

# The relationship between empathy and burnout – lessons for paramedics: a scoping review

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**Background:** The concepts of empathy and burnout are critical for practicing paramedics and the profession. While there has been an increasing body of research on the relationship between empathy and burnout with physicians and nurses, surprisingly, no research has been undertaken with paramedics. The aim of this scoping review was to explore the relationship between empathy and burnout.

**Method:** A scoping review was performed based on Arskey and O'Malley's framework. Five databases were searched: CINAHL plus, EMBASE, MEDLINE, PsycINFO, and Scopus. Google Scholar was searched for gray literature. Two reviewers independently assessed eligibility and extracted the data.

**Results:** The initial search produced a yield of 1270 articles after removal of duplicates. All abstracts were screened for relevance, and 30 articles were selected for further screening. Twenty six articles were deemed relevant, of which there were 23 cross-sectional studies, two editorials, and one description article on the multidimensional aspect of burnout and empathy. The studies were conducted in Europe, USA, North America, and Asia. In most studies, there was an inverse correlation between empathy and emotional exhaustion and depersonalization but a positive correlation with personal accomplishment.

**Conclusion:** Although there seems to be a real relationship between empathy and burnout in physicians and nurses, the strength of the relationship differs to some extent depending on the samples and settings. Due to similarities between health professions, the relationship between empathy and burnout may also be relevant to the paramedic profession. Future paramedic research should focus on longitudinal studies to determine the factors that might influence empathy and burnout levels to provide a better understanding of these two key factors.

**Keywords:** burnout, empathy, nurse, physician, paramedic

## Introduction

Prehospital emergency health care is a rapidly growing and evolving profession. Paramedics provide emergency and unscheduled medical assistance to people in the community with acute and chronic illnesses and injuries.<sup>1,2</sup> Paramedics deal with a multitude of issues in their health care roles, for example, dealing with patients with poor health literacy, palliative care, family violence, poor living conditions of patients and alcohol and drug abuse situations. These can have an adverse impact on the mental well-being of paramedics, resulting in stress, burnout, posttraumatic stress disorders, and suicidal thoughts and behaviours.<sup>3-6</sup> According to Ambulance Victoria, Australia, a National Coronial Information System report in June 2015 revealed that the suicide rate among paramedics is four times higher than the Victorian average and

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three times higher than other emergency workers (ie, police and fire fighters).<sup>7</sup>

Empathy is important in health care settings because it facilitates a positive relationship between health care professionals and patients.<sup>8,9</sup> This positive relationship can buffer against professional burnout,<sup>10,11</sup> which has become a major concern among health care professionals, including paramedics.

## Burnout

Maslach, a pioneer in burnout theory, describes burnout as a sequence of three dimensions: 1) emotional exhaustion (EE); 2) depersonalization (DP); and 3) reduced personal accomplishment (PA).<sup>12</sup> EE refers to high emotional demand leading to depletion of individuals' resources. DP refers to attempt to distance themselves emotionally from patients and colleagues. Reduced PA refers to a decreased sense of achievement and loss of self-esteem. Generally, burnout entails high levels of EE, a marked sense of DP, and low levels of PA.<sup>12</sup> Health care professionals are frequently faced with long working hours, high patient load, time and resource constraints, and work and family life imbalance,<sup>13,14</sup> resulting in burnout. Paramedics often face the same stressors.<sup>15,16</sup>

## Empathy

Empathy is a complex, multidimensional concept consisting of both cognitive and affective (emotional) aspects.<sup>17</sup> Affective empathy refers to experiencing the feelings of others, while cognitive empathy is the ability to understand the experiences and feelings of others and being able to relay that understanding back to them. Another key component of empathy, which distinguishes it from sympathy, is self-other differentiation, which is the ability to separate one's own emotions from those of the other person,<sup>11</sup> which may improve objectivity and help to reduce anxiety and distress. In contrast, sympathy is about feeling "sorry" for someone rather than with someone. Empathy is widely accepted to be an important component of health care, as it leads to better patient outcomes and increased patient satisfaction.<sup>18</sup> On the other hand, lower levels of empathy result in greater frequency of malpractice suits and decreased patient satisfaction.<sup>19</sup> In a paramedic context, empathy not only improves patient outcomes and allows paramedics to perform their best but also improves psychological outcomes for families who have lost a loved one.<sup>20</sup>

## Relationship between empathy and burnout

We were unable to locate any peer-reviewed literature examining the relationship between empathy and burnout within

the paramedic profession. Therefore, given the paucity of paramedic literature, it is important to gain an understanding of the literature from other related health professions such as medicine and nursing. There are some professional similarities between these professions and paramedicine such as various clinical skills, exposure to unwell patients, emotionally demanding work, and the types of training they undergo. In addition, medicine and nursing have been key contributors to the development of paramedic curricula. As such, it is likely that results from these two professions may be relevant to the paramedic profession. A study found that cognitive empathy might have a protective role in burnout among Canadian primary care general practitioners (GPs).<sup>21</sup> Another study on GPs found high empathy to be significantly associated with low burnout in Spain.<sup>22</sup> Moreover, a study on Swedish district nurses found the lower the burnout score, the higher the empathy score.<sup>23</sup> Another study on nurses in Korea found nurses with lower cognitive empathy were more likely to experience burnout.<sup>24</sup> Therefore, the aim of this scoping review was to explore the relationship between empathy and burnout on physicians and nurses. These findings will then be used to inform and guide the next steps in addressing this critical area of health and well-being research for the paramedic profession.

Ethics committee approval was not required due to the nature of a scoping study.

## Methods

The aim of a scoping review is to collate information from various sources, both peer- and non-peer-reviewed articles to provide a broad understanding of a topic. This scoping review was guided by Arksey and O'Malley six stages methodology.<sup>25</sup> The stages are:

1. Identify the research question
2. Identify relevant studies
3. Study selection
4. Charting the data
5. Collating, summarizing, and reporting results
6. Expert consultation (optional)

### Stage 1: Identify research question

Empathy in health care settings is important because it enhances positive patient outcomes and satisfaction.<sup>9,17,26</sup> Empathetic communication facilitates positive relationship between patients and the health care professionals.<sup>8,9</sup> Furthermore, this relationship has a positive effect on health care professionals and can buffer against professional burnout.<sup>10,11</sup>

The demands of the job may cause stress, with work overload, and time and resource constraints being predictors of

professional burnout.<sup>27</sup> Given the prominent issue of empathy and burnout particularly in emergency health care and the evident effects of emotional disconnection, the following research question was chosen to guide the scoping review: Is there a relationship between paramedic empathy and burnout?

### Stage 2: Identify relevant studies

Five databases were searched for relevant articles: CINAHL plus, EMBASE, Ovid MEDLINE, PsycINFO, and Scopus. Google Scholar was also searched for gray literature. There were no restrictions on date published or peer-review status. Initial search terms used included “paramedic\*,” “emergency medical technician\*,” “ambulance\*,” “empathy\*,” “burn-out,” and “job satisfaction.” However, as no relevant studies were found in this initial search, the search parameters were expanded to include physicians and nurses given their job functions are the closest to paramedicine in terms of patient contact situations, long and irregular working hours, and exposure to distressing circumstances. Search terms added in this stage included “doctor\*,” “nurse\*,” and “physician\*.”

### Stage 3: Study selection

Two reviewers independently assessed eligibility and extracted the data. The initial search produced 1270 articles after removal of duplicates. All abstracts were screened for relevance, and 30 articles were selected for the full-text screening. All 30 full texts were read and reviewed against the following criteria:

1. Articles must examine the relationship between empathy and burnout
2. Articles must be on the physicians and/or nurses
3. Articles must have the full-text available in English

Four articles were excluded at this stage due to irrelevance, leaving 26 articles to be included in this review.

### Stage 4: Charting the data

The included studies are presented with summary in Table 1.

### Stage 5: Collating, summarizing, and reporting the results

Twenty six articles that discussed the association between empathy and burnout for physicians and nurses were found. Twenty three were original studies, while two were editorials and one descriptive article. Eleven articles focused on nurses, five were on physicians, and five on both nurses and physicians. Another five were on medical students or residents only.

**Table 1** Overview of included articles

Reference	Year	Title	Location	Population	Key findings
Astrom et al <sup>6</sup>	1990	Empathy, experience of burnout, and attitudes toward demented patients among nursing staff in geriatric care	Umea, Sweden	Geriatric care nurses	Weak negative correlation between burnout and empathy
Astrom et al <sup>28</sup>	1991	Staff burnout in dementia care – relations to empathy and attitudes	Umea, Sweden	Geriatric care nurses	Burnout correlated with lower empathy scores
Baxter <sup>29</sup>	1992	Empathy: its role in nursing burnout	New Hampshire, USA	Acute care nurses	Inverse relationship between empathy and burnout
Bradham <sup>30</sup>	2008	Empathy and burnout in nurses	Illinois, USA	Bedside nurses	Negative relationship between demographics and burnout
Brazeau et al <sup>31</sup>	2010	Relationships between medical student burnout, empathy, and professionalism climate	New Jersey, USA	Fourth year medical students	Negative correlation between empathy and burnout
Duarte et al <sup>32</sup>	2016	Relationships between nurses' empathy, self-compassion, and dimensions of professional quality of life: a cross-sectional study	Portugal	Registered nurses	Burnout negatively associated with empathetic behaviors Negative association between burnout and empathy behaviors
Ferri et al <sup>33</sup>	2015	Empathy and burnout: an analytic cross-sectional study among nurses and nursing students	Northern Italy	Nurses and nursing students	High levels of empathy protect against burnout. Burnout may reduce empathy
Fulop et al <sup>34</sup>	2011	Relationship between empathy and burnout among psychiatric residents	Hungary	Psychiatric residents	Empathy may prevent burnout
Garrett <sup>35</sup>	1999	Stress, coping, empathy, secondary traumatic stress, and burnout in health care providers working with HIV-infected individuals	New York, USA	Physicians, nurses, social workers, and support staff	Low empathy related to high levels of burnout

(Continued)

Table 1 (Continued)

Reference	Year	Title	Location	Population	Key findings
Glidewell <sup>36</sup>	2000	Burnout, vicarious traumatization, coping styles, and empathy in long-term care nursing personnel	Mississippi, USA	Long-term care nurses	Empathy is protective against burnout
Lamothe et al <sup>21</sup>	2014	To be or not to be empathetic: the combined role of empathic concern and perspective taking in understanding burnout in general practice	France	General practitioners	Cognitive and affective empathy together may prevent burnout
Lee et al <sup>24</sup>	2003	A comprehensive model for predicting burnout in Korean nurses	South Korea	Nurses	Cognitive empathy negatively related to burnout
Melnick and Powsner <sup>37</sup>	2016	Empathy in the time of burnout	USA	Physicians	Negative relationship between cognitive empathy and burnout Burnt out physicians find it harder to be empathetic
Miller et al <sup>38</sup>	1988	Communication and empathy as precursors to burnout among human service workers	Midwestern USA	Psychiatric hospital staff	Emotional involvement when providing care leads to burnout
Falsson et al <sup>23</sup>	1996	Burnout, empathy, and sense of coherence among Swedish district nurses before and after systematic clinical supervision	Southeast Sweden	District nurses undergoing training in care of newly diagnosed breast cancer patients	Burnout negatively correlated with empathy
Park et al <sup>39</sup>	2016	A multicenter study investigating empathy and burnout characteristics in medical residents with various specialties	South Korea	Medical residents	Empathy negatively correlated with emotional exhaustion and depersonalization
Passalacqua <sup>40</sup>	2010	Running on empty: examining the effect of physician stress, burnout, and empathy on patient-centered care	Arizona, USA	Internal medicine residents	High burnout predicts greater decline in empathy levels over the course of a shift
Passalacqua and Segrin <sup>41</sup>	2012	The effect of resident physician stress, burnout, and empathy on patient-centered communication during the long-call shift	Southwestern USA	Resident physicians	Burnout significantly negatively associated with empathy levels over the course of a shift
Raiziene and Endriulaitiene <sup>42</sup>	2007	The relationship among empathy, occupational commitment, and emotional exhaustion of nurses	Regional Lithuania	Nurses	Empathy negatively correlated with emotional exhaustion
Tei et al <sup>43</sup>	2014	Can we predict burnout severity from empathy-related brain activity?	Kyoto, Japan	Nurses with <11 years of experience	Burnout severity explained by reduced empathy-related brain activity
Thiroux et al <sup>11</sup>	2016	Empathy is a protective factor of burnout in physicians: new neuro-phenomenological hypotheses regarding empathy and sympathy in care relationship	France	Physicians	Empathy is a preventative factor of burnout
Walocha et al <sup>44</sup>	2013	Empathy and burnout among physicians of different specialties	Krakow, Poland	Physicians employed in hospitals, outpatient clinics, or universities	Increasing any aspect of burnout has a negative impact on empathy
Williams <sup>45</sup>	1989	Empathy and burnout in male and female helping professionals	Southeastern USA	Registered nurses, social workers, and teachers	Empathy positively correlated with both emotional exhaustion and burnout. (Concluded that empathy positively related to burnout)
Yuguro et al <sup>46</sup>	2015	Association between sick leave prescribing practices and physician burnout and empathy	Lleida, Spain	Primary care doctors	High empathy significantly associated with low burnout
Yuguro et al <sup>47</sup>	2016	Association between low empathy and high burnout among primary care physicians and nurses in Lleida, Spain	Lleida, Spain	Primary care physicians and nurses	Burnout associated with low levels of empathy
Zenasni et al <sup>48</sup>	2012	Burnout and empathy in primary care: three hypotheses	France	Primary care physicians	Evidence to suggest that burnout decreases empathy, empathy causes burnout, and empathy prevents burnout

The key themes identified in the articles were as follows:

1. There is a negative relationship between empathy and burnout, that is, the less empathetic a physician or nurse is, the more likely they are to be burned out, and the more severely burned out they are likely to be. The vast majority of articles identified this correlation.
2. Three of the studies concluded that lack of empathy could lead to burnout.
3. Six studies claimed that burnout is a contributing factor to low levels of empathy.
4. Five studies found that empathy was a protective factor against burnout.

## Discussion

Of the 26 articles reviewed, 22 were original studies.<sup>6,21,23,24,28–36,38–45,47</sup> Although most studies showed a negative correlation between empathy and burnout, it is interesting to note that the strength of the relationships differed depending on the samples and settings. Those studies were conducted in Europe, USA, North America, and Asia. Two were editorials<sup>37,48</sup> and one<sup>11</sup> was a description paper on the multidimensional features of empathy and burnout and the differences between empathy and sympathy to give a better understanding of the relationship between empathy and burnout.

## Relationship between empathy and burnout

### Nurses

Astrom et al<sup>6</sup> studied 358 different Swedish nursing staff caring for patients with dementia in a nursing home, general long-term care clinic, and psychogeriatric clinic to compare empathy, burnout, and attitude levels among different nursing staff and to examine the relationships between the three concepts. They found a weak negative correlation ( $r=-0.19$ ) between burnout<sup>49</sup> and empathy.<sup>50</sup> Baxter<sup>29</sup> surveyed 124 American nurses working in an acute care hospital in New Hampshire to determine the empathy and burnout levels. Empathy was measured with the Barrett-Lennard Relationship Inventory (BLRI),<sup>51</sup> and the Maslach Burnout Inventory (MBI) was used to measure burnout in three domains: emotional exhaustion (MBI-EE), depersonalization (MBI-DP), and reduced personal accomplishment (MBI-PA). They found a statistically significant inverse correlation ( $r=-0.32$ ,  $p<0.0001$ ) between empathy and DP, but a positive correlation ( $r=0.20$ ,  $p=0.021$ ) with PA.

Ferri et al<sup>33</sup> evaluated the relationship between empathy and burnout in 97 Italian nursing students and 162 nurses.

They found a strong negative correlation between EE and emotional empathy measured by the Balanced Emotional Empathy Scale (BEES)<sup>52,53</sup> for both students ( $r=-0.30$ ,  $p<0.002$ ) and nurses ( $r=-0.24$ ,  $p<0.002$ ). Whereas, MBI-PA showed a strong positive correlation with the BEES mean total scores in students ( $r=0.31$ ,  $p<0.002$ ) and nurses ( $r=-0.26$ ,  $p<0.001$ ). MBI-DP was not associated with the BEES mean total scores (values not reported). The authors concluded that a high degree of empathy can be “protective against the development of burnout”<sup>33</sup> (p. 111).

### Physicians

Fulop et al<sup>34</sup> investigated burnout in psychiatry residents and medical specialists and examined the relationship between emotional involvement, communicational skills, and burnout symptoms. MBI was used to measure burnout, and empathy was assessed with the Interpersonal Reactivity Index (IRI), the latter evaluating four domains of empathy. They found a statistically significant positive correlation between MBI-EE and the IRI Personal Distress domain<sup>54</sup> ( $r=0.36$ ,  $p<0.001$ ), but negative correlations between MBI-DP and IRI Perspective Taking domain ( $r=-0.32$ ,  $p<0.001$ ) and IRI Empathetic Concern domain ( $r=-0.38$ ,  $p<0.001$ ).

The Jefferson Scale of Empathy Health Professional version (JSE-HP) was developed for specific use with health professionals.<sup>55</sup> Park et al<sup>39</sup> used the Korean edition of this scale along with the MBI to assess the relationship between empathy and burnout in 317 Korean medical residents. There were statistically significant negative correlations with MBI-EE ( $r=-0.27$ ,  $p<0.001$ ) and MBI-DP ( $r=-0.44$ ,  $p<0.001$ ) but a positive correlation with MBI-PA ( $r=0.50$ ,  $p<0.001$ ). A similar pattern was observed in separate analyses of the people-oriented specialties (MBI-EE,  $r=-0.31$ ; MBI-DP,  $r=-0.51$ ; MBI-PA,  $r=0.47$ ) and technology-oriented specialties (MBI-EE,  $r=-0.22$ ; MBI-DP,  $r=-0.36$ ; MBI-PA,  $r=0.56$ ). People-oriented specialties included internal medicine, obstetrics and gynecology, emergency medicine, and psychiatry. Technology-oriented specialties included anesthesiology, neurosurgery, surgery, and radiology. This was a significant result as it demonstrated that correlation exists even in residents at the beginning of their careers, not just in more experienced practitioners, and that those with less empathic capabilities are more vulnerable to burnout at the start of their careers. Such results and study design would be worthy of replicating with paramedic cohorts and provide opportunities for researchers to undertake such research.

Walocha et al<sup>44</sup> assessed the level of empathy and burnout among 71 Polish physicians of different specialization. They

found a statistically significant difference between surgical and non-surgical physicians in the level of MBI-EE ( $p=0.03$ ). Non-surgical specialists had higher BMI-EE. It is interesting to note that they found a statistically significant inverse correlation between MBI-PA and empathy (measured with the Emotional Empathy Scale (EES))<sup>56</sup> ( $r=-0.23, p<0.05$ ). This finding was not supported by other studies.<sup>29,39</sup> One possible explanation may be the use of different empathy measures. Walocha et al<sup>44</sup> used the EES,<sup>56</sup> while Baxter<sup>29</sup> used the BLRI<sup>57</sup> and Park et al<sup>39</sup> used the JSE-HP.<sup>55</sup> They also found a negative correlation between the level of empathy (according to the Thematic Apperception Test) and MBI-EE ( $r=-0.30, p<0.05$ ) and MBI-DP ( $r=-0.39, p<0.01$ ) and no positive correlation with MBI-PA ( $r=0.14, p$ -value was not reported).

### Nurses and physicians

Additionally, Yuguero et al<sup>47</sup> studied the association between empathy and burnout in 136 Spanish primary care physicians and 131 family nurses. They found a significant association between empathy and burnout in both the groups; for the nurses ( $p=0.011$ ) and for the physicians ( $p=0.001$ ). However, they found no significant differences between physicians and nurses in empathy and burnout. Although there is evidence to suggest a negative relationship between empathy and burnout, it remains unclear as to how they interact. Three possibilities are discussed below.

### Low empathy leading to higher burnout

Three studies identified that low empathy could be a contributing factor for high burnout. Lee et al<sup>24</sup> examined individual characteristics, job stress, and personal resource to identify significant predictors of burnout of 178 Korean nurses. For MBI-DP, they found 24% variance (adjusted  $R^2=0.19$ ) was explained by individual characteristics, job stress, and personal resources. Among personal resources, cognitive empathy was a significant predictor, accounted for 5% of the variance. For MBI-PA, 35% variance (adjusted  $R^2=0.31$ ) was explained by the proposed predictor variables in the study. Hence, the authors suggested that increasing cognitive empathy levels may be one way to reduce burnout.

In 2014 Tei et al,<sup>43</sup> explored two models of burnout; the “compassion fatigue theory” which proposes that too much empathy is associated with burnout and the “emotional dissonance theory” which proposes that a low level of emotional regulation may produce a disparity between experienced and expressed emotions.<sup>43</sup> The relationship between burnout severity scores and psychological measures of empathic disposition (measured by the IRI), emotional

dissonance (measured by the Emotion Work Requirements Scale, EWRS), and alexithymia (difficulty in identifying and experiencing ones’ emotions<sup>58</sup> and measured by the Toronto Alexithymia Scale, TAS) were undertaken among 25 nurses. They found statistically positive significant relationships between MBI-EE and IRI-PT ( $r=0.50, p=0.010$ ), EWRS (hide negative emotion) ( $r=0.430, p<0.032$ ), TAS-20 (difficulty in identifying feelings) ( $r=0.63, p<0.001$ ). The positive correlation between burnout severity and emotional dissonance was no longer significant when alexithymia scores were covaried out ( $r=0.26, p=0.21$ ), suggesting a link between burnout, emotional dissonance, and alexithymia. The positive correlation between burnout severity and empathy remained significant when alexithymia scores were covaried out ( $r=0.46, p=0.02$ ), supporting both theories of “compassion fatigue” and “emotional dissonance.”

Lamothe et al<sup>21</sup> studied 294 French GPs. They found when predicting burnout using sympathy, empathy, and their interaction as predictors, each of the predictors was uniquely associated with the outcome; with lower empathy scores predicting higher burnout (model adjusted for marital status). Higher sympathy ( $\beta=-0.17, p<0.05$ ) and higher empathy ( $\beta=-0.21, p<0.001$ ) predicted lower burnout. The interaction term was also significant ( $\beta=0.11, p<0.05$ ) suggesting that empathy and sympathy may interact to protect against burnout. The total model explained 10% of the variance of burnout ( $R^2=0.08$  without controls). Hence, the importance of training health care professionals in techniques of emotion regulation is emphasized. These findings provide important background for future paramedic research.

### Higher burnout leading to lower empathy

Six articles implied that high burnout might result in low empathy.<sup>6,30,33,37,41,44</sup> Many health care workers are subject to work overload, which Astrom et al<sup>6</sup> recognized as a significant cause of burnout. This may lead to irritation and the feeling of being “weighed down” and emotionally exhausted, which can affect a physician’s ability and motivation to empathize with their patients. On the other hand, Ferri et al<sup>33</sup> found that DP was more related to emotional disconnection from patients, stating “depersonalisation does not permit a therapeutic relationship.” Ferri et al<sup>33</sup> suggested that the decline in empathy observed in a burnout of nurses may be a defence mechanism against human suffering; subconsciously attempting to protect themselves by feeling less empathic towards the patients. Bradham<sup>30</sup> also found that nurses lost the ability to empathize with their patients if they are burnt out. Passalacqua and Segrin<sup>41</sup> found that during the latter half of

physicians' long shift work, they suffered from burnout due to sleep deprivation and work overload resulting in significant reduction of empathy toward their patients.

## Empathy as a protective factor

Six articles<sup>11,21,33,34,36,48</sup> showed that empathy could be a protective factor against burnout. According to Thirioux et al,<sup>11</sup> a key characteristic of empathy is self-other distinction, that is, putting yourself in the patients' shoes but at the same time recognizing that your emotions are separated from those of the patients. This self-other distinction helps to prevent burnout as it reduces the EE associated with negative emotions. It also makes health care professionals more "immune" to DP,<sup>11</sup> as the two concepts are in polar opposition. However, the biggest effect of empathy on burnout seems to be an increase in personal achievement. It is well known that empathic physicians and nurses provide a higher quality of care,<sup>48</sup> and this "generates a greater professional satisfaction."<sup>11</sup>

## Application to the paramedic profession

Although this scoping review explored the relationship between burnout and empathy on physicians and nurses, it is conceivable that some of the findings may also be relevant to paramedics. Paramedics experience many of the same job stressors as nurses and physicians, and burnout is equally well known to affect paramedics as their in-hospital counterparts.<sup>16</sup> Empathy is a central component in effective communication and maintaining therapeutic communication between paramedics and patients.<sup>30</sup> Paramedics who are constantly exposed to highly distressing situations (eg, illnesses and deaths) may be particularly vulnerable to develop stress and compassion fatigue or burnout, unless they are effective in controlling their capacity to empathise.<sup>59</sup> Melnick and Pownser<sup>37</sup> pointed out that to increase physician-patient relationship, a health care system needs to invest more toward health care providers. It will lead to a detailed study to determine if these strategies are applicable to the paramedic profession. Those responsible for research, policy development, and educators of paramedics can use these findings described in other providers in developing future interventions in paramedics.

## Limitations and future research

The review was on the physicians and the nurses and not on paramedics because of lack of peer-reviewed literature on paramedics. Nevertheless, the findings from this review are likely to be applicable to paramedics. Although there is an association between empathy and burnout in many health care

professionals, it is unclear as to what degree of burnout needs to occur before it leads to low empathy or degree of empathy that needs to exist to protect against burnout. Due to the lack of paramedic-specific information, it is important to learn lessons from other associated professions. This information may inform and generate new paramedic-orientated research in the area of empathy and burnout. Future areas of research should focus on longitudinal studies in paramedics to determine the factors that might influence empathy and burnout levels to provide a better understanding of the two key factors. Suggestions for mixed methodology designs are also warranted for future research studies to add the component of qualitative insight into the mechanisms and response to burnout in paramedics. Additional studies should examine what levels of educational preparation regarding stress and empathy are provided to student paramedics and paramedics during their studies, as well as review the impact of ambulance service organizational culture in the process of mitigating and/or treating burnout effectively in this population.

## Conclusion

Although there seems to be a real relationship between empathy and burnout among nurses and physicians, the characteristics of the relationship differ to some extent depending on the samples and settings. Due to cognitive and clinical similarities between health professions, the relationship between empathy and burnout may also be relevant to the paramedic profession. Future paramedic research should focus on longitudinal studies to determine the factors that might influence empathy and burnout levels to provide a better understanding of these two elements.

## Disclosure

The authors report no conflicts of interest in this work.

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