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Students' perceptions of the interprofessional team in practice through the application of servant leadership principles

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Abstract
This study examined students' perceptions of interprofessional practice within a framework of servant leadership principles, applied in the care of rural older adults utilizing a service learning model. Mobile wellness services were provided through the Idaho State University Senior Health Mobile project in a collaborative team approach in the community-based setting. Students from varied health professional programs were placed in teams for the provision of wellness care, with communication among team members facilitated by a health professions faculty member serving as field coordinator. The Interdisciplinary Education Perception Scale (IEPS) was used to measure students' perceptions of interprofessional practice using a pretest post-test research design. Multivariate analysis was performed revealing a significant pretest to post-test effect on students' perceptions as measured by factors inherent in the IEPS and deemed essential to effective interprofessional practice. Univariate analysis revealed a significant change in students' perception of professional competence and autonomy, actual cooperation and resource sharing within and across professions, and an understanding of the value and contributions of other professionals from pretest to post-test.

Keywords: *Interprofessional practice, servant leadership, rural health care, geriatric health care*

Introduction

The movement toward a community-based focus of care, reaching an aging population is recognized as critical from a public health perspective as this vulnerable population continues to grow (Rogers, 2002; Swearingen & Liberman, 2004). As the population of the older adults over the age of 65 rapidly expands, there is an increasing need to provide access to wellness care, supporting healthy aging. The population of individuals over 60 is expected to increase to almost two billion internationally by 2050. Many countries have worked toward greater integration of health and social services with a movement away from institution-based services and toward client-centered care at home or within communities (Challis et al., 2006). Many older adults, desiring to avoid institutionalized care, will choose to remain in their communities and contribute through their graying years (Flesner, 2004; Marek et al., 2005). Implementation of an interprofessional care model with a wellness focus can support comprehensive service provision through the sharing and integration of knowledge from

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multiple professions, use of community resources, and referral to local providers. A service learning model offers a unique opportunity for students to expand their skills, knowledge base, and understanding while providing education, assessment and intervention in partnership with the community. Through the service learning model, students are taught social responsibility, democracy, and commitment to professional involvement in the life of communities and as a contributor to society (Bentley & Ellison, 2005).

A shift to community-based interprofessional care provides a meaningful opportunity for students of varied disciplines to collaborate outside of the formal organization. A team approach requires the interaction of two or more individuals from different disciplines who have specific roles, perform interdependently, are adaptable, and share a common goal (Baker et al., 2005). The goal of this interaction is to enhance the practice of each discipline and the group holistically through interprofessional sharing of knowledge and resources. Team members collaborate and share discipline specific expertise to support client-centered care (McCallin, 2001). Through this process the desired outcome is the mutual understanding and respect of each involved discipline and the actual and potential contribution within a context of care (American Association of Colleges of Nursing, 1995).

Assessing the perceptions of students from varied health disciplines in interprofessional practice is important as faculty endeavor to provide learning experiences that will support collaboration across disciplines following graduation and into practice. Providing the older adult with the expertise of an interprofessional team enhances their quality of care, and provides students from multiple disciplines a real view of life in advanced age (Goff, 2004; Lagana, 2003).

Reaching older adults through mobile service

In an effort to build an interprofessional learning opportunity for students in the health professions, and link the academic setting in partnership with rural communities, Idaho State University (ISU) implemented the ISU Senior Health Mobile project. This project has been a partnership involving several intergovernmental agencies and Idaho State University Kasiska College of Health Professions. The primary goals of the project have been to: provide a collaborative interprofessional learning opportunity in the community-based setting; partner with communities in the provision of wellness care to the older adult; teach health professions students to utilize the principles of servant leadership in the collaborative process through facilitated communication; and to build an appreciation of the older adult and their community, family, and home as a context of care. The project was started 1 July 2000 and remains active today with an expansion of service area, increase in the number of clients served, and continued development of diverse care provided to undeserved, rural older adults.

The ISU Senior Health Mobile provides interprofessional health and wellness services to adults age 60 and older in a nine county area of southeast Idaho. Services provided include health assessment, health education, medication management, foot care, home safety evaluation, fall prevention intervention, nutrition assessment and teaching, resource access, hypertension screening, memory loss assessment, and referral and follow-up, among other interventions.

Conceptual application in practice

The principles of servant leadership (Spears & Lawrence, 2002) have been applied in the interprofessional learning experience of student teams through the ISU Senior Health

Mobile. These principles include listening, awareness, conceptualization, foresight, stewardship, commitment to the growth of people, and community building. Servant leaders in this experience are encouraged to build and strengthen relationships with other team members and appreciate and value the expertise and contributions of other disciplines in the planning and provision of care. Students are encouraged to listen actively to varying viewpoints, reflect on the learning experience, develop trust within the team and community, and build self-awareness enhanced by faculty support in an interactive process. Decision making is built on foresight, and the ongoing assessment of evidence to enhance outcomes of wellness care. Through interaction with individuals and families the students develop a sense of stewardship and a desire to participate actively in the life of the aged while providing a needed health care service.

The integration of servant leadership principles in practice has less to do with directing other people and more to do with serving their needs and in fostering the use of shared power in an effort to enhance effectiveness in the professional role. The projected outcome of servant leadership in practice is to develop a strong, effective, caring team of healthcare providers that are skillful, creative, and willing to share responsibility while meeting identified goals as applied to community-based care (Swearingen & Liberman, 2004). A major barrier to effective interprofessional practice is lack of awareness of, and appreciation for the potential contributions of other disciplines, boundaries, and power struggles. Teaching students through a collaborative process supports the valuing of peers in decision making and creates a learning environment conducive to positive interaction toward client focused care (McCallin, 2001; Minore & Boone, 2002).

There is a significant connection between the way in which healthcare workers treat one another and the way they treat the customer (Swearingen & Liberman, 2004). Interprofessional collaboration facilitated through education in the community, with the application of theory to practice is one way of achieving more sensitive, yet effective health care. This result is fostered through facilitated communication by enveloping the discrete knowledge of each profession into a practice of collaboration shared among disciplines (Hammick, 1998). Through this process, students learn to provide client-centered care responsive to the client's individual needs, in partnership with the family while creating open boundaries with the community (Chapman et al., 2003).

Methods

This study used a pre-test post-test research design to measure student perceptions of interprofessional practice following a collaborative learning experience in the rural community offering mobile wellness services to the older adult. Students from multiple health-related disciplines were assigned to team activities utilizing servant leadership principles as a framework in the delivery of care through the ISU Senior Health Mobile (SHM). Services were offered in the home, on the SHM vehicle, or in a senior center.

To facilitate the planning and provision of services, a comprehensive assessment was completed in each rural area to explore client and community need for wellness care. Student learning opportunities were planned based on identified needs and disciplines participating on any given date. Students and faculty involved in the project traveled three days a week over the course of eight semesters. A typical clinical day would involve a student team of at least three members, involving at least two disciplines, and supervised by the field coordinator from the nursing discipline, who drove the Senior Health Mobile. Other health professions' faculty participated in activities on site, depending on the services planned and the need for specific direct discipline supervision. Each clinical day one student was

identified as the leader. This student served to coordinate services and participated with faculty in the facilitation of team interaction and in collaboration with the older adult. These interactions were supported through application of servant leadership principles as the students explored their roles in the interprofessional team.

Underpinning the application of servant leadership principles is a strong adherence to the ethical and caring behaviors necessary to build meaningful relationships with others (Spears, 1998). Facilitated communication encompassing these principles was supported through reflection opportunities provided on-site including team decision making, peer review and evaluation, post-clinical meetings, and team projects. The full-time field coordinator was primarily responsible for implementing servant leadership principles in practice through team and individual interaction opportunities on-site, during travel time, and at quarterly interdisciplinary meetings with participating students. Discipline specific faculty further supported this process in practice. Faculty were prepared through planned meetings with the project director and field coordinator, steering committee meetings, and involvement with students in targeted activities in practice. Further, evidence of the application of servant leadership principles was provided through professional writing, project implementation, and interactive discussion. In the process of interaction, students' reflect on their own professional values and the value of others on the team, relating this to the learning experience. Reflection is an important activity in clinical practice, because it can foster the leadership skills necessary to build team commitment, improve listening skills, and enhance respect for other person's ideas (Spears & Lawrence, 2002; Plack et al., 2005). Reflection is also important for enhancing awareness, appreciating the contributions of other disciplines, and developing community stewardship (Bentley & Ellison, 2005; Lagana, 2003).

Data were collected over a four year time span or eight academic semesters. Students completed a pre-test designed to measure their perceptions of interprofessional practice prior to participation on the Senior Health Mobile (SHM). Once the rotation for any student was completed, a post-test using the same assessment instrument was administered.

Sample

Students were recruited from varied health professions programs at Idaho State University including nursing, physical therapy, occupational therapy, health and nutrition sciences, physician assistant, pharmacy, and social work. Each student participated in the SHM project from two to fifteen weeks, depending on the conditions of their academic discipline and other clinical requirements. Students who participated for shorter periods had a more concentrated experience on the SHM, while those on longer rotations did not travel as often each week.

Instrumentation

The Interdisciplinary Education Perception Scale (IEPS) developed by Luecht, Madsen, & Taugher (1990) was used to assess student perceptions of interprofessional practice both as the pre-test and as the post-test. The IEPS assesses perceptions of students involved in interdisciplinary practice applications regarding their own profession and other health-related disciplines. Reliability and validity of the published tool was established by the original authors (Luecht et al., 1990). The tool measures four component factors deemed essential to interdisciplinary practice: (Factor 1) professional competence and autonomy; (Factor 2) perceived need for professional cooperation; (Factor 3) perception of actual cooperation and resource sharing within and across professions; and (Factor 4)

understanding the value and contributions of other professionals (Table I). These factors align with the tenets of servant leadership which were used as a conceptual framework in team interaction and the delivery of services in the Senior Health Mobile experience. The IEPS tool requires the respondent to indicate their first reaction to statements developed for the measurement of each component factor on a scale of 1 (strongly disagree) to 6 (strongly agree).

Results

Spanning the four year time period of this study, pre-test and post-test data were collected from 114 students. All participating students were enrolled in programs at the baccalaureate level or higher. Four discipline categories were established for the sample, consisting of students enrolled in Nursing ($n = 56$), Physical and Occupational Therapy ($n = 24$), Dietetics ($n = 20$), and pharmacy, social work, physician assistant, health education ($n = 14$; 5 or fewer participating from each discipline).

Multivariate analysis of variance (MANOVA) was performed on all four component factors as delineated in the IEPS. There was a significant pre-test to post-test effect ($F_{4,107} = 4.65$, $p = 0.002$), and a significant discipline effect ($F_{12,327} = 3.12$, $p < 0.001$). There was not a significant interaction between pretest to post-test and discipline category ($F_{12,327} = 0.71$, $p = 0.742$). The F statistic reported for the MANOVA is Pillais' trace which is the most robust to violations of the assumptions.

Univariate repeated measures analysis of variance was then completed for each of the four component factors developed in the IEPS to recognize which factors demonstrated significance from pre-test to post-test. The pre-test to post-test effect was significant for factor 1 (professional competence and autonomy) ($F_{1,110} = 5.29$, $p = 0.023$), factor 3

Table I. Content of the Interdisciplinary Education Perception Scale (IEPS).*

Factor 1: Professional Competence and Autonomy (statements 1, 3, 4, 5, 7, 9, 10, & 13)
Individuals in my profession are well trained.
Individuals in my profession demonstrate a great deal of autonomy.
Individuals in other professions respect the work done by my profession.
Individuals in my profession are very positive about their goals and objectives.
Individuals in my profession are very positive about their contributions and accomplishments.
Individuals in other professions think highly of my profession.
Individuals in my profession trust each other's professional judgment.
Individuals in my profession are extremely competent.
Factor 2: Perceived Need for Professional Cooperation (statements 6 & 8)
Individuals in my profession need to cooperate with other professions.
Individuals in my profession must depend upon the work of people in other professions.
Factor 3: Perception of Actual Cooperation Resource Sharing Within and Across Professions (statements 2, 14, 15, 16, 17)
Individuals in my profession are able to work closely with individuals in other professions.
Individuals in my profession are willing to share information and resources with other professionals.
Individuals in my profession have good relations with people in other professions.
Individuals in my profession think highly of other related professions.
Individuals in my profession work well with each other.
Factor 4: Understanding the Value and Contributions of Other Professional/Professions (statements 11, 12, &18)
Individuals in my profession have a higher status than individuals in other professions.
Individuals in my profession make every effort to understand the capabilities and contributions of other professions.
Individuals in my profession work well with each other.

*Adapted from Luecht, Madsen, & Taugher, 1990.

(perception of actual cooperation and resource sharing within and across professions) ($F_{1,110} = 15.73$, $p < 0.001$), and factor 4, (understanding the value and contributions of other professionals/professions) ($F_{1,110} = 8.38$, $p = 0.005$). The pre-test and post-test means for significant factors are presented in Table II. The discipline effect was significant for factor 1 ($F_{3,110} = 7.29$, $p < 0.001$) and 3 ($F_{3,110} = 5.72$, $p = 0.001$). Tukey's test of the means to identify pair-wise differences in the discipline effect was performed for significant factors 1 and 3 (Table III).

The results of the data analysis indicate a significant change in student perceptions of interprofessional practice which support effective collaboration across disciplines. The application of servant leadership principles can enhance professional practice by building and strengthening relationships among students in the community resulting in a greater appreciation of the contributions and expertise of varied disciplines.

Discussion

Central themes in the education of health professionals have shifted to the delivery of services outside of the traditional organizational setting with a focus on the integration of knowledge across disciplines to meet community and societal needs (Kemp, 2003; Plowfield et al., 2005). Effective care of the older adult requires the integration of specialized knowledge of multiple disciplines given the complex care needs of this population. The American Geriatric Society has recognized that a process of care which improves outcomes in the older adult involves the collaboration of multiple disciplines and prepares clinicians to provide services to the elderly (American Geriatrics Society Interdisciplinary Advisory Group, 2005). The sharing of knowledge within a team can facilitate the understanding of the patient and their problems and each discipline gains an awareness of the importance of other disciplines in the process of care.

In the care of the older adult, interprofessional team practice in the delivery of wellness services has demonstrated favorable patient outcomes including reduced loss of functional ability, improvement in activities of daily living, and decreased use of acute care settings (American Geriatrics Society Interdisciplinary Advisory Group, 2005). Implementation of interprofessional team models in service learning is an excellent methodology for preparing a workforce to meet the needs of a changing society, particularly for an aging population

Table II. Mean scores for significant factors pre-test to post-test ($N = 114$).

	Pre-test Mean (SD)	Post-test Mean (SD)
Factor 1	4.921 (0.499)	5.066 (0.491)
Factor 3	5.122 (0.591)	5.360 (0.559)
Factor 4	4.091 (0.702)	4.328 (0.713)

Table III. Tukey's test of discipline means ($N = 114$).

	Nursing	PT/OT	Dietetics	Other
Factor 1	4.815^{a}	5.169^{b}	5.212^{b}	5.094^{ab}
Factor 3	5.059^{a}	5.331^{ab}	5.505^{b}	5.436^{ab}

[ab]Disciplines with shared superscripts are not significantly different from each other according to Tukey's test with a significance level of $p \leq 0.05$.

(Garrett, 2005). Application of servant learning principles in the interactions of the interprofessional team in practice can foster a workforce better equipped to respond to customer needs and expectations (Spears & Lawrence, 2002). Much of the success of this program, which continues to expand, is due to the implementation of the principles of servant leadership with its philosophical focus on commitment to teamwork, community involvement, and the growth of each health professional student involved in the project.

From the data analysis in this study, an integrated practicum experience, utilizing servant leadership principles in the process of working cooperatively in the care of older adults, can change perceptions of students of interprofessional practice. Further this type of practicum experience which reaches older adults where they reside through mobile service delivery can result in an enhanced experience of both the team of health service providers and the older adult. These findings are consistent with other studies done on the outcomes of interdisciplinary practice and the support of aging with older adults remaining in their own home and active in the community (Browne et al., 2002; Lagana, 2003).

The application of servant leadership principles within the context of service learning experiences in the delivery of health and wellness care to older adults in a rural setting is a perfectly appropriate application of interprofessional care. This study demonstrates the essential process of interprofessional education by supporting the facilitated exchange of skills, knowledge, and dispositions between faculty and students, provider and client, and theory and practice. Community-based functions which foster a collaborative approach to care, improved communication, and valued expertise of team members benefits all, particularly a segment of the population at elevated risk of disease and disability.

Although the Interdisciplinary Education Perception Scale (IEPS) is not a direct measure of the application of servant leadership in practice, the factors delineated in the IEPS align closely within the servant leadership framework. Future qualitative research on interprofessional practice in the community-based setting might strengthen the expression of the contribution of servant leadership principles to the effectiveness of the collaborative team process. Comparing student and faculty perceptions of the interprofessional process in community-based care will contribute to the knowledge base as the health care field experiences a shift in emphasis of delivery of health care services from the formal organization to a community-based approach. Involving medical students, as well as other primary care providers in the interprofessional process in the community would be of interest, to improve access to care in rural areas. Innovative applications in rural practicum experiences, reaching and aging population contributes to communities and offers a rich environment for student learning.

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