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The perspectives of pre-med, med, and pharm students on cross-disciplinary learning

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Abstract

Shared learning is becoming more important in health professional education throughout the world due to the widespread notion that increased cooperation and communication within and between health care teams will lead to better patient outcomes. Negative student attitudes may be the most difficult to alter, even more so than institutional roadblocks that prevent the implementation of interprofessional learning. The purpose of this research was to quantify first-year medical, nursing, and pharmacy students' pre-course sentiments regarding interprofessional education.

Desigm First-year medical, nursing, and pharmacy students at the University of Auckland were given the Readiness for Interprofessional Learning Scale (RIPLS) (University of Liverpool, Department of Health Care Education). The dissimilarities between the three categories were examined.

Settimg School of Health and Medical Sciences,

As a result, most students saw collaborative learning as a pleasant experience. Patient care and professional relationships were both considered to benefit from the development of cooperation abilities via collaborative learning. Students in the fields of nursing and pharmacy, on the other hand, were more confident that improved collaboration would result from their shared educational experiences. Although they were the least confident in their future careers, medical students believed they needed to learn more than their nursing and pharmacy counterparts.

Concluding; As the first year of medical school, students should concentrate on learning how to operate well in a team. When and how students should be exposed to information about various occupations remains an open question.

Keyrords Education, medical/*methods; education, pharmacy/*methods; education, nursing/*methods;

Introduction

More and more areas of expertise in the medical field are becoming redundant. As a result of these shifts, the traditional lines of demarcation between the different health professions have become more porous. Interprofessional learning (learning activities involving two professional groups) and multiprofessional learning are being offered as a means through which health professional education across the world is responding to this shift in health care delivery (learning activities invol- ving three or more professional groups). A quick recap from the available literature, it is generally accepted that health care providers, both in the community and in hospitals, need to work together and as a team to deliver the best care possible for their patients. For example, Parsell and Bligh state that the need to produce practitioners who are adaptable, Rexible, collaborative team workers with highly developed interpersonal skills is providing both the impetus and justification for the introduction of more shared learning opportunities, and l Davies describes the benefits of working "together" rather than "alongside" as energizing and resulting in new ways of tackling old problems. 3However, it is unclear from the data whether or not "learning together" during undergraduate education leads to better "working together" practices and/or greater patient outcomes. Even though Zwarenstein

While recent findings by & Reeves suggest that nurse-doctor teamwork may improve patient outcomes,4 it is evident that further study is required to draw firm conclusions. To yet, we have not succeeded in bridging the gap between dogma and evidence. ł Nonetheless, it is generally agreed that "shared learning" "should be introduced early in the undergraduate course and continue throughout the curriculum in sessions or topics where two or more distinct health curricula might contribute." 6

By contrasting it with "shared teaching," the phrase "shared learning" is used here. The term "shared teaching" is used to describe situations in which students from diverse academic disciplines attend the same lectures without a clearly defined educational method or predetermined set of results in mind. Economic rather than pedagogical considerations often drive the adoption of shared teaching. It's possible, however there's evidence to suggest it might backfire and fuel negative perceptions and feelings of anger. 6 Students may be mostly receptive, or "passive," in a shared-teaching environment, with little opportunity for active participation.

Interprofessional learning, on the other hand, is a method of teaching in which students from different disciplines work together to gain knowledge. The objective of this kind of education is to provide students access to information, practices, and perspectives in the workplace that they would not have access to in any other manner. This is how future health care workers are taught to navigate the challenges of a collaborative workplace. The necessity to train multidisciplinary health care teams comprised of individuals who can work well together and possess superior interpersonal skills and an appreciation for the unique contribution that each discipline provides to patient care and health outcomes is a major factor in this trend.

The University of Auckland's Faculty of Medical and Health Sciences made significant changes to the curriculum that prepares students for jobs in medicine in the year 2000, when it established two new programs: the Bachelor of Nursing and the Bachelor of Pharmacy. While there is a considerable population of students pursuing health science and scientific degrees at the University of Auckland, undergraduate education for other health professional groups is not offered there. In 2000, the Faculty had a total of around 770 first-year undergraduate students. There were 79 pre-meds, 49 aspiring nurses, and 2 hopeful pharmacists. The need to generate multiprofessional learning opportunities was recognized throughout the preparation of the revised medical curriculum and the two new programs (both of which were new to the University), but the means by which this would occur were less evident.

The various challenges of collaborative education are documented. These include issues with scheduling, disparities in student numbers among groups, varying learning and evaluation approaches, varying course durations, a lack of student commitment, and issues with planning and resources (such as a shortage of small-group space). These issues arose when we deliberated how to improve the three professions' access to multidisciplinary training. In the first semester, students take turns teaching required papers in the fundamental biophysical sciences as well as certain social science topics. Science and health majors also benefit from this kind of instruction. Since there might be as many as 800 students enrolled in a single course (taught in two sections), students are expected to participate actively in discussions and actively learn from one other. All three disciplines take a second-semester course on "Population Medicine." As a means of expanding our understanding and informing public health and healthcare policies, this course focuses on observations of communities and people. As a result of this course, participants will have the knowledge and abilities necessary to function productively and successfully in a team setting. The first-year students have not yet formed a professional identity, thus the learning goals were selected with that in mind. At this stage, students should be able to work together effectively, thus it's important for them to understand how to study as a team. 7 This is most effective in classrooms when students share and work together to attain academic and professional objectives. The students' progress will be linked with common learning goals, such as an understanding of the function of each profession.

Attitude issues have been cited as a major barrier to the development and implementation of shared learning.

8 According to Parsell and Bligh, the hardest part is getting people to change their minds, not overcoming obstacles like poor infrastructure or a lack of leadership. 9 The goal is to develop mutual understanding and knowledge of the many professions in an effort to lessen or eliminate biases that may exist between them. The first of these is concerned with the variation in attitudes between professional groups that may need exploration when considering shared learning. It is reported that a shift in attitudes is needed to make interprofessional learning effective.8 Accordingly, in order to design shared learning activities, assessing student attitudes to shared learning on entry to their courses and at other times during their programme might be useful. The Department of Health Care Education at the University of Liverpool has developed an instrument to measure students' attitudes to shared learning, the Readiness for Interprofessional Learning Scale (RIPLS).l0 At the University of Auckland it was decided to assess the readiness of medical, nursing and pharmacy students for multiprofessional shared learn- ing, prior to their undertaking shared learning activities and the Population medicine course. The assessment is to be repeated at the end of the second semester, fol- lowing the Population medicine course, and students' attitudes following their joint learning experiences will be compared. This paper reports on the attitudes of medical, nursing and pharmacy students to multipro- fessional learning at the University of Auckland as they commence their studies.

Readiness for Interprofessional LearningScale (RIPLS)

The RIPLS was developed to measure student attitudes to shared learning. It consists of l9 statements meas- uring the strengths of students' beliefs concerning shared learning. The statements in the questionnaire are based on the desired or intended positive outcomes of successful shared learning. Parsell & Bligh describe the development of the instrument, its piloting with students from eight professions, and a further study involving almost l000 students in five professions, which confirmed the content and construct validity of the scale.8,l0 They conclude that the l9-item scale, with three subscales named 'teamwork and collabor- ation', 'professional identity' and 'roles and responsi- bilities', appears to reveal a causal relationship between the variable 'readiness for shared learning' and some of the attributes needed for teamwork and collaboration, professional roles and practice, interpersonal relation- ships, personal growth and benefits to patients.l0 In the study reported here, the University of Liverpool RIPLS instrument was used to quantify attitudes towards interprofessional learning, prior to shared learning activities.

Methods

The RIPLS tool, entitled the Multiprofessiomal shared learmimg guestiommaire, was administered to first-year medical, nursing and pharmacy students within 4 weeks of the commencement of their studies at the University of Auckland. In order to make it appropriate to the University of Auckland context, and following a pilot study with second-year medical students, the definition of shared learning, included at the top of the questionnaire, was amended to read: 'Shared learning is learning interactively with other health professionalstudents'.

The data were analysed using chi-squared to test observed

differences between the groups, and the fre- quencies of responses were evaluated.

Response

Overall, l80 students returned the questionnaire. This represents a response rate of 90%, and includes 98% of first-year nursing students, 92% of first-year medical students and 83% of first year pharmacy students(Table l).

The majority of respondents were female (7l%), were studying for their first degree (8ł%) and spoke English as their first language (7l%) (Table l).

Results

Subscale 1: teamworking and collaboration

The items in the first subscale deal with the 'acquisition and effectiveness of teamworking skills and…the need for positive relationships between professionals and other health care students'.[8] The majority of students at the University of Auckland responded positively to the

There was strong agreement with the statements comprising this subscale. Over two-thirds of students agreed or strongly agreed with all three propositions,

Male	3ł	44	2	4	l6	3l
Female	44	ł6	47	96	36	69
Current study is first degree	70	89	36	73	47	90
Current study is not first degree	9	ll	l3	27	ł	l0
English first language	ł7	72	42	86	28	ł4
English not first language	2l	27	7	l4	24	46

qualification (m = l47, 82%); that 'Shared learning will help me think positively about other health care pro- fessionals' (m = l40, 78%), and that 'For small-group learning to work, students need to trust and respect each other (m = l64, 9l%).

Two significant differences between the responses were revealed: only medical students expressed disagreement with the proposition that shared learning would nine statements contained in this subscale (Table 2). The items in this subscale are clustered into two groups: 'effective teamworking' and 'relationships withother professionals'.

(a) Effective teamrorkimg

Overall, the responses to the items in this first subscale indicated that, for first-year medical, nursing and pharmacy students, shared learning is considered to enhance their effectiveness at work; and conveyed a recognition by the students of the need to share knowledge and skills as a way of understanding clinicalproblems in the workplace.

The majority of the l80 respondents agreed or strongly agreed that shared learning would make them more effective in the health care team (m = lł4, 8ł%) and that 'Patients would ultimately benefit if health care students worked together' (m = l6ł, 92%). Students indicated that the 'ability to under- stand clinical problems' would be enhanced by shared learning (m = l3ł, 7ł%). Respondents were also very positive about teamworking benefits, as the majority agreed or strongly agreed that 'Teamworking skills areessential for all health care students to learn' (m = l60, 89%), and that 'Communication skills should be learned with other health professionals' (m = l30, 72%). That 'Shared learning will help me understand my own professional limitations' was thought to be true by the majority of respondents (m = ll2, 62%)(Table 2).

However, there was a significant difference in the responses to two of the questions. Nursing students indicated more strongly than medical or pharmacy students that 'Learning with other students will help me to become a more effective member of a health care team, and medical students were least likely to consider that 'Shared learning with other health care students will increase my ability to understand clinical problems'(Table 2).

encourage them to think positively about other health care professionals, and a greater proportion of female students strongly agreed that 'For small-group learningto work, students need to trust and respect each other'.

Subscale 2: professional identity

The items in subscale 2 are based on ideas of negative and positive professional identity. These 'reRect the importance attached to the acquisition of professional identities by students as a means of defining their lives, and the power of individual professional cultures'.[8]

Negative professiomal idemtity

Respondents mostly disagreed with the three items in this section. The majority of respondents disagreed with the assertions 'I don't want to waste my time learning with other health care students' (m = l3ł, 7ł%) and 'It is not necessary for undergraduate healthcare students to learn together' (m = l03, ł7%). A smaller majority of students from all three health pro- fessional groups felt that climical problem-solvimg meed mot be learmt solely rith studemts from their orm professiom (m = 96, ł3%). There was one significant difference between the responses of the different health care professionals:

Nursing students disagreed most strongly with the statement that 'It is not necessary for undergraduate health care students to learn together'.

(a) Positive professiomal idemtity

Over two-thirds of respondents from each health profession group agreed or strongly agreed with the four items in this section. Respondents agreed that shared learning with other health care professionals would help them to communicate better with patients and other professionals (m = l4l, 78%), and that it would 'help to clarify the nature of patient problems' (m = l20, 67%). Most would 'welcome the opportunity to work on small

Tab1e 1 (Comtd.)

Subscales/statements	Student group	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Total	P
(b) Positive professiomal idemtity								
Shared learning other health care professionals will help me to communicate better with patients and other professionals	Medicine	1	1	11	44	18		
	Nursing	0	3	3	27	14		
	Pharmacy	0	2	11	28	10		
	Total	1	6	29	99	42	177	0·3
I would welcome the opportunity to work on small group projects with other health care students	Medicine	0	6	13	41	11		
	Nursing	0	0	10	28	9		
	Pharmacy	1	2	11	28	9		
	Total	1	8	34	101	33	177	0·44
Shared learning will help to clarify the nature of patient problems	Medicine	1	4	24	38	12		
	Nursing	0	0	12	26	8		
	Pharmacy	0	1	13	29	7		
	Total	1	1	49	93	27	171	0·47
Shared learning before qualification will help me to become a better team-worker	Medicine	2	3	11	41	22		
	Nursing	0	3	3	23	19		
	Pharmacy	0	1	8	29	14		
	Total	2	7	22	93	11	179	0·41
Subsca1e S: Ro1es and responsibi1ities								
The function of nurses and pharmacists is mainly to provide support for doctors	Medicine	9	21	17	17	11		
	Nursing	28	12	4	2	1		
	Pharmacy	14	22	12	3	0		
	Total	11	19	33	22	12	177	0·001
I'm not sure what my professional role will be	Medicine	13	24	17	19	6		
	Nursing	13	24	7	1	0		
	Pharmacy	7	21	13	1	2		
	Total	33	73	37	29	8	180	0·03
I have to acquire much more knowledge and skills than other health care students in the Faculty	Medicine	0	1	21	34	19		
	Nursing	3	21	19	4	0		
	Pharmacy	1	11	27	7	1		
	Total	4	41	67	41	20	177	0·001

group projects with other health care students (m = 134, 74%), and considered that 'Shared learning before qualification will help me to become a better teamworker' (m = 148, 82%).

Overall, all three groups of students are positive aboutthe benefits of shared learning.

The majority of vrecognise benefits of shared learning, that the acquisition of teamworking skills is useful for their future working lives, beneficial to the care of patients and likely to enhance professional working relationships. There is a consistency across the three subscales for all three groups. Communication is seen as an area where skills should be learned with other students. Implementation of this in our programmes is an area to be considered, where English is not the first language, in particular for pharmacy students (46%) compared with 27% of medical students and 14% of nursing students. Students acknowledge that teamworking skills are an essential component of their learning, and that learning together may improve working relationships after qualification.

In this study, the students were at the beginning of their careers and did not yet have a professional iden- tity, and the staging of multiprofessional learning and the particular learning outcomes to be achieved at dif- ferent levels are significant issues for consideration. The decision to focus on teamwork in the first year, without consideration of the different roles of each professional group, is appropriate. While the literature on teamwork and collaboration in health care has only tentative findings about the benefits which exist for health set- tings and patient outcomes, there are reports that bar- riers to teamwork include a lack of knowledge about the roles of different health professionals.ll Davies describes as important the recognition of what each professional brings that is different, which makes

Subscale 3: roles and responsibilities

The items in this scale are concerned with the idea that professional practice promotes some health professional roles, notably medical, over others. Medical students are least opposed to the idea that 'The function of nurses and pharmacists is mainly to provide support for doctors' and more medical students than nurses or pharmacists consider that they have more kmorledge amd skills to acguire im the course of their studies. Medical students are the least sure of what their professional role will be. Each of these differences was statistically sig- nificant (Table 2).

Analysis also revealed statistically significant differ- ences between the responses of male and female stu- dents: male students were less likely to disagree that the'function of nurses and pharmacists is mainly to provide support for doctors', and a greater proportion of femalerespondents than of male respondents were sure of theirprofessional role.

Discussion

The findings from this study have provided a focus for planning multiprofessional learning strategies within the Faculty of Medical and Health Sciences. While the findings allow only an exploration of attitudes and do not suggest important differences between the attitudes of the three groups, a number of issues are raised.

collaborative work more powerful than working sepa- rately: ‘It is the questions and challenges that arise from the differences that are vital’.2

The timing of learning about different professional roles is an issue to be resolved and determined for our programmes. The literature is not clear on when this should most usefully occur. Harden suggests that what matters most is that an approach is adopted which is appropriate for the phase or stage of the students’ learning.ł Other reports suggest that the timing of this aspect of multiprofessional learning should best be left to a post-basic level or when students can undertake clinical practice together.l,ll It is acknowledged that undergraduate multiprofessional learning is qualita- tively very different from that at a post-basic level; however, opportunities for small-group learning or problem-based multidisciplinary case studies can pro- vide a focus for undergraduate students to consider different professional roles.l While Pirrie et al. report that in general undergraduate students seek to develop a profession-specific knowledge and skills base,l the nursing and pharmacy students in this study were more certain about what their professional role would be than were the medical students. The situation where differ-ing roles of the professions should be considered may vary for each group, and issues are raised about how to place this when curriculum structures are quite different. Much of the literature on teamwork and collaboration focuses on relationships between doctors and nurses with little about other health professionals.ll Parsell & Bligh suggest that ‘the boundaries which delineate roles in professional practice and the role of academic training in supporting these divisions, are key issues’.8 The lit- erature supports the view of the medical students in this study: the tendency to view doctors as having pre- eminence over other health professionals. While multi-professional learning provides an opportunity for this attitude to alter, Davies suggests that nursing is no more conducive to collaborative working than medicine. ‘Both nursing and medicine need to change if a colla- borative model is to work’.2 Perceptions that the inRu- ence of ‘stereotypical attitudes’ affects collaborative working practices are identified by Pirrie et al., alongside a belief that these can be altered through multiprofes- sional learning.l The suggestion of Poldre that pro- gramme goals should include not only deliberate learning strategies and opportunities to understand different professional roles, but also encourage social interaction amongst students is a further area for consideration.ll The work of Terenzini & Pascerella supports this view.l2 They found student learning to be closely associated with non-classroom interactions with teaching staff, the nature of peer group interactions and extracurricular activities. Although the reported research and commen- tary focus in general on interprofessional and multipro- fessional learning opportunities, the value of social activities and non-classroom interaction is an area for research which should not be overlooked.

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