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## How does medical education affect empathy and compassion in medical students? A meta-ethnography: BEME Guide No. 57

Charmaine Krishnasamy<sup>a</sup>, Sik Yin Ong<sup>a</sup>, May Eng Loo<sup>a</sup> and Jill Thistlethwaite<sup>b,c</sup>

<sup>a</sup>HOMER, NHG Education, National Healthcare Group, Singapore, Singapore; <sup>b</sup>NPS MedicineWise, Sydney, Australia; <sup>c</sup>FASS (Faculty of Social Sciences), University of Technology Sydney, Ultimo, Australia

### ABSTRACT

**Background:** Empathy and compassion are important in healthcare delivery, and are necessary qualities in medical students.

**Aims:** To explore medical students', patients' and educators' perceptions of what affects empathy and the expression of compassion; and to address gaps in knowledge, attitudes and skills on how education affects empathy and the expression of compassion in medical students.

**Methods:** The seven steps by Noblit and Hare were used for this meta-ethnography. Databases were searched for studies in English, published from 2007 to 2017 with outcomes of empathy and compassion. Key themes and concepts were identified, and accounts from the studies were used to build interpretations.

**Findings:** Thirty-three qualitative studies were included and four main themes were derived: seeing the patient as a person; appreciating the elements of empathy and compassion; navigating in the training environment; and being guided by ideals. Interactions between the patient, the medical student and training environment which affect the development of empathy and compassion are illustrated in a conceptual model.

**Conclusions:** This meta-ethnography extends our understanding of how medical education affects the expression of empathy and compassion in medical students. The results provide important considerations for medical educators and faculty developers in further developing and improving medical curricula.

### Introduction

Empathy is important to help doctors explore and understand patients' needs and experiences, and to provide good quality patient care (Eikeland et al. 2014). Empathy enables a clinician to carry out core medical tasks more accurately and is regarded as a key determinant of quality in medical care (Neumann et al. 2009). Compassion is a concept frequently associated with empathy, and there is an increasing emphasis on the need for compassion in healthcare delivery (Schantz 2007). Below we consider the concepts of empathy and compassion first separately, then how they are related, and their importance for medical education.

The benefits of empathy in doctors have been reported in a systematic review conducted in general practice, in which empathy was found to be associated with improved patient satisfaction, better diagnostic and clinical outcomes, and enhanced patient enablement (Derksen et al. 2013). However, as a concept, there is no consensus definition of empathy (Pedersen 2009). Coulehan et al. (2001) considers empathy in the clinical setting to have three implications, namely a "cognitive focus," an "affective or emotional focus" and an "action component" (p. 221); while Mercer and Reynolds (2002) consider empathy to be a process, involving the ability to understand the patient's situation, perspective and feelings, to communicate back that understanding, and to act on that understanding in a helpful and therapeutic way. This definition by Mercer and

### Practice points

- The expression of empathy and compassion arises from the unique interaction between a medical student and a care recipient.
- Approaches like creative writing and films are complementary to, and not a substitute for, other more patient-focused opportunities.
- Students should have opportunities to observe desirable behaviors of empathy and compassion in authentic learning contexts, and to share their views in a reflective space with open dialogue.
- Educators should consider learners' professional priorities, emphasize the interpersonal nature of empathy, and encourage students to be genuinely interested in patients.

Reynolds (2002) is one of the most frequently used definitions of physician empathy (Neumann et al. 2011).

Several systematic reviews have investigated the development of empathy among medical students and residents; and questions have been raised regarding the usefulness of validated, self-reported questionnaires in predicting perceived empathy in practice, and the failure to consider interactional efforts between patient, doctor, clinical and institutional contexts (Batt-Rawden et al. 2013; Fernando et al. 2016; Sulzer et al. 2016). Differing findings

from reviews have been reported with some reviews showing that empathy appeared to decline during medical school and residency (Pedersen 2010; Neumann et al. 2011) while others reported little or no change in empathy scores (Colliver et al. 2010; Ferreira-Valente et al. 2017). The empathy instruments used in these studies were not validated with real or standardized patients' perceptions of empathy in actual or simulated clinical encounters (Colliver et al. 2010); and many of the studies failed to provide a clear definition of empathy (Sulzer et al. 2016). Additionally, many studies were found to have contradictions in the way empathy was conceptualized and operationalized (Sulzer et al. 2016).

Numerous educational interventions including patient narratives and creative arts, writing, drama workshops, communication skills training, and experiential learning, have been developed to encourage the development of empathy, compassion and respect for patients in medical students (Wear and Zarconi 2008; Batt-Rawden et al. 2013). Reflective writing has also been found to improve students' levels of empathy, and has been recommended to be included in any medical curriculum (Chen and Forbes 2014). Despite efforts to promote the development of empathy and compassion through various interventions in the humanities, the influence of the hidden curriculum should not be neglected. Hafferty and Franks (1994) call for cognizance of the hidden curriculum which includes the structure of training, educators' views and conversations outside of the classroom setting. Additionally, both intentional and unplanned role modeling of doctors have been shown to have a substantial influence on the development of medical professionalism in learners (Passi et al. 2013). Batt-Rawden et al.'s (2013) review suggests that educational interventions can be useful in maintaining and enhancing empathy in undergraduate medical students however recommends that further studies be conducted on specific strategies and best practices to inform medical education.

In the medical education literature, empathy has been described in other ways including: dutifulness (Wolf 1980); prosocial behavior (Lockwood et al. 2014); moral reasoning (Olsen 1997); sympathy (Svenaeus 2015); and altruism (Persson and Kajonius 2016). Fernando et al. (2016) consider that compassion is "built on the capacity to empathize – a form of cognitive and emotional perspective taking – but involves the additional step of wanting to alleviate suffering" (p. 340). Similarly, as defined in Goetz et al.'s review (Goetz et al. 2010), compassion is "the feeling that arises in witnessing another's suffering and that motivates a subsequent desire to help" (p. 351).

Compassion is often considered a core competency and sign of quality care (Sinclair et al. 2016). Compassion also helps medical students overcome fear and develop deep and lasting empathy (Shapiro 2008). Empathy without compassion may cause distress when a clinician faces intense suffering, subsequently leading to emotional fatigue and burnout (Fernando et al. 2016). As stated in The Lancet (2007), "although compassion is often cited as one of the core values of professionalism, there remains a continuous and inconclusive debate about whether compassion is innate or can be taught." (p. 630). In other literature, there is also a call for compassion and humanism to be

embedded and nurtured in health care, health professional schools and standards (Gaufberg and Hodges 2016); and for compassion to be integrated in collaborative care to improve health and experiences (Lown et al. 2016). It is thus important to promote the development of both empathy and compassion in clinicians for better patient care and to mitigate burnout in clinicians.

Sulzer et al. (2016) proposed that the relational aspects of empathy should be studied, rather than conceptualized solely as a personal attribute. Personal factors are also not the sole determinants of the emergence of compassion as it is also profoundly influenced by patient factors, system factors and clinical factors (Fernando et al. 2016). There is a lack of understanding of how the learning contexts including the structure of curricula affect the development of empathy and compassion in medical students (Ferreira-Valente et al. 2017). Existing qualitative studies exploring medical students' experiences of the different educational interventions provided insight to aspects and elements in medical curricula that students perceived as beneficial for developing empathy and compassion (Allen et al. 2008; Michalec 2011; Lutz et al. 2013; Eikeland et al. 2014; Batley et al. 2016). Studies that examined patients' perspectives (Kenyon and Brown 2007; Breytspraak et al. 2008) further enhanced our understanding of the influence of educational interventions on the expression of empathy and compassion by medical students since patients are the recipients of medical care. Hence, we proposed to review and synthesize the evidence on how medical education curricula affect empathy and compassion in medical students, and how this is perceived by medical students, educators and patients.

## Aims

The aims of this review were to synthesize the evidence on how medical education affects empathy and compassion in medical students, and how this is perceived by medical students, educators and patients. The objectives were to:

- Examine medical students', educators' and patients' perceptions and experiences of what affects empathy and compassion in medical students.
- Build a new interpretive account from the primary empirical qualitative studies to understand how education affects empathy and compassion in medical students.
- Provide useful information and important consideration points for medical educators and faculty developers in developing medical curricula including clinical placements.

## Methods

Qualitative studies offer in-depth understanding of nuanced relationships, authentic perspectives, and educational dilemmas (Bearman and Dawson 2013). There are several methods for synthesizing qualitative evidence, and a meta-ethnography can be used for synthesizing qualitative data, to provide interpretations by translating studies into one another (Britten and Pope 2012). A meta-ethnography method was chosen for this review because it

allowed us to synthesize qualitative studies that investigated perceptions and experiences of medical students, educators, and patients' on the aspects of the medical curriculum affecting empathy and compassion. Through the process of a meta-ethnography, the understanding and transfer of ideas, concepts, and metaphors across studies is encouraged (Britten and Pope 2012); and allows the synthesis to move toward reconceptualization, providing new insights on the research phenomenon (Britten et al. 2002; Doyle 2003).

This meta-ethnography was conducted according to our protocol published previously on the BEME website (Krishnasamy et al. 2016). We used the seven steps by Noblit and Hare (1988) namely: (1) Getting started: involves determining the focus of the data synthesis; (2) Deciding what is relevant to the initial interest: involves locating studies and making decisions on inclusion and quality assessment; (3) Reading the studies: involves reading the accounts and noting metaphors, concepts, or themes; (4) Determining how the studies are related: involves comparing concepts, metaphors and concepts from studies, and to see how they are similar or different; (5) Translating studies into one another: involves comparing concepts and metaphors between and within study accounts, to see how they relate to other key concepts or metaphors; (6) Synthesizing translations: involves making a whole from common types of translations or concepts and reaching new interpretations; and (7) Expressing the synthesis: involves conveying the findings of the synthesis.

Following the pilot scoping (Krishnasamy et al. 2016), we searched for articles using the search terms shown in Table 1. The purpose of the search was to identify and retrieve studies with qualitative research designs that discussed education for medical students with outcomes of empathy and compassion that are in English, and were published from 2007 to 2017 to capture articles on recent curricula and teaching methods. Study designs of interest included phenomenology, ethnography, grounded theory, narrative research, case study, and articles with qualitative data. Qualitative articles are suitable because they allow an understanding of study participants' perspectives and provide insight to their social situations and interactions (Creswell 2009). Hence, these articles would enable us to gain insight into how education affects empathy and the expression of compassion in medical students, and thus answer our research questions.

The search strategies and databases used for the literature search are shown in Table 2.

**Table 1.** Search terms used for database searching for the pilot scoping.

P	I	C	O
Medical undergraduate <sup>a</sup>		Qualitative	Empathy
Medical student <sup>a</sup>		Phenomenology	Compassion
Medical educat <sup>a</sup>		Ethnography	
Medical faculty		Grounded theory	
Medical teach <sup>a</sup>		Interview <sup>a</sup>	
		Narrative <sup>a</sup>	
		Focus group <sup>a</sup>	
		Meta-ethnography	
		Case study	
		Thematic analysis	
		Framework analysis	

<sup>a</sup>Truncations used during database searching.

A total of 1454 papers were identified through the database searching. These records were exported to EndNote 8. The results from each database are shown in Table 3.

Of these, 482 duplicates were removed, and the titles and abstracts of the remaining records were then screened independently by at least two reviewers in EndNote 8 using the study selection criteria in Table 4. We used the steps by Bramer et al. (2017) to guide us in using EndNote 8 for this process.

In total, 860 records were deemed unsuitable and excluded, and the full texts of the remaining 112 were retrieved. Each of these articles was then independently read by at least two reviewers to determine suitability for inclusion in the study. After the full text articles were read, 33 articles were deemed suitable for inclusion in the meta-ethnography. A summary of this process is shown in the adapted PRISMA flowchart (Moher et al. 2009), in Figure 1.

Each paper was randomly allocated to at least two reviewers. The data extraction form developed for the review and reported in the protocol was used to extract the information relevant to our review aims, and is available on the BEME website (Krishnasamy et al. 2016). The data extraction form was piloted with a few studies and revised by all review team members. Information extracted included details on country, type, format and design of educational interventions and programs, and educators. Supplemental Table 5 details information on the publication, study design, location and setting, and the objective of the study and type of teaching activity involved. Descriptions of the experiences, attitudes and perceptions of empathy and compassion were also extracted from the papers for data analysis.

At least two reviewers extracted the data from each paper, and appraised the quality of each of the 33 studies. Any disagreement was resolved through discussion with a third reviewer. All papers that did not address medical education and empathy or compassion were excluded. Data extraction and quality appraisal were documented and organized using Excel. The results of the quality appraisal based on CASP criteria (CASP 2014) are presented in the Appendix Supplementary Table 1.

Each paper was read by three members of the research team several times, and key concepts and ideas which are known as "metaphors" were extracted and documented (Noblit and Hare 1988). NVivo Software (NVivo Qualitative Data Analysis Software 2014) was used in the process of coding the findings from the data. Descriptions of students', patients', family members', and educators' experiences of empathy and compassion were also extracted verbatim from each paper and categorized into "First order constructs" (participants' own words extracted from the articles) and "Second order constructs" (researchers' interpretations extracted from the paper) (Cahill et al. 2018, p. 133). The papers were read across for common and recurring concepts (Britten et al. 2002). The reviewer team proposed concepts that were defined differently and implicit to the included studies. A list of all the ideas, metaphors, phrases and themes that were generated from each paper were juxtaposed to see how they occurred, recurred or were encompassed in each study, and relationships between and across studies were then explored, and concepts and themes across all studies were displayed in a

**Table 2.** Databases and search strategies used for the literature search.

Database	Search strategy
Cumulative Index to Nursing and Allied Health Literature (CINAHL)	[AB medical undergraduate* OR AB medical student* OR AB medical educat* OR AB medical faculty OR AB medical teach*] AND [AB empathy OR AB compassion ] AND [AB qualitative OR AB phenomenology OR AB ethnography OR AB grounded theory OR AB interview* OR AB narrative* OR AB focus group* OR AB meta-ethnography OR AB case study OR AB thematic analysis OR AB framework analysis]
EMBASE	<p>Limiter: English</p> <ol style="list-style-type: none"> <li>1. (Medical undergraduate* or Medical student* or Medical educat* or Medical faculty or Medical teach*).af.</li> <li>2. (Qualitative or Phenomenology or Ethnography or Grounded theory or Interview* or Narrative* or Focus Group* or Meta-ethnography or Case study or Thematic analysis or Framework analysis).af.</li> <li>3. (Empathy or Compassion).af.</li> <li>4. 1 and 2 and 3</li> <li>5. limit 4 to English language</li> </ol>
Education Resources Information Centre (ERIC)	<ol style="list-style-type: none"> <li>1. Medical undergraduate* OR Medical student* OR Medical educat* OR Medical faculty OR Medical teach*</li> <li>2. Qualitative OR Phenomenology OR Ethnography OR Grounded theory OR Interview* OR Narrative* OR Focus Group* OR Meta-ethnography OR Case study OR Thematic analysis OR Framework synthesis</li> <li>3. Empathy OR Compassion</li> <li>4. 1 AND 2 AND 3</li> </ol> <p>Limiter: English</p>
PsycINFO	<ol style="list-style-type: none"> <li>1. Medical undergraduate* OR Medical student* OR Medical educat* OR Medical faculty OR Medical teach*</li> <li>2. Qualitative OR Phenomenology OR Ethnography OR Grounded theory OR Interview* OR Narrative* OR Focus Group* OR Meta-ethnography OR Case study OR Thematic analysis OR Framework synthesis</li> <li>3. Empathy OR Compassion</li> <li>4. 1 AND 2 AND 3</li> </ol> <p>Limiter: English</p>
PubMed	<p>((((((((qualitative) OR phenomenology) OR ethnography) OR grounded theory) OR interview*) OR narrative*) OR focus group*) OR meta-ethnography) OR case study) OR thematic analysis) OR framework synthesis) AND (((empathy[MeSH Terms]) OR compassion[MeSH Terms])) OR ((empathy OR compassion))) AND (((((((medical teacher[MeSH Terms]) OR medical faculty[MeSH Terms]) OR medical education[MeSH Terms] OR medical educator[MeSH Terms]) OR medical student[MeSH Terms]) OR medical undergraduate*[MeSH Terms])) OR ((medical) AND teacher)) OR ((medical) AND faculty)) OR ((medical) AND educator)) OR ((medical) AND student*) OR ((medical) AND undergraduate*))</p> <p>Filter: English</p>

**Table 3.** Number of search results from each database used.

Database	Total hits
CINAHL	59
EMBASE	426
ERIC	29
PsycINFO	474
PubMed	466
Total	1454

grid (Cahill et al. 2018). Next, the research studies were arranged chronologically and themes were translated using the key concepts or themes from each paper as suggested by Atkins et al. (2008). A line-of-argument synthesis was conducted to integrate the similarities and differences among the studies to produce a new conceptual model illustrating our interpretation of the findings. We had several discussions to clarify the key concepts and meanings identified, and created interpretations of these collaboratively (Cahill et al. 2018). Audit trails were also maintained to enhance the trustworthiness of the research findings. Preliminary concepts were derived individually by the reviewers and discussed extensively before the final third order concepts were finalized. An example of how this coding was conducted is provided in Supplemental Table 6.

## Findings

The line-of-argument synthesis contributes to meeting the review's first aim of examining medical students', educators, and patients' perceptions and experiences of what affects empathy and compassion in medical students. The

**Table 4.** Study selection criteria used to guide the screening of articles.

Inclusion criteria	Exclusion criteria
Empirical study in English.	Students or faculty were from non-medical professions, therapy or healthcare therapy.
Paper published since and including year 2007.	Studies using a quantitative or mixed methods design.
Involvement of students enrolled in medical undergraduate studies and engaged in initial medical training regardless of their qualifications on entry.	
Study describes some form of education or teaching intervention or learning experience for the medical students.	
Study uses a qualitative study design.	

synthesis resulted in four main themes: Seeing the patient as a person; Appreciating the elements of empathy and compassion; Navigating in the training environment; and Being guided by ideals. Based on the medical students' and patients' perceptions and experiences, we suggest that in order to show empathy and compassion to patients, medical students need to develop and maintain the perspective of "Seeing the patient as a person" over the course of their medical training. Additionally, empathy and compassion are dynamic processes and relational in nature. By this, we mean that interactions between patients and students influence the demonstration of empathy and compassion. This is evidenced by students' and patients' accounts of how empathy and compassion were expressed and reinforced or suppressed by care recipients' emotions, words and actions. Besides that, the larger environment in which the patients, students and educators are situated

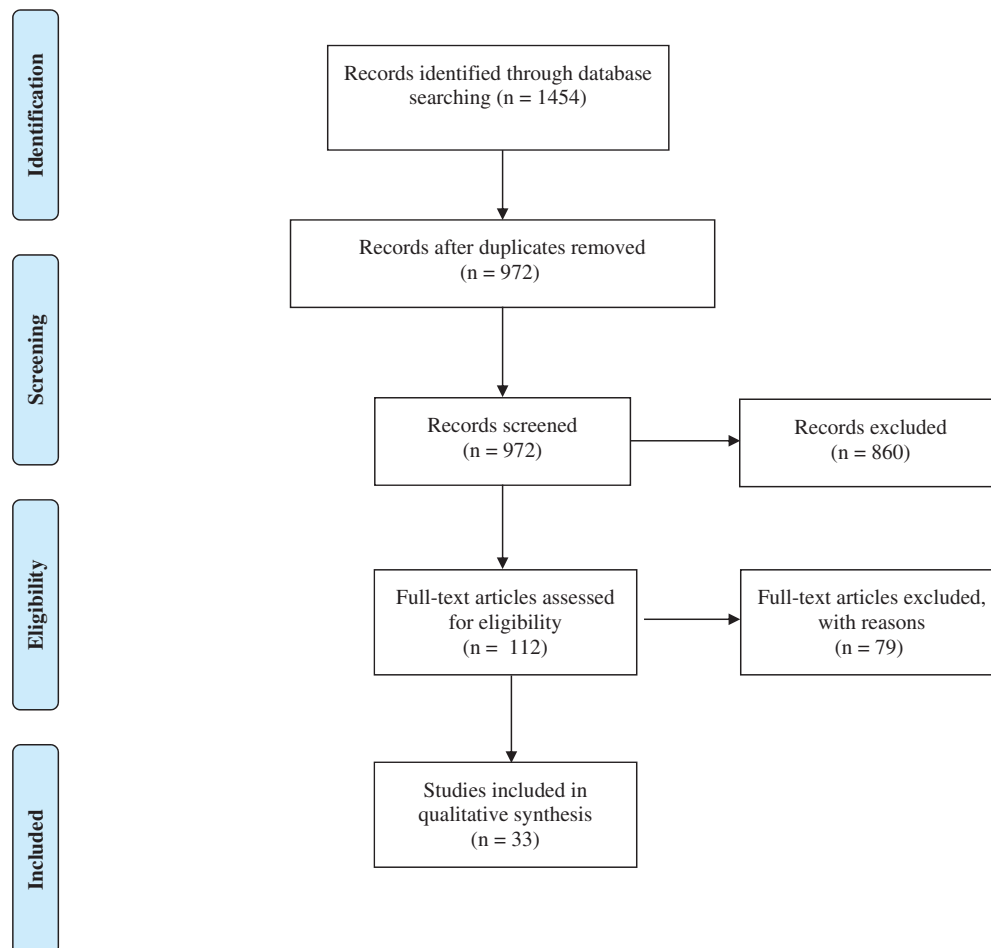


Figure 1. PRISMA 2009 flow diagram (adapted). From: Moher et al. (2009).

has a paramount influence on medical students' experiences in their attempts to learn and demonstrate empathic and compassionate actions. Finally, learning of empathy and compassion is also influenced by medical students' values and ideals. Supplemental Table 7 provides an overview of the main themes and sub-themes identified in all 33 articles. Supplemental Table 8 provides additional quotes to substantiate our themes and sub-themes.

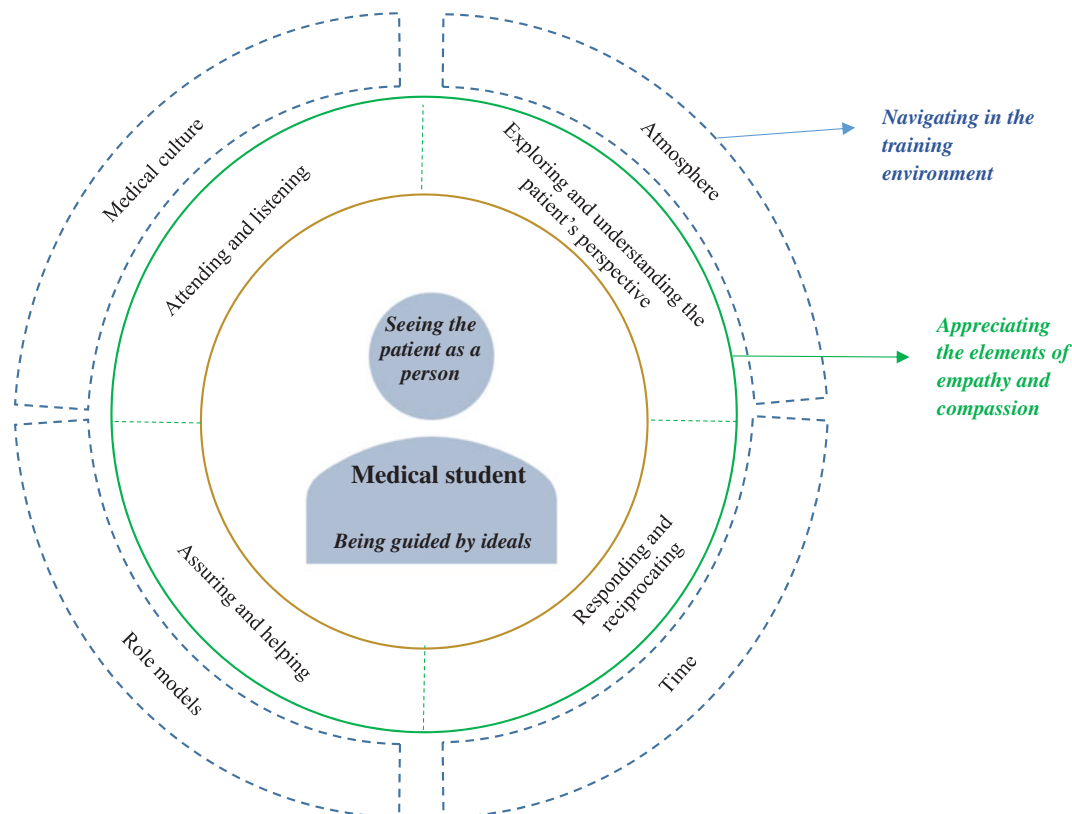
In relation to the review's second aim, Figure 2 illustrates a model delineating the main themes described above and the interactions between the patient, medical student, and training environment. As illustrated in the model, all the components interact and affect medical students' learning of empathy and compassion.

### Seeing the patient as a person

When medical students saw patients as people, rather than depersonalizing them, they were encouraged to have empathy for patients. Students in the studies recognized patients as a "person" (Kenyon and Brown 2007, p. 607; Klemenc-Ketis and Kersnik 2011, p. 3; Arntfield et al. 2013, p. 5; Burgess et al. 2015, p. 3; Boland et al. 2016, p. 488), "real person" (Boland et al. 2016, p. 488), "whole person" (Boland et al. 2016, p. 489), "people" (Kenyon and Brown 2007, p. 607; Ganesh and Ganesh 2010, p. 228; Konkin and Suddards 2012, p. 590; McNeill and Campbell 2013, p. 261; Beck et al. 2015, p. 1278), "human beings" (Kearsley and Lobb 2014, p. 76; Brand et al. 2017, p. 436) or "fellow human beings" (Head et al. 2012, p. 537), and as an

"individual" (Allen et al. 2008, p. 261; Beck et al. 2015, p. 1279) or "individuals" (Chretien et al. 2015, p. 1027).

From their encounters with patients in platforms such as a medical apprenticeship, a rural clinical attachment and/or a longitudinal integrated clerkship, students also demonstrated an increased awareness that patients have personalities (Allen et al. 2008), are people "who live and play outside" (McNeill and Campbell 2013, p. 261) and have "jobs and have to pay their mortgage" (Konkin and Suddards 2012, p. 590). Through an elective course on professionalism using films, students also recognized empathy demonstrated by the nurse in the film when she regarded the patient "as a subject" and "saw her as a person who is breathing, thinking, hearing, seeing, talking, wanting, suffering and seeking support from other people" (Klemenc-Ketis and Kersnik 2011, p. 3). In examining perceptions and experiences, students also learned to not depersonalize patients, specifically not to see them as "an object" (Klemenc-Ketis and Kersnik 2011, p. 3) or to objectify them (Bandini et al. 2017). They also learned not to consider patients as an illness (Ganesh and Ganesh 2010; Arntfield et al. 2013), "disease" (Head et al. 2012, p. 537; Frazier et al. 2015, p. 4; Boland et al. 2016, p. 489), "cases" (Ganesh and Ganesh 2010, p. 228; Brand et al. 2017, p. 436), "set of symptoms" (Boland et al. 2016, p. 489), or "bed number" (Ganesh and Ganesh 2010, p. 228); and to not merely see them as opportunities for teaching or learning (Eikeland et al. 2014). Reflecting on a week-long clinical rotation in palliative care, a student experienced intense anger when he observed doctors treating a patient "like cattle" (Head et al. 2012, p.



**Figure 2.** Model of interactions between the patient, the medical student and the training environment.

539). When the medical students saw the patient as a person, there was a desire to relate with the patient “on a human level.” Reflecting on her clinical placements, a student wrote “Every patient has a real need to be treated as a real person and that no amount of knowledge will be useful if I cannot interact correctly with the patient on a human level” (Boland et al. 2016, p. 488). However, students also realized how “they often lost sight of the uniqueness of the individual” in the medical environment (Head et al. 2012, p. 539).

### ***Appreciating the elements of empathy and compassion***

In this next theme, medical students were described as being present and attending to patients, being curious about them and trying to understand their perspectives. This adds to an understanding of what affects empathy and compassion in medical students. The acts of medical students giving assurance and helping patients, and in turn, patients responding to this care, comfort, and help are also included in this theme. This theme includes interactions between medical students and medical care recipients but excludes interactions between students and other healthcare staff or professionals. In this theme, medical students learned to appreciate the different elements of empathy and compassion and their interpersonal nature.

### ***Attending and listening***

The perceptions and experiences of medical students, educators and patients were examined through how they devoted time and paid attention to and listened closely to patients, care recipients, as well as caregivers and families.

Through interactions with them, students learned the importance of being present for patients (Head et al. 2012), spending time or taking time with them (Ganesh and Ganesh 2010; Frazier et al. 2015; Boland et al. 2016), and listening to them (Breytspraak et al. 2008; Ganesh and Ganesh 2010; Beck et al. 2015; Chretien et al. 2015; Frazier et al. 2015; Gonsalves and Zaidi 2016). During a narrative medicine intervention, students elicited illness narratives from patients and learned to “slow down and listen,” making patients feel that they are a person: “sometimes we need to take a moment to just sit with someone and just listen ... and make them feel like you know they’re a person once again, that they’re not an illness...” (Chretien et al. 2015, p. 1027). Listening to refugees while providing care triggered empathy in students (Griswold et al. 2007). Students also learned to express empathy and compassion by “just” listening to patients and caregivers (Atasoy et al. 2012, p. 659; Beck et al. 2015, p. 1279). In addition to making patients feel that they are persons, triggering empathy in students and allowing them to express empathy, listening to patients also helped students to understand patients’ struggles with their conditions (Kastenholz and Agarwal 2016). Students were also able to learn the importance of listening in order to understand their patients through narrative medicine training (Arntfield et al. 2013); and reflecting on films (Klemenc-Ketis and Kersnik 2011).

### ***Exploring and understanding the patient’s perspective***

This sub-theme involves understanding underlying concerns, causes, or issues pertaining to patients’ and families’ emotions toward medical care suggestions, decisions, or plans, as well as exploring the pain or suffering experienced from perceptions and experiences of medical students, educators, and patients. Students learned to explore

and understand the perspectives of patients (including care recipients and caregivers) by observing or relating to them. For example, continuity of patient care through a longitudinal integrated clerkship gave students the opportunity to understand the experiences and perspectives of patients and their caregivers, contributing to the students' compassion (Konkin and Suddards 2012). A student expressed that doctors are able to augment their relationships with patients in different contexts by considering patients' perspectives instead of just feeling sorry for them (Tavakol et al. 2012). Students learned to explore patients' perspectives by "using open questions and asking ideas, concerns and expectations" (Aper et al. 2015, p. 82); and by eliciting information about patients (Griswold et al. 2007). Understanding and empathizing with patients involved being nonjudgmental for some students (Batley et al. 2016; Kastenholz and Agarwal 2016). Other students drew on their life experiences to foster empathy and understanding toward their patients (Eikeland et al. 2014; Brand et al. 2017), but some were not able to: "Although I attempted to employ empathy, it was difficult because I had no idea what this man must be feeling. Before, I have always used empathy by trying to stand in the other person's shoes and mimic what I think they should be feeling. In this case, I just couldn't do that" (Boland et al. 2016, p. 488). When students found it hard to empathize without having experienced something similar to their patients, they may have had difficulty differentiating between sympathy and empathy (Tavakol et al. 2012).

Students were also able to learn to explore patients' perspectives without direct interaction with patients. Patient stories narrated during lectures promoted the patients' point of view and encouraged students to have empathy and compassion (Easton 2016). Creative writing allowed students to access an "otherwise alien experience and perspective and as a result feel genuine empathy and compassion" toward patients they may otherwise have been "quick to judge" (McDonald et al. 2015, p. 7). Through narrative medicine training, students learned to receive and value different perspectives to understand patients better (Arntfield et al. 2013).

### **Assuring and helping**

The medical students also learned about comforting patients, care recipients, and caregivers. By relating with patients, care-recipients, and caregivers, students were motivated to assure and help them, and learned how to do so in different contexts. Students expressed being motivated to work hard to become great doctors in order to help children with diseases such as diabetes (Beck et al. 2015). This desire to help is also evident in one student reflecting on the experience in a voluntary community service organized in medical school, "This project has helped me mature in many ways, because it's a different point of view when you go back to the country you grew up in. You feel you're in the status where you are capable of helping people, that you have the ability to help people, so you want to help them more and more..." (Loh et al. 2016, p. 687). Students learned practical ways of assuring and helping like summarizing things (Allen et al. 2008), giving supportive words (Atasoy et al. 2012), smiling (Griswold et al. 2007), holding a patient's hand (Head et al. 2012),

dispelling worries (Kastenholz and Agarwal 2016), and comforting (Ganesh and Ganesh 2010; Loh et al. 2016).

### **Responding and reciprocating**

From the studies, when students demonstrated empathy, compassion or care, patients responded positively (Griswold et al. 2007; Allen et al. 2008; Ganesh and Ganesh 2010; Konkin and Suddards 2012; Lutz et al. 2013; Boland et al. 2016). In return, when patients responded positively to them, students were encouraged and found it easier to have compassion (Braun et al. 2013) and be able to practice "gentle medicine" (Head et al. 2012, p. 538). Students who interacted with older adults in a retirement community found that "the relationship is reciprocal" where each felt comfortable with the other (Breytspraak et al. 2008, p. 141). On the other hand, if patients were not responsive, students felt that they were not able to engage with them: "I... expected... all this emotion about his illness and we were going to connect ... instead I kind of felt pushed away, and he wasn't even actually able to engage in a story about his illness." (Chretien et al. 2015, p. 1026).

### **Navigating in the training environment**

The next theme, *Navigating in the training environment*, encompasses aspects of the environment that pertain to the teaching and training of medical students and how they impact the development of empathy and compassion in medical students. This includes their experiences in the training environment, and their perceptions of the considerations of time, medical culture, role models, and atmosphere.

#### **Time**

*Time* includes instances of efficiency, realities of time pressure as well as constraints experienced by the medical students or observed in those whom they learn from, and which impact on their expression of empathy or compassion. Students described the time constraints they experienced and concerns they had about losing the caring attitudes and behaviors they were taught because of the need for efficiency (Allen et al. 2008). "Some respondents described changes in behaviors based on efficiency and time management, but these changes were not always positive as some students noted their increasing impatience both in their professional and personal lives." (Bandini et al. 2017, p. 60). Time pressures also led to some students following the practices of more experienced clinicians, "I would not do it like that if I had more time ... but you just have to do it the way your supervisor does it ..." (Aper et al. 2015, p. 82); or accepting that which they initially had not, "At first, I was annoyed by some people here who are really cynical, but later on I noticed that they're actually still efficient, so now I don't mind the negative atmosphere ..." (Batley et al. 2016, p. 4).

#### **Medical culture**

*Medical culture* includes mention or emphasis on scientific or medical knowledge, or medication or other treatment. It also includes constraints on the expression of emotions,



empathy or compassion due to different discourses about emotions and their role within the prevailing medical culture. In addition, the norms and values of the medical culture may also be inferred from the content and structure of the medical curriculum, activities, and assessable topics.

The focus of the medical culture on medical knowledge over humanistic qualities is exemplified in this quote from Michalec (2011) "From the interviews with preclinical students it could be argued that many students did not see the psycho-social aspects of patients as 'real things' that they need to learn. They may feel that clinical empathy is important to engage in and is an important ingredient in positive doctor-patient relations, as a majority of them expressed during their interviews, but given that it is not formally evaluated, and that the discussions of these topics declines over the course of the year, students focus more intently on what is truly valued by the institution, that which *is* tested and consistently addressed in small groups, labs, and lectures" (p. 125). Klemenc-Ketis and Kersnik (2011) reported how the medical students involved in learning professionalism through films emphasized the development of scientific and medical knowledge over humanistic qualities in the doctor's management of their patient in one of the films, which was considered to be "one-sided and purely bio-medically founded" (p. 3). This emphasis was also thought to be a problem in other studies, for example, "This disconnect likely arises out of the methods used for training which are viewed as counter-culture, a problem that is common to humanities-based programs in medicine [46]" (Arntfield et al. 2013, p. 9).

Despite this, one medical student identified a need to maintain a balance between empathy and distance during patient-physician interactions: "There is a limit. You have to be empathetic, but you cannot be too empathetic, and again, this should come with experience; to know at which point you should stop being too involved with the patient, and at which point to engage more ..." (Batley et al. 2016, p. 4). This balance was also mentioned by Ganesh and Ganesh (2010, p. 228): "Students need to find a balance between being challenged by investigating a patient's medical condition – the science of medicine; and at the same time not being divorced from the person they are treating – the emotional side of medicine." Several of the papers discussed ways in which medical curricula and activities could be structured to help balance the development of medical knowledge with nurturing the humanistic qualities of doctors. In Kenyon and Brown (2007) for example, the experience of having a mission statement day promoted reflection on the values that motivated students to study medicine, "It really sets the tone for the entire medical school but it would be useful to incorporate that tone a little more throughout. It's pretty unique. I've never had that experience before and I probably never will again. It was such an intense soul-searching emotional experience. It was great." (p. 609).

### **Role models**

*Role models* includes those who are involved in shaping the learning and development of medical students, including staff, faculty, patients, or others involved directly or indirectly in their medical training. Positive and negative role modeling are also included in this sub-theme. The

tutors served as role models in showing empathy, and occasionally some tutors showed how it should not be done (Boland et al. 2016, p. 489). An example of positive role modeling included a reflection by a medical student following observations of communication between physicians, patients, and relatives, as well as between relatives and staff, "I understood that being a physician is not consisted of just studying or having an ordinary profession and that it requires the formation of the wish to help the others and of empathy skills." (Atasoy et al. 2012, p. 659).

### **Atmosphere**

*Atmosphere* encompasses physical and nonphysical aspects of the environment that have an effect on the development of students' empathy and compassion, including consideration of aspects of the environment that can be changed or improved.

Medical tools and appliances may have the effect of creating a medical atmosphere and homogenizing or objectifying patients (Allen et al. 2008, p. 262). Students experienced cognitive overload when they had to manage both the biomedical and communicative aspects of a consultation and perceived that this made it more difficult to demonstrate empathy (Eikeland et al. 2014; Aper et al. 2015). Having a reflective space and open dialog improved students' emphatic skills and ability to cope with difficult situations (Ganesh and Ganesh 2010; Arntfield et al. 2013; Lutz et al. 2013; Brand et al. 2017).

### **Being guided by ideals**

This theme espouses the idea that underlying and intrinsic thoughts, motivations, and ideals the medical students had influenced their identities and how they developed and responded in the various learning situations and environments they were in. For instance, students were disappointed or angry to see consultants not showing respect and not spending time to understand patients' difficulties and felt powerless that they could not defy educators' instructions or the over-emphasis on medical knowledge in medical culture though they knew their actions were not in patients' best interests (Allen et al. 2008; Tavakol et al. 2012; Burgess et al. 2015; Frazier et al. 2015). Others felt guilty for being unable to relieve patient's suffering (Ganesh and Ganesh 2010). The following example shows the dilemma experienced by a student who wanted to provide comfort and relieve patient's discomfort but was stopped by his/her medical educator: This student wanted to demonstrate empathy toward the patients in ways that she was not allowed, for example by attending and responding to care needs. "There are some of the elderly patients (...) that ask if someone can cut their nails (...) My idea of empathy is that that is something I could have done, (...) I changed the bedding for a patient who had vomited (...) then I was told," "Then you should call the nurse because she's supposed to do that," because we were seven people, we were supposed to interview (...) and I thought, "Well, there's only two people talking. I can do this in the meantime." (Eikeland et al. 2014, p. 4).

Medical students' values and ideals also appear to affect what they chose to focus on in their training environment.

Medical students chose to model doctors who are aligned with their own ideals of the physician's role. Students who valued problem-solving and evidence-based medicine, viewed clinicians with high clinical efficiency as their role models, while those who valued patient care, modeled themselves on clinicians' compassionate behavior (Aper et al. 2015; Bandini et al. 2017). Students' values also influenced their perception of learning about psycho-social aspects of patient care. Some students found little value in learning the psycho-social aspects of patient care in lectures and small group discussions in their first year of medical school. They described the content as "that touchy-feely stuff" and stated that they preferred to "focus on the real things" (Michalec 2011, p. 125). The provision of early positive experiential learning experiences, i.e. opportunities to interact with patients may influence their perceptions over time (Kastenholz and Agarwal 2016). In addition, students who attended workshops that promote development of self-awareness and reflection on their personal and professional experiences found "a renewed sense of drive and enthusiasm" for medicine (Kearsley and Lobb 2014, p. 77). Reflection, along with experiential learning allows students to consolidate their thoughts and develop into the kind of doctor they want to be (Boland et al. 2016).

In summary, medical education affects empathy and compassion in students in multiple ways and through different means. Learning activities that allow students to recognize patients as unique individuals and fellow human beings (e.g. creative writing, films, longitudinal integrated clerkship) promoted development of empathy and compassion. Opportunities to interact with patients have the added advantage to promote and reinforce expression of empathy and compassion. Medical students learned about the interpersonal nature of empathy and compassion through patient interactions by having the opportunity to listen, explore patients' perspectives, help patients, and receive responses from them. The development of empathy in students is also affected by the external training environment, including the emphasis on medical knowledge, time pressure, negative role models, and aspects of the environment that depersonalize patients. Moreover, students' ideals of the doctor's role not only shape how they respond to situations that appear to contradict their ideals, these ideals also affect what students choose to focus on in their training, thus affecting their development of empathy and compassion. Reflection exercises allow students to pause and contemplate on their experiences and remind students of the importance of empathy and compassion.

## Discussion

This meta-ethnography aimed to build a new interpretive account from the primary qualitative studies to understand how education affects empathy and compassion in medical students. Our conceptual model in Figure 2 illustrates how medical students' perspectives and ideals, their appreciating of the interpersonal elements of empathy and compassion, as well as their training environment are aspects that all play a part in how education affects empathy and compassion in medical students.

Medical students' perspectives of *seeing the patient as a person* are seen to play a central part in how education

affects empathy and compassion in students. It may be developed primarily through learning activities involving interactions with patients as well as narrative approaches such as creative writing and videos. Although both learning approaches allowed students to see patients as individuals rather than objects, it appears that students recognized that they may lose this perspective only when they were given an opportunity to interact with patients within the medical environment. Students realized that they may lose sight of the uniqueness of their patients as individuals while navigating in their fast-paced training environment as they encountered conflicting messages between taught values and observed behavior. For instance, time pressures experienced in the clinical setting led students to model after experienced, efficient clinicians and lose the perspective that patients are people. Students also struggled to maintain a balance between empathy and distance with their patients as they were constantly reminded by their educators to suppress their emotions and behave "professionally."

The ideals of medical students that guide them during their training are also seen to be central. Mastering biomedical skills and knowledge undoubtedly formed a substantial part of students' ideals of the doctor's role; nonetheless, these ideals potentially limited students' practice of empathy. Medical students' ideals of the doctor's role also influence the extent to which they internalized empathy and compassion. This shaped how they responded to and interfaced with the various individuals and environmental factors that they encountered in their training. Some students found little value in learning about the psycho-social aspects of patient care and preferred to focus on biomedical knowledge in the first year of medical school. Our findings echo Pedersen's (2009) recommendation to take into consideration biomedical paradigms and learners' professional priorities and structure empathy training beyond the dichotomy between biomedicine and the humanities. Guided reflections incorporated in teaching activities allowed students to pause and contemplate on their experiences of empathy and compassion. The provision of opportunities for medical students to voice their concerns helped them clarify their thoughts on observed behaviors that they perceived to be misaligned with their ideals and standards.

Appreciating the four interpersonal elements of empathy and compassion (i.e. Attending and listening, Exploring and understanding the patient's perspective, Assuring and helping, and Responding and reciprocating) is another core aspect. Current trends in medical curriculum appear to focus predominantly on developing students' skills in active listening and thinking from the perspectives of patients. However, empathy and compassion are dynamic processes. The expression of empathy and compassion is relational in nature and emerged in interactions. When patients reciprocated to expressions of students' empathic and compassionate behavior, the students were in turn encouraged, and found it easier to express empathy and demonstrate compassion. Main et al. (2017) highlighted the interpersonal and relational nature of empathy, with empathy being a dynamic process that is highly dependent on the characteristics of the person being empathized with, the relationships between the

interacting persons and other contextual elements. Our findings support the approach of conceptualizing empathy as “not a finite point in time of mutual affective experience, but rather as a dynamic process that involves cognitive and emotional discoveries about others’ experiences” (Main et al. 2017, p. 358).

As illustrated in our conceptual model, the medical student navigates his training environment while being guided by his ideals, shaping his perspectives about patients and learning to appreciate the elements of empathy and compassion. We identified aspects of the training environment that have an impact on this process. In his meta-ethnography of interview-based studies, Jeffrey (2016) identified that a strong emphasis on the biomedical over psycho-social elements of care may create a barrier to empathy. On top of the emphasis on biomedical knowledge, we found that time pressure, negative role models, and the objectification of patients can affect students’ perspective of seeing patient as a person and learning to appreciate the different elements of empathy and compassion.

In relation to the third aim of the review, important considerations that medical educators and faculty developers could have in developing medical curricula include using existing curricula and providing students with opportunities to interact with different types of patients in different settings while encouraging the students to be genuinely interested in the patients as persons. This is because, as medical students interact with their patients with empathy and compassion, patients may reciprocate, and this in turn can encourage students to express compassion. This negotiation and establishment of a dialog between a clinician and patient can reinforce the relational aspects of empathy and compassion; it allows for the co-creation of patients’ stories with professionals and identification of steps that can be taken in the care environment (Avrahami and Reis 2009). Educators could also consider broadening the definition of empathy to also consider empathy as a relational construct, to incorporate shifting focus from teaching the “form of empathy” to the “relational functions of empathy” in interpersonal contexts, i.e. considering how receptive the person being empathized with is, and the contextual elements that may influence the interactions (Main et al. 2017, p. 364). Although approaches like creative writing and films do not provide the opportunity for students to interact with patients, we found they helped students appreciate the interpersonal nature of empathy as well. As these approaches are limited when students do not interact with patients, we recommend they are complementary to, and not a substitute for, other more patient-focused opportunities. Lastly, it is imperative that good values and ideals are encouraged and supported through for example clinicians and educators demonstrating professionalism and exemplary behaviors that medical students can model, acknowledging that everyone working in a clinical environment is a role model. Students should also be provided opportunities to reflect and share their concerns if any, or to clarify their thoughts or reflections on observations and behaviors that they perceived to be not aligned to the ideals and standards they have.

The majority of the papers included were of reasonable quality as rated on the CASP (2014). The papers either did

not provide information on the relationship between the researcher and participants or it was not clear what their relationship was. However, the papers had clear aims, and the methodology used was appropriate to achieve their aims. Ethical issues were considered in the studies and appropriate strategies were used for participant recruitment and data collection. Data analysis seemed appropriate and rigorous, and clear results were stated in the majority of the papers included.

### Implications for future research

Future research could consider the interrelationships and interactions among the components of empathy and compassion that medical students are exposed to as part of their training. By studying all of these proposed components together, one might be better able to understand the nature and nuances of the mechanisms in which empathy and compassion present. A clarification of the understanding of the findings could also suggest implications and applications, such as whether these individual or combined components contribute to change in medical education, and the development of medical professionals who are better able to express and manage their empathy and compassion and during interactions with patients, caregivers, and staff. Future research could also investigate the development of medical students’ sensibility to language, interactions, or communication, and their narrative competence in skills such as active listening, reading, and reflective writing, which could potentially impact on their expression of empathy and compassion in the health-care context.

### Limitations

The data on which the analyses were based were as reported by the authors of each paper, hence understanding of the phenomena may be limited as the quotes and themes, while generally assumed to be representative of the key themes and findings in each empirical study, may have been limited by word counts or selective reporting by authors. Although the studies were from a range of countries including Turkey, Australia, the USA, and Canada, it was difficult to compare the findings between studies because differences in contexts, geographical locations, health care systems and structures may have affected how each educational program was provided, or experienced by the students. Additionally, gray literature were not searched for and included in this review.

### Conclusions

This meta-ethnography helps deepen our understanding of how medical students learn about empathy and compassion in various intensive training formats in a dynamic training environment. We showed how medical students’ perspectives and ideals, their appreciating of the interpersonal elements of empathy and compassion, as well as their training environment all play a part in how education affects empathy and compassion in medical students.

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## Glossary

**Empathy:** Is considered as a process, involving the ability to understand the patient's situation, perspective, and feelings and to communicate back that understanding, and to act on that understanding in a helpful (therapeutic) way (Mercer and Reynolds 2002).

**Compassion:** Is "built on the capacity to empathize – a form of cognitive and emotional perspective taking – but involves the additional step of wanting to alleviate suffering" (Fernando et al. 2016, p. 340).

**Medical student:** Persons involved in medical, undergraduate studies and engaged in initial medical training regardless of their qualifications on entry.

**Education:** Includes medical education curricula and activities medical students engage in, in a variety of learning environments that could include classroom, bedside teaching, homework, interactions with patients, etc.

**Educators:** Include medical teachers, faculty, and persons involved in teaching medical students, e.g. patients.

## Notes on contributors

**Charmaine Krishnasamy**, BOT(Hons), PhD, is a Senior Research Analyst at HOMER, NHG Education, National Healthcare Group, Singapore.

**Sik Yin Ong**, BAsc, MNutrDiet, is a Research Analyst at HOMER, NHG Education, National Healthcare Group, Singapore.

**May Eng Loo**, BSc(Hons), MA, is a Research Analyst at HOMER, NHG Education, National Healthcare Group, Singapore.

**Jill Thistlethwaite**, MBBS, PhD, MMed, FRCGP, FRACGP, Medical Adviser, NPS MedicineWise, Sydney, NSW; Adjunct Professor, University of Technology Sydney, NSW, Australia.

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