the Center on Aging Studies at the University of Missouri-Kansas City.)
2. "Into Aging" is from the book Hoffman TL, Reif SD. *Into Aging, A Simulation Game*. Thorofare, NJ: Charles B. Slack, Inc.; 1991. ASIN 0913590525 and is listed as out of print, limited availability by Amazon.com. This text is often in the collection of college and university libraries and may be obtained through interlibrary loan.
3. The motion picture clips are from my personal collection. The film *To Dance with the White Dog* (reference # 13) is available at Hallmark® Card Shops and at Amazon.com. Because this film is so rich with aging issues, the entire film is shown during one of the class periods. The running time is 108 minutes and the price is about $12.00.
4. The remaining motion pictures may be purchased from web sites, at Amazon.com, or at local video shops at prices ranging from $ 6.00 to $ 15.00 and the following sections are used:

    On Golden Pond (reference #14) - Scene in which Henry Fonda, the older male character, goes into the woods to collect strawberries and becomes disoriented and eventually lost. The running time is 6 minutes. A second scene in which the older male character takes his grandson out onto the lake in a boat is also useful. They become lost and experience an accident and must be rescued by family members. The running time for this scene is 10 minutes.

    Grumpy Old Men (reference #15) - Scene 6 depicts a conversation concerning aches and pains and among two older men (Walter Matthau and Jack Lemmon) in a pharmacy. The running time for this scene is 6 minutes.

    Cocoon (reference #16) - The first 20 minutes of the film depict life and issues in a retirement community and the quest for youth by senior adults.

    Hanging Up (reference #17) - Scenes 1, 2, 3, and 4 reveal the admission of a confused older man (Walter Matthau) to the hospital by his daughter (Meg Ryan), the daughter's anxiety and response to her father's declining health and her guilt at her inability to care for her father in his "dying state." The running time for these four scenes is about 25 minutes. Scenes 23, 24, 25, and 26 near the end of the film reveal the conflict, jealousy, and guilt experienced by the three daughters (Meg Ryan, Diane Keaton, and Lisa Kudrow) in sharing the responsibility for their father. The father eventually dies and the three daughters cope differently with their feelings and their father's death. The running time is 25 minutes for these scenes.
5. The additional videos used are available from pharmaceutical manufacturers and are from my personal collection. Most of these are no longer available. Contacting the pharmaceutical manufacturers that make products related to these diseases (gait disorders, psychosis, dementia, and depression) may be beneficial.
6. The case studies may be developed from practice or most of the textbooks on therapeutics used in schools of pharmacy have companion case books that can be purchased and used or adapted for this purpose. The "Mrs. I.M. Olde" case is from reference #26.
7. I have provided the web sites for the USP (United States Pharmacopeial Convention and the National Institute on Aging. These contain many very useful resources for pharmacists providing information to senior patients. These resources are available at reasonable prices, and are often available at no charge.
8. The materials regarding drug regimen review and ASCP (American Society of Consultant Pharmacists) practice issues are available from ASCP and can be ordered from their website listed in reference #32 (http://www.ascp.com).