

Health professional student attitudes towards teamwork, roles and values in interprofessional practice: The influence of an interprofessional activity

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Abstract

Introduction: Logistical difficulties associated with timetabling interprofessional education (IPE) in multiple entry-level health professional programs requires adopting new and innovative models. This study evaluated whether a 2-hour IPE workshop can impact students' perceptions of teamwork, professional roles, values and communication.

Method: Medical, physiotherapy and nursing students (n = 430) reviewed a case study and discussed roles, responsibilities and communication between healthcare professionals. Students were invited to participate in research by completing pre and post surveys comprising 12 statements based on the teamwork, roles and responsibilities and interprofessional biases questions from the Interprofessional Attitude's Scale (IPAS). Data from IPAS were entered into SPSS and analysed using descriptive statistics.

Results: All student groups demonstrated a positive attitude pre activity with an overall statistically significant improvement in pre- and post-activity scores ($z = -8.568$, $p < 0.001$, medium to large effect size ($r = 0.47$), pre workshop Md = 45 to post workshop Md = 46.5). Students identified the activity as relevant to them for learning more about their professional roles, communication, values and teamwork.

Conclusions: A 2-hour workshop can be effective in influencing students' attitudes towards IPE. Inclusion of a team activity promotes discussion on cooperation, coordination and accountability. Using a case study of a patient whose condition deteriorates as a result of poor communication enables students to explore the value

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of their own and other professions roles and responsibilities as well as interprofessional communication.

A case-study-based IPE activity is effective in influencing students' attitudes towards interprofessional communication and teamwork and developing a better understanding of their own and one another's roles in patient care.

Keywords: interprofessional education; interdisciplinary communication; educational model.

Introduction

Interprofessional education (IPE) has been identified as a key component enabling health professionals to work collaboratively and provide holistic care to patients (Paradis & Whitehead, 2015). In Australia, the accrediting bodies of medicine (AMC, 2013), physiotherapy (Australian Physiotherapy Council Limited, 2017) and nursing and midwifery (ANMAC, 2012) expect IPE to be included in all entry-level programs. The Interprofessional Education Collaborative (IPEC) identified four core competencies to be included in any IPE activity: values and ethics, roles and responsibilities, interprofessional communication and teamwork (Kahaleh, Danielson, Franson, Nuffer, & Umland, 2015). These values also align with the key themes of interprofessional practice identified by the World Health Organisation (2010).

Organising appropriate and effective IPE activities across multiple entry-level programs with unique and individual timetables and possible differing educational expectations is both logistically and pedagogically challenging (Nisbet, Lee, Kumar, Thistlethwaite, & Dunston, 2011). Models of IPE proposed to date include case-based IPE using simulation activities with standardised patients (Curran, Reid, Fitzgerald, Heath, & Mullins-Richards, 2015), group assignments across disciplines (McNaughton, 2015) and web-based activities (Lapkin, Levett-Jones, & Gilligan, 2014). There is consensus that the difficulties associated with scheduling and managing these models of IPE pose barriers for implementing IPE. New, innovative and less logistically-challenging models of IPE need to be developed to enable it to be embedded within the curriculum of all healthcare courses.

One such model is a "one-off" interprofessional workshop (DiVall et al., 2014); however, while logistically less challenging to schedule, because of the short duration of the workshop, it is challenging for educators to ensure the IPE competencies and expectations of each profession are addressed. There is a need for research to determine if this more manageable form of IPE can be effective.

Academics from the schools of medicine, physiotherapy and nursing and midwifery at the University of Notre Dame Australia, Fremantle campus, collaborated to develop a 2-hour IPE workshop for Year 2 students across all three schools that would address the competency themes and each professions' expectations. This mixed-methods study set out to evaluate if a targeted 2-hour workshop could impact students attitudes towards IPE, specifically the core competencies of teamwork, roles and responsibilities, communication

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and values, in a manageable pedagogical activity. Data were collected using a modified Interprofessional Attitudes Scale (IPAS) (Norris, 2015). The information gained from this mixed-methods study may provide health professional educators with an IPE option that is logistically easier to implement than traditional methods.

Methods

Year 2 students from the schools of medicine, physiotherapy and nursing and midwifery at the University of Notre Dame Australia (n = 430) attended a 2-hour IPE activity in August 2016 as part of their curriculum requirements. The physiotherapy and nursing programs are 4- and 3-year undergraduate programs, respectively, while the medicine program is a 4-year postgraduate program. Review of the curricula for each school helped identify the year group best suited for this activity based on content covered to date and exposure to the clinical environment.

Participants were allocated in groups of 10, ensuring each group had representation from all three disciplines. Students invited to participate in the research were identified only by their discipline. Participants completed a hard copy survey pre and post the IPE activity. The survey comprised statements related to teamwork, roles and responsibilities and interprofessional bias from the validated and reliable Interprofessional Attitudes Scale (IPAS) (Nisbet et al., 2011). The survey comprised 12 statements rated against a 5-point Likert scale, from strongly agree (5) to strongly disagree (1). There were two open-ended questions included in the post-activity survey exploring what aspect of the activity was most relevant to them and suggestions as to what might improve the activity. As the survey was anonymous, consent was implied by returning the completed survey.

A team-building activity was introduced as an “ice breaker” with a subsequent debrief to prompt students to consider roles that team members adopt when undertaking a task. Next, students were shown a series of slides to demonstrate how working in isolation, one expert who disregarded, undervalued and dismissed contributions from fellow professionals may miss the whole picture of a situation and draw a false conclusion. Comparisons were drawn with patient care and the value placed on interprofessional practice (IPP). This led into a focused discussion of a case study of a patient following a hip replacement for a fractured neck of femur. Students were shown a video in which a junior staffer’s lack of confidence to voice their concerns about the patient to a more senior member of staff resulted in a deterioration in the patient’s condition, with subsequent admission to the intensive care unit. Facilitators guided students through a series of questions exploring their perceptions of the situation and what they perceived may have been done differently to achieve a more positive outcome for the patient.

At completion of the 2-hour IPE event, students were asked to complete the post-activity survey. Surveys were numbered to enable pre and post comparison.

Ethics approval was gained for this study from the Human Research Ethics Committee of the University of Notre Dame Australia (Reference Number: 016136F).

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Data analysis

Discipline data and survey results were entered into SPSS Version 22, with negatively-worded question scores reversed prior to analysis. All data were tested for normality of distribution, looking at skewness and kurtosis and including the Kolmogorov–Smirnov test. Individual school data were analysed using descriptive statistics. For individual questions, a score of 4 or 5 on the Likert scale was deemed to be a positive response to the statement. A participant was deemed to have an overall positive attitude to IPE if their aggregate score for the survey was 40/60 or greater.

Comparison of pre and post scores for all students and within schools was determined using the Wilcoxon signed-rank test. Comparison between schools of pre and post scores was determined using the Kruskal–Wallis test. Comparisons pre and post event for each individual question were evaluated using the Wilcoxon signed-rank test.

Responses to the open-ended questions were transferred into Excel, and one researcher initially themed the responses. These were reviewed for consensus by the full team of researchers. Responses to the first question, examining the relevance of the workshop, were assigned to one of the four IPEC competencies. Responses to the second question were reviewed and themes identified.

Results

There was a 77% overall response rate to the survey, with 332 of the 430 student attendees completing the pre and post surveys. Of the total attendees, 89/105 students studying medicine completed both surveys, 175/245 nursing students and 68/80 physiotherapy students. A further six surveys were incomplete and not included in the analysis.

Data from all IPAS statements were not normally distributed, with Kolmogorov–Smirnov tests showing statistically significant results ($p = 0.000$). A negative skewness was recorded for every response, indicating respondents had a positive attitude towards interprofessional teamwork and roles (IPT). Analysing pre and post scores of all students, and students within individual schools, using a Wilcoxon signed-rank test determined the differences between pre and post scores on the IPAS to be statistically significant for nursing ($z = -7.540$, $p < 0.001$, large effect size [$r = 0.58$] pre workshop Md = 45 to post workshop Md = 48), physiotherapy ($z = -4.117$, $p < 0.001$, large effect size [$r = 0.51$], pre workshop Md = 46 to post workshop Md = 48) and the group as a whole ($z = -8.568$, $p < 0.001$, medium to large effect size [$r = 0.47$], pre workshop Md = 45 to post workshop Md = 46.5). A Wilcoxon signed-rank test revealed a non-statistically significant improvement in attitudes to IPE amongst medical students following participation in the workshop ($z = -2.058$, $p = 0.04$, with a medium effect size [$r = 0.22$]). The median score on IPAS increased from pre workshop (Md = 43) to post workshop (Md = 44).

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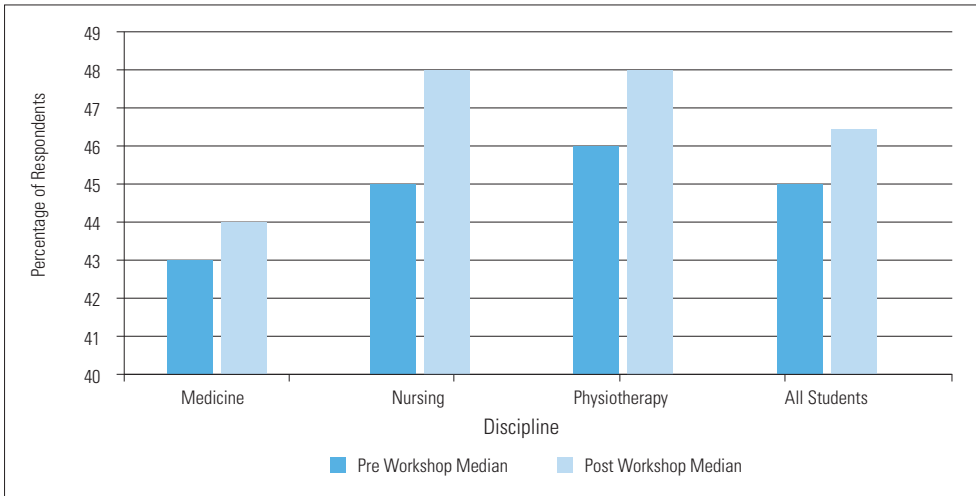


Figure 1. Median scores pre and post workshop

Figure 1 shows that prior to the IPE event, students had a positive attitude towards interprofessional teaching (IPT), with physiotherapy students showing the most positive attitude (46/60), followed by nursing students (45/60). Students from the School of Nursing and Midwifery recorded the biggest shift in attitude to IPT following the event, recording the same median score post activity as physiotherapy (48/60).

The Kruskal–Wallis test determined there was a statistically significant difference between the three student groups’ pre event attitude towards teamwork and roles and responsibilities (medicine n = 89, nursing n = 172, physiotherapy n = 68), ($X^2(2, n = 329) = 13.92, p = .001$) and post-event attitudes (medicine n = 87, nursing n = 173, physiotherapy n = 66), ($X^2(2, n = 326) = 28.03, p = .000$). Physiotherapy recorded a higher median score pre event while physiotherapy and nursing recorded the same median score post event.

Examining individual statements using the Wilcoxon signed-rank test, using a p value of 0.05 determined that medical students did not record any statistically significant changes pre- and post-event to responses to any statement, while nursing recorded 10/12 statistically significantly different responses and physiotherapy students recorded 6/12 statistically significantly different responses. Table 1 indicates the changes per question, pre- and post-event, for all three groups of students

Responses to the relevance of the activities were sorted into the four IPEC competencies, with students ranking identification of their profession’s role and those of others as the most relevant activity, followed by communication, values and, then, teamwork. Some examples of qualitative responses to this question are given in Table 2.

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Table 1
Difference in Individual Statements Pre and Post.

Statement	Medicine	Nursing	Physiotherapy
Shared learning before graduation will help me become a better team worker.	N	Y	Y
Shared learning will help me think positively about other professionals.	N	Y	Y
Learning with other students will help me become a more effective member of a healthcare team.	N	Y	Y
Shared learning with other healthcare students will increase my ability to understand clinical problems.	N	Y	N
Patients would ultimately benefit if healthcare students worked together to solve patient problems.	N	Y	N
Shared learning with other healthcare students will help me communicate better with patients and other professionals.	N	Y	Y
I would welcome the opportunity to work on small group projects with other healthcare students.	N	Y	Y
It is not necessary for healthcare students to learn together.	N	Y	Y
Shared learning will help me understand my own limitations.	N	Y	N
Health professionals/students from other disciplines have prejudices or make assumptions about me because of the discipline I am studying.	N	Y	N
I have prejudices or make assumptions about health professionals/students from other disciplines.	N	N	N
Prejudices and assumptions about health professionals from other disciplines get in the way of delivery of healthcare.	N	N	N

Y = statistically different, N = not statistically different based on Wilcoxon signed-rank test

Table 2
Comments on the Relevance of the Activity Aligned to IPEC Competencies

IPEC Competency	Response
Roles	Hearing about the roles of nurses + physios, and hearing their positive + negative experiences when communicating with doctors (PS5)
Communication	How to communicate effectively with confidence (NS3)
Values	A discussion dealing with how to face prejudices about other professions [sic] (NS98)
Teamwork	Working in a setting where we can communicate on a level playing field & where all perspectives where [sic] respectfully acknowledged was grt [sic]. (NS50)

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Two clear themes around using case studies for the activity and networking emerged from the question “Is there anything you would suggest that might improve today’s activity?” On the whole, students valued the opportunity to engage in the IPE activity, in particular to work collaboratively around a hypothetical discharge process, and they requested more case studies be included in future workshops. One student suggested, “Use more clinical scenarios/case studies and ask how each discipline would handle it” (MS3).

Physiotherapy students suggested that the case study was very medical and nursing orientated and recommended future scenarios include additional allied health roles. Some medical students suggested that networking was most beneficial and suggested doing away with the structured activity. Their responses included, “Get rid of it and have a bonding event and social chat” (MS15).

Only three students expressed frustration about the workshop, including the following negative comment: “As an allied health professional with working experience, this was a waste of time” (MS25).

Discussion

Results from this mixed-methods study suggest that a 2-hour IPE case-based workshop is effective in improving the attitude of students from the medicine, physiotherapy and nursing and midwifery professions towards the IPEC competencies of values and ethics, roles and responsibilities, interprofessional communication and teamwork (Kahaleh et al., 2015). Collaboration between the three schools to develop consensus about learning outcomes for the workshop also ensured that the interest of each profession was met.

Ethical practice is defined in the university’s list of graduate attributes as “a capacity for high ethical standards both personally and professionally, underpinned by the ability to apply ethical thinking skills to social/societal problems” (The University of Notre Dame Australia, 2018). The case-based activity where poor interprofessional communication resulted in the patient’s condition deteriorating required students to consider their own professional and personal ethical standards in a challenging situation.

Professional identities and perceptions of roles and responsibilities begins before undertaking health courses (Wharton & Burg, 2016). Discussing roles and perspectives of patient care with students from other disciplines in the early years of study provides an opportunity to learn about professional differences and strengthen understanding of their own role and reduce the bias of other professions (Bressler, 2016; Hood, 2014a, 2014b). This workshop allowed students the opportunity to discuss and explore their own profession’s roles and responsibilities and learn more about those of the other disciplines. Students also discussed their own professional prejudices and considered how these may impact on patient care.

Good interprofessional communication has been linked to better patient outcomes, with inadequate communication being linked to poorer outcomes (Wharton & Burg, 2016). The videos chosen for this workshop highlighted how a perceived power inequality

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undermines interprofessional communication, with allied health students and junior practitioners feeling intimidated to communicate with more senior members of staff about concerns they may have about a patient's condition (Denvir & Brewer, 2015; Engel, 2017). Group discussions in the activity focused on communication between people with perceived or real inequalities of power, and students were prompted to voice how they might deal with this power difference in the clinical setting. Responses to open-ended questions highlighted the value of this activity in increasing students' confidence in communicating with other members of the interprofessional team.

The university's list of graduate attributes described teamwork as "a capacity to contribute in a positive and collaborative manner in order to achieve common goals" (The University of Notre Dame Australia, 2018). Jones and Phillips (2016) identified cooperation, coordination and shared accountability as essential behaviours to achieve effective teamwork. The Icebreaker exercise was designed to facilitate teamwork, and subsequent discussion prompted students to think about how the activity had unfolded, consider if someone had taken a lead or if there was any planning and determine whether they would have done anything differently. This exercise was designed to prompt identification of behaviours necessary for cooperation, coordination and accountability and set the framework for the remainder of the workshop.

Using case studies is an effective way to prompt discussions, and many participants highlighted the benefits of the case study, requesting more cases be included in future workshops (Curran et al., 2015; Curran, Sharpe, Flynn, & Button, 2010). The case study used in this workshop was adapted from one developed by the School of Medicine, which received Excellence in Research Australia recognition as research in a non-traditional format; however, feedback from the workshop identified that work is required to further adapt it to a more inclusive IPP case study (Waldron & Waldron, 2015).

Hertweck et al. (2012) found medical students place less value on working with other students than other health professions, and we, too, found this in our study, with medical students having the lowest pre- and post-survey scores. Hertweck et al. (2012) surmised that the personality attributes of people attracted to study medicine may explain attitude (Hertweck et al., 2012). Hudson, Lethbridge, Vella, & Caputi (2016) identified that medical students attitudes towards IPE decreased after an IPE placement, suggesting that IPE might challenge medical students' "idealised" view of doctors (Hudson et al., 2016). It is possible that our IPE activity challenged students' perceptions of their role; however, despite the post-survey score of medical students in our study remaining lower than the pre-survey scores of nursing and physiotherapy students, their attitudes towards IPE did improve, reinforcing that this IPE activity was effective in facilitating positive change.

Disparate timetables and teaching programs have been identified as barriers to implementing interprofessional practice into curricula (McNaughton, 2015; Steketee, 2014). This research has shown that a logistically-manageable 2-hour IPE workshop can effectively improve the attitudes of medical, nursing and physiotherapy students

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towards IPP and in particular the IPEC competencies of values and ethics, roles and responsibilities, interprofessional communication and teamwork, while meeting the educational needs of three schools.

Limitations

This project examined one cohort of students who attended a “one off” IPE activity although data were gained from 77% of attendees. Further research should be conducted on additional IPE activities to determine the effectiveness and repeatability of the results.

Conclusions

This study determined that a case-based IPE activity is effective in influencing students’ attitudes towards communication and teamwork in the interprofessional context. It also determined that this case-based IPE activity helped students develop a better understanding of their own and one another’s roles in patient care. It is not known if the gains from this workshop are long-lasting, and further research is required to determine this. Further IPE content is planned for inclusion in curricula in all three programs.

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This project was unfunded and there were no conflicts of interest.

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