Rosemarie Hogan, Chris Rossiter, Christine Catling (2018) 'Cultural empathy in midwifery students: Assessment of an education program' in *Nurse Education Today*, v. 70, pp 103-108. https://doi.org/10.1016/j.nedt.2018.08.023

ABSTRACT

Background

The ability of midwives to provide empathic care that is culturally appropriate is critical for women to feel accepted by the midwives who support them. Australia is a culturally diverse society, yet there is evidence of poorer maternity outcomes for some women and infants, related to their cultural background.

Objectives

This study's objective was to evaluate the effectiveness of an education program for student midwives. The program was intended to increase the cultural empathy of future midwives, to help ensure greater cultural safety and optimal maternity outcomes across all sections of Australian society.

Design

This quantitative study compared pre- and post-intervention measures of students' empathy.

Setting

The health faculty of a large urban university in Australia.

Participants

Fifty-five students from all three years of an undergraduate midwifery program participated.

Methods

The study examined students' scores on the Jefferson Scale of Empathy for health profession students, measured before and immediately after the education program, and again after four weeks.

Results

The midwifery students had a high mean baseline score on the empathy scale. Scores increased significantly after the education program. Students with lower pre-test scores recorded significantly greater increases in their empathy levels than those who were more empathic initially. Empathy scores declined one month after the program, but remained higher than baseline levels.

Conclusions

Several studies have explored empathy levels amongst current and future health professionals. However, few studies of health professional students have evaluated the impact of specific education interventions addressing cultural empathy. This study found that midwifery students tended to have higher empathy scores than students in other health disciplines. The education workshop further increased participants' scores.

HIGHLIGHTS

- This study acknowledges cultural diversity among childbearing women through enhancing cultural empathy in midwifery students.

- Participants' empathy scores increased following education about culturally competent midwifery care.
- Students who were less empathic initially experienced greater increases in empathy scores after the program.
- Despite some decline over time, empathy levels remained higher than before the education program.

KEYWORDS

Midwifery students

Empathy

Cultural competence

Education program

CULTURAL EMPATHY IN MIDWIFERY STUDENTS: ASSESSMENT OF AN EDUCATION PROGRAM

Background

Empathic, culturally safe maternity services ensure that women feel physically, spiritually, socially and emotionally supported. International professional bodies expect that nurses and midwives provide empathic care and practice in a culturally competent way (International Confederation of Midwives 2013; International Council of Nurses 2012). Similarly, the *Australian National Competency Standards for the Midwife* require that midwives' practice is culturally safe, and that midwives are able to recognise the specific needs of Aboriginal women and their communities, demonstrating respect for differences in cultural meanings and responses to health and maternity care (Nursing and Midwifery Board of Australia 2006). This serves as the motivation for the current study that developed and assessed an educational program for midwifery students to enhance cultural empathy.

Cultural diversity and health outcomes

Australia is a culturally diverse society. Aboriginal and Torres Strait Islander people represent approximately three per cent of the total population (Australian Bureau of Statistics 2016). In addition, over a quarter of the Australian population was born overseas in a wide range of countries, including 8.3% born in China, 7.4% in India, and 14.7% in England (Australian Bureau of Statistics 2016). While country of birth is not a sensitive indicator of cultural difference, these figures illustrate the great variety of backgrounds

within the Australian population, which has implications for the provision of health care in general and specifically maternity care.

Aboriginal and Torres Strait Islander people experience poorer health than non-Indigenous Australians (Henderson & Kendall 2011), with persistently elevated morbidity and mortality rates reported (Australian Bureau of Statistics 2017c). Approximately 6% of births in Australia in 2016 were to parents of whom at least one identified as being Indigenous (Australian Bureau of Statistics 2017a). Despite recent improvements, infant mortality rates remain higher amongst Indigenous infants (6.2 per 1000 live births between 2014-2016) than amongst the non-Indigenous population (3.2 per 1000 live births) (Australian Bureau of Statistics 2017b). The rate of low birthweight among babies born to Indigenous mothers is 10.5%, more than twice that of babies to non-Indigenous mothers (4.7%) (Commonwealth of Australia Department of the Prime Minister and Cabinet 2017). Aboriginal and Torres Strait Islander people often under-utilise mainstream health services, including maternity services; for example Indigenous mothers have fewer antenatal visits than non-Indigenous women (Hilder et al. 2014). Research has identified a lack of cultural empathy as one reason for less frequent service utilisation (Kendall & Barnett 2015).

In Australia, health inequalities are related to cultural diversity. A Victorian study found, compared to Australian-born women, those born in Southern Asia had higher rates of stillbirth and those born in South-east and East Asia had lower rates (Davies-Tuck, Davey & Wallace 2017). Further, insufficient antenatal care of migrant women in developed countries has been found to contribute to poor outcomes such as chronic disease and pregnancy-related conditions which should be identified and managed early (Hayes, Enohumah & McCaul 2011). A systematic review found evidence that some women from

culturally diverse backgrounds experienced insensitive maternity care and that immigrant women reported communication barriers and maternity care lacking in kindness and respect (Small et al. 2014).

Cultural empathy

The concepts of culture and empathy have been well researched as separate entities. Weinberg (2003) describes culture as an accumulation of values, rituals, traditions and customs created by people to understand, interpret and give meaning to the world. Meanwhile empathy has been defined as 'the intellectual or imaginative apprehension of another's condition or state of mind' (Hogan 1969, p. 307) and as an intention to help (Hojat et al. 2009). Fields et al. (2011) further define empathy in healthcare as a predominantly cognitive attribute that involves an understanding of a person's experiences combined with a capacity to communicate this understanding and an intention to provide help to the person. There is debate about whether empathy is an emotional characteristic or an intellectual attribute (Hojat et al. 2009), and thus how much it can be facilitated by education programs focusing on understanding other people's experiences.

However, theories and empirical research exploring the link between cultural background and empathy are limited. Ridley and Lingle first proposed this concept, which goes beyond general empathy and includes understanding and accepting another's culture. They describe 'a deepening of the human empathic response to permit a sense of mutuality and understanding, across the great differences in value and expectation, that cross-cultural interchange often involves' (Ridley & Lingle 1996, p. 22). These insights enable practitioners to have a more effective therapeutic approach when working with clients from ethnic backgrounds different from their own (Ridley & Lingle 1996).

Cultural empathy in midwifery care may enable women to feel accepted by the midwives who support them, enhancing mutual trust with a positive effect on overall safety and birth outcomes.

Empathy amongst healthcare students

The ability to communicate and provide appropriate care with empathy is critical to all healthcare disciplines. There is evidence that empathy skills are more prevalent in female nursing students (Cunico et al. 2012; Ferri et al. 2015), but some authors found an overall shortfall of empathy in this group (Ferri et al. 2015; Fields et al. 2011; Ouzouni & Nakakis 2012). It is clearly important to continue to develop nursing and midwifery students' empathy skills during the course of their degrees.

Several instruments have been validated to measure individuals' empathy (Davis 1983; Hogan 1969; Mehrabian & Epstein 1972). One, the Jefferson Scale of Empathy (JSE) (Hojat et al. 2001), was developed by medical educators as a psychometrically sound way to measure empathy specifically amongst health professionals (originally physicians). It incorporates three domains: compassionate care, ability to stand in the patient's shoes and perspective-taking. The JSE has been validated with students in several health professions (Table 1). Two Australian studies assessed empathy among midwifery students (McKenna et al. 2011; Williams et al. 2014). Most studies were cross-sectional, measuring empathy at a single point in time, although some generated longitudinal data (Dean et al. 2017; Hojat et al. 2009; Nunes et al. 2011; Ward et al. 2012; Williams, Boyle & Howard 2016).

INSERT TABLE 1 HERE

Some cross-sectional studies assessed students from different stages of their degree: compared to first year students, final year students appeared to have lower scores in dentistry (Sherman & Cramer 2005) and paramedicine (Williams, Boyle & Howard 2016), but higher scores in midwifery (McKenna et al. 2011). Ward et al. found a significant decline in empathy levels among nursing students which they attributed to exposure to clinical encounters and real patients in later years (Ward et al. 2012). Similar results occurred amongst students in five health disciplines (Nunes et al. 2011) and in medicine (Hojat et al. 2009). Similarly, a cross-temporal meta-analysis in the United States found that college students generally had lower empathy levels than students from previous generations (Konrath, O'Brien & Hsing 2011).

Interventions to develop cultural empathy

Most studies to date have measured empathy as a static attribute or trait, in the absence of specific interventions to influence students' level of empathy with the people they care for. Further, these studies rarely address the cultural dimension of empathy. No studies were found using the JSE to specifically measure empathy in health professionals in relation to a person's culture, although one study of general practitioners did use elements of the JSE in a new tool designed to measure empathy towards ethnic minorities (De Maesschalck et al. 2010). Everson et al. (2015) conducted an immersive 3D simulation educational approach with nursing students to enhance their cultural empathy. The researchers used a Modified Kiersma-Chen Empathy Scale (MKES) to measure changes in students' empathy levels. Their findings suggest it had a positive impact on students' cultural competence. However, the authors advise as this was the first time this scale was used for pre– post-testing, their results should be interpreted with caution.

Objective

This article outlines a program to increase the cultural empathy of undergraduate midwifery students at one large urban Australian university. It aims to evaluate the effectiveness of the program in increasing the students' level of cultural empathy.

Method

Intervention

This study examines an educational workshop for Bachelor of Midwifery students, based on a modified version of the Interprofessional Empathy Behaviour Education Toolkit for undergraduate healthcare students, developed by Williams and Edlington (2014).

The learning objectives for the workshop were to:

a) identify the characteristics of the culturally competent midwife practitioner;
b) explore aspects of cultural diversity and how they manifest during interactions between midwives and women from different cultures;
c) explain the role of cultural empathy in achieving an effective midwife-woman relationship and the cultural issues that should be considered when providing woman-centered care.

The three-hour workshop incorporated small group exercises and video scenarios of simulated midwifery encounters with Indigenous women and women from culturally and linguistly diverse backgrounds. We sought advice from the Faculty Aboriginal and Torres Strait Islander Advisor and from a researcher who has worked extensively with culturally

and linguistically diverse women to ensure the videos and workshop resources were culturally appropriate.

The workshop commenced with an icebreaker where students formed small groups to complete exercises such as 'cultural empathy matching cards'. This was followed by a whole group discussion to ensure each group had the same understanding of the term 'cultural empathy'. Next the students watched the video with simulated scenarios of a midwife conducting an antenatal check on pregnant women – one Indigenous and one migrant from Afghanistan – demonstrating best practice in communication and respectful exploration of the women's needs and expectations of pregnancy and birth care. This was followed by debriefing, small group reflection exercises addressing 'If I was the woman', and role-play, with time for feedback and discussion. The workshop concluded with wrap-up exercises to encourage students to reflect on how to incorporate what they learnt into their own clinical practice. Students were encouraged to keep a reflective journal during their next clinical placement, recording their observations and practice of cultural empathy.

The workshop resources were designed to promote empathic behaviours and attitudes among midwifery students, including reflection on their clinical practice. The workshop was deliberately held just prior to students attending a four-week hospital clinical placement to give them recent examples of best practice in communication and cultural empathy to take into their placements.

The development of the workshop and resources was supported by a small teaching and learning grant from xxxx University.

Participants

The workshop was attended by undergraduate students in the University's Bachelor of Midwifery program, including students from all three years of the course. Attendance was voluntary, and students were invited to attend via email.

Setting

The workshop was conducted in a large collaborative classroom at the University, during October 2016.

Measures

At the time of the study, we were not aware of validated instruments to measure cultural empathy specifically. We thus chose the JSE tool as it has been used widely in many studies internationally and has proven reliability and validity. We used the self-administered version for health profession students (JSE-HPS) (Hojat, Gonnella, Nasca, et al. 2002; Hojat et al. 2001), which has been used amongst students in several health professions (Table 1). Respondents rated 20 statements on a 7-point Likert scale, from 'strongly disagree' (=1) to 'strongly agree' (=7). Scores on the JSE range from 20 to a maximum of 140 with higher scores indicating a higher level of empathy.

We slightly adapted the JSE to make it more relevant to midwifery. We sought permission to change the word 'patient' to 'woman'; the provider did not agree so we compromised on the term 'client'. We also changed the age variable to a whole number (rather than age-ranges) to facilitate data analysis, and removed the demographic question on gender to avoid identifying the one male student in the group.

Procedure

Prior to the workshop, students were given a unique number to use on the three surveys included in the study (T1-3), to enable all responses from the same student to be matched for analysis. Students first completed the JSE in hard copy prior to the workshop (T1). Immediately after the workshop, they completed a second hard copy (T2). Finally, 28 days after the workshop, following their clinical placement, the facilitator contacted participating students and asked them to complete the JSE using the online survey in Survey Gizmo (T3). The facilitator sent a reminder email to all students a week later. We offered a cinema voucher as an incentive, accessible once they completed the online survey, using a method that did not link their responses to their names.

Ethics

Ethical approval was granted by the University's Human Research Ethics Committee.

Data analysis

Responses from the T1 and T2 survey forms were entered manually into MS Excel and transferred to SPSS Version 24. Data from the T3 survey were downloaded to Excel for cleaning and then transferred to SPSS for analysis. An experienced biomedical statistician advised on the data analysis.

We calculated overall JSE scores using the JSE Scoring Algorithm, reverse-scoring specific items and totalling the item scores out of a possible 140. Descriptive data including JSE scores and demographic questions are reported using means, ranges and standard deviations (Table 2). Means were compared using paired t-tests and univariate ANOVA. We used a general linear model due to the unequal sample size over the three different time

points. Correlations were calculated using Pearson's correlation coefficient (r). Statistical significance was set at 0.05.

Results

A total of 55 students enrolled in the Bachelor of Midwifery program participated in the workshop and completed the JSE at T1 and T2. Of these, 33 were in first year, seven in second year and 15 in third year. The mean age was 26.3 years. Presenters noted one male student.

Table 2 indicates the students' JSE scores at three timepoints. Immediately after the workshop, there was a statistically significant increase in the mean JSE score compared to baseline ($p=0.012$).

INSERT TABLE 2 HERE

Further, there was a statistically significant negative correlation between students' original JSE score (T1) and difference between T2 and T1 scores ($r = -.713$, $p<0.001$). Thus, students with lower scores before the workshop tended to achieve larger increases in JSE scores following the intervention, compared with those whose initial empathy scores were higher who recorded a smaller increase after the workshop.

A total of 41 students responded to the T3 survey between 28 and 38 days after the workshop. Among this group, the mean JSE score had declined in the interim, but was still above the T1 score for the whole sample (Table 2).

Some students had misplaced their unique number by the T3 survey. The results from the 23 students who correctly remembered their identifying numbers (Table 2 'matched

cohort') also showed a significant increase in JSE scores between T1 and T2 (p=0.001), and a similar decline by the follow-up a month later.

We further examined the JSE scores for students with different characteristics. There appeared to be no statistically significant difference in results according to students' age. Table 3 indicates the results for students in different years. The T3 results are from the smaller sample of students who remembered their unique number because the online survey did not repeat the question about year of student. There was a statically significant increase on the JSE score between T1 and T2 for first year students only (p<0.001). Those in other years showed a similar trend (an increase at T2, dropping back by T3 to a level still higher than T1). However, these differences were not statistically significant amongst second and third year students.

INSERT TABLE 3 HERE

Discussion

This study of midwifery students used the JSE to determine whether a workshop, based on Williams and Edlington's toolkit (2014), made a positive difference to cultural empathy levels in relation to the care of women from diverse cultural backgrounds. Students' scores on the JSE increased significantly immediately after the workshop, although it then declined partially after one month. Amongst those whose scores could be matched at all three timepoints, empathy after one month was still higher than prior to the workshop (Table 2). However, this increase was not statistically significantly possibly due to the small sample size (only 23 provided matchable responses at three timepoints). Analysis by year of study (Table 3) showed a similarly significant increase in T2 JSE scores among first-year students,

but not amongst other students, probably due to the small numbers of second- and third-year participants. We did not have the resources to undertake a longitudinal approach to explore empathy scores over a longer timeframe.

Our sample showed a relatively high JSE score at baseline (mean=115.0), higher than most groups of students reported in the literature except for some studies of medical students (Hojat, Gonnella, Mangione, et al. 2002; Hojat, Gonnella, Nasca, et al. 2002; Hojat et al. 2009; Paro et al. 2012) and first-year dental students (Sherman & Cramer 2005). This could possibly be related to the preponderance of female students (98.2% of the sample), given the tendency for women to score higher on the JSE in most studies (Table 1). However, it is also higher than the scores achieved in other studies of midwifery students (McKenna et al. 2011; Williams et al. 2014) which were similarly female-dominated.

Longitudinal studies have found that JSE scores can drop over time amongst students in medicine, nursing and other health disciplines (Hojat et al. 2009; Nunes et al. 2011; Ward et al. 2012). This trend has been attributed to declining idealism, increasing cynicism and the effect of greater clinical exposure over the course of the degree. However, data from one cross-sectional study of Australian midwifery students indicated that students in second and especially third year had higher mean JSE scores than those in first year (McKenna et al. 2011), suggesting that increasing clinical practice may not always impact negatively on students' capacity to understand the experiences of the women they work with. It may also relate to midwives' increasing exposure to women in circumstances that are frequently positive (pregnancy and childbirth) rather than illness-related.

In the current study, the higher mean JSE score after the workshop, even after a period of time, suggests the beneficial impact of the intervention specifically targeted at developing

cultural empathy. This is similar to the findings on increased empathy amongst traditional medicine students exposed to a structured mindfulness program (Dean et al. 2017).

Further, the results show that with lower initial empathy scores demonstrated a greater increase by T2 than those with higher T1 scores. This suggests that the program may have a more substantial impact on individuals who were originally less empathic. Similarly, the considerable change in JSE scores for first year students, suggests that the program was influential amongst newer students with less clinical experience.

Simulation and the demonstration of best practice are considered an effective way to teach therapeutic communication skills and the development of empathy to undergraduate healthcare students (Webster, Seldomridge & Rockelli 2012). Similar to our study, Kelly et al. (2014) found that nursing students reported benefits from simulated learning opportunities blending case studies and simulated patients. Catling et al. (2016) also reported that simulated teaching methods, particularly role-play with simulated patients, create a safe learning experience that midwifery students find realistic and enhanced their learning.

Limitations

The study was restricted to a relatively small, self-selected sample of midwifery students in one urban university, thereby limiting the external validity of the findings. The small numbers impeded analysis of differences in empathy scores between different year groups. The numbers were smaller still at follow-up and analysis was frustrated by the inability to link some T3 responses to T1 and T2 scores. It would also have been preferable to allow a longer interval before re-testing JSE scores, to explore the longer-term impact of this relatively short learning experience.

Although it is widely used and validated amongst health students from various disciplines, there may have been some limitations in using the JSE in this context. The JSE examines clinicians' empathy with patients seeking treatment for illness or injury, rather than with women giving birth. It does not address issues of culture. We used the JSE as we were not aware at the time of the study of other validated tools specifically addressing cultural empathy. Since then, other instruments have been validated which are potentially more appropriate for the current study (Courtney-Pratt et al. 2015).

Conclusion

Few previous studies have examined the relationship between education interventions and health professional empathy. Most recent research examines student empathy at a single timepoint or at different stages of their studies, rather than exploring the impact of education targeted at enhancing empathy (Table 1). The literature is more limited in exploring cultural empathy interventions. This study demonstrated a significant increase in JSE empathy scores in midwifery students after the cultural empathy workshop. Students with initial lower empathy scores, including first year students, demonstrated a greater increase in empathy scores after the workshop.

This study demonstrates the potential for teaching and learning initiatives aimed at enhancing cultural competence. Ideally education programs should be provided early in the curriculum, where they may have greater impact.

References

Australian Bureau of Statistics, 2016. Census data, viewed 24 January 2018, <http://www.abs.gov.au>.

Australian Bureau of Statistics, 2017a. Aboriginal and Torres Strait Islander births and fertility. viewed 24 January 2018, <http://www.abs.gov.au/AUSSTATS/abs@.nsf/Latestproducts/3301.0Main%20Features62016?opendocument&tabname=Summary&prodno=3301.0&issue=2016&num=&view=>.

Australian Bureau of Statistics, 2017b. Aboriginal and Torres Strait Islander deaths. viewed 24 January 2018, <http://www.abs.gov.au/AUSSTATS/abs@.nsf/Latestproducts/3302.0Main%20Features62016>.

Australian Bureau of Statistics, 2017c. Aboriginal and Torres Strait Islander Peoples. viewed 24 January 2018, <http://www.abs.gov.au/aboriginal-and-torres-strait-islander-peoples>.

Catling, C., Hogan, R., Fox, D., Cummins, A., Kelly, M. & Sheehan, A., 2016. Simulation workshops with first year midwifery students. Nurse education in practice 17, 109-15.

Commonwealth of Australia Department of the Prime Minister and Cabinet. 2017. Closing the Gap Prime Minister's Report 2017, Commonwealth of Australia, Canberra.

Courtney-Pratt, H., Levett-Jones, T., Lapkin, S., Pitt, V., Gilligan, C., Van der Riet, P., Rossiter, R., Jones, D. & Everson, N., 2015. Development and psychometric testing of the satisfaction with Cultural Simulation Experience Scale. Nurse Education in Practice 15 (6) 530-536.

Cunico, L., Sartori, R., Marognolli, O. & Meneghini, A.M., 2012. Developing empathy in nursing students: a cohort longitudinal study. Journal of Clinical Nursing 21 (13-14) 2016-2025.

Davies-Tuck, M.L., Davey, M.-A. & Wallace, E.M., 2017. Maternal region of birth and stillbirth in Victoria, Australia 2000–2011: A retrospective cohort study of Victorian perinatal data. PloS one 12 (6) e0178727.

Davis, M.H., 1983. Measuring individual differences in empathy: Evidence for a multidimensional approach. Journal of personality and social psychology 44 (1) 113-126.

De Maesschalck, S., Willems, S., De Maeseneer, J. & Deveugele, M., 2010. Development and validation of EMP-3: an instrument to measure physicians' attitudes towards ethnic minority patients. Family medicine 42 (4) 262-267.

Everson, N., Levett-Jones, T., Lapkin, S., Pitt, V., van der Riet, P., Rossiter, R., Jones, D., Gilligan, C. and Courtney-Pratt, H., 2015. Measuring the impact of a 3D simulation experience on nursing students' cultural empathy using a modified version of the Kiersma-Chen Empathy Scale. Journal of clinical nursing 24 2849-2858.

Ferri, P., Guerra, E., Marcheselli, L., Cunico, L. & Di Lorenzo, R., 2015. Empathy and burnout: an analytic cross-sectional study among nurses and nursing students. Acta Bio Medica Atenei Parmensis 86 (2) 104-115.

Fields, S.K., Mahan, P., Tillman, P., Harris, J., Maxwell, K. & Hojat, M., 2011. Measuring empathy in healthcare profession students using the Jefferson Scale of Physician Empathy: health provider–student version. Journal of interprofessional care 25 (4) 287-293.

Hayes, I., Enohumah, K. & McCaul, C., 2011. Care of the migrant obstetric population. International journal of obstetric anesthesia 20 (4) 321-329.

Henderson, S. & Kendall, E., 2011. Culturally and linguistically diverse peoples' knowledge of accessibility and utilisation of health services: exploring the need for improvement in health service delivery. Australian Journal of Primary Health 17 (2) 195-201.

Hogan, R., 1969. Development of an empathy scale. Journal of consulting and clinical psychology 33 (3) 307.

Hojat, M., Gonnella, J.S., Mangione, S., Nasca, T.J., Veloski, J.J., Erdmann, J.B., Callahan, C.A. & Magee, M., 2002. Empathy in medical students as related to academic performance, clinical competence and gender. Medical education 36 (6) 522-527.

Hojat, M., Gonnella, J.S., Nasca, T.J., Mangione, S., Veloksi, J.J. & Magee, M., 2002. The Jefferson Scale of Physician Empathy: further psychometric data and differences by gender and specialty at item level. Academic Medicine 77 (10) S58-S60.

Hojat, M., Mangione, S., Nasca, T.J., Cohen, M.J.M., Gonnella, J.S., Erdmann, J.B., Veloski, J. & Magee, M., 2001. The Jefferson Scale of Physician Empathy: Development and Preliminary Psychometric Data. Educational and Psychological Measurement 61 (2) 349-365.

Hojat, M., Vergare, M.J., Maxwell, K., Brainard, G., Herrine, S.K., Isenberg, G.A., Veloski, J. & Gonnella, J.S., 2009. The devil is in the third year: a longitudinal study of erosion of empathy in medical school. Academic Medicine 84 (9) 1182-1191.

International Confederation of Midwives, 2013. Essential competencies for basic midwifery practice, ICM, Geneva.

International Council of Nurses, 2012. The ICN code of ethics for nurses, ICN, Geneva.

Kelly, M.A., Hager, P. & Gallagher, R., 2014. What matters most? Students' rankings of simulation components that contribute to clinical judgment. Journal of Nursing Education 53 (2) 97-101.

Kendall, E. & Barnett, L., 2015. Principles for the development of Aboriginal health interventions: culturally appropriate methods through systemic empathy. Ethnicity & Health 20 (5) 437-52.

Konrath, S.H., O'Brien, E.H. & Hsing, C., 2011. Changes in dispositional empathy in American college students over time: A meta-analysis. Personality and Social Psychology Review 15 (2) 180-98.

McKenna, L., Boyle, M., Brown, T., Williams, B., Molloy, A., Lewis, B. & Molloy, L., 2011. Levels of empathy in undergraduate midwifery students: An Australian cross-sectional study. Women and Birth 24 (2) 80-84.

Mehrabian, A. & Epstein, N., 1972. A measure of emotional empathy. Journal of personality 40 (4) 525-43.

Nunes, P., Williams, S., Sa, B. & Stevenson, K., 2011. A study of empathy decline in students from five health disciplines during their first year of training. International Journal of Medical Education 2 12-17.

Nursing and Midwifery Board of Australia, 2006. National competency standards for the midwife, NMBA, Melbourne.

Ouzouni, C. & Nakakis, K., 2012. An exploratory study of student nurses' empathy. Health Science Journal 6 (3) 534-552.

Paro, H.B., Daud-Gallotti, R.M., Tibério, I.C., Pinto, R.M. & Martins, M.A., 2012. Brazilian version of the Jefferson Scale of Empathy: psychometric properties and factor analysis. BMC medical education 12 (1) 73.

Ridley, C.R. & Lingle, D.W., 1996. Cultural empathy in multicultural counselling: a multidimensional process model, in P.B. Pederson & J.G. Draguns (eds), Counselling across culture, 4th edn, Sage, Thousand Oaks, CA, pp. 21-46.

Sherman, J.J. & Cramer, A., 2005. Measurement of changes in empathy during dental school. Journal of Dental Education 69 (3) 338-45.

Small, R., Roth, C., Raval, M., Shafiei, T., Korfker, D., Heaman, M., McCourt, C. & Gagnon, A., 2014. Immigrant and non-immigrant women's experiences of maternity care: a systematic and comparative review of studies in five countries. BMC pregnancy and childbirth 14 (1) 152.

Ward, J., Cody, J., Schaal, M. & Hojat, M., 2012. The empathy enigma: an empirical study of decline in empathy among undergraduate nursing students. Journal of Professional Nursing 28 (1) 34-40.

Webster, D., Seldomridge, L. & Rockelli, L., 2012 Making it real: Using standardized patients to bring case studies to life. Journal of psychosocial nursing and mental health services 50 (5) 36-41.

Weinberg, H., 2003. The culture of the group and groups from different cultures. Group Analysis 36 (2) 253-268.

Williams, B., Boyle, M. & Howard, S., 2016. Empathy levels in undergraduate paramedic students: A three-year longitudinal study. Nurse Education in Practice 16 (1) 86-90.

Williams, B., Brown, T., Boyle, M., McKenna, L., Palermo, C. & Etherington, J., 2014. Levels of empathy in undergraduate emergency health, nursing, and midwifery students: A longitudinal study. Advances in medical education and practice 5 299.

Williams, B. & Edlington, T., 2014. A toolkit for educators and facilitators - From the final report: Can DVD simulations be used to promote empathic behaviours and interprofessional collaboration among undergraduate healthcare students?, Monash University, Melbourne.