

Supplemental Digital Appendix 1: **1-3**
 Algorithms for a Search of the Literature on Medical Students' Experiences of Empathy, December 2016 and June 2019

Supplemental Digital Appendix 2: **4**
 Assessment, Using the Critical Appraisal Skills Program (CASP) of Quality of Articles Examined in a Review of the Literature (Through June 2019) on Medical Students' Experiences of Empathy

Supplemental Digital Appendix 3: **5**
 Summary of the appraisal of the Quality of Articles Examined in a Review of the Literature (Through June 2019) on Medical Students' Experiences of Empathy

Supplemental Digital Appendix 1

Algorithms for a Search of the Literature on Medical Students' Experiences of Empathy, December 2016 and June 2019

Database (results)	Phrase	Filters
Pubmed (861)	("Qualitative Research"[Mesh] OR "Focus Groups"[Mesh] OR "Observation"[Mesh] OR "Grounded Theory"[Mesh] OR "Hermeneutics"[Mesh] OR "Narration"[Mesh] OR ("qualitative" OR "thematic" OR "empirical" OR "descriptive") AND ("study" OR "studies" OR "research" OR "method*" OR "report*" OR "approach" OR "interview*")) OR "focus groups" OR "observation*" OR "observation method*" OR "grounded theory" OR "content analysis" OR "interview*" OR "group discussion" OR "hermeneutics" OR "narratives" OR "self-report" OR "self report" OR "analytical research" OR "discourse analysis" OR "thematic analysis" OR "speech analysis" OR "observational study" OR "constant comparative method") AND ("Empathy"[Mesh] OR "empath*") AND ("Students, Medical"[Mesh] OR "Faculty, Medical"[Mesh] OR "Schools, Medical"[Mesh] OR "Education, Medical"[Mesh] OR "Teaching"[Mesh] OR "Medicine"[Mesh] OR "residency" OR "intern*" OR ("medical" OR "medicine" OR "clinical") AND ("school*" OR "stud*" OR "educational program" OR "facult*" OR "residency" OR "intern*" OR "school teach*" OR "teach*" OR "education*" OR "pedagog*" OR "teaching method" OR "teaching rounds" OR "universit*" OR "intern*" OR "residen*")) AND ("psychology, medical"[Mesh] OR "psychology, educational"[Mesh] OR "psychology, social"[Mesh] OR "self report"[Mesh] OR "knowledge"[Mesh] OR "personal narratives as topic"[Mesh] OR "self-assessment"[Mesh] OR "self report" OR "self-report" OR "personal narratives as topic" OR "self assessment" OR "self-assessment" OR "attitude" OR "knowledge" OR "psychology" OR "self concept" OR "self-concept" OR "management" OR "experience*" OR "organization*" OR "view*" OR "point of view" OR "perspective*" OR "understanding")	English 1990 to ... Humans

<p>PsycINFO (1568)</p>	<p>(DE "qualitative research" OR DE "observation methods" OR DE "grounded theory" OR DE "content analysis" OR DE "interviews" OR DE "group discussion" OR DE "hermeneutics" OR DE "narratives" OR DE "self-report" OR "focus groups" OR "observation*" OR "observation method*" OR "grounded theory" OR "content analysis" OR "interview*" OR "group discussion" OR "hermeneutics" OR "narratives" OR "self-report" OR "self report" OR "analytical research" OR "discourse analysis" OR "thematic analysis" OR "speech analysis" OR "observational study" OR "constant comparative method" OR ("qualitative" OR "thematic" OR "empirical" OR "descriptive") AND ("study" OR "studies" OR "research" OR "method*" OR "report*" OR "approach" OR "interview*")) AND (DE "empathy" OR "empath*") AND (DE "educational programs" OR DE "medical internship" OR DE "medical residency" OR DE "medical students" OR DE "medical education" OR DE "school based intervention" OR DE "group intervention" OR DE "school adjustment" OR DE "theories of education" OR DE "education policy" OR DE "social skills training" OR "educational programs" OR "school based intervention*" OR "group intervention*" OR "school adjustment" OR "theories of education" OR "education polic*" OR "social skills training" OR "residen*" OR "intern*" OR ("medical" OR "medicine" OR "clinical") AND ("school*" OR "stud*" OR "educational program" OR "facult*" OR "residen*" OR "intern*" OR "school teach*" OR "teach*" OR "education*" OR "pedagog*" OR "teaching method" OR "teaching rounds" OR "universit*" OR "intern*" OR "residen*")) AND (DE "self-report" OR DE "self-perception" OR DE "introspection" OR DE "self-concept" OR DE "attitudes" OR DE "estimation" OR DE "declarative knowledge" OR DE "comprehension" OR "self report" OR "self-report" OR "self-perception" OR "self perception" OR "introspection" OR "self assessment" OR "self-assessment" OR "attitude" OR "estimation" OR "knowledge" OR "comprehension" OR "psychology" OR "self concept" OR "self-concept" OR "management" OR "experience*" OR "organization*" OR "view*" OR "point of view" OR "perspective*" OR "understanding")</p>	<p>English 1990 to ... Human Journal article NO “Quantitative study”</p>
<p>Embase (600)</p>	<p>('grounded theory'/exp OR 'analytical research'/exp OR 'empirical research'/exp OR 'descriptive research'/exp OR 'qualitative research'/exp OR 'content analysis'/exp OR 'discourse analysis'/exp OR 'thematic analysis'/exp OR 'speech analysis'/exp OR 'observational study'/exp OR 'constant comparative method'/exp OR (('qualitative' OR 'thematic' OR 'empirical' OR 'descriptive') AND ('study' OR 'studies' OR 'research' OR 'method*' OR 'report*' OR 'approach' OR 'interview*')) OR 'focus groups' OR 'observation' OR 'grounded theory' OR 'analytical research' OR 'content analysis' OR 'discourse analysis' OR 'thematic analysis' OR 'speech analysis' or 'observational study' OR 'constant comparative method') AND ('empathy'/exp OR 'empath*') AND ('resident'/exp OR 'medical student'/exp OR 'education program'/exp OR 'medical education'/exp OR 'medical school'/exp OR 'residen*' OR 'intern*' OR (('medical' OR 'medicine' OR 'clinical') AND ('school*' OR 'stud*' OR 'educational program' OR 'facult*' OR 'school teach*' OR 'teach*' OR 'education*' OR 'pedagog*' OR 'teaching method' OR 'teaching rounds' OR 'universit*' OR 'intern*' OR 'residen*')) AND ('attitude'/exp OR 'knowledge'/exp OR 'psychology'/exp OR 'self concept'/exp OR 'management'/exp OR experience OR organization* OR knowledge OR attitud* OR 'self-concept' OR 'self concept' OR 'self-perception' OR 'self perception' OR 'introspection' OR 'comprehension' OR understanding OR perspective OR 'view*' OR 'point of view')</p>	<p>English 1990 to ... Human Article / article in press</p>

<p>Social Sciences Citation Index (707)</p>	<p>(TS=((("qualitative" OR "thematic" OR "empirical" OR "descriptive" OR "analytical") AND ("study" OR "studies" OR "research" OR "method*" OR "report*" OR "approach" OR "interview*") OR "focus groups" OR "observation" OR "grounded theory" OR "content analysis" OR "interviews" OR "discourse analysis" OR "thematic analysis" OR "speech analysis" OR "observational study" OR "constant comparative method" OR "hermeneutics" OR "narratives" OR "self-report" OR "self report" OR "analytical research") AND ("empath*") AND (("medical" OR "medicine" OR "clinical") AND ("school*" OR "stud*" OR "educational program" OR "facult*" OR "school teach*" OR "teach*" OR "education*" OR "pedagog*" OR "teaching method" OR "teaching rounds" OR "universit*" OR "intern*" OR "residen*") OR "residen*" OR "intern*") AND ("self report" OR "self-report" OR "self-perception" OR "self perception" OR "introspection" OR "self assessment" OR "self-assessment" OR "attitude" OR "estimation" OR "knowledge" OR "comprehension" OR "psychology" OR "self concept" OR "self-concept" OR "management" OR "experience*" OR "organization*" OR "view*" OR "point of view" OR "perspective*" OR "understanding"))))</p>	<p>English 1990 to ...</p>
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Supplemental Digital Content 2

Assessment, Using the Critical Appraisal Skills Program (CASP) of Quality of Articles Examined in a Review of the Literature (Through June 2019) on Medical Students' Experiences of Empathy

CASP comprises 10 questions: two screening questions about the aims of the research and appropriate use of a qualitative methodology, and eight questions covering research design, sampling strategy, data collection, researcher's reflexivity, ethical issues, data analysis, the findings, and the value of the research. Two authors (JS and EC-D) performed this assessment independently and then discussed the results within the research group until we reached agreement. Given the lack of consensus about the role and function of study quality assessment as part of systematic reviews, we did not exclude any study from the analysis based on our evaluation. However, Results are as reliable as they are based on the studies with high methodological quality. We therefore performed a secondary sensitivity analysis by excluding from the synthesis studies in the lowest quartile of methodological quality.

The quality appraisal showed that the overall quality of the studies was high. Several papers failed to address the role of the researchers, that is, their own possible effects on the findings and/or interpretations (reflexivity item); others failed to report data collection and data analysis sufficiently.

Supplemental Digital Appendix 3

Summary of the appraisal of the Quality of Articles Examined in a Review of the Literature (Through June 2019) on Medical Students' Experiences of Empathy

Principal criterion	Specific criteria specific (non-exhaustive list)	Quality assessment of the studies		
		Yes	Partially	No
Objectives	Explicit, relevant, important objectives	35	0	0
Method	Appropriate use of qualitative methods	35	0	0
Design	Design justified by the authors	22	1	12
Recruitment of participants	Recruitment described, appropriate and justified by the authors	25	10	0
Data collection	Mode of collection clear, adequate, justified by the authors, data saturation discussed	9	26	0
Reflexivity of researchers	Researches reflected about their own role and the potential biases at different stages of the study	15	4	16
Ethical considerations	Approved by an ethics committee, details to participants	33	0	2
Data analysis	Specific description of the data analysis process, data sufficient to support the results	14	19	2
Results	Explicit, credible, discussed results	12	22	1
Value of the study	Contribution to existing knowledge, transferability, identification of new avenues of research	16	18	1