Experiential Learning About the Elderly: The Geriatric Medication Game

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This article describes an active learning simulation, The Geriatric Medication Game, and reports on its ability to effect attitudinal changes. This structured experience was designed to increase players' awareness of the physical, psychological, and financial difficulties which the ambulatory elderly have handling their medications. The ability of this game to effect attitudinal change was tested by pre- and post-game questionnaires, including a semantic differential tool which can produce significant results in two directions. Results indicate that the game does increase players' awareness of the problems the elderly face in complying with medications.

INTRODUCTION

In 1979, an advisory committee of experts recommended that “schools of pharmacy should educate all students in the basic knowledge, attitudes and skills needed to better address the pharmaceutical needs of the elderly” and that to accomplish this, schools “should pursue methods other than traditional methods of teaching”(1). Since that time, a number of nontraditional approaches have been developed to teach pharmacists and pharmacy students about aging, including, most recently, independent study(2), multidisciplinary team training(3), and an exercise in which pharmacy students conduct life reviews with elderly patients(4). Concurrently, educators in other fields have been using simulation games to sensitize their students to concerns facing future clients. One of these, variously known as “Into Aging” and “Aging Game,” has documented success in introducing nursing and medical students to the problems confronted by the frail elderly and is making its way into the required curricula at medical schools(5).

While “Into Aging” in one of its present formats could be used in pharmacy education, only two of the more than 60 life events in the game have to do with medication. Moreover, the focus of “Into Aging” is on the frail elderly and institutional care. Given that close to 95 percent of Americans over 65 live outside of institutions, that their inability to manage medications at home has been reported as a primary cause for nearly one-quarter of nursing-home admissions(6), and that institutional settings are already the prevailing sites for pharmacy students’ geriatric exposure(7), pharmacy educators may find more use for a simulation that...
focusing entirely on the impediments to optimal drug use by the ambulatory elderly.

In 1991, two faculty and four students at the St. Louis College of Pharmacy began development of such a simulation game. After two semesters of refinement and testing, The Geriatric Medication Game became a regular part of the professional communication course at the College. In addition, practicing pharmacists, physicians, nurses, and other geriatric professionals have participated in the game at local conferences and programs, and a number of agencies and schools in the U.S. and Canada have purchased their own copies of the game.

DESCRIPTION OF THE GAME
The Geriatric Medication Game is a three phase game. In less than an hour, a group of 10 to 20 players experience a concentrated sample of the physical, psychological, and financial problems which make compliance with medications so difficult for people over 65.

In Phase I, players are given individual patient profiles and asked to circle the three personal characteristics that they will most value when they are over 65; they learn that the color of the profile they have filled in indicates their financial status; and they are outfitted with a combination of two physical disabilities indicated by a code on the profile. Also, in Phase I, the players are told that their goal is to finish tasks at three stations, while retaining their characteristics and their money.

In Phase II of the game, players make their way to three tables, each of which presents a medication-related challenge, an indeterminate fee, and the possibility of losing a valued characteristic. At Station A the players face a memory challenge. At Station B their manual dexterity is tested. At Station C, perceptual challenge, players must sort medications into a daily pill separator by color, a task made difficult by instructions given in a soft voice or small print and by the yellow acetate goggles some players wear, which mimic the inability to discriminate between colors many elderly experience.

In addition to the specific tasks which the players encounter at the three tables, a number of other experiences are built into Phase II of the game. Facilitators are intentionally rude or patronizing. Players have to wait in line—and sometimes, if they are on Medicaid, they are bumped to the end of the line in favor of a “wealthy” player. Also, the moderators will roam around asking players to pick Adverse Drug Reaction cards, which carry various risks—dizziness, confusion, impotence, incontinence, etc.—and attendant fees, loss of characteristics, or embarrassment.

Phase III of the game involves wrap up and a discussion focusing on the players’ emotions, the issue of stereotyping, and ways to overcome the barriers encountered. Often players approach the game thinking it will be a snap or a lark. In admitting that they felt frustration, fear, embarrassment or anger, the players get a fuller sense of empathy with the elderly patients they will encounter. Also, the intentionally exaggerated situations in the game almost always provoke comment. Typically, one player will say, “Medicaid patients aren’t really treated this way” or “it’s not really this hard for old people” and someone else will reply, “this does happen, let me tell you about…” From this type of interchange, the moderator can move into a discussion of stereotyping, pointing out that while stereotypes do have a basis in reality, it is a mistake to think that all pharmacists are rude or all elderly people are deaf, confused, unable to handle their medications. Finally, once the players have experienced the barriers that make medication compliance difficult for the elderly, they are very interested in ways to overcome these barriers. At this point the moderator can make concrete suggestions such as reminding them that patients with retinal deterioration have an even harder time when there is glare, but usually the students will either come up with ideas of their own or share techniques they have encountered, such as this memory aid which one student reported: “If the patient drinks coffee every morning, he could store his morning medication on top of the coffee can.”

EFFECT OF GAME
Positive participant response to experiential or “active” learning is not unusual. For instance, in their study of a postgraduate gerontology training program for pharmacists, Reid and Vorce-West found that the programs which used “active” elements such as role plays, simulations, and patient interviews “were rated higher compared to the lecture/discussion based program”(11). It is, therefore, not surprising that the majority of the medical students who played the “Aging Game” and the pharmacy students and practicing health professionals who played The Geriatric Medication Game felt that they had an effective learning experience. In order to go beyond these admittedly impressionistic and expectedly positive results, a pre- and post-game questionnaire was administered which tested the impact The Geriatric Medication Game had on players’ attitudes.

Methods
The questionnaire included nine semantic differential questions (e.g., Healthy - Sick or Happy - Sad) with a six-point scale between the adjectives. Students were also asked to rate how difficult it would be for a visually disabled elderly person to take medications; for an elderly person to recall medication names; for an elderly person to comply with medication instructions; and for an elderly person to financially cope with the health care system. These questions used a Likert-type six-point scale that ranged from “not at all difficult” (rated “one”) to “extremely difficult” (rated “six”). Students were asked to put their name at the top of the form.

Sixty-three pharmacy students completed the questionnaire; 48 students were in professional communication class sections where The Geriatric Medication Game was played and 15 students were in a section that did not participate in the game. Only questionnaires from students who had completed both the pre- and posttests were used in the analysis. Students were in the third year of the five- or six-year (BS or PharmD) program.

The students completed the questionnaire twice, once at the beginning of the semester and a second time after the game. Students in the control group filled the second questionnaire out in class at approximately the same time as it was administered to the three class sections participating in the game. The control group had received other communication class instruction that was unrelated to aging instead of the game material.
Table I. Student responses before and after The Geriatric Medication Game

<table>
<thead>
<tr>
<th>Question</th>
<th>Pretest NO game</th>
<th>Pretest game</th>
<th>Posttest NO game</th>
<th>Posttest game</th>
</tr>
</thead>
<tbody>
<tr>
<td>Healthy Sick</td>
<td>3.6</td>
<td>3.5</td>
<td>3.3</td>
<td>4.2*</td>
</tr>
<tr>
<td>Happy Sad</td>
<td>3.1</td>
<td>3.0</td>
<td>2.9</td>
<td>3.7*</td>
</tr>
<tr>
<td>Superior Inferior</td>
<td>3.5</td>
<td>3.6</td>
<td>3.9</td>
<td>4.5**</td>
</tr>
<tr>
<td>Confident Unsure</td>
<td>3.9</td>
<td>3.4</td>
<td>3.7</td>
<td>4.3*</td>
</tr>
<tr>
<td>Satisfied Dissatisfied</td>
<td>3.1</td>
<td>3.0</td>
<td>2.8</td>
<td>4.0*</td>
</tr>
<tr>
<td>Success Failure</td>
<td>2.9</td>
<td>2.9</td>
<td>2.6</td>
<td>3.6*</td>
</tr>
<tr>
<td>Valuable Worthless</td>
<td>3.1</td>
<td>3.3</td>
<td>2.9</td>
<td>4.0*</td>
</tr>
<tr>
<td>Active Passive</td>
<td>3.3</td>
<td>3.3</td>
<td>3.3</td>
<td>4.1*</td>
</tr>
<tr>
<td>Independent</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dependent</td>
<td>3.5</td>
<td>3.4</td>
<td>3.4</td>
<td>4.1</td>
</tr>
</tbody>
</table>

* Significant ANOVA interaction (P<0.05).
** Significant main effects for pre/post test and game/no game using ANOVA (P<0.05).

Results

Table I presents the results of the semantic differential questions. The results consistently show that after playing the game, students were more willing to use the negative side of the scale. For most of the items, the posttest game response was significantly different from each of the other three cells; this finding is based on a t-test between cell means after the F-test interaction was significant. For independent-dependent, the interaction showed a similar trend (P<0.10). The results support the hypothesis that the game would heighten the sensitivity of the students to the emotions of older individuals trying to cope with the health care system.

Table II shows a similar pattern of results, but fewer statistically significant differences. After the game, students were especially likely to appreciate the difficulty of taking medications for a visually disabled elderly person (significant F-test interaction). Questions about the recall of medication names and complying with medication instructions showed a similar trend (P<0.10) for the interaction in the same direction. The question about financially coping with the health care system showed no differences. Again, the overall picture provided by the results was the increased awareness of those who had participated in the game.

The control-group students (NO game) participated in a course section whose instructor chose other activities rather than the game. Those other activities had little effect on the semantic differential scores (Table I), where the actual data consistently shows a difference of 0.1 (e.g., 3.5 to 3.6) and no consistent pattern. The authors are aware of no reason that the registrar would systematically assign students to the different sections of the course, so we feel that a reasonable control group was chosen. Table II suggests more of a pretest to posttest increase for the control group and some pretest differences, still consistent with our interpretation, but suggesting that these questions may either be less reliable or that other events have influenced student responses. Another interpretation would be that the visual aspects of the program were more compelling than the recall and financial components. Increasing the number of students in the control group to more than 15 would give the analysis more power, but was not possible in the quasi-experimental setting. Typically, 15 subjects in this type of design is sufficient to detect the important differences between groups.

Table II. Student responses before and after The Geriatric Medication Game

<table>
<thead>
<tr>
<th>Question: How difficult would it be...</th>
<th>Pretest NO game</th>
<th>Pretest game</th>
<th>Posttest NO game</th>
<th>Posttest game</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visually disabled taking medicines</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recall medication names</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Comply with medication instructions</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Financially cope with the health care system</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* 1=Not at all difficult; 6=Extremely difficult.
* Significant ANOVA interaction (P<0.05).
** Significant main effect for posttest using ANOVA (P<0.05).

DISCUSSION

As the profession of pharmacy evolves in the direction of pharmaceutical care, pharmacy education is also changing. Among these changes are an increasing emphasis on “active learning,” an increasing attention to the study of “the psychosocial or communicative aspects of patient care”(12) and an increasing attempt to measure outcomes, something which is particularly difficult in the social and behavioral sciences. While The Geriatric Medication Game is definitely active and “person-centered” its outcomes have also been assessed objectively. The direction of the results on the semantic differential, more negative after the game, was as predicted, but these items do not always change in this direction. Identical questions were used in an earlier study with pharmacy students before and after visits to community and long term care elderly(13). In this study, the semantic differential showed that the visits led to a more favorable view of the elderly in nursing homes and less negative stereotyping. This visitation program had been designed to expose students to positive examples of aging; The Geriatric Medication Game has been designed to sensitize students to the problems some older individuals may encounter. Thus, these measures can support both types of desired outcomes.

Obviously, an effective aging program should balance an increased sensitivity to the needs of the elderly with efforts to reduce the negative stereotypes of aging that many individuals have developed. Such a balanced program will include some emphasis on successful aging, the adaptability of the human spirit, and the fact that many older individuals do an excellent job taking their multiple medications as directed.


References


