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SHORT REPORT

Interprofessional education in an enrichment programme for prospective health sciences students

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ABSTRACT

Effective and meaningful interprofessional education opportunities for prospective health sciences students are important to prepare students for the work environment they will encounter after training. This article briefly describes the Summer Academic Enrichment Program, a programme for students pursuing entry to dentistry, medicine, pharmacy, and physical therapy schools. The programme evaluation includes investigation of the programme's effectiveness to impact attitudes towards interprofessional teams and collaboration. The Attitudes Toward Health Care Teams Scale and the Revised Readiness for Interprofessional Learning Scale were administered at the beginning and the end of the programme. Statistical analysis of pre-assessment subscale scores indicated that pre-pharmacy students reported significantly more positive attitudes towards team value than pre-dental students at the beginning of the programme, with post-assessment results indicating that these differences had been eliminated. Additionally, all students demonstrated significantly more positive attitudes towards interprofessional teams during the post-assessment.

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Education; evaluation; evaluation research; interprofessional education; teamwork

Introduction

Summer enrichment pipeline programmes are initiatives designed to prepare and strengthen the applicant profiles of students pursuing entry to health professions programmes and may include academic preparation, career exploration, learning and study skills, as well as initiating professionalization into students' selected health careers (Alexander & Mitchell, 2010). Early exposure to interprofessional education (IPE) is an important aspect of introducing students to their future careers. Research has indicated that health professional students differ in their opinions of interprofessional learning at the time of clinical training, but engagement in interprofessional learning can positively impact their attitudes, such as more positive attitudes toward shared learning, communication skills, and team-working skills (Medves, Paterson, Broers, & Hopman, 2013). However, less is known about students who are pursuing entry to health professions training programmes and their attitudes toward interprofessional teams and education. The aim of the current study was to examine the impact of a summer enrichment pipeline programme on students' attitudes toward interprofessional teams.

Background

The Summer Academic Enrichment Program (SAEP) at Virginia Commonwealth University (VCU) is an academically intensive six-week summer programme for students approaching the application process to health professions training programmes in dentistry, medicine, pharmacy, and physical therapy. The programme has three core areas: academic preparation, immersion into selected discipline, and exploration of each healthcare discipline represented in the programme.

The exploration component is completed through specific activities that introduce students to other health professions and through the use of a case study. Students apply and are accepted to one discipline (dentistry, medicine, pharmacy, or physical therapy), but then are exposed to all four disciplines through exploration rotations. For example, pre-medicine students will participate in dentistry, pharmacy, and physical therapy rotations. At the dental rotation students learn about the profession and participate in hands-on activities, such as carving teeth moulds in the simulation laboratory, to understand the expertise and skills that dentists bring to a healthcare team. At the end of the programme, all students participate in a case study where they work in teams to discuss the role of each health profession in treating a patient. This approach allows students to learn the roles and responsibilities of other health professionals before applying that knowledge through an interactive case study.

Methods

The study utilized a pre-post evaluation approach to examine prospective health sciences students' attitudes toward IPE and

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if their attitudes were impacted over the course of the programme.

Participants and setting

A total of 51 students participated in SAEP during the summer of 2014: 19 pre-dentistry, 12 pre-medicine, 10 pre-pharmacy, and 10 pre-physical therapy students. Only students present for all pre- and post-programme assessments, course exams, and surveys were included in programme evaluation analysis. The study was approved by the VCU institutional review board.

Measures and data collection

Students completed the Attitudes Toward Health Care Teams Scale (ATHCTS; Leipzig et al., 2002) and the Revised Readiness for Interprofessional Learning Scale (RIPLS; McFayden, Webster, & MacLaren, 2006). Versions of scales were selected based literature searches that revealed previous use with students in contrast to versions of the scales that had been used with practicing health professionals. Subscales for each scale replicated previous use as described in the literature. The subscales used for analysis in the evaluation are attitudes toward team efficiency (5 items; pre α = .819; post α = .698), attitudes toward team value (10 items; pre α = .766; post α = .700), and teamwork and collaboration (9 items; pre α = .792; post α = .810). Descriptive statistics of all subscales of the ATHCTS and Revised-RIPLS are provided in Table 1; however, additional analysis of the attitudes of physicians shared role on the team, negative professional identity, and roles and responsibilities subscales are not provided due to unacceptable internal reliability (α < .620) during either the pre- or post-assessment. The positive professional identity subscale was in acceptable range, however, was outside of the scope of this analysis of attitudes toward interprofessional teams and education. All items on the ATHCTS and Revised-RIPLS were measured on a scale of 1 (strongly disagree) to 6 (strongly agree).

Table 1. Means scores on interprofessional education subscales overall and by prospective health sciences students' discipline interest.

	N	Pre	Post	*p*-value
Attitudes towards team efficiency				
Dentistry	16	4.29	4.78	.021*
Medicine	12	4.3	4.77	.055
Pharmacy	7	4.6	4.89	.328
Physical therapy	10	3.84	4.48	.056
Total group	45	4.24	4.72	.000*
Attitudes towards team value				
Dentistry	17	4.74#	5.52	.000*
Medicine	11	4.96	5.49	.006*
Pharmacy	7	5.41#	5.61	.251
Physical therapy	10	4.87	5.43	.007*
Total group	45	4.92	5.51	.000*
Teamwork and collaboration				
Dentistry	18	5.5	5.72	.055
Medicine	12	5.52	5.72	.080
Pharmacy	7	5.78	5.83	.604
Physical therapy	9	5.7	5.85	.242
Total group	46	5.59	5.76	.003*

Note. *indicates significant differences between pre- and post-assessment subscale scores (p < .05). #indicates significant differences between health professions concentration groups on pre-assessment (p < .05).

Analysis

Descriptive statistics and internal reliability were calculated for all subscales at the beginning and end of the programme (see Table 1). Differences between groups by health professions discipline interest were investigated using a one-way analysis of variance. Paired *t*-tests were used to compare pre- and post-assessment scores for each subscale. All statistics were calculated using IBM SPSS Statistics software, version 21.

Results

Results of a one-way ANOVA from the pre-assessment indicated statistically significant differences in attitudes toward team value at the beginning of the programme ($F(3, 41) = 3.13$, $p = .036$, $r = .431$), with pre-pharmacy students reporting more positive attitudes than pre-dental students. Group differences were not observed at the conclusion of the programme.

Overall, the most positive attitudes at the conclusion of the programme were perceptions of teamwork and collaboration ($M = 5.76$), followed by attitudes toward team value ($M = 5.51$) and attitudes toward team efficiency ($M = 4.72$). Paired *t*-tests of pre- and post-assessment measures indicate significant increases in each subscale during the programme: teamwork and collaboration ($t(45) = -3.15$, $p = .003$, $r = .425$), attitudes toward team value ($t(44) = -7.81$, $p = .000$, $r = .762$), and attitudes toward team efficiency ($t(44) = -4.22$, $p = .000$, $r = .537$).

Discussion

It has been suggested that pipeline programmes should go beyond preparing students academically for health professional school and familiarize students with the social and intellectual interactions they will encounter (Afghani, Santos, Angulo, & Muratori, 2013). SAEP aimed to introduce students to an educational and professional environment that includes interprofessional collaboration. The evaluation largely indicates this aim has been achieved.

Research has found that students often enter health professional training programmes with perceptions of other healthcare professions that may be based on stereotypes (Ateah et al., 2011). Stereotypes may hinder students' desire to participate in, or the potential impact, of IPE programmes and initiatives. The SAEP evaluation provides preliminary evidence that exposure to IPE programming prior to enrolment in health professions training programmes may be a viable option to improve prospective health sciences students' perceptions and receptivity of IPE.

Findings must be interpreted with caution while considering the study design and the programme setting. VCU boasts five health professional schools, including the Schools of Allied Health Professions, Dentistry, Medicine, Nursing, and Pharmacy. The School of Allied Health houses nine departments, including the Department of Physical Therapy. Additionally, it is important to acknowledge the small sample size in our programme evaluation and the use of single group design. The combination of the unique setting and small sample size creates potential to impact results as

improved attitudes could be attributed to the individual characteristics of students that are motivated to apply to an interprofessional pipeline programme at a university with five health professions schools. The programme evaluation protocol has been extended and will now include qualitative exploration of students' perceptions of interprofessional teams and how their attitudes may have been impacted during the programme. This continued and evolving evaluation is necessary to determine full programme effectiveness.

Concluding comments

As IPE continues to emerge in educational and practice models in healthcare, it is increasingly necessary to prepare aspiring healthcare professionals for interprofessional learning. The new cadre of health professional students must be educated to not only accept the high degree of interdependence and collaboration inherent in IPE, they must also be capable of thriving within these environments. Results of this programme evaluation provide preliminary support that it is possible to introduce meaningful IPE learning opportunities to prospective health sciences students while preparing them for the academic rigors of health professional education.

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Declaration of interest

The authors report no conflicts of interest. The authors alone are responsible for the writing and content of this article.

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