Figure 1:Search Algorithm.

142 articles excluded after review of title/abstract:

- 49 Criteria (1): Not a primary clinical publication

- 21 Criteria (2): Did not involve a simulation session

- 50 Criteria (3): Did not include medical students along with individuals from ≥ 1 other profession

- 4 Criteria (4): Not available in full text

- 18 Duplicates

305 articles identified:

- 111 Pubmed

- 186 EMBASE

- 5 Medline

- 3 PsychINFO

163 full-text articles reviewed

66 articles excluded after review of full text:

- 31 Criteria (1): Not a primary clinical publication

- 13 Criteria (2): Did not involve a simulation session

- 22 Criteria (3): Did not include medical students along with individuals from ≥ 1 other profession

97 articles included

Reference lists searched: additional 29 articles added

126 articles included

Table 1. JET model of interprofessional outcomes accompanied by examples that include medical students completing IPL simulation

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| --- | --- | --- |
| **Outcome Levels** | **Description** | **IPL example** |
| 1. Reaction | Learners' view on the learning experience and its interprofessional nature | Reaction to the IPL team |
| 2a. Modification of attitudes/perceptions | Changes in reciprocal attitudes or perceptions between participant groups.  | Perception of another health professional’s role  |
| 2b. Acquisition of knowledge and skills | Acquisition of knowledge and skills linked to interprofessional collaboration | Improvement in teamwork skills |
| 3. Behavioural change | Identified individuals' transfer of interprofessional learning to their practice setting and changes to professional practice | Nil examples in literature |
| 4a. Change in organisational practice | Wider changes in the organisation and delivery of care | Nil examples in literature |
| 4b. Benefits to patients/clients | Improvements in health or wellbeing of patients/clients | Nil examples in literature |

Table 2. Summary of IPL simulations involving an emergency scenario categorised by format of simulation

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Author** | **Participants** **(interprofessional groups involved)** | **Format of simulation****(number and frequency of intervention sessions)** | **Outcome assessment method** | **Specific outcomes measured as classified by the JET model** | **Summary of key outcomes** |
| Appelbaum et al. 2020 | Medicine; nursing | Three sessions | Pre-post test survey (developed by researcher) | Attitude: towards teamworkAttitude: towards power distanceAttitude: towards psychological safety | Perceived power distance impacted team effectiveness through the mediators of psychological safety and perceived team cohesion. |
| Atack et al. 2009 | Medicine; paramedicine; nursing; social worker; pharmacy; respiratory therapist, medical radiation | 8-week course including 3-hour weekly modules | Pre-post test survey(RIPLS) | Attitude: perception of IPL competency Attitude: perception of disaster management competency  | The major themes included participants’ improved readiness to practice, insight into client perspective, and increased awareness and skills related to interprofessional practice. |
| Baker et al. 2008 | Medicine; nursing | Single session | Survey(IEPS) | Attitude: perception of the interprofessional team | On average, participants perceived the session to be beneficial and felt they had a better understanding of the roles in the interprofessional team. |
| Bottenberg et al. 2013 | Medicine; nursing; pharmacy | Single session | Survey(developed by researcher) | Attitude: perception of managing an emergency with an interprofessional team | Overall, the participants perceived the interprofessional simulation session as beneficial to their learning. However, their attitudes towards the role of the other profession was not significantly altered by the experience.  |
| Buckley et al. 2012 | Medicine; nursing; radiography; ODP, physiotherapy | Single session | Pre-post test survey(developed by researcher) | Attitude: confidence in IPLAttitude: perception of factors contributing to good careAttitude: benefits of IPL to future clinical practiceAttitude: usefulness of video feedback | Post-intervention, participants felt more confident in their interactions with other members of the interprofessional team and felt they had increased awareness of the roles of other healthcare professionals. Medical students were more likely to comment on leadership as a factor for good patient care than collaboration, whereas for nursing students this tended to be the opposite. Medical students were less positive than nursing students about the value of the video feedback, and were less likely to consider accessing the footage again. |
| Dagnone et al. 2008 | Medicine; nursing | Single session (2-4 mini-sessions combined) | Post-test survey(developed by researcher) | Attitude: perception of value of the simulation | All participants showed positive attitudes toward the sessions. Nursing students in particular found the interprofessional component valuable with a desire for further sessions. |
| Flentje et al. 2016 | Medicine; nursing | Single session | Post-test survey (developed by researcher) | Attitude: towards importance of IPL in professional practice | All participants agreed that they were more aware of other healthcare professionals following the intervention. |
| Garbee et al. 2013 | Medicine; nursing | Two sessions over six months | Survey(CATS, TAS, and Operating Room Teamwork Assessment Scale) | Skill: teamwork | Following the session, the teamwork skills of the interprofessional team improved. Six months later, there was not a statistically significant difference between the two interventions, indicating that the skills were fairly well retained. |
| Hegg et al. 2020 | Medicine; nursing | Single session | Pre-post test survey (developed by researcher) | Knowledge: ABCDE assessment Skill: teamwork Skill: communication  | The scores given by peer observers were generally lower on all of the learning outcomes compared to the facilitators’ scores. The consistency in scores between peer observers from different professions and facilitators varied considerably. The results indicate that peer assessment may support, but not replace, faculty assessment. |
| Hobgood et al. 2010 | Medicine; nursing | Single sessionFormat used TeamSTEPPS teaching framework | Survey (developed by researcher)SP evaluation (unspecified) | Attitude: towards interprofessional teamwork Attitude: towards medical knowledge | Participants’ attitudes to teamwork and knowledge scores improved significantly from pre-intervention to post-intervention. The intervention appeared successful in improving participants attitudes towards IPL. |
| Horsley et al. 2016 | Medicine; nursing | Single session (two mini-sessions combined)Format used TeamSTEPPS teaching framework | Checklist (unspecified) | Skill: teamwork | IPL was perceived to be extremely valuable and participants felt it was useful for nursing and medical students to learn from each other, particularly using the TeamSTEPPS principles. |
| Jakobsen et al. 2018 | Medicine; nursing | Single session (four mini-sessions combined)Format used Better and Systematic Team Training course to students (Student-BEST) | Pre-post test survey (developed by researcher) | Attitude: towards teamworkAttitude: towards communication | Participants reported increased understanding about interprofessional communication, teamwork and leadership. Post intervention, participants believed they would be better leaders of teams and/or better team members.  |
| Jankouskas et al. 2011 | Medicine; nursing | Single sessionFormat used Crisis Resource Management training | Post-test surveyBasic Life Support Checklist | Skill: teamwork  | There was no significant difference in team effectiveness measures between the control and experimental groups, suggesting that crisis resource management training is ineffective. |
| Joyal et al. 2015 | Medicine; nursing; pharmacy | Single session | Pre-post test survey (developed by researcher) | Attitude: confidence working in an interprofessional teamKnowledge: Interprofessional knowledge (unspecified) | Post-intervention, participants reported that they had improved knowledge of the role of other professions in healthcare, and that they felt more confident working in an interprofessional team. |
| King et al. 2013 | Medicine; nursing; respiratory therapy | Single session | Survey (developed by researcher) | Attitude: towards interprofessional teamworkAttitude: towards roles of other professions | The participants reported that the intervention improved their awareness of the importance of working in an interprofessional team. They also reported that the intervention improved their awareness of the importance of understanding the other profession's role for safe patient care. |
| Kumar et al. 2019 | Medicine; midwifery | Single session | Pre-post test survey (developed by researcher) | Attitude: confidence working in a teamAttitude: towards effective communicationKnowledge: procedural skills Knowledge: a systematic approach to obstetric and neonatal emergenciesSkill: teamwork | Participants all agreed their role was to support the mother through the birth process. Midwifery students identified that their role was to support senior clinicians. Participants felt that team-based learning could build trust between professions and result in better learning and patient management. |
| Leithead et al. 2018 | Medicine; nursing | Single session | Pre-post test survey (RIPLS) | Attitude: towards IPLSkill: teamwork | Participants had significant improvements in team-based attitudes and RIPLS scores.  |
| Liaw & Siau et al. 2014 | Medicine; nursing | Single session (two mini-sessions combined)Format used TeamSTEPPS teaching framework | Pre-post test survey (developed by researcher) | Attitude: towards interprofessional collaboration | Post-intervention, both medical and nursing students rated the other profession higher for interprofessional skills, academic ability and being team players. Both professions also gave higher scores for attitudes towards interprofessional collaboration compared to baseline. |
| Liaw et al. 2020 | Medicine; nursing | Single sessionFormat used TeamSTEPPS teaching framework | Pre-post test survey (ATHCT survey and ISVS survey) | Attitude: towards teamwork Skill: communication skills | This study did not show the inferiority of computer-based virtual reality on teamwork attitudes and communication skill performances when compared with live simulations. |
| Lockeman et al. 2017  | Medicine; nursing | Three sessions | Pre-post test survey (developed by researcher) | Attitude: perception of working in an interprofessional teamKnowledge: of IPL | Post-intervention, participants had more positive perceptions of interprofessional practice. Participants also increased their understanding of the roles and responsibilities of each profession. |
| Luctkar-Flude et al. 2010 | Medicine; nursing | Single session | Post-test survey (developed by researcher)  | Attitude: towards IPLAttitude: confidence performing CPRSkill: Teamwork  | Participants from the experimental interprofessional group reported better communication than the single profession all-nursing control group. Participants from the experimental interprofessional group reported greater confidence in cardiac resuscitation skills than the single profession all-nursing control group. These differences were not statistically significant.  |
| Luctkar-Flude et al. 2013 | Medicine; nursing | Single session (two mini-sessions combined) | Post-test survey(developed by researcher)Checklist(unspecified) | Attitude: confidence performing paediatric skillsSkill: teamwork | Participants from the experimental interprofessional group reported less confidence in paediatric skills than the single profession all-nursing control group. Interprofessional teams were better at role allocation than the single profession teams. |
| Miller et al. 2014 | Medicine; nursing; dentistry; pharmacy; public health; veterinary medicine | Training throughout semester totalling 10 hours (including 3 workshops and 2 simulations)Format used IPEC based framework | Survey (IEPS) | Skill: emergency response skills Skill: teamwork | Participants demonstrated a significant improvement in knowledge, teamwork skills and emergency response skills following the intervention. It was also noted that participants did significantly better on their second scenario after receiving feedback. In a longitudinal survey 6-12 months after the initial intervention, there was decay in knowledge and skills but was still better than baseline (pre-intervention) levels.  |
| Nagelkerk et al. 2014 | Medicine; nursing | Single session | Survey developed by researcher)Observation during session | Attitude: towards interprofessional teamworkKnowledge: safety knowledge | Participants safety-related knowledge was significantly increased following the didactic training session and simulation. Participants perceived the simulation as improving the interprofessional teamwork skills. |
| Nagraj et al. 2018 | Medicine; paramedic | Six sessions over two days | Post-test survey (developed by researcher) | Attitude: towards teamwork Attitude: towards IPL | Participants reported they had learned about the other’s professional role and that the intervention enhanced mutual respect between the two professions. Participants reported that the intervention promoted collaborative practice as well as improved their clinical skills.  |
| Nystrom, et al. 2016 | Medicine; nursing | Single session | Observation during sessionVideo analysis | The difference in proximate and distant observation of a student simulation by their peers | In the proximate observation, participants took on an active role in both observing and being part of the simulation while the instructors felt compelled to take on a more traditional, didactic role. In the distant observation, participants roles were even more passive due to the disconnect in space and time to the simulation. |
| Partecke et al. 2016 | Medicine; nursing | Single session (2 day course) | Observation during session | Attitude: towards IPL | Participants’ perceptions and attitudes towards interprofessional collaboration appeared to change positively at the end of the intervention.  |
| Pitout et al. 2016 | Medicine; physiotherapy; occupational therapy | Single session | Written reflection | Attitude: towards working in an interprofessional team  | Following the intervention, participants acknowledged the importance of the interprofessional team. Participants also recognised the similarities and differences between the roles of different healthcare professionals. |
| Reed et al. 2016 | Medicine; nursing | Single sessionFormat used TeamSTEPPS teaching framework | Post-test survey (developed by researcher) | Attitude: towards managing an emergency in an interprofessional team | Participants reported positive attitudes towards interprofessional collaboration following the intervention. Participants reported that interprofessional collaboration was an integral part of patient care and safety. There were no significant differences between the attitudes of the medical and nursing students. |
| Reese et al. 2010 | Medicine; nursing | Single session | Evaluation rubric | Skill: teamwork in disclosing error | Participants were much more comfortable with explicit error disclosure in a team post-intervention. Participants were also more likely to apologise and be direct in responding to questions. |
| Reime et al. 2016 | Medicine; nursing | Two sessions over seven weeks | Post-test survey(Delphi performance scale) Focus group interviewsPeer assessment (unspecified) | Attitude: towards managing an emergency in an interprofessional team  | Participants reported that the intervention gave them the opportunity to practice clinical reasoning skills and share professional knowledge. Participants reported learning to speak up to ensure safe patient care in an emergency.  |
| Reime et al. 2017 | Medicine; nursing | Two sessions over three months | Post-test survey (Delphi performance scale) Focus group interviewsPeer assessment (unspecified) | Attitude: towards interprofessional teamworkAttitude: towards roles of other professionsAttitude: confidence in communication | Participants emphasised the importance of participating in different roles, training several times, and training interprofessionally to enhance realism. Nursing students scored better for closed loop communication skills. |
| Reising et al. 2011 | Medicine; nursing | Single session | Post-test survey (IUSIR) | Attitude: towards interprofessional teamwork  | Participants reported that the intervention changed how they viewed their own role in the interprofessional team. Participants also reported that the intervention was helpful in teaching communication skills necessary in an interprofessional team environment.  |
| Reising et al. 2017 | Medicine; nursing | Single session | Pre-post test survey (IUSIR) | Skill: communicationSkill: procedure performance | Deliberate training in team communication improved team communication. Improved interprofessional team communication was related to improved procedural performance, which translated to improved patient care in the simulation setting.  |
| Robertson et al. 2010 | Medicine; nursing | Single sessionFormat used TeamSTEPPS teaching framework | Pre-post test survey (developed by researcher) | Attitude: towards IPL | Post-intervention, participants’ knowledge of teamwork skills had improved. Nursing students' attitudes towards teamwork had positively increased, unlike the medical students. |
| Rodehorst et al. 2005 | Medicine; nursing; respiratory therapy; pharmacy | Single session | Focus group interviews | Attitude: towards interprofessional teamwork | Participants identified overlaps between their roles and the other professions, as well as where their roles and responsibilities differed. Participants reported their preconceived ideas about the hierarchy of medical care was challenged. Participants felt the intervention led to a shared sense of community and teamwork. |
| Scherer et al. 2013 | Medicine; nursing | Single session | Pre-post test survey(RIPLS) | Attitude: towards IPLKnowledge: of IPLSkill: teamwork | The medical students scored the highest post-test knowledge score. Participants from the experimental interprofessional group achieved higher RIPLS survey scores than the single profession all-nursing control group. Participants felt that the intervention helped to improve their interprofessional teamwork skills. |
| Scott et al. 2020 | Medicine; nursing; pharmacy | Single session | Post-test survey (developed by researcher) | Knowledge: of advanced life supportSkill: teamwork  | Post intervention, participants reported that they felt more prepared for practice in a rural setting and had increased confidence in their clinical decision making. Participants also reported improved teamwork skills and a better understanding of other professions’ roles. |
| Shanahan et al. 2015 | Medicine; nursing | Single session | Pre-post test survey (developed by researcher) | Attitude: towards IPL | Post-intervention, participants had increased their understanding of the roles and responsibilities of each profession. Participants requested more similar sessions in the future. |
| Shaw-Battista et al. 2015 | Medicine; nursing; midwifery | Unspecified | Written evaluation | Attitude: towards IPL | The major theme was that the simulation intervention appeared to improve team-based learning and IPL specific to maternity care. |
| Shrader et al. 2013 | Medicine; pharmacy; physician's assistant | Single sessionFormat used IPEC based framework | Survey(IEPS, TWS, COS) | Attitude: perception of IPL and clinical outcomeAttitude: perception of teamwork and clinical outcome | While participants’ attitudes towards IPL were associated with better clinical outcomes, they were not statistically significant predictors. The teamwork score however was a significant predictor of clinical outcome scores. |
| Shrader et al. 2011 | Medicine; pharmacy; physician's assistant | Single session | Pre-post test survey (IEPS, TWS, COS) | Attitude: perception of IPL and clinical outcomeAttitude: perception of teamwork and clinical outcome | Post-intervention, participants were significantly more likely to agree with the statement that 'Learning with healthcare students before graduation will improve relationships after graduation'.  |
| Sigalet et al. 2013 | Medicine; nursing; respiratory therapy | Two sessions over two weeks | Survey (KIDSIM) | The appropriateness of the KIDSIM scoring tool for the assessment of team performance in IPL | The intervention group scored better than the comparison group for each scenario, however both groups significantly improved their scores from the first to the second scenario. |
| Sigalet et al. 2012 | Medicine; nursing; respiratory therapy | Single session | Pre-post test survey(ATTITUDES Questionnaire) | Attitude: towards interprofessional teamwork | Comparing participant scores from pre-intervention to post-intervention, there were significant increases in these areas assessed by the questionnaire: relevance of IPL, relevance of simulation, communication, situation awareness, and roles and responsibilities. |
| Sigalet et al. 2015 | Medicine; nursing; respiratory therapy | Two sessions (time period unspecified) | Survey (KIDSIM) | Skill: teamwork  | The intervention group scored better than the comparison group for each scenario, however both groups significantly improved their scores from the first to the second scenario.  |
| Smithburger et al. 2013 | Medicine; pharmacy; nursing; physician's assistant; social work | Four sessions, weekly | Survey (CATS) | Skill: teamwork | Overall, the participants’ communication and teamwork skills significantly improved from session 1 to session 4, with significant improvements in scores also seen from session 1 to 2, then 2 to 3. The participants perceived that their confidence in working in an interprofessional team had improved as a result of the sessions. |
| Stewart et al. 2010 | Medicine; nursing | Single session | Post-test survey (developed by researcher)  | Attitude: perception of knowledgeAttitude: perception of teamwork Attitude: perception of professional identity | Participants perceived that an interprofessional simulation format was a better way of learning because it allowed them to practice practical skills as well as learning from other professions. Medical students found the simulation stressful because of the unfamiliar setting and their own clinical knowledge gaps.  |
| Tankimovich et al. 2020 | Medicine; nursing | Single sessionFormat used TeamSTEPPS teaching framework | Pre-post test survey (developed by researcher) | Attitude: towards IPLAttitude: towards teamwork  | Participants reported improved confidence in their teamwork skills. The majority of participants perceived interprofessional team training as beneficial to their careers.  |
| Tofil et al. 2014 | Medicine; nursing | Four sessions, fortnightly | Pre-post test survey (developed by researcher) | Attitude: towards teamwork Knowledge: medical knowledge (unspecified) | Participants knowledge scores significantly improved from the start to the completion of the module for both medical and nursing students. Participants commented positively about the knowledge gained from the workshop, improved teamwork and communication skills. |
| Wagner et al. 2011 | Medicine; nursing | Single session | Post-test survey (developed by researcher) | Attitude: perception of working in an interprofessional team | Nursing students indicated that this was a valuable exercise and a rare opportunity to interact with the medical students prior to working in a hospital. Nursing students felt more confident to discuss advanced care directives and that the experience had helped to prepare them to work in an interprofessional team in the future. |
| Whelan et al. 2015 | Medicine; nursing; pharmacy | Single session | Pre-post test survey (developed by researcher)Focus group interviews | Knowledge: of the roles and responsibilities of health professionals | Post-intervention, participants had a greater appreciation as to how interprofessional collaboration can lead to better patient care. Participants reported an improved awareness as to how different healthcare roles are connected. |

ATHCT: Attitudes Toward Interprofessional Health Care Team

ISVS: Interprofessional Socialization and Valuing Scale

RIPLS: Readiness for Interprofessional Learning Scale

IEPS: Interdisciplinary Education Perception Scale

CATS: Communication and Teamwork Skills assessment tool

TAS: Teamwork Assessment Scale

TWS: Teamwork Scale

COS: Clinical Outcome Scores

KIDSIM: KIDSIM team performance scale

IUSIR: Indiana University Simulation Integration Rubric

Table 3. Summary of IPL simulations involving communication skills categorised by format of simulation

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Author** | **Participants (interprofessional groups involved)** | **Format of simulation****(number and frequency of intervention sessions)** | **Outcome assessment method** | **Specific outcomes measured as classified by the JET model** | **Summary of key outcomes** |
| Anderson et al. 2017 | Medicine; midwifery | Single session | Survey (developed by researcher) | Attitude: perception of confidence of caring for a woman in labour Knowledge: understanding of role of nurses and midwives | Medical students reported an improved understanding of the birth process, environment and role of the midwife, and felt less anxious about their upcoming obstetrics placements. Midwives reported that the interactions with the medical students was positive and had improved their confidence working with other professionals. |
| Berg et al. 2010 | Medicine; nursing | Single session | Survey (developed by researcher)Checklist for SBAR components | Attitude: confidence in using SBAR technique to communicate with an interprofessional teamSkill: adherence to SBAR format  | Participants reported that the experience had improved their understanding of interprofessional communication, but they still felt they lacked the skills to appropriately communicate with their interprofessional team. Nursing students were more likely to use an SBAR format to deliver information. |
| Blackhall et al. 2014 | Medicine; nursing | Unspecified | Survey (developed by researcher – named CBOAT) | Skill:professionalism Skill: communicationSkill: shared problem solving Skill: shared decision making | The final CBOAT assessment tool clarified the important collaborative behaviours needed by doctors and nurses, with distinct criteria for each. This provides a helpful guide for teaching interprofessional sessions related to the end of life and measuring student outcomes. |
| Cooke et al. 2003 | Medicine; nursing | Single session (2 day course) | Pre-post test survey (developed by researcher)Reflective discussion | Attitude: confidence in breaking bad news to patientsAttitude: towards interprofessional teams | Participants reported that the experience had challenged their preconceptions of the other profession.  |
| Djukic et al. 2012 | Medicine; nursing | Single session (accompanied by 2-week online module)Format used TeamSTEPPS teaching framework | Survey (developed by researcher) | Attitude: towards IPL | Medical students appreciated being introduced to the role of nurses, and overall enjoyed the experience.  |
| Efstathiou et al. 2014 | Medicine; nursing; pharmacy; physiotherapy | Single session (three mini-sessions combined)Format used IPEC based framework | Pre-post test survey (RIPLS) | Attitude: towards interprofessional team communication | Participants felt more confident in their skills and knowledge in dealing with end-of-life communication. Prior to the intervention, the participants already had a positive attitude towards IPL, and saw benefit in learning end-of-life communication skills with the nursing students. |
| Ellman et al. 2012 | Medicine: nursing; divinity | Single session | Survey (developed by researcher) | Attitude: towards the interprofessional teamKnowledge: understanding of end of life care issues | Participants of all professions recognised important issues beyond their own discipline, the roles of other professionals, and the value of team collaboration. Participants of all professions perceived that the program met its five learning objectives (mean response values>4 on a 5-point Likert scale), and highly rated the program for its usefulness for future professional work. |
| Fewster-Thuente et al. 2014 | Medicine; nursing | Single session (two mini-sessions combined)Format used TeamSTEPPS teaching framework | Pre-post test survey (developed by researcher) | Attitude: towards interprofessional team communication  | All participants reported having a better understanding of each other’s role following the intervention. |
| Hess et al. 2016 | Medicine; pharmacy | Training throughout semester (five sessions and 10 online modules) | OSCE pre- and post- intervention (Common Ground Rating OSCE assessment tool) | Skill: Patient interviewing skills  | Performance in all communication skill domains increased significantly post-intervention for medical and pharmacy students.  |
| Holthaus et al. 2015 | Medicine; nursing; dietetics; physical therapy; respiratory therapy; pharmacy; occupational therapy; social work | Single session | Pre-post test survey (RIPLS) | Attitude: towards other professions Attitude: perception of IPL  | Post-intervention, all participants reported greater understanding of the role of other professions. Additionally, participants reported that they felt more comfortable working as a team and communicating with one another. |
| Kearney et al. 2010 | Medicine; nursing; pharmacy | Single session | Survey (developed by researcher) | Attitude: towards adverse event disclosureAttitude: perception of IPLKnowledge: understanding interprofessional teamwork and patient safety | Post-intervention, participants had a positive attitude towards teamwork and interprofessional collaboration. Additionally they had increased understanding of the importance of adverse event reporting in improving patient safety. |
| Ker et al. 2003 | Medicine; nursing | Single session | Survey (developed by researcher) | Skill: collaborative teamworkSkill: effective leadership | Participants enjoyed the opportunity to integrate their learning and learn within a safe environment where mistakes were allowed. Observers noted medical students had a tendency to behave as if they had priority when clerking in patients. Observers also noted that collaborative teamwork increased as the session went on. |
| King et al. 2009 | Medicine; nursing; dentistry; laboratory science; nutrition; occupational therapy; pharmacy; physical therapy | Two sessions per week for five weeks | Surveillance of program usage data | Usage of the online resources by health students | Use of the online resources dropped each week over the five weeks. The online resources were used the least by medical students. |
| Krumwiede et al. 2019 | Medicine; nursing; clinical nutrition; prosthetics/orthotics; physical therapy; physician’s assistants; radiation therapy; social work | Single session | Pre-post test survey (developed by researcher) | Attitude: towards IPLAttitude: towards teamworkKnowledge: error disclosure | Post intervention, participants were more comfortable with disclosing a medical error. Participant reported a positive attitude towards team roles and responsibilities regarding error disclosure. |
| Lee et al. 2019 | Medicine; nursing | Single session | Pre-post test survey (developed by researcher) | Attitude: confidence in assessing sexual assault patientsKnowledge: understanding of a sexual assault assessmentSkill: communication with sexual assault patients | Confidence in sexual assault assessment rose significantly post intervention. Initially medical students were significantly less confident than nursing students, but intervention closed the confidence in sexual assault assessment gap. |
| Liaw & Zhou et al. 2014 | Medicine; nursing | Single sessionFormat used TeamSTEPPS teaching framework | Pre-post test survey (developed by researcher) | Attitude: perception of IPLAttitude: confidence in working in an interprofessional team  | Post-intervention, there was a significant improvement in the participants scores for perceptions of IPL, and self-confidence in verbally communicating information about a patient via SBAR. |
| Lippe et al. 2020 | Medicine; nursing; social work | Single session | Pre-post test survey (CARES-PC) | The appropriateness of the CARES-PC scoring tool for the assessment of perceived competency in palliative care | The CARES-PC scoring tool demonstrated strong reliability and validity. It captured change in perceived competence across time and professions, and was particularly useful in nursing students.  |
| McIlwaine et al. 2007 | Medicine; social work | Single session | Survey (developed by researcher) | Attitude: towards interprofessional teamwork | Most participants saw benefit in completing the workshop in interprofessional groups, and recommended that nursing students should also be included. Following the intervention, participants identified that they have a stronger awareness of their professional role and an improved knowledge of the scope of the role of other health professionals. |
| Miller et al. 2013 | Medicine; nursing | Single session | Pre-post test survey (RIPLS) | Attitude: perception of IPL | Participants’ attitudes to the IPL intervention were more positive after the session, but this did not reach statistical significance. There was no control group so it is not possible to determine whether this intervention improved participants’ attitudes towards IPL. |
| Motycka et al. 2018 | Medicine; nursing; pharmacy | Single sessionFormat used TeamSTEPPS teaching framework | Pre-post test survey (TTAQ)  | Attitude: towards roles of other professionsSkill: communication | Post intervention, all participants communication scores increased. Nursing students’ perceptions of leadership changed, while pharmacy students’ perceptions of situational awareness changed. The interprofessional teams became more proficient at meeting most learning objectives with increased exposure to the scenarios.  |
| New et al. 2015 | Medicine; nursing; pharmacy | Single session | Survey (developed by researcher) | Attitude: perception of benefit of intervention for improving interprofessional communication | Participants from all professions indicated that the intervention was helpful and effective. Nursing students commented that communicating information to other students in the simulation was an 'empowering' experience. |
| Ragucci et al. 2016 | Medicine; nursing; pharmacy; physician's assistant | Single session | Survey (developed by researcher)Assessment rubric post-intervention | Attitude: confidence in disclosing medical errors to patientsSkill: proficiency in disclosing medical errors to patients | Participants with training were much more comfortable with explicit error disclosure, and more likely to apologise and be direct in responding to questions. |
| Reeves et al. 2017 | Medicine; nursing; physician’s assistant | Single session | Post-test survey (developed by researcher) | Attitude: towards teamworkSkill: communication | Participants reported that their confidence in applying communication strategies had increased. Participants rated the effectiveness of their team functioning as ‘very well’. Participants reported enjoying learning about the similarities and differences of each other’s professional roles.  |
| Rochman et al. 2012 | Medicine; nursing; public health; engineering; business | Single session (three mini-sessions combined) | Survey (developed by researcher) | Knowledge: impact of distractions and interruptions on nurses | Participants developed a more detailed understanding and appreciation of the role of the nurse and the challenges they faced.  |
| Saylor et al. 2016 | Medicine; nursing | Single session | Pre-post test survey (developed by researcher) | Attitude: toward interprofessional collaborationSkill: interprofessional competencies | Participants attitude toward interprofessional collaboration improved significantly following the intervention. Interprofessional competency scores varied by profession and evaluator. |
| Sehgal et al. 2019 | Medicine; pharmacy | Single session (two mini-sessions combined)Format used IPEC based framework | Post intervention reflection | Attitude: towards interprofessional teamwork | Participants reported the intervention helped them recognise their professions’ limitations in skills, knowledge and abilities. Participants also reported the importance of interprofessional collaboration and communication was reinforced. Participants reflections demonstrated empathy for the patient taking medications and better preparedness to take a patient medical history, perform a medication reconciliation, and value a community pharmacist.  |
| van Schaik et al. 2016 | Medicine; nursing; pharmacy; dentistry; physical therapy; social work; dietetics | Single session | Survey (developed by researcher) | Attitude: towards usefulness of feedback | All participants found the concept of giving peer feedback challenging. Students were able to identify the profession which gave them their anonymous feedback for teamwork at a higher rate than by chance alone. Generally, participants found the feedback useful and positive. |
| Wakefield et al. 2006 | Medicine; nursing | Single session | Pre-post test survey (developed by researcher) | Attitude: towards interprofessional teamworkSkill:confidence in breaking bad news | Participants responded positively to the realistic way that interprofessional teams were involved in breaking bad news to the patient. They discovered the similarities and differences between the roles of the medical and nursing students. All students became aware that differences in roles and different approaches with patients could lead to interprofessional conflict.  |
| Wakefield et al. 2003 | Medicine; nursing | Single session (two mini-sessions combined) | Pre-post test survey (developed by researcher) | Attitude: towards interprofessional teamworkSkill:confidence in breaking bad news | Participants reported increased confidence in their ability to break bad news to patients following the intervention. Nursing students enjoyed the opportunity to learn within a safe environment where mistakes were allowed.  |
| Wamsley et al. 2012 | Medicine; nursing; dentistry; pharmacy; physical therapy | Single session | Pre-post test survey (ATHCT survey) | Attitude: towards interprofessional teamwork | Participants reported a greater appreciation for the different profession’s roles after the intervention. Their perception of team value and team efficiency also increased. Participants also described improved confidence in interacting with patients in the future. |
| Wang et al. 2017 | Medicine; nursing | Single sessionFormat used TeamSTEPPS teaching framework | Pre-post test survey (developed by researcher) | Knowledge: understanding of the roles and responsibilities of different professions  | Both the Chinese medical and nursing students had defined ideas about what their professional boundaries are, with nurses being described as hands-on practitioners carrying out doctors' orders, assistants, and carers, while doctors were diagnosticians and prescribers. Nurses were seen as being better communicators, and doctors were leaders and decision makers. Participants felt that the intervention helped them to learn how to operate in an interprofessional team, and recognised the importance of collaboration. |
| Wen et al. 2019 | Medicine; nursing; pharmacy; social work | Single sessionFormat used IPEC based framework | Pre-post test survey (developed by researcher) | Attitude: towards teamworkAttitude: towards interprofessional communication | Post intervention, participants reported their confidence in communicating had improved. Participants also reported they had increased trust in other professions. Participants appreciation for other professions abilities increased.  |

RIPLS: Readiness for Interprofessional Learning Scale

IEPS: Interdisciplinary Education Perception Scale

ATHCT: Attitudes Towards Healthcare Teams survey

TTAQ: The Teamwork Attitudes Questionnaire