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Factors affecting Australian medical students' attitudes to interprofessional education; validity of the Readiness for Inter-professional Learning Scale-Med

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ABSTRACT

Objectives: To examine the attitudes of undergraduate pre-professional medical students toward involvement in interprofessional learning, using the Readiness for Interprofessional Learning Scale.
Methods: A cross sectional survey of 478 Australian medical students in the clinical years (3, 4 and 5).
Results: Positive attitudes (mean: 72%), varied significantly across course years 3, 4 and 5 ($p \leq .05$). More negative attitudes to IPL in the middle (second) year of clinical placement (course year 4) compared with the prior year. A three-factor explanatory model was adopted: Shared Learning (11 items) (Cronbach alpha .92), Professional Identity (5 items) ($\alpha = .75$) and Teamwork/Collaboration (2 items) ($\alpha = .51$) components.
Conclusions: Medical students' attitudes suggest that interprofessional education should be offered early in the medical course. This study confirms the Readiness for Interprofessional Learning Scale-Med as reliable tool when used with undergraduate/pre-professional medical students.

Introduction

Education reforms in Australia over the last decade have aimed to increase undergraduate health care training opportunities that support interdisciplinary learning. This follows the lead of international recommendations regarding a need to improve health care students' preparation for interprofessional practice [1]. Medical educators are expected to produce graduates who are both competent in their specialty (medicine) and in working collaboratively as members of a health care team [2]. Furthermore, interprofessional education is prescribed in national standards in medicine and in nursing [3,4] on the understanding that better teamwork and improved communication within health care teams can positively affect patient safety [5]. The present study aims to add to what is known about medical students' attitudes to and willingness to undertake interprofessional learning.

Medical education has traditionally occurred within each profession, uni-professionally, whether conducted in medicine, nursing or another field such as allied health. In contrast, interprofessional education (IPE) occurs when there is active learning with and from other disciplines: i.e., when two or more professionals learn with, from and about each other [6]. The basis of this is that interprofessional education has the capacity to improve collaboration between professionals and also the quality of practice [5]. In medicine, clinical education is increasingly focused on interdisciplinary education based on the objective of achieving more patient-centered care. For example, in the case of clinical education wards, students have learned to understand the basis of teamwork and their professional roles in delivery of patient care [7]. Ideally, IPE would involve experiential learning for students, in a practice-based setting [8].

How equipped are undergraduate medical students to undertake interdisciplinary learning, then, when uni-professional learning may form most of their prior experience? Jacobsen et al [9] suggest that two main factors affect a student's attitude toward IPE. Students become 'professionally socialized' as they adopt the behavioral patterns of the surrounding culture, and second they experience 'stereo-typing' of their present beliefs.

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This comes from forming opinions about certain groups of people from the contexts in which they have observed these groups perform (such as hospital wards) [10]. Students' perceptions of IPE are also influenced by many additional factors such as their age, gender and prior work experience [11]. Although there is sparse information about medical students' attitudes toward interprofessional learning, the attitudes toward IPE of other health care students in multiple disciplines have been explored in many contexts [12–20].

Students' attitudes to learning in an interprofessional context have been examined using a valid instrument: the Readiness for Interprofessional Learning Scale (RIPLS) [21] (see Appendix). As a mode of learning, readiness is characterized as an individual being primed, motivated and capable of being involved [22]. The scale was developed through a survey of 120 second-year undergraduate health care students, including medicine, nursing and six other health and social care professions. The instrument has accumulated a body of normative data confirming its reliability; during development it exhibited a Cronbach alpha [α] of .90, (exceeding an expected .70) [23]. Three main constructs were identified in the scale: Teamwork/Collaboration, Professional Identity and Role/Responsibilities, although the sample was small and there was no examination of attitudes in various discipline groups.

McFadyen et al [24] subjected the scale to further testing, sampling 308 health care students from eight health and social care professions (not including medicine). Their model included four domains and was found reliable ($\alpha = .84$) although the subscales differed from prior studies. A study of 418 Australian health and social care students (not including medicine) mainly in early years 2–4 of their course [18] found further variations in factor structure. Unstable results may be influenced by sample size, with larger samples showing higher correlations. Furthermore, the studies sampled an assortment of pre-professional student groups and were conducted in the UK or in Australia. More recently, the scale has been tested more broadly, with translation into various languages including French, German, Persian and Indonesian [16,17,19,25]. All studies reported at least two reliable factors with varying validity and reliability. None, however, have exclusively reported the views of medical students and so we respond to this gap in knowledge.

The present report forms part of a longitudinal study conducted by researchers from Monash University and Monash Health who developed an interprofessional clinical learning program for pre-registration health care students during their clinical placements. This report aims to answer the research questions: (i). What are the attitudes of pre-registration medical students toward involvement in IPE? and (ii). How reliable is the RIPLS as an assessment instrument when used with medical students?

Methods

Survey and sample

The study design was a cross-sectional survey. The RIPLS questionnaire was formatted with additional demographic questions asking about participants' age, year of birth, course, year of university degree and prior experience of IPE.

All medical students attending a single university who were in the third, fourth or fifth year (the final year) of their undergraduate medical degree and who were on clinical placement in one large Melbourne metropolitan health service between semester 2, 2011 to semester 2, 2012 were invited to participate. Surveys were conducted at two time periods with two groups of students. All students scheduled for placement received an explanation of the study during orientation, and were invited to complete the paper-based or on-line survey. Consent was implied by return of a completed questionnaire. The Monash University Standing Committee on Ethics in Research Involving Humans and the health service granted ethics approval for the study.

Analysis

Survey data were analyzed using SPSS version 18 (SPSS Incorporated. Chicago, Ill:2007) and descriptive and inferential statistics. The overall internal consistency of the response set was indicated by a Cronbach Alpha (α) .69 and the reliability of the final model (18 items) was confirmed with a coefficient of .70, matching the conventional value of $\alpha \geq .7$ [21].

Construct validity was examined using a principal components analysis (PCA) [23]. PCA is useful to explore inter-relationships between scaled variables to account for variability in a pattern of correlations. Conditions on the factorability of the scale were met: a sample ratio of $\geq$10:1 (actual: 25: 1). Many variables showed coefficients of $\geq$.3; a Kaiser-Myer-Olkin Measure of Sampling Adequacy of .94 exceeded a recommended value of .6 and Bartletts' Test of Sphericity was significant ($p < .001$), supporting the factorability of the correlation matrix [26]. A factor loading of .4 with a parallel analysis were applied to determine the final rotated solution [23]. This followed the computation strategy of Parsell & Bligh [21], McFadyen et al [24] and Williams, Brown & Boyle [18] which were all comparison studies. It should be noted that we did not reverse-code items (as per the latter studies) as this did not suit our question set nor affect the model. All methodological details are provided in the results section.

Results

Demographic characteristics of the 482 medical undergraduate participants are presented in Table 1. Participants' prior experience of IPE was low, with less than one quarter (23.5%) reporting any prior interprofessional education. Experience of IPE did not increase with course advancement (3rd year: 22%; 4th year: 26%, 5th year: 24%). Except for several students who reported shared learning in a previous degree course, no systematic IPE experience was apparent.

Principal components

PCA revealed four components with eigenvalues exceeding 1.0 (Table 2) based on a scree plot and a parallel analysis [27]. Component 1 explained 41.5% of shared variance, 2 (8.0%), 3 (7.2%), and 4 (5.2%). The four components that were retained explained 62.2% of shared variance. The pattern and structure of the rotated components are shown in Table 2.

Of the four components, 11 items emerged on the various bases of 'Shared learning' (named after McFadyen 2005), five on

Table 1
Characteristics of medical student participants ($n = 482$).

Item	Cohort 1 *n* (%)	Cohort 2 *n* (%)	Total *N*
Sex			
Male	88 (39.3)	136 (60.1)	224
Female	133 (51.6)	122 (47.3)	258
Year of birth	Median 1989	Median 1990	Range: 1976–1992
Year of medical course			
3rd year	115 (46.7)	136 (54.8)	248
4th year	94 (63.1)	63 (36.9)	149
5th year	15 (18.3)	71 (81.7)	82
Reported prior experience of IPL			
Yes	45 (17.4%)	66 (29.5%)	111
No	213 (82.6)	156 (70.6%)	369