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Abstract

Background: In healthcare, interpersonal skills such as teamwork and communication are essential for safe, high-quality, person-centered care.

Methods: Four reference databases were searched using relevant keyword combinations in order to examine how the visual and performing arts have been used to facilitate the development of teamwork and communication skills among health professionals and what the outcomes were. Reference list checking was also conducted in order to identify other relevant articles not captured in the initial search strategy.

Results: Many of the studies that we reviewed revealed that after participation in the arts, participants felt positively about the experience, had a greater awareness of the importance of teamwork and communication skills in their professional practice, and reported general improvements in these skills.

Conclusions: While the initial results of this review seem promising, a concerted effort to conduct more methodologically sound studies on various art forms and their effect on the development of health professionals' interpersonal skills is required.

Keywords: arts; health professionals; interpersonal skills; teamwork; communication

Using Art for the Development of Teamwork and Communication Skills Among Health Professionals: A Literature Review

Effective interpersonal skills such as teamwork and communication are considered to be among the most important attributes that employers look for in today's workforce (Robles, 2012). In healthcare, the value of these skills extends beyond employability. According to CanMEDS 2015, the Royal College of Physicians and Surgeons of Canada (RCPSC)'s physician competency framework for guiding medical education and practice, CanMEDS 2015, effective teamwork and communication are essential for safe, high-quality, patient-centered care (Royal College of Physicians and Surgeons of Canada, 2015). Teamwork allows physicians and other health professionals, community partners, and health system stakeholders to work together to make decisions and execute tasks, while effective communication allows them to build strong relationships and facilitate the gathering and sharing of essential information (RCPSC, 2015). In healthcare, a significant number of errors—many with an adverse impact on patient safety—can be attributed to poor teamwork and communication (Gluyas, 2015; Greenberg et al., 2007; Leonard, Graham, & Bonacum, 2004; Wolff & Bourke, 2000). Therefore, effective communication and teamwork skills are critical for upholding the reputation of health professionals and creating a “culture of safety” to support the delivery of optimal patient care (Leonard et al., 2004).

National licensure bodies in Canada, the United Kingdom, and the United States have all recognized the importance of teamwork and communication as essential professional competencies in medical practice. The RCPSC includes “collaborator” and “communicator” as two of the seven necessary competencies in its CanMEDS 2015 framework (RCPSC, 2015). Similarly, the General Medical Council (GMC) in the United Kingdom lists “communication, partnership and teamwork” as one of its guiding principles for physician training and practice,

while the Accreditation Council for Graduate Medical Education (ACGME) in the United States lists “interpersonal and communication skills” as a core competency for graduate medical education (ACGME, 2007, p. 9; GMC, 2013, p. 13). The recognition of these skills in guidelines created by national accreditation bodies further stresses their essentiality to good medical practice.

While technical skills can be taught and assessed more explicitly, nontechnical skills such as teamwork and communication are much more difficult to teach because of a lack of clear, measurable outcomes (Perry, Maffulli, Willson, & Morrissey, 2011). Existing teaching practices around these skills suffer from a number of shortcomings, including: lack of consistency across programs and institutions; poor assessment practices; limited training for faculty around teaching and evaluating interpersonal skills; and few opportunities for students to discuss and reflect upon their experiences with teamwork and communication in actual clinical practice, as most discussions around these skills tend to pertain to simulated encounters or pre-prepared case studies (Haq, Steele, Marchand, Seibert, & Brody, 2004; O’Connell & Pascoe, 2004). Therefore, given their importance in healthcare, there is a need to enhance the way that nontechnical skills such as teamwork and communication are taught to health professionals.

As students transition out of training and into clinical practice, their opportunities for continued education around effective interpersonal skills may be even more limited. In actual clinical settings, teamwork and communication can be challenged by a number of factors, including, “discipline-specific educational backgrounds, the ad hoc forming of teams with changing membership (e.g., OR teams, code teams), a ‘siloed’ approach to healthcare, and hierarchies in professional cultures that impact safe patient care” (Lo, 2011, p. 2). As a result,

providing ongoing professional development opportunities for members of existing healthcare teams is also of particular relevance given the unique challenges present in this context.

Performance Theory: Explaining the Link Between the Arts and Clinical Practice

A unique approach to teaching teamwork and communication skills is through the use of the visual and performing arts. Performance studies are a broad domain pertaining to the study of performance in its various forms that may help to better explain the relevance of the arts to clinical practice. Applied in this context, performance theory posits that enacting one's role as a health professional is, in a sense, a performance involving many "actors" with diverse roles. According to Case and Brauner (2010, p. 160):

Arguing that a medical professional is performing a role is not an accusation of fakery, but rather, an acknowledgement of learned behaviours developed to meet critical objectives. These roles include appropriate and symbolic costumes, notably the white coats of the doctors and the loose gowns of the patients. Scripts are followed closely, having been learned—and sometimes consciously rehearsed—before the performance... Doctors who understand that their own role includes witnessing the performances of the patient and of the other persons involved in the patient's care can create empathy through thoughtful listening and observation.

Engagement in the arts can facilitate the interpersonal development of health professionals through the fostering of an "empathetic imagination"—a cognitive skill set that underlies effective communication and collaboration with others (Case & Brauner, 2010). This way of thinking allows one to deeply connect with someone else's lived experiences and emotions, allowing them to imagine how that other person might feel or behave in a given situation (Case & Brauner, 2010). One mechanism through which this is

fostered is one in which the student engages in art as an observer (Perry et al., 2011). This can simulate “the wider experience of life,” which is necessary for understanding and interacting with others (Perry et al., 2011, p. 142). For example, reading novels and poetry can provide insight into the human experience and emotion, as can analyzing paintings in a museum. Watching a theatrical performance can also serve a similar purpose and may lead to a heightened experience through the observation of actors’ verbal and nonverbal cues.

A second suggested mechanism for fostering an empathetic imagination is actual participation in the arts, including the creation of visual art or the act of performance. This can help participants explore and question their own feelings, as well as develop new ways of thinking (Case & Brauner, 2010; Perry et al., 2011). In becoming more attuned with their own emotions, participants also develop the ability to better empathize with others, which is not only important in the doctor-patient relationship, but in all other human interactions as well. As described in a study by Ogden, DeLuca, and Searle (2010), engaging in a group performance made many participants feel especially vulnerable as it was a new experience for them, yet it was exactly this shared vulnerability that helped them strengthen their relationship with their colleagues. In the case of health professionals, participating in something novel or unexpected may lead them to experience some of the same emotions that their patients would face during a difficult diagnosis or bereavement (Perry et al., 2011).

Therefore, recognizing that performance occurs in everyday situations and spaces, such as hospitals and clinics, allows us to consider the role that the arts may have in developing health professionals who can better appreciate and evaluate the terms of their interactions with others. In doing so, we can rely upon the principles of performance theory

to offer health professionals “more conscious learning by insisting that the practice of role modeling and other techniques meant to guide... development must be accompanied by analysis of structure, content, and context” (Case & Brauner, 2010, p. 160). Ideally, this will produce health professionals who are better equipped to understand and enact their roles in everyday practice, and in interactions with both their patients and their colleagues.

Methods: Aims and Search Strategy

The benefit of the arts in medical education has been more widely documented in the context of technical (i.e., observational and interpretive) skill development, such as by Perry et al. (2011) who conducted a systematic review on the topic. However, to our knowledge, no reviews have been conducted on the use of the arts for the development of interpersonal skills such as teamwork and communication. The purpose of our article, therefore, is to undertake a review of the existing literature on this topic in order to answer the question: Should we make greater use of the arts in the development of teamwork and communication skills among health professionals, and if so, why?

In order to answer our research question, we conducted a literature search using four reference databases: Allied and Complementary Medicine (AMED), Cumulative Index to Nursing and Allied Health Literature (CINAHL), Embase, Ovid MEDLINE, and PsycINFO. These databases were selected based on their comprehensive coverage of a wide range of health professions. A more detailed overview of our search strategy, including the keywords used and the number of articles located at each step, is provided in Tables 1 and 2. Two separate tables are provided since AMED, Embase, Ovid MEDLINE, and PsycINFO were searched using the same platform (Ovid), whereas CINAHL required the use of a separate platform and search strategy.

After duplicates were excluded, the search using the AMED, Embase, and Ovid MEDLINE databases yielded 160 results, while the search using the CINAHL database yielded 142 results. Search results from each database were further screened to discard any irrelevant articles according to the following exclusion criteria: not pertaining to the professional development of healthcare workers (except for in one instance in which a relevant article involving teacher candidates was identified); not pertaining to the development of teamwork or communication skills; not using an arts-based approach; not a primary, peer-reviewed journal article; or not in English. In total, our search of all four databases identified 18 useful articles. Given this relatively small number of relevant results, we decided to supplement the results of our search with manual reference list checks of relevant articles in order to identify other relevant articles not captured by the initial search strategy. Ten additional articles were identified in this manner.

Results and Discussion: Using Art to Enhance Teamwork and Communication

The Visual Arts

Of the many art forms that exist, the visual arts have been the most extensively explored in terms of their role in facilitating the development of interpersonal skills such as teamwork and communication among healthcare workers. The visual arts are especially effective at encouraging participants to listen to and appreciate multiple perspectives because they do not usually have a single interpretation—the meaning of the art is instead based on individual perspectives and experiences that will vary from person to person (Shapiro, Rucker, & Beck, 2006). When art is interpreted in a group setting, participants can learn that listening to others may expose them to ideas that they would not have thought of on their own.

For example, at the Keck School of Medicine in Southern California, junior medical students were given the opportunity to participate in an elective course developed in partnership with a local museum in which they were able to discuss and interpret art pieces with their classmates (Schaff, Isken, & Tager, 2011; see Yang, Lin, & Chang, 2011 for a similar study). While the authors relied exclusively on students' subjective feedback to evaluate the impacts of this experience, the data indicated that the experience allowed students to learn from each other and appreciate others' views. As part of their reflection, one student wrote (p. 1275):

I learned something from every person who participated, and was blown away with some of the insights that my colleagues who claim to 'know nothing about art' and take little interest in it were able to make. Beforehand I was excited about going to see art but thought the connection to medicine would probably be forced. In fact, the connection was strong and very compelling in terms of group process, the importance of different perspectives in formulating an impression (be it art or a new case), and enhancing our perceptive abilities.

Lessons in understanding multiple perspectives have applicability in the health professions where teams are often interprofessional in nature and where individuals with different levels of training and domains of expertise must work together to ensure safe and effective delivery of healthcare. Williams (2002) recommends collage artwork, especially magazine picture collage work, for interprofessional training. Collage work can be used as a communication tool to help bridge a range of language sets used by different professionals, help explore issues, and build relationships during interprofessional workshops. Magazine collage can also be particularly effective because it is not threatening to those individuals who might believe they lack artistic ability (Williams, 2002).

Along similar lines, engaging in art as a group can help reveal strengths and weaknesses of the team and help participants feel more comfortable addressing these areas with their colleagues. In a study by Sheingold, Warson, Lunsford, and Pintz (2014), an analysis of 45 nursing students' artistic drawings and reflections on the exercises revealed that over 80 percent of the participants felt that the exercise were useful for understanding team issues that are "usually 'below the surface'" and for demonstrating how people and organizations are "a part of a network, web, or interdependent system" (p.9). In addition, nearly 60 percent of students felt that the exercise had provided them with the tools needed to identify some of the root causes of dysfunction in their work area.

Other studies have attempted to examine the efficacy of the visual arts in enhancing communication skills among health professionals. In a study by Klugman, Peel, and Beckmann-Mendez (2011), 32 medical and nursing students participated in three 90-minute sessions involving guided reflections on art. Using the Communication Skills Attitudes Scale previously developed by Rees, Sheard, and Davies (2002), the authors found that participants had an increased interest in communication following the intervention. Though this increase was not statistically significant, freeform responses from student evaluations of the program showed that many of the students felt they had gained valuable interpersonal skills including learning to appreciate multiple points of view (47 percent of students), listening skills (31 percent), learning more about collaboration and the group process (31 percent), and learning not to jump to conclusions (31 percent). The authors also found a statistically significant increase in the students' tolerance of ambiguity as measured by Budner's (1962) Tolerance of Ambiguity Scale, which is a trait that has been identified in effective leaders (Furnham & Ribchester, 1995).

Elder, Tobias, Lucero-Criswell, and Goldenhar (2006) provided further insight into how visual-art based group exercises can help develop communication skills. Second-year medical students who completed an elective in partnership with the Cincinnati Art Museum were required to respond to survey questions about the Art of Observation course using specific examples and stories. Qualitative analysis of the results revealed that the course had positively influenced the development of clinical skills, including not only verbal communication skills but also nonverbal communication skills. An interesting emergent theme from participants' responses was that the majority of them had not been exposed to the "important components of communication" as part of their prior medical education and therefore valued the opportunity to practice and observe communication skills in a museum setting (p. 397).

Finally, the role of the visual arts in patient-provider communication has also been explored, most notably by Wikström, who identified through several controlled studies that the visual arts could be useful as a communication instrument with elderly patients (Wikström, 2000, 2003b) as well as for teaching nursing students about non-verbal communication (Wikström, 2001) and empathy (Wikström, 2003a). Similar qualitative findings are also detailed by Frei, Alvarez, and Alexander (2010).

The Performing Arts

Studies have also explored the role of the performing arts, such as music and theatre, in the development of teamwork and communication skills among health professionals. In his article "Surgery and Jazz," Martellucci (2015) draws an interesting connection between surgical teams and jazz improvisation (pp. 440-441):

Just like with a jazz band leader, the ability of the surgeon to allow himself to become a partner, not a dictator, is critical...Problem solving during a surgical

procedure often means improvisation. To improvise in a positive way, surgeons and musicians must feel free to take risks and to act, working in a context of mutual trust with the team...They are encouraged to think while doing rather than be guided solely by plans. Thus, when a team shares improvisation rights, it tends to encourage the flexible treatment of preplanned material, which means that surgical quality improvement and jazz improvisation are closely aligned.

Martellucci (2015) reminds us that many of the cognitive processes that underlie surgical performance are the same as those possessed by musicians, and in fact, there appears to be a link between prior musical training and enhanced surgical performance (Boyd et al., 2008). One of the reasons is that expert surgeons are also seamless improvisers—they are able to facilitate actions that “require individual and group expertise, and that are based on changing, complex inputs, and environments that are often ambiguous and interact in unpredictable ways” (Martellucci, 2015, p. 441). Improvisation also reinforces skills that are directly applicable to patient-provider communication, such as enhanced listening skills, confidence, and the ability to respond instinctively and spontaneously (Haidet, 2007; Shochet, King, Levine, Clever, & Wright, 2013).

While Martellucci (2015) explores the relationship between improvisation and surgical performance, he does not discuss how surgical teams can become stronger at facilitating the type of spontaneity he describes. A study by de la Croix, Rose, Wildig, and Willson (2011) addressed this gap by exploring the role of music and the dramatic arts in facilitating teambuilding. They designed a workshop, known as “Performing Medicine,” that is run by professional artists and encourages medical students to explore issues relating to health care and work in a creative way. During an evaluation of the impact of the

workshop on participants' development, workshop developers thematically analyzed a dataset of student reflection and feedback. Of the five prevalent themes, two involved interpersonal skill development—in particular, developing a broader awareness of others and of communication skills in general. The students also felt a greater sense of camaraderie with their classmates and were more comfortable with relating to people from different backgrounds after participating in the workshop.

Also related to the theme of teambuilding, a study by Ogden et al. (2010) detailed the experiences of pre-service teacher candidates who had recently been engaged in the production of a musical theatre production as part of their training. While this study did not involve health professionals, it did demonstrate the role that the dramatic arts can have in facilitating a sense of trust and camaraderie within a team. Ogden et al.'s (2010) qualitative questionnaire and focus group data indicated that relationship building was a major outcome of participating in theatre production, particularly as the activity brought participants outside of their immediate comfort zones and because participants found that they shared a sense of vulnerability throughout the activity. Participants also indicated that they felt a sense of belonging in the production and that teamwork was integral to the relationships that they formed during the activity. Most importantly, this sense of community and connectivity extended beyond the theatre production and into other aspects of the students' education as well, including their future classroom interactions.

Some studies have also examined whether using art for professional development could specifically benefit healthcare teams who frequently work under high-stress situations. In a study by Hilliard (2006), a team of hospice workers consisting of nurses, social workers, and chaplains were divided into two experimental groups, one that used an

ecological music therapy approach centered on improvisation and another that used a more structured, didactic approach. Though neither group experienced a significant reduction in compassion fatigue as a result of the music therapy, both groups had a significant improvement in team building, as evidenced by increased post-workshop scores on a teambuilding questionnaire.

These results are supported by work from van Westrhenena and Fritz (2013), which demonstrated that workshops based on various creative art forms including music, drama, art, touch therapy, storytelling, and movement were able to facilitate communication among a team of professional hospice workers and improve their self-care and wellbeing (see Salas et al., 2013 for a similar study involving medical students). While arts-based workshops may not fully mitigate the effects of a stressful work environment, they appear to be able to bring teams closer together and enhance the support that team members provide to one another during difficult situations.

Besides teamwork, it is also pertinent to this review to explore the role that music and the dramatic arts can play in the enhancement of health professionals' communication skills. Within the existing literature, there has been a substantial focus on developing medical students' empathic communication abilities, particularly with their patients. For example, Skye, Wagenschutz, Steiger, and Kumagai (2014) found that medical students felt that interactive theater and role play with professional actors helped them learn to break bad news (e.g., a cancer diagnosis) to patients and also to stimulate discussion on complex issues related to breaking bad news. Similarly, 192 participants in a communication skill workshop designed to teach interprofessional learners how to have challenging healthcare conversations reported via a post-workshop survey that the use of

actors for role-playing was both realistic and valuable to their learning (Bell et al., 2014; see Cowperthwait et al., 2015; Ladyshevsky & Gotjamanos, 1997; Rucker & Browning, 2015; Sargeant, MacLeod, & Murray, 2011 for similar results). Interestingly, Bell et al. (2014) reported no statistically significant differences in perceived value between learners who participated in the simulations (47%) versus those who observed (53%), or between different health professionals (i.e., doctors, nurses, or psychosocial professionals).

At other institutions, similar theater-based improvisation and role-playing activities have also had positive effects with respect to students' abilities to react to a variety of patient encounters with empathy and support (Eisenberg, Rosenthal, & Schluskel, 2015; Shochet et al., 2013). In addition, the dramatic arts, which often involves improvisation and role-playing, played a particularly important role in preparing health professionals to deal with unexpected patient encounters that may otherwise catch them off-guard (Shochet et al., 2013; Watson, 2011).

Finally, it is worth noting that engagement in theatre training can also be useful for developing communication skills outside of patient-provider communication, such as for teaching medical students how to give more engaging case presentations by incorporating "stage presence," eye contact, vocal inflection, interesting detail, and good timing and organization (Hammer et al., 2011).

Limitations of Existing Studies and Recommendations for Future Work

It is important to consider the limitations of the methodological approaches used by the studies contained in this review. Guskey (2000) proposes a five-step model for evaluating the effectiveness of professional development programs, with each successive step representing stronger evidence of efficacy: 1) participants' reactions, 2) participants' learning, 3)

organizational support and change, 4) participants' use of new knowledge or skills, and 5) student learning outcomes. Many of the studies reviewed herein focus exclusively on only the first or second levels of Guskey's model: changes in participants' reactions and changes in participants' learning. While these levels provide evidence on whether or not participants liked the activity (reactions) and whether or not they improved their skills (learning), they do not provide insight into changes in organizational climate or procedures or changes in participants' behaviour. In addition, studies to date have only considered outcomes from the perspective of participants and not from that of service users. Therefore, in order to generate more compelling evidence of impact, it will be important for future work to examine the use of art for the development of interpersonal skills at higher levels of change (i.e., organizational and behavioural) and from multiple perspectives. It will also be necessary to determine the extent of these changes, in particular whether or not they are sustained over time.

It is also pertinent to consider the quality of evidence that is used at each level of change. For example, when studying whether participants have improved in a particular skill or not, relying exclusively on subjective, self-reported measures will not usually give an accurate picture of learning. Future studies should strive to combine subjective data with more objective measures, such as the use of validated instruments to measure teamwork and/or communication skills both before and after a given development opportunity. These instruments should not simply ask participants to globally rate their perceived development in teamwork or in communication (e.g., "I felt that my communication skills improved as a result of this workshop"). Instead, they should seek to understand changes in specific domains of teamwork and communication and also to collect specific examples of changes that may have taken place following the development opportunity.

As indicated earlier, it is often helpful to triangulate participants' own self-reports with data from other sources—for example, from colleagues, instructors, or patients—given that self-assessment is often limited in its accuracy (Eva & Regehr, 2008). An interesting approach to assessment in the domain of interpersonal skills was used by Eisenberg et al. (2015) who relied on an Observed Simulation Communication Education and Evaluation (OSCEE) tool that had been modeled after the traditional clinical assessment tool, the Objective Structured Clinical Examination. After medical residents in a theatre-based development program participated in small-group sessions, they subsequently advanced to one-on-one training (using the OSCEE) which involved an interaction between an actor and the resident; this interaction was evaluated by a faculty member who was also present as an observer. Residents were evaluated on their communication skills using a checklist previously developed at Virginia Commonwealth University with domains including beginning effectively, listening actively, planning collaboratively, and achieving closure (Dow, Leong, Anderson, & Wenzel, 2007). This presented a more objective approach to the measurement of interpersonal skills development and could easily be applied to other skills as well, such as teamwork.

Conclusions

In this article, we reviewed existing literature pertaining to the use of art within the health professions in order to answer the question of whether or not we should make greater use of the arts in the development of teamwork and communication skills among health professionals, and if so, why? Our search results revealed that a variety of activities rooted in both the visual and performing arts have been used in the professional development of health professionals. Many of the studies revealed that participants felt positively about their experiences with using art for professional development and believed that they had gained a greater awareness of the

importance of interpersonal skills in their professional practice. Participants also noted general improvements in interpersonal skills as a result of arts-based development opportunities. Positive outcomes included improvements in participants' abilities to: work effectively with individuals from different backgrounds; notice and appreciate multiple perspectives; understand group processes, including sources of team conflict and dysfunction; and listen to and provide empathy and support to others, especially under difficult circumstances.

While the initial results of this review seem promising and suggest that the visual and performing arts may be useful for building teamwork and communication skills among health professionals, there is still a limited amount of research in this domain. In addition, much of the existing work in this domain suffers from considerable methodological limitations such as overreliance on participants' reactions to a learning experience without considering whether or not it resulted in any measurable change in their behaviour, as well as the frequent use of subjective, self-reported measures that rarely provide an accurate picture of skill development. A concerted effort to collect more data on various art forms and their effect on the development of health professionals' interpersonal skills is required in order to glean further information. Therefore, we encourage researchers conducting work in this area to consider the specific organizational or behavioural outcomes of arts-based professional development opportunities and to more carefully consider the quality of evidence that they select to justify the effectiveness of these interventions.

Declaration of Work Performed

RS conceived this review and oversaw the completion of this work. AA, SM, and VM designed the literature search strategy, performed the main search, and reviewed the resulting articles. AA produced the initial draft of the manuscript and made all recommended revisions. All authors provided critical edits and approved the final version of this manuscript.

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Table 1. Search strategy: AMED, Embase, Ovid MEDLINE, and PsycINFO

#	Searches	Results
1	art* workshop*.mp [mp=ab, hw, ti, tn, ot, dm, mf, dv, kw, bt, id, cc, nm, kf, px, rx, an, ui, tc, tm]	101
2	visual art*.mp [mp=ab, hw, ti, tn, ot, dm, mf, dv, kw, bt, id, cc, nm, kf, px, rx, an, ui, tc, tm]	2,209
3	dramatic art*.mp [mp=ab, hw, ti, tn, ot, dm, mf, dv, kw, bt, id, cc, nm, kf, px, rx, an, ui, tc, tm]	71
4	music* theatre.mp [mp=ab, hw, ti, tn, ot, dm, mf, dv, kw, bt, id, cc, nm, kf, px, rx, an, ui, tc, tm]	64
5	improvisation.mp [mp=ab, hw, ti, tn, ot, dm, mf, dv, kw, bt, id, cc, nm, kf, px, rx, an, ui, tc, tm]	1,914
6	dance.mp [mp=ab, hw, ti, tn, ot, dm, mf, dv, kw, bt, id, cc, nm, kf, px, rx, an, ui, tc, tm]	10,571
7	performing art*.mp [mp=ab, hw, ti, tn, ot, dm, mf, dv, kw, bt, id, cc, nm, kf, px, rx, an, ui, tc, tm]	1,555
8	professional development.mp [mp=ab, hw, ti, tn, ot, dm, mf, dv, kw, bt, id, cc, nm, kf, px, rx, an, ui, tc, tm]	35,911
9	collaboration.mp [mp=ab, hw, ti, tn, ot, dm, mf, dv, kw, bt, id, cc, nm, kf, px, rx, an, ui, tc, tm]	126,888
10	communication.mp [mp=ab, hw, ti, tn, ot, dm, mf, dv, kw, bt, id, cc, nm, kf, px, rx, an, ui, tc, tm]	622,021
11	teamwork.mp [mp=ab, hw, ti, tn, ot, dm, mf, dv, kw, bt, id, cc, nm, kf, px, rx, an, ui, tc, tm]	24,109
12	teambuilding.mp [mp=ab, hw, ti, tn, ot, dm, mf, dv, kw, bt, id, cc, nm, kf, px, rx, an, ui, tc, tm]	139
13	interpersonal skill*.mp [mp=ab, hw, ti, tn, ot, dm, mf, dv, kw, bt, id, cc, nm, kf, px, rx, an, ui, tc, tm]	4,290
14	nurs*.mp [mp=ab, hw, ti, tn, ot, dm, mf, dv, kw, bt, id, cc, nm, kf, px, rx, an, ui, tc, tm]	789,932
15	physician*.mp [mp=ab, hw, ti, tn, ot, dm, mf, dv, kw, bt, id, cc, nm, kf, px, rx, an, ui, tc, tm]	773,040
16	allied health professional*.mp [mp=ab, hw, ti, tn, ot, dm, mf, dv, kw, bt, id, cc, nm, kf, px, rx, an, ui, tc, tm]	3,032
17	health* professional*.mp [mp=ab, hw, ti, tn, ot, dm, mf, dv, kw, bt, id, cc, nm, kf, px, rx, an, ui, tc, tm]	122,323
18	health* worker*.mp [mp=ab, hw, ti, tn, ot, dm, mf, dv, kw, bt, id, cc, nm, kf, px, rx, an, ui, tc, tm]	36,991
20	multi-disciplinary.mp [mp=ab, hw, ti, tn, ot, dm, mf, dv, kw, bt, id, cc, nm, kf, px, rx, an, ui, tc, tm]	12,399
21	medical student*.mp [mp=ab, hw, ti, tn, ot, dm, mf, dv, kw, bt, id, cc, nm, kf, px, rx, an, ui, tc, tm]	78,057
22	1 OR 2 OR 3 OR 4 OR 5 OR 6 OR 7	15,989
23	8 OR 9 OR 10 OR 11 OR 12 OR 13	781,682
24	14 OR 15 OR 16 OR 17 OR 18 OR 19 OR 20	1,663,899
25	21 AND 22 AND 23	221
26	Remove duplicates from 24	160

Table 2. *Search strategy: CINAHL*

#	Searches	Results
1	(MH "Performing Arts") or (MH "Art")	5,613
2	(MH "Seminars and Workshops")	9,643
3	(MH "Professional Development")	17,601
4	(MH "Collaboration")	23,367
5	(MH "Communication") or (MH "Communication Skills") or (MH "Communication Skills Training")	42,296
6	(MH "Collaboration")	8,844
7	(MH "Social Skills") or (MH "Interpersonal Relations")	21,282
8	(MH "Health Personnel") or (MH "Allied Health Personnel")	20,285
9	(MH "Nurses") or (MH "Practical Nurses")	48,045
10	(MH "Multidisciplinary Care Team")	24,581
10	1 or 2	15,205
11	3 or 4 or 5 or 6 or 7	105,682
12	8 or 9 or 10	91,234
13	11 and 12 and 13 (Limiters: English Language)	142