

## **Empathy levels among Canadian paramedic students: a cross sectional survey.**

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### **Author Declarations**

The authors declare that this work has not been published elsewhere. Data from this study were presented at the Fanshawe College Paramedic Programs Research Day, Ontario, Canada, April 2017 and the Professionalisation of Paramedicine through Research Symposium in Melbourne, Australia in September 2018. The authors declare that they are responsible and accountable for the accuracy and integrity of all aspects of this work.

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### **Author Contributions**

LK, CG and TW conducted the literature review, designed and conducted the study, performed data analysis, and authored the manuscript. AB aided with data analysis, literature review, and study design. All authors contributed to the final writing and editing of the manuscript. All authors have approved the final version for publication.

## **Empathy levels among Canadian paramedic students: a cross sectional survey.**

### **Abstract**

#### **Introduction**

Empathy is an important factor in communication between healthcare provider and patient. Previous studies have shown that empathy benefits patient care in multiple ways. Empathy allows a space of decreased vulnerability and as a result, builds trust in healthcare relationships, fosters open communication that leads to improved patient care, improves patient satisfaction and buffers healthcare provider burnout. This study aimed to determine the empathy levels demonstrated by paramedic students to patients with various medical conditions, and to compare these findings to previous studies.

#### **Methods**

This study employed a cross sectional design of a convenience sample of first and second year paramedic students in a community college program in Ontario, Canada. The Medical Condition Regard Scale (MCRS) was used to measure empathy levels in these students across five medical conditions: physical disability, intellectual disability, suicide attempt, mental health emergency, and substance abuse.

#### **Results**

A total of 43 students participated in the study; 27 males and 15 females (1 unknown). Males demonstrated a mean empathy score of 232.44 while females demonstrated a mean of 266.4. Across the five medical conditions, substance abuse had the lowest mean empathy score (42.88), followed by mental health emergency (49.58), suicide attempt (49.47), intellectual disability (50.42) and physical disability (53.0).

#### **Conclusion**

Results from this study suggest that paramedic students demonstrated the lowest levels of empathy towards patients suffering from substance abuse issues, and the highest levels of empathy towards patients with a physical disability. Male paramedic students are less empathetic than their female peers, and second year paramedic students are less empathetic than their first year counterparts. These results provide an insight into paramedic student attitudes in Canada, and provide a foundation for further studies.

## Introduction

Empathy helps healthcare providers to create a positive interpersonal relationship that creates a non-defensive environment, and allows the patient to be more forthcoming (Mercer and Reynold., 2002; Neumann et al., 2009; Petrucci et al., 2016; Hemmerdinger et al., 2007). Empathy is an important characteristic in the relationship between a healthcare practitioner and his or her patients. When empathy is present, it can enhance both the patient and the provider's overall experience. There are different understandings of the word empathy and what being empathic is; the general consensus of the definition state that empathy is the understanding of another person's reactions, thoughts, feelings and problems (Myers, 2000; Eisenberg, 2000; Burks & Kobus., 2012, Petrucci et al., 2016). Empathy involves not only understanding another person, but demonstrating that understanding back to the patient while maintaining emotional detachment (Burks & Kobus., 2012). The ability to communicate this understanding and a paramedic's intention to help is important to create an empathetic and open environment (Petrucci et al., 2016).

There is an important need to differentiate empathy from sympathy in the healthcare field, as failing to do so could lead to misdirection in patient support. Sympathy is an expression of concern or sorrow about stressful events in a person's life; this expression usually comes from judgement and may not be in the interest of the patient (Meier & Davis., 2008; Clark, 2010). Sympathy may also prove ineffective when a paramedic assumes that his or her own experience matches or equates to that of the patient (Egan, 2010). Not only is expressing sympathy a disadvantage to the patient and their care, it is also a disadvantage to the paramedic. If healthcare providers assume the emotional burden of every patient they encounter, it may not take long before they begin to suffer compassion fatigue, and

burnout (Hamilton et al., 2016; Williams et al., 2017). Therefore, it is imperative to know the difference between empathy and sympathy, and how to demonstrate the appropriate trait during patient interactions.

Clinical outcomes have been shown to improve when patients perceive their health provider to be empathetic (Burks & Kobus, 2012). This open climate encourages patients to be more vocal about their symptoms and problems, which allows health providers to obtain more accurate information, and facilitates better overall clinical care (Burks & Kobus., 2012). There are many favourable outcomes for patients when empathy is displayed such as reduced psychological stress, improved self-concept, reduced rates of anxiety and depression and lower complication rates (Del Canale et al., 2012; Hojat et al., 2011; Reynolds, 2000). The ability to set one's emotions aside when practising empathy can be particularly beneficial to the provider by preserving professional well-being and positively influencing clinical encounters (Burks & Kobus., 2012).

Previous studies in healthcare students in Australia (Williams et al. 2012; McKenna et al., 2012; Williams et al., 2014; Williams et al., 2016) have demonstrated that empathy scores are low among paramedic students, scores decrease as one progresses through paramedic education, and empathy scores vary significantly for certain medical conditions.

The aim of this study was to assess empathy scores of first and second year paramedic students at Fanshawe College in Ontario, Canada. The authors hypothesized that in concordance with existing evidence, empathy scores would vary across medical conditions, and that certain medical conditions would elicit relatively low empathy scores.

## Methods and materials

This study was a cross-sectional study using a web-based questionnaire and convenience sampling of first and second year paramedic students at Fanshawe College in Ontario, Canada. Ethics approval was granted by the Research Ethics Board at Fanshawe College (approval S16-00-1). The MCRS and demographic questions were input into Google Forms, and a link to anonymously complete the form was provided to participants. An invitation to participate was distributed via a closed social media group consisting only of paramedic students. Participants were provided with an explanatory statement and informed that participation was voluntary and anonymous.

This study utilised the Medical Condition Regard Scale (MCRS), a 6-point Likert scale consisting of eleven statements for each medical condition. The MCRS is a validated tool used to measure empathy, regard, and bias for a number of medical conditions (Christison et al., 2002). The MCRS has a Cronbach- $\alpha$  co-efficient of 0.87 when assessed for internal consistency and a test-retest reliability co-efficient of 0.84 (Christison et al., 2002). The statements in the MCRS investigate common stigmas, likes, dislikes, and the desire to treat patients with certain medical conditions. This scale has previously been used to measure empathy levels in medical and nursing students, and in paramedic students (Williams et al., 2012; McKenna et al., 2012; Williams et al., 2016). Other scales exist to measure empathy, such as the Jefferson Scale of Empathy; we elected to utilise the MCRS due to its simplicity and ease of use, proven validity and consistency, and to allow for comparisons to previous studies in other healthcare professions students that utilised the MCRS. The MCRS requires respondents to rate their agreement to each statement from

1 (strongly disagree) to a 6 (strongly agree). Five questions are phrased negatively and thus the scores for these questions are reversed for analysis (strong agreement with these questions would indicate lower empathy). Overall empathy scores can vary from the lowest score (55) to the highest score (330). For each individual medical condition, scores can vary from the lowest score (11) to the highest score (66). Higher scores indicate a higher regard of empathy for the medical condition in question.

This study utilised the MCRS to assess empathy levels for five medical conditions: physical disability, intellectual disability, suicide attempt, mental health and substance abuse. These medical conditions were selected based on previous studies of empathy levels in healthcare professions. In addition to the MCRS, brief demographic questions were posed regarding age, gender, year of study in the paramedic program, and open-ended questions investigating students' perceptions on empathy education in the program.

The Statistical Package for Social Sciences (SPSS; Version 20.0, New York, USA) was used for data storage, tabulation and the generation of descriptive statistics. Means, t-tests and one-way analysis of variance tests were used to assess differences between age groups, gender, and year of study. Results were considered statistically significant if the p-value was less than 0.05.

## Results

A total of 43 paramedic students participated out of a possible 90 (47.8% response rate). Respondents comprised 18 (38.3%) first year students, and 25 (61.7%) second year students, with 15 females (35.7%) and 27 males (64.3%) respectively. One respondent did not respond to the gender question. Male paramedic students displayed a mean empathy score of 232.44 (standard deviation (SD)  $\pm$ 29.17), while

their female counterparts had a statistically significant higher mean score of 266.4 (SD±29.99) (p=0.001)

There was notable variance between respondents' attitudes towards patients with the five different medical conditions as measured by the MCRS. Physical disability and intellectual disability were held in similar regard according to the MCRS. Suicide attempt and mental health emergencies were held in lower regard, with substance abuse held in significantly lower regard by respondents. Means for each medical condition are presented in Table 1.

Medical condition	Mean	SD
Intellectual Disability	50.42	8.73
Physical Disability	53.00	7.22
Suicide Attempt	49.47	7.75
Substance Abuse	42.88	10.62
Mental Health Emergency	49.58	10.02

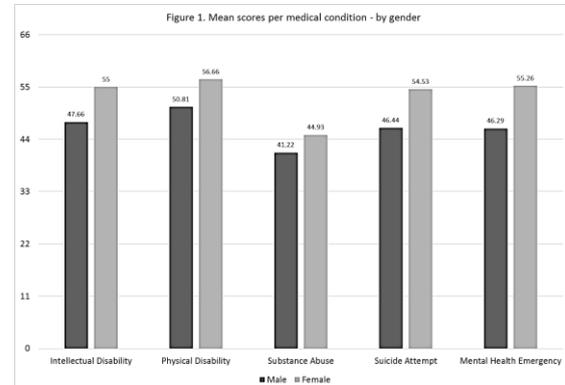
*Table 1. Mean Medical Condition Regard Scale scores for each medical condition*

The respondents were divided into four age groups for analysis. The mean empathy scores between age groups were not statistically significant [F(3, 38) = 2.329, p=0.09], suggesting that age does not play a significant role in influencing empathy scores in this population. One respondent did not respond to the age question.

There were several statistically significant differences for year of study and gender for mean scores across the five medical conditions. First year paramedic students had a mean empathy score of 257.11 (SD±32.46), while second year students had a mean score of 236.88 (SD±32.10) (p=0.049). First year paramedic students also demonstrated a higher mean empathy score towards mental health emergencies (mean 53.72 v 46.6; p=0.02).

Female paramedic students displayed higher mean empathy scores than their male counterparts for all conditions: intellectual disability (mean 55.0 v 47.66; p=0.008),

physical disability (56.66 v 50.81; p=0.011), substance abuse (44.93 v 41.22; p=0.278), suicide attempt (54.53 v 46.44; p=0.001), and mental health emergencies (55.26 v 46.29; p=0.005). (Figure 1).



*Figure 1. Mean empathy scores per medical condition by gender.*

A total of 37 respondents (86%) indicated that more empathy training was required in the program. Suggestions to improve empathy training included increasing high-fidelity simulation, inviting guest speakers, and undertaking more mental health service placements. A selection of quotes from respondents, of interest to the research question, were selected, and are outlined in Text-box 1.

“...include holistic/biopsychosocial views of health...”

“...LTC [long-term care] placements only made people feel less empathy for the elderly patients...”

“...you can't teach empathy...”

*Text-box 1. Selected free-texts responses from respondents*

## Discussion

Our study demonstrated that empathy scores vary across medical conditions, and are significantly lower when dealing with substance abuse presentations. The results of our study also demonstrate that females

display higher empathy scores than their male counterparts and this is consistent with previous literature (Williams et al., 2012; Hojat et al., 2004; Williams et al., 2015). Our results did not demonstrate any significant differences in empathy scores among age groups, although this is likely attributable to our small sample size.

The low levels of empathy demonstrated for substance abuse could be attributed to the view that substance abuse is a disorder that the patient is responsible for. The stigma around substance abuse creates a belief that the user has the ability to stop using drugs or alcohol whenever they choose to do so. There is a need for further exploration and explanation as to why this disorder is treated with less empathy.

Looi (2008) attributes the differences in male and female empathy scores to differences in brain architecture and neural circuitry. Looi suggests that men are predisposed to being unemotional in order to facilitate more rational decision making. Regarding differences in empathy with age, Beadle et al. (2013) posits that older adults portray more motivation to help others than younger people, and this marked difference was seen at the age of 24. While our study demonstrated no differences among age groups, previous studies have demonstrated differences, with higher empathy scores demonstrated by middle aged participants (Williams et al., 2012; Williams et al., 2014)

Differences in empathy scores between first and second year students were also observable in our study. This trend has previously been demonstrated in nurses, paramedics, physicians, and dentists (Hojat et al., 2004, Nunes et al., 2011, Williams et al., 2012). Studies have found personal distress to be a main cause of empathy decline; other causes are cognitive overload, lack of personability, the modern medical system, and elitist thinking (Paro et al., 2014)

Self-distress was identified as a main cause of empathy decline by Williams et al, (2012) and Neumann et al (2011). The most mentioned causes of distress were burnout, low sense of well-being, and depression. Vulnerability of students was also a factor to increased distress. Students have values of idealism, enthusiasm and humanity present at the beginning of their schooling but these diminish as students are confronted with reality during clinical placements. Students showed a decline in empathy and an increase in cynicism when they had late exposure to clinical settings. Possible explanations for this include a student's inaccurate perception of the realities of the job due to misinformation and underexposure. Social support problems become an issue for students and healthcare professionals who have heavy workloads and work long hours. These students and professionals suffer from reduced contact with their families and a lack of social support from their peers and friends.

Empathy is also shown to decline as education progresses and this is thought to occur due to emotional exhaustion, depersonalization and academic overload (Paro et al., 2014). The large amount of theoretical learning throughout the years overwhelms and distracts the individual from being empathetic. As education progresses, the workload increases and this increase inevitably causes a decrease in time for self-reflection to maintain empathy. When studying to become a healthcare professional, education is the main focus. Modern medical education focuses strongly on the scientific aspects rather than the social aspects. Social science and humanistic curriculum is key to developing appropriate bedside manner and an empathetic personality. The strong science focus and the heavy workload does not allow much time for students to incorporate the social aspect of patient interaction. Other reasons outlined in the literature linked to decrease in empathy

levels are inadequate role models, elitist thinking and certain personality traits. Elitist thinking is when a person believes they belong to an elite and privileged group. This thought process may induce a distancing from the patient which may also be seen as lacking in empathy. Regarding role models, students will inherently model and develop their own empathy and patient care skills from the professionals they work with. Positive role-modelling of empathetic behaviours may help to influence empathy levels among students.

Our results suggest that paramedic students may benefit from focused empathy education and training. Students have mixed ideas (Text-box 1) on the training required in order to understand and improve empathy towards patients, but they do identify a need. Incorporating focused empathy education may help contribute to patients receiving the same level of care and ensure the longevity of the healthcare practitioner's career, as well as creating more positive patient-practitioner interactions. There are many recommended methods to increase empathy levels in students and working professionals. These methods include mindfulness training, self-reflection, emotional labour training, and positive role models (Batt-Rawden et al., 2013). Integration of empathy training into the paramedic curriculum could prove beneficial, although the exact type of education, duration, delivery method and curriculum warrants further research.

### **Limitations**

The use of convenience sampling and recruitment via social media, although simpler recruitment methods, mean that results may not be representative of paramedic students across our program, or the province. The sample size of 43 also results in a 10.8% margin of error in our results – future studies should aim to enrol larger sample sizes to reduce this margin of error. There is no data on those students who declined to participate. Those who did

participate may have been more attuned to the study's purpose and felt obligated to participate. Respondents may also have participated more than once, as the survey was anonymous. An unknown number of second year students observed a preliminary presentation before responding to the survey which may have influenced their participation. The MCRS is a self-reported questionnaire that while providing reliable data, does not account for participants' self-reporting bias. There may be variances in what participants reported, and how they actually conduct themselves in practice.

### **Conclusion**

Our findings suggest that empathy is not demonstrated equally across medical conditions, varies by gender and year of study, and likely decrease as one progresses through paramedic education (as demonstrated in differences between first and second year scores, though we did not study this longitudinally). Further research needs to be undertaken, with longitudinal studies of empathy levels among paramedic students in Canada. In addition, studying working paramedics longitudinally would offer an insight into the degree of change in empathy over one's career and furthermore, allow research into reasons for such decline. The topic of empathy in paramedicine opens the door to a plethora of potential research.

Empathy is an important element in a practitioner-patient relationship and when present, can enhance both the patient and the practitioner's overall experience during an encounter. Further research is required in the clinical environment on this topic. This may help students, faculty members and institutions to view the concept of empathy not as a "soft science" or a "touchy-feely" idea, but rather as a scientifically based concept with demonstrated clinical, personal and professional benefits.

There is a general lack of formal empathy education in healthcare curricula (Mishra, 2015; Pedersen, 2010), and, as a result one can speculate, the paramedic profession. Our results suggest that action needs to be taken to improve empathy levels among paramedic students. Further research is required to determine exactly what this action is, and how to best incorporate it into curricula. Acting now to improve empathy levels among paramedic students may result in increased job satisfaction, resilience to compassion fatigue, and improved patient care in their future careers.

## References

- Bikker, A. P., Fitzpatrick, B., Murphy, D., & Mercer, S. W. (2015). Measuring empathic, person-centred communication in primary care nurses: Validity and reliability of the Consultation and Relational Empathy (CARE) Measure. *BMC Family Practice*, 16(1).
- Batt-Rawden, S. A., Chisolm, M. S., Anton, B., & Flickinger, T. E. (2013). Teaching Empathy to Medical Students. *Academic Medicine*, 88(8), 1171-1177.
- Beadle JN, Sheehan AH, Dahlben B, Gutchess AH. (2015). Aging, Empathy, and Prosociality. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*. 70(2):213-222.  
doi:10.1093/geronb/gbt091.
- Burks, D. J., & Kobus, A. M. (2012). The legacy of altruism in health care: The promotion of empathy, prosociality and humanism. *Medical Education*, 46(3), 317-325.
- Chen D, Lew R, Hershman W, Orlander J. (2007) A cross-sectional measurement of medical student empathy. *Journal of General Internal Medicine*. 22:1434–1438.
- Christison GW, Haviland MG, Riggs ML. (2002) The medical condition regard scale: measuring reactions to diagnoses. *Academic Medicine*. 77(3):257-62. [PMID 11891166]
- Clark, A. (2010). Empathy and Sympathy: Therapeutic Distinctions in Counseling. *Journal of Mental Health Counseling*, 32(2), 95-101.
- Egan, G. (2010). *Thee skilled helper: A problem-management and opportunity-development approach to helping* (9th ed.). Belmont, CA: Thompson Brooks/Cole.
- Eisenberg, N. (2000). Empathy and Sympathy. In M. Lewis & J. M. Haviland-Jones (Eds.), *Handbook of Emotions* (2nd ed., pp. 667-691). New York: Guilford Press.
- Fields SK, 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.
- Geraghty, S., Lauva, M., & Oliver, K. (2016). Reconstructing compassion: Should it be taught as part of the curriculum? *British Journal of Nursing*, 25(15), 836-839.
- Hamilton S, Tran V, Jamieson J. (2016). Compassion fatigue in emergency medicine: The cost of caring. *EMA - Emergency Medicine Australasia*, 28(1), 100-103.
- Hardy, C. (2016). Emphasizing with patients: the role of interaction and narratives in providing better patient care. *Medicine, Health Care and Philosophy*, 1-12.

- Hojat M, Mangione S, Nasca TJ, et al. (2004) An empirical study of decline in empathy in medical school. *Medical Education*. 38:934–941.
- Kalisch, B. J. (1973). What Is Empathy? *AJN, American Journal of Nursing*, 73(9), 1548-1552.
- Kliszcz J, Nowicka-Sauer K, Trzeciak B, Nowak P, Sadowska A. (2006) Empathy in health care providers--validation study of the Polish version of the Jefferson Scale of Empathy. *Advances in Medical Science*. 51:219-25.
- Knapp, H. (2007). Therapeutic Communication: Developing professional skills. *Australian and New Zealand Journal of Public Health*, 31(5), 496-496.
- Lambert, M. J., & Barley, D. E. (2001). Research summary on the therapeutic relationship and psychotherapy outcome. *Psychotherapy: Theory, Research, Practice, Training*, 38(4), 357-361. doi:10.1037//0033-3204.38.4.357
- Looi, J. C. (2008). Empathy and Competence. *MJA*, 188(7).
- Mahoney, S., Sladek, R. M., Neild, T. (2016). A longitudinal study of empathy in pre-clinical and clinical medical students and clinical supervisors. *BMC Medical Education*, 16:270.
- Mishra, S. (2015). Do we need to change the medical curriculum: Regarding the pain of others. *Indian Heart Journal*. 67, 187–191. <https://doi.org/10.1016/j.ihj.2015.05.015>
- Myers, S. (2000). Empathic Listening: Reports on the Experience of being Heard. *Journal of Humanistic Psychology*, 40(2), 148-173. doi:10.1177/0022167800402004
- Neumann, M., Edelhäuser, F., Tauschel, D., Fischer, M. R., Wirtz, M., Woopen, C., . . . Scheffer, C. (2011). Empathy Decline and Its Reasons: A Systematic Review of Studies With Medical Students and Residents. *Academic Medicine*, 86(8), 996-1009. doi:10.1097/acm.0b013e318221e615
- 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. doi:10.5116/ijme.4d47.ddb0
- Paro H, Silveira P, Perotta B, Gannam S, Enns S, et al. (2014) Empathy among Medical Students: Is There a Relation with Quality of Life and Burnout? *PLoS ONE* 9(4): e94133. doi:10.1371/journal.pone.0094133
- Pedersen, R. (2010). Empathy development in medical education: A critical review. *Medical Teacher*. 32, 593–600. <https://doi.org/10.3109/01421590903544702>
- Petrucci, C., Cerra, C. L., Aloisio, F., Montanari, P., & Lancia, L. (2016). Empathy in health professional students: A comparative cross-sectional study. *Nurse Education Today*, 41, 1-5.
- Raab, K. (2014). Mindfulness, Self-Compassion, and Empathy Among Health Care Professionals: A Review of the Literature. *Journal of Health Care Chaplaincy*, 20(3), 95-108.
- Rakel, D. P. (2013). Mindfulness in Clinician–Patient Encounters: Improving Health Outcomes with Empathy.

*Alternative and Complementary Therapies*, 19(5), 247-250.

Singh, S., (2005). Empathy: Lost or Found in Medical Education? *Medscape General Medicine*, 7(3), 74.

Williams, B., Boyle, M., Brightwell, R., Devenish, S., Hartley, P., McCall, M., . . . Null, N.

(2012). An assessment of undergraduate paramedic students' empathy levels.

*International Journal of Medical Education*, 3, 98-102.

doi:10.5116/ijme.4fba.9190

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, 299–306.

Williams, B., Boyle, M., Howard, S. (2016). Empathy levels in undergraduate paramedic students: A three-year longitudinal study. *Nurse Educ. Pract.* 16, 86–90.

<https://doi.org/10.1016/j.nepr.2015.09.002>

Williams B, Lau R, Thornton E, Olney L. (2017) The relationship between empathy and burnout & lessons for paramedics: a scoping review. *Psychol Res Behav Manag.* 10(Nov):329-337.

doi:10.2147/PRBM.S145810.