An Examination of Interdisciplinary Student Experiences: Impact on Student Attitudes

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Study Background

The National Health Service Corps (NHSC), housed within the Health Resources and Services Administration, developed programs to provide opportunities for health profession students/residents to experience health care teams in underserved communities throughout the country. The program was developed to:

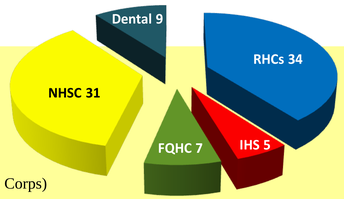
- establish and strengthen links between community-based sites and academic institutions.

These interdisciplinary training programs began in North Dakota in 1994 and ended in 2012 spanning 18 years (no federal funding in 2009) and included:

- 400 students from medicine (MS), nurse practitioner (NP) studies, physician assistant (PA) studies, psychology (Psych), counseling psychology, social work (SW), and dentistry (DDS).
  - 3 in-state universities (357 students)
  - participants from 16 other states, the District of Columbia and Hungary (43 students).

An important component of this program was forming partnerships with health care facilities and educational institutions. Figure 1 shows the types and numbers of health care facilities utilized in the program.

Figure 1: Participating Facilities



Key:

- NHSC (National Health Service Corps)
- Dental sites
- RHC (Rural Health Clinics)
- IHS (Indian Health Service)
- FQHC (Federally Qualified Health Centers)

Research Study

Exploratory research was conducted on study years 2005-2008 to examine:

- change in students' level of confidence in interdisciplinary skills,
- change in students' attitudes towards their profession, interdisciplinary practice; and
- Students' intent to practice in rural or urban areas.

Table 1 shows the number and disciplines of participating students by year while Tables 2 and 3 show the survey results.

Table 1: Student Participation

Year	MS	NP	PA	Psych	SW	DDS	Total
2005	7	2	0	0	1	2	12
2006	18	2	4	2	2	0	28
2007	12	3	2	1	0	0	18
2008	6	0	0	2	3	0	11

Methods

- Students in medicine, nursing, behavioral health and dentistry were recruited for this program.
- Applications were collected through Survey Monkey.
- Pre/post-test surveys were completed on participating students to obtain contact information, demographic information, attitudes about interdisciplinary teaming, cultural competence, intent to practice in a rural or urban area and overall satisfaction with the program.
- Weekly journals were recorded related to their experiences.
- Data were analyzed using IBM SPSS v20.
  - A Binomial Sign Test was used to determine a change in students' confidence levels on 30 items measuring attitudes and interdisciplinary skills.
  - Tied scores were managed by evenly splitting the responses into positive and negative categories and dropping uneven tied scores from the analysis.
  - A Bonferroni adjustment was made based on the number of comparisons in each category. The effect size index (g) and Cohen's guidelines was used with the Sign Test for interpreting the size of this index.

Results

Two sets of questions were analyzed that addressed the students' confidence in interdisciplinary learning skills and attitudes about their own profession. Questions presenting the greatest effect size are displayed in Tables 2 and 3.

Table 2: Students' degree of confidence in participating as a member of an interdisciplinary health care team and assisting patients in rural and underserved environment (Bonferroni adjustment: .0038)

Questions	2005		2006		2007		2008	
Differences	*P*	g	*P*	g	*P*	g	*P*	g
Contribute to discussion of patient care treatment plan with a team of health care professionals.	.687[b]	0.167	.093[b]	0.196	.000[b]	0.441	.021[b]	0.400
Assist a patient in obtaining health care in a rural community.	.453[b]	0.214	.000[b]	0.417	.000[b]	0.500	.109[b]	0.300
Identify cultural differences that exist in patients from a rural community.	.219[b]	0.333	.064[b]	0.208	.004[b]	0.342	.002[b]	0.500
Communicate health information to a patient in a rural community who cannot speak English.	.219[b]	0.333	.093[b]	0.196	.001[b]	0.389	.065[b]	0.318
Identify differences between rural and urban health care systems.	.125[b]	0.357	.152[b]	0.167	.008[b]	0.333	.549[b]	0.136
Identify types of patients requiring interdisciplinary cooperation to achieve optimal care.	.687[b]	0.167	.035[b]	0.239	.001[b]	0.389	.109[b]	0.300
Contribute knowledge of your specific discipline for the purpose of interdisciplinary team problem solving.	.453[b]	0.214	.093[b]	0.196	.019[b]	0.289	.109[b]	0.300
Gain new information using self-directed learning activities	.125[b]	0.357	.152[b]	0.167	.064[b]	0.237	.109[b]	0.300

Table 3: Changes in students' attitudes related to their own profession (Bonferroni adjustment: .0029)

Questions	2005		2006		2007		2008	
Differences	*P*	g	*P*	g	*P*	g	*P*	g
Individuals in my profession are able to work closely with individuals in *other* professions.	1.000[b]	0.000	.210[b]	0.152	.096[b]	0.222	.227[b]	0.227
Individuals in my profession are very positive about their goals and objectives.	.375[b]	0.300	1.000[b]	-0.022	.167[b]	0.184	.227[b]	0.227
Individuals in my profession have good relations with people in *other* professions.	1.000[b]	-0.100	.035[b]	0.239	.019[b]	0.289	.227[b]	0.227
Individuals in my profession think highly of *other* related professions.	1.000[b]	0.000	.093[b]	0.196	.359[b]	0.132	.227[b]	0.227
Individuals in *other* professions often seek advice of people in my profession.	.375[b]	0.300	.064[b]	0.208	.238[b]	0.167	1.000[b]	0.056
Individuals in my profession must depend upon the work of people in *other* professions.	1.000[b]	-0.100	.152[b]	0.167	.648[b]	-0.079	.344[b]	0.200

To interpret the results in Tables 2 and 3, Cohen's effect size guidelines *(Statistical Power Analysis for the Behavioral Sciences, 1988)* were used as indicated:

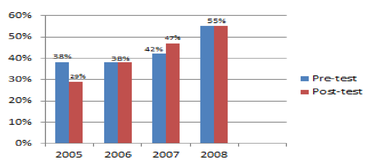
.05 ≤ g ≤ .149 Small effect size .15 ≤ g ≤ .249 Moderate effect size g ≥ .25 Large effect size

[b] Binomial distribution used

Students were asked about their intent to practice in rural or urban communities. While there was a slight decrease in intent in 2005, no difference was found in 2006 and 2008 with a positive change noted in 2007 which illustrates that the program did not lessen their intent to practice in rural areas following the rotation as shown in Figure 2.

Tables 1 & 2 Note: Results on this poster only include questions that had a significant (or moderate to large) effect on the students change in confidence participating in an interdisciplinary health care team and in their attitudes about their own profession. The complete table is provided in the handout.

Figure 2: Change in location of Practice Based on Community Size



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Conclusions

Research was conducted on students participating in the SEARCH program from 2005-2008 to analyze the factors that affected the changes in students' confidence levels and attitudes related to their own professions. Many of the results were not significant due to a small sample size and the Bonferroni adjustment. Preliminary results shown in Tables 2 and 3 indicate that students greatly improved their level of confidence in assisting patients' access to resources in a rural area as well as gaining a better understanding of the cultural differences in patients from rural and urban areas. Although the SEARCH experience did not significantly change the student's commitment to future rural practice, students gained a greater understanding and appreciation for rural practice. Results show that the program did achieve cultural competence which is one of the primary goals of the SEARCH program. Future research is planned to investigate relationships between students' high school location (rural/urban) and eventual practice location.