First-Year Pharmacy Students’ Perceptions of Their Service-Learning Experience

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To determine the effects of a service-learning experience, first year pharmacy students were surveyed on the following: (i) perceptions regarding cultural diversity, the elderly, the poor, and the disabled; and (ii) perceptions regarding community service and social support; (iii) perceptions regarding their service-learning assignment were also assessed. One hundred fourteen students were surveyed on objectives 1 and 2 prior to their service-learning experiences. Students were surveyed on all three objectives after completing their service-learning experience. Using a five-point Likert scale (1=strongly disagree to 5=strongly agree), respondents rated their level of agreement with a series of statements. T-tests were used to compare their pre- and post-test responses. A total of 112 (98 percent) students completed the survey. Comparisons of the pre and post-tests revealed that there was a significant increase in mean perception scores regarding: community service (P=0.02), and patients’ need for social support (P<0.01). No other comparisons were significantly different. Students agreed (mean=3.8) that all pharmacy students should complete a service-learning experience, and they also agreed (mean=4.0) that the service-learning experience would be beneficial to them when practicing pharmacy. Introducing service-learning during the pharmacy curriculum may help students to: (i) better understand the future patients that they will be serving; (ii) recognize the importance of community service; and (iii) become more aware of patients’ need for social support.

INTRODUCTION

Service-learning (S-L) is a type of experiential education in which students learn through serving others. As pharmacy and other health professions continue to focus on “patient-centered” care, S-L has been one of the avenues used to understand the social support that is needed by patients. One of the ways that S-L promotes “patient-centered” care is that it provides an opportunity for students to understand and experience challenges faced by many patients, which, in turn, helps to promote a sense of “caring” for others.

Colleges of pharmacy have incorporated S-L programs into their curricula in a variety of formats(1-14). The primary objectives of these programs have centered on building communication skills and learning about underserved populations. Although three schools (4,6,13) have developed S-L programs that incorporate first-year pharmacy students into a S-L experience, most (3,5,8,9-12,14) programs have focused on advanced year pharmacy students as well as clerkship rotations.

The outcomes of S-L projects are varied. The most frequently reported outcome of S-L is that it promotes a greater understanding of the health needs of a population (3,6,10-12). The second most reported outcome of S-L is how the experience enhanced written and verbal communication skills (3,6,9,12). According to Strand, et al.(15), the pharmaceutical care process begins with: (i) establishing a relationship with the patient; and (ii) collecting, synthesizing, and understanding patient specific data. Both of the primary S-L outcomes of understanding health needs and increasing communication complement the skills needed to initiate the pharmaceutical care process as described above. Additional outcomes of S-L programs included increasing awareness of community service and the social needs (3,6,9,11,13). Additionally, S-L programs were reported to increase students’ understanding of and appreciation for diversity (3,9,11). Although authors have reported very positive outcomes from their S-L programs, the outcomes were reported qualitatively or were measured after the completion of the S-L program. To examine changes over time, this study examined students’ perceptions as well as their outcomes using pre-and post-test surveys.

The University of Texas College of Pharmacy (UT-COP) has incorporated S-L as a required component for first-year pharmacy students. Students are required to complete 18 hours of continuous service in a single service agency of their own choosing, along with the course coordinator’s approval. Details of the UT-COP S-L program are detailed elsewhere (see Am. J. Pharm. Educ., 64, 260-265(2000)). The primary goals of the students’ S-L experience were twofold: (i) to develop sensitivity to and comfort level with persons who represent a variety of human differences (cultural, racial, age, economic, disability, or disease); and (ii) to develop a greater understanding and appreciation for the value of community service and social support. The purpose of this project was to assess first-year pharmacy students’ perceptions regarding their S-L experience. The following were objectives for this project:

1. determine whether perceptions regarding cultural diversity, the elderly, the poor, and the disabled differed before and after the S-L experience;

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2. determine whether perceptions regarding community service and social support differed before and after the S-L experience; and
3. determine their overall perceptions regarding their S-L experience.

METHODOLOGY

Questionnaire

To address objectives 1 and 2, which were to assess attitudes and perceptions regarding cultural diversity, the elderly, the poor, the disabled, community service, and social support, an adapted version of an instrument previously used in the S-L courses at Purdue University was utilized. The instrument was not previously evaluated for reliability, but it was evaluated for content validity by pharmacy practice and administration researchers. The following is a description of the survey instrument utilized in this study (also see Appendix).

Perceptions Regarding Underserved Groups. To understand student perceptions of underserved groups, students were asked to rate their level of agreement with a series of statements using the following five-point Likert scale: 1=strongly disagree, 2=disagree, 3=uncertain, 4=agree, and 5=strongly agree. The underserved groups included the culturally diverse, the elderly, the poor, and the disabled. Each of the four scales contained items that assessed how pharmacy students felt about communicating with and providing services to people of that particular group. For example, in the “culturally diverse” scale, pharmacy students were asked to indicate their agreement with statements about communicating with and providing services to people who have a different cultural background or people who are of a different race. This eight-item scale also captured students’ views on the amount of attention focused on racial issues as well as the inclusion of coursework that focuses on diversity and race.

The “elderly” scale was developed to capture students’ perceptions of the elderly. Of the six items, two related to stereotypical views of the elderly, and the remaining four were similar to the above issues of communication, service provision, attention, and coursework inclusion. The “poor” scale consisted of four statements regarding stereotypical views of people on welfare and three statements focused on communicating with and providing services to the poor and the attention focused on the poor. The “disabled” scale consisted of three items that once again capture communication, service provision and attention focus concepts.

Perceptions Regarding Community Service and Social Support. Students were provided a series of statements regarding the purpose and value of community service. The six items focused on how community service helps individuals to understand social problems and be less judgmental and stereotypical. Three items comprised the social support scale. These items focused on the role that social support from family, friends, and health professions may play in the treatment progression of patients. Students were instructed to rate their level of agreement with the statements utilizing the same Likert scale described above. Items from this and the previous sections were included on both pre-and post-test surveys.

Overall Perceptions Regarding the S-L Experience. The purpose of objective 3 was to assess students’ overall perceptions regarding their S-L experience. The items discussed in this section were included in the post-test survey along with the scale items discussed above. Students were asked to assess their S-L experience by rating the importance of the experience to their educational and professional development, the structure and coordination of the course, their writing assignments, and the 18-hour service requirement. Students were also asked to indicate their intentions on continuing to be involved in community service as well as their perceptions about the “balance” between service and learning.

Information was obtained from the students regarding the type of population they served in their community service experience. Finally, demographic information (age and gender) along with previous professional practice experience (independent, chain, or hospital) and community service experience (various sites and agencies) was also collected.

Data Collection

During the Fall 1998 and Spring 1999 semesters, 114 first year pharmacy students were enrolled in the “Introduction to Pharmacy” course. As part of the experiential education in this course, students were required to complete a S-L experience one semester and a shadowing experience (to acquaint students with career options in pharmacy) during the alternate semester. Thus, while one-half of the class completed S-L, the other half completed shadowing and vice versa. Both groups were surveyed at baseline (prior to starting their S-L experience) and at the completion of their experience. To ensure confidentiality and anonymity, students were instructed to choose their own identification number and write it down so that it could be used for the post-test. This was done to accomplish three goals: (i) encourage the students to answer the questions honestly and openly; (ii) blind the researchers from identifying individual student responses; and (iii) facilitate the matching of pre- and post-surveys for data analysis.

Data Analysis

The data were coded and entered into computer files using the PC-SAS (Personal Computer-Statistical Analysis Software, Cary, NC) package. Frequency and mean summary statistics were computed for all variables and were reviewed for coding errors. Items that were negatively stated were recoded to reflect the correct value. Cronbach’s alphas were calculated for each of the scales. Paired t-test analyses were run on the mean scale scores to determine differences in pre- and post-test responses. For all statistical analyses, an a priori significance level of 0.05 was chosen.

RESULTS

Demographics and Experience. Of the 114 students surveyed, 112 (98.2 percent of responses) were usable. Two surveys were not usable because of missing responses. The respondents were predominantly female (62.5 percent) and the mean age of the respondents was 23 years (SD=2.5). Over one-half (58.0 percent) of the students had professional experience in chain pharmacy. Of those that had chain pharmacy experience, on average, their length of experience was approximately 1.5 years (SD=1.6). Most (64.3 percent) of the respondents had been involved in some type of community service prior to their S-L experience (see Table I).

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1The survey instrument was originally developed at Purdue University for use in a service-learning elective course which was coordinated by Robert Chalmers.
One of the objectives of this study was to assess students' over-all perceptions regarding cultural diversity, the elderly, the poor, and the disabled as well as to determine if their S-L experience changed their perceptions. Table IV shows that overall, students had positive perceptions of the four underserved groups with mean scores ranging from 3.8 to 4.4. Students were positive in terms of their comfort level in communicating with the disabled as well as the amount of focus on the needs of the disabled (mean=4.4). Students were also positive regarding issues of race and cultural diversity (mean=3.9). Overall, students reported that they would feel comfortable communicating with and providing services to patients with a culturally different background than their own. Similarly, students, in general, had positive (mean=3.8) perceptions regarding providing services for and communicating with the elderly. The paired t-test results show that there was no statistically significant differences in students’ perceptions of underserved groups before and after their S-L experience.

Students’ Perceptions Regarding Community Service and Social Support. The second objective of this study was to determine whether S-L had an effect on students’ perceptions...
and objectives, a reaction log (reflection paper), and a formal complete a series of writing assignments which included goals be decreased. Another requirement of S-L was that students percent) of the students felt that the time commitment should overall, two-thirds of the students felt that the 18-hour require-ment as a pharmacy student (mean=3.6). See Table V for the results. table IV. Paired t-test comparison of pre- and post-test scores

<table>
<thead>
<tr>
<th>Underserved Groups</th>
<th>Pre-test</th>
<th>Post-test</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean²</td>
<td>SD</td>
<td>Mean²</td>
<td>SD</td>
</tr>
<tr>
<td>Culturally Diverse</td>
<td>3.9</td>
<td>0.6</td>
<td>3.9</td>
<td>0.6</td>
</tr>
<tr>
<td>Elderly</td>
<td>3.8</td>
<td>0.5</td>
<td>3.9</td>
<td>0.5</td>
</tr>
<tr>
<td>Poor</td>
<td>3.8</td>
<td>0.5</td>
<td>3.8</td>
<td>0.5</td>
</tr>
<tr>
<td>Disabled</td>
<td>4.4</td>
<td>0.6</td>
<td>4.4</td>
<td>0.6</td>
</tr>
<tr>
<td>Community Service</td>
<td>4.1</td>
<td>0.5</td>
<td>4.2</td>
<td>0.6</td>
</tr>
<tr>
<td>Social Support</td>
<td>3.8</td>
<td>0.6</td>
<td>4.0</td>
<td>0.7</td>
</tr>
</tbody>
</table>

N’s range from 109-112.  
*Indicates significance at P<0.05. 
¹Indicates significantly more positive about their perceptions regarding community service (P=0.02) and social support (P=0.01).

Table VI. Students’ perceptions regarding the balance between service and learning

<table>
<thead>
<tr>
<th>Response category</th>
<th>N</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Served more than learned</td>
<td>28</td>
<td>19.8</td>
</tr>
<tr>
<td>Learned more than served</td>
<td>29</td>
<td>26.1</td>
</tr>
<tr>
<td>Served and learned at the same level</td>
<td>60</td>
<td>54.1</td>
</tr>
<tr>
<td>Total</td>
<td>111</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Students’ Overall Perceptions of the S-L Experience. The final objective of this study was to assess students’ overall perceptions of their S-L experience. In general, students agreed that the S-L experience would be beneficial to them when they practice pharmacy (mean=4.0) and they would recommend the experience to other pharmacy students (mean=3.8). Students also felt that the experience was important in their development as a pharmacy student (mean=3.6). See Table V for the results.

Students were required to complete 18 hours of continuous community service over the course of the semester. Overall, two-thirds of the students felt that the 18-hour requirement was appropriate whereas approximately one-third (30.6 percent) of the students felt that the time commitment should be decreased. Another requirement of S-L was that students complete a series of writing assignments which included goals and objectives, a reaction log (reflection paper), and a formal paper or their S-L experience. Students were uncertain to agreeable (mean=3.6; scale range: 1=strongly disagree to 5=strongly agree) when asked if the writing assignments helped to clarify the value of community service. When asked if they would continue to be involved in community service, approximately 60 percent responded “yes” and 38 percent responded “maybe”. Because one of the important aspects of S-L is the reciprocal and balanced relationship between the two, students were asked to evaluate this “balance” between service and learning during their experience. As Table VI shows, approximately half (54 percent) of the students felt that the balance was equitable, whereas 26 percent perceived that they learned more than they served. Thus, the majority of students (80.2 percent) felt that the balance was equitable or that it “tipped” in their favor.

DISCUSSION

Objective 1 was to assess whether S-L had an effect on students’ perceptions toward underserved (culturally diverse, the elderly, the poor, and the disabled) groups. It has been reported that S-L experiences helped students gain an understanding of cultural diversity(10) and an understanding of the concerns of the elderly(12). In this study, there were no significant differences before and after the S-L experiences. Several events could have explained this. The four underserved groups represented (culturally diverse, the elderly, the poor, and the disabled) were chosen because it was hypothesized that these would be the type of people that students would primarily be in contact with during their S-L experience.

Many students chose their agencies through a “Volunteer Fair”, where agencies send representatives to campus to recruit volunteers. The year that the students were participating in their S-L experiences, there were numerous educational institutions present at the Volunteer Fair. Students commented that the educational institutions were heavily recruiting volunteers. These recruitment efforts are reflected in the results with over one-half (54.5 percent) of the students working with children and youth. Because it was not anticipated that serving children
and youth would be as prevalent, changes in perceptions regarding this population was not captured. Thus, the non-significant differences regarding underserved groups could have been the result of this occurrence.

It is also possible that interpretation of the scale items could have affected the results. Three of the four scales were very close (0.67-0.69) to Nunnally’s(16) acceptable level of 0.70 for Cronbach’s alpha, and one scale (elderly) was below the acceptable level (alpha range 0.57-0.59). Thus the reliability of these scales may have been modest. Another possible explanation is that S-L did not change their perceptions about underserved groups. When reviewing the mean scale items, the responses ranged from 3.8-4.4 reflecting an overall “agreement” with the statements. This range in values can be interpreted as pharmacy students having positive perceptions regarding underserved groups. These perceptions may not be surprising if the assumption is made that pharmacy students enter into the profession of pharmacy with a desire to help others, thus, they may not feel negatively about those who may require assistance in helping themselves.

Objective 2 assessed whether S-L had an effect on students’ perceptions of community service and social support. In both cases, the students’ perceptions increased significantly. Although both of the results were statistically significant, the overall practical significance (particularly with the change in pre- and post-test responses with community service) was modest. Despite this, it seems that students’ experiences helped them gain an appreciation for the need of social services and how these services may enhance how they relate to patients, as well as how these services can complement the health services that patients receive. Others have also reported that S-L increased students awareness of social needs(6,11,13) as well as the need for community service(6,9,11,13).

The students, in general, were very positive about their overall S-L experiences. They felt the experiences would be beneficial when practicing pharmacy and they also would recommend the experience to other students. Students were in some ways a little uncertain (mean=3.6) about how the experiences “fit” with their educational and professional development. This result is not surprising in that the respondents were first-year pharmacy students. Although these students were aware of the concept of pharmaceutical care, they may not be able to directly link this concept to S-L. Another study(10) also found that students were initially unable to make the connections to pharmacy, but that the final analysis was positive.

One author(12) reported that the S-L experience helped students gain an appreciation for the reflection exercises. In this study, students were a little uncertain (mean=3.6) about how reflecting on and writing about their experiences helped them understand the value of S-L. Although the students may not realize the importance of reflection through writing, when the author read their reaction logs and papers, it became apparent (to the author) how vital the exercise was. The students’ comments were very revealing and insightful. The majority of the students were very expressive in their descriptions of events that occurred and how the events affected them. The depth and breadth of what the students learned may not be effectively captured in a series of attitudinal statements, but by their reflection exercises. Although the students may not fully realize the value of their written assignments, it is an effective way to ensure that the links between service and learning are established.

Although a majority (60 percent) of the students stated that they would continue to be involved in community service, 38 percent said “maybe” and the remaining two percent said “no”. Students were asked to explain why they chose their answer. After examining the responses to the open-ended questions, students that responded “yes” expressed how they enjoyed their experiences, how much they learned, and how it made them feel to “make a difference.” Students that responded “maybe” or “no” indicated that although they enjoyed their experiences, the time constraints of pharmacy school as well as outside employment may preclude extensive community service involvement. Thus, students were willing to continue their community service efforts as time permitted.

Perhaps the most revealing question of the entire experience was students’ assessment of the “balance” between service and learning (see Table VI). As indicated previously, S-L is intended to be a reciprocal relationship where the servers and served are both teachers and learners. Over one-half (54.1 percent) of the students struck the intended balance between service and learning (i.e., perceived that they served and learned at the same level) and another 26 percent felt that the balance was tipped in their favor (i.e., perceived that they learned more than they served). Although students were instructed to indicate what type of service they provided, we did not have a “formal” process for them to express the lessons that were learned. The lessons learned were gleaned from student writing assignments (i.e., reaction logs and formal paper entitled, “My service-learning experience”).

While students worked in excess of 18 hours over a semester talking, sharing, teaching, mentoring, etc., their writing assignments seemed to reflect that they learned a lot about people’s needs. Some learned what the term “empathy” really meant, whereas others dispelled their own stereotypes about certain types of people. Some learned how to be listeners and how the “touch therapy” can be a powerful remedy to an ailing patient. Others were pleasantly surprised at how relaying small gestures of kindness could tremendously impact another individual. Others learned how important dignity, respect and autonomy were to patients in making choices about their health care needs. Some students were also able to witness the hallmark signs of certain disease states and their progression in a variety of patients. These perceptions show that the general broad-based S-L experience for first professional year pharmacy students was one in which the majority of students actually received the benefits of experiential learning through S-L.

CONCLUSIONS

The S-L experience at the College positively impacted first-year students’ perceptions regarding the value of community service and social support. While serving 18 hours in a community service organization, students learned valuable lessons about patients’ individual needs, as well as how they could make a positive impact on patients as pharmacy students and later as practicing pharmacists.

References

an Academic/Community Partnership to Provide Service Learning,” *ibid.*, 61, 90S(1997).


APPENDIX. SERVICE LEARNING QUESTIONNAIRE

Below are several statements which concern your feelings about patients, the health care system, and the profession of pharmacy. Please answer each item by circling your response based on the following scale:

Strongly Agree, Agree, Neutral, Disagree, Strongly Disagree

**Cultural Issues**

1. I am uncomfortable speaking with someone of a cultural background different than my own.
2. As a pharmacist, I would be uncomfortable providing services to someone of a cultural background different than my own.
3. In the U.S., too much attention is focused on the special needs of people from different cultural backgrounds.
4. Pharmacy schools should require coursework which focuses on cultural diversity.
5. It is important for pharmacists to speak a language other than English.
6. I am uncomfortable speaking with someone of a race different than my own.
7. As a pharmacist, I would be uncomfortable providing services to someone of a race different than my own.
8. In the U.S., too much attention is focused on the special needs of racial minorities.

**Elderly**

1. Elderly people are generally set in their ways and unwilling to change.
2. Elderly people generally tend to be irritable and grouchy.
3. I am uncomfortable speaking with an elderly person.
4. As a pharmacist, I would be uncomfortable providing services to an elderly person the elderly.
5. In the U.S., too much attention is focused on the special needs of the elderly.
6. Pharmacy schools should require coursework which focuses on the needs and treatment of elderly patient.

**Poor**

1. People often are on welfare primarily because they expect the government to provide for their needs.
2. People often are on welfare primarily because of circumstances beyond their control.
3. People often are on welfare primarily because they lack the training/education necessary to improve their lives.
4. People who are on welfare do not like being dependent on government assistance.
5. I am uncomfortable speaking with someone who is extremely poor or on welfare.
6. As a pharmacist, I would be uncomfortable providing services to someone who is extremely poor or on welfare.
7. In the U.S., too much attention is focused on the special needs of the poor.

**Disabled**

1. I am uncomfortable speaking with someone who is disabled.
2. As a pharmacist, I would be uncomfortable speaking with someone who is disabled.
3. In the U.S., too much attention is focused on the special needs of the disabled.

**Community Service**

1. Providing community service to people in need helps individuals be more patient with others.
2. Providing community service to people in need helps individuals better understand social problems.
3. Providing community service to people in need helps individuals better understand how social service agencies are organized.
4. Providing community service to people in need helps individuals be less judgmental about other people.
5. Providing community service to people in need helps individuals avoid stereotyping groups of people.
6. Providing community service to people in need helps individuals feel that they can make a difference in other people’s lives.

**Social Support**

1. The social services which patients receive may be more important to the success of their treatments than the medical services which they receive.
2. The social support which patients receive from friends and family may be more important to the success of their treatments than the medical services which they receive from health professionals.
3. The social support which patients receive from health professionals may be more important to the success of their treatments than the medical services which they receive from those professionals.