



SYSTEMATIC REVIEW

Integrating humanities curricula in medical education: a literature review [version 2]

Anna Taylor^{1,3}, Susan Lehmann^{2,4}, Margaret Chisolm ^{2,4}

¹University of Bristol²University of Manchester³Johns Hopkins University⁴Johns Hopkins University School of Medicine

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Abstract

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Introduction: Medicine's increasing technologic complexities can constrain medical learners' development of patient-centered communication skills, and adversely impact patient outcomes. Although humanities-based clinical education interventions encourage reflective practice and promote the practice of holistic patient care, it remains unclear which educational interventions are the most effective.

Methods : A search was conducted in PubMed, utilising the terms 'humanities', 'humanism', 'art', 'medicine', 'narrative medicine', and 'medical education' to identify relevant English-language articles. Discussion with experts yielded further titles, such that 156 articles were reviewed and summarised, with particular focus on those describing novel curricular interventions.

Results: 108/156 (69%) of the articles were commentaries or reflections; 48/156 (31%) reported on curricular interventions. Of the latter, the majority incorporated literature or ethics, typically delivered in small-group format. Only ten interventions included impact assessment measures beyond learner satisfaction. Five of these used qualitative evaluations; three, quantitative scales; and two, both.

Discussion: Humanities-based curricular interventions with a focus on literature or ethics were more common than those involving the visual or performing arts. Among the studies that evaluated these curricular interventions, the majority employed qualitative measures. Collaborative teaching between clinicians, arts educators and patients

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5. **Nandalal Gunaratne**, Faculty of Medicine, Wayamba University of Sri Lanka
6. **Sandra Kemp**, Curtin Medical School, Curtin University

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may be considered in order to bridge the gap between science and humanities.

Keywords

Art, Humanities, Communication, Reflection, Narrative medicine, Medical education, Curriculum, Humanism and professionalism

Corresponding author: Margaret Chisolm (mchisol1@jhmi.edu)

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Introduction

Learning to take a holistic approach to patient care is more important for medical students today than ever, as an explosion of biomedical discoveries in genetics and pathophysiology are continuously being integrated into medical education (Pedersen, 2010). The loss of empathy among medical students and junior doctors as they progress through training is also a well-described phenomenon (Pedersen, 2010; Stratta, Riding and Baker, 2016), which may negatively impact the therapeutic doctor/patient relationship and effective patient care (Banerjee and Sanyal, 2012; McCullough *et al.*, 2015). There is clearly a need to help trainees retain empathy in order to become more humanistic clinicians (Batt-Rawden *et al.*, 2013), and educational interventions such as narrative writing can be effective in promoting reflection (Levine, Kern and Wright, 2008). Other humanities-based curricula that have been shown to enhance reflection involve visual arts, literature and theatre (Schwartz *et al.*, 2009). However, little is known about the impact and outcome of humanities-based educational interventions in the medical school curriculum.

This paper aims to review the literature regarding the integration of humanities curricula into medical education, including methods of measuring the effectiveness of such interventions. The paper will summarise the key learning points from the literature on this topic and identify any gaps in the literature.

Methods

A search was conducted in PubMed in September 2015, utilising the terms 'humanities', 'humanism', 'art', 'medicine', 'narrative medicine', and 'medical education' to identify a body of published English-language articles of relevance to the topic of interest. No publication date limits were set. Each article was reviewed and summarised, with particular focus on descriptions of curricula and outcome measures used to evaluate impact.

Results

The search yielded 163 titles. Discussion with experts in the field yielded an additional 10 articles for review. Of these 173 articles, 17 were excluded because a full text was not available, yielding a total of 156 articles. See [Figure 1](#) for a summary of the results.

Of the 156 articles reviewed, most (108; 69.2%) were commentaries and reflections on the humanities as they relate to medicine. Forty-eight articles described a humanities-based intervention, most of which were implemented in high-income countries. Although this search did identify articles - at the abstract review level - from low/middle income countries on humanities in medicine, the full-text of these articles was not always available in the English language. Of those articles that were available in English, most took the form of a commentary or reflection rather than a report of an intervention. Twenty-six of the 48 intervention articles did not report any formalised evaluation outcomes (Goodwin and Machin, 2016; Kemp and Day, 2014; Ortega, Andreoli and Chima, 2011; Wald *et al.*, 2010; Joachim, 2008; Kumagai, 2008; Boudreau, Cassell and Fuks, 2007; Meites, Bein and Shafer, 2003; Louis-Courvoisier, 2003; Frich and Fugelli, 2003; Acuna, 2003; Murray, 2003; Jones and Verghese, 2003; Hawkins, Ballard and Hufford, 2003; Wear, 2003; Fried, Madar and Donley, 2003; Spike, 2003; Krackov *et al.*, 2003; Sirridge and Welch, 2003; Andre *et al.*, 2003; Montgomery, Chamers and Reifler, 2003; Kirklin, 2003; Rizzolo, 2002; Sklar *et al.*, 2002; Downie *et al.*, 1997; Self and Baldwin, 1990). Of the 22 articles reporting evaluation outcomes, 12 described learner satisfaction outcomes (del Pozo and Fins, 2005; Wald *et al.*, 2015; Gurtoo *et al.*, 2013; Abdel-Halim and AlKattan, 2012; George and Dellasega, 2011; Karnad, 1999; Shapiro, 2003; Newell and Hanes, 2003; Anderson and Schiedermayer, 2003; Lypson and Hauser, 2002; Bertman and Marks, 1985; Wilson and Blackwell, 1980). Only ten articles included any formal method of evaluation or assessment of impact beyond learner satisfaction. Of those ten articles, five used qualitative techniques to evaluate learners (Thompson *et al.*, 2015; Ramani and Orlander, 2013; Gulpinar, Akman and User, 2009; Wachtler, Lundin and Troenin, 2006; Bonebakker, 2003), three used quantitative measures (Rodriguez *et al.*, 2013; Wiecha and Markuns, 2008; Wiecha, Vanderschmidt and Schilling, 2002), and two used a combination (Shapiro, Morrison and Boker, 2004; Shapiro *et al.*, 2005). Quantitative measures were typically Likert scales or validated empathy scales (Empathy Construct Rating Scale and the Balanced Emotional Empathy Scale) (Shapiro, Morrison and Boker, 2004).

A number of areas within the humanities were utilized in curricula, but the most common type of intervention was one based around literature or ethics, with fewer interventions using the visual arts or performing arts. The most common form of teaching delivery was small group teaching, and interventions were often facilitated by a professional with humanities experience (George and Dellasega, 2011; Wald *et al.*, 2010; Gulpinar, Akman and User, 2009; Boudreau, Cassell and Fuks, 2007; Wachtler, Lundin and Troenin, 2006; Karnad, 1999; Shapiro, Morrison and Boker, 2004; Hawkins, Ballard and Hufford, 2003; Andre *et al.*, 2003; Shapiro, 2003; Newell and Hanes, 2003; Anderson and Schiedermayer, 2003). Only three interventions utilized newer methods of medical education such as websites to curate content, or social media to enable more frequent communication between students (Wiecha and Markuns, 2008; Wiecha, Vanderschmidt and Schilling, 2002; George and Dellasega, 2011).

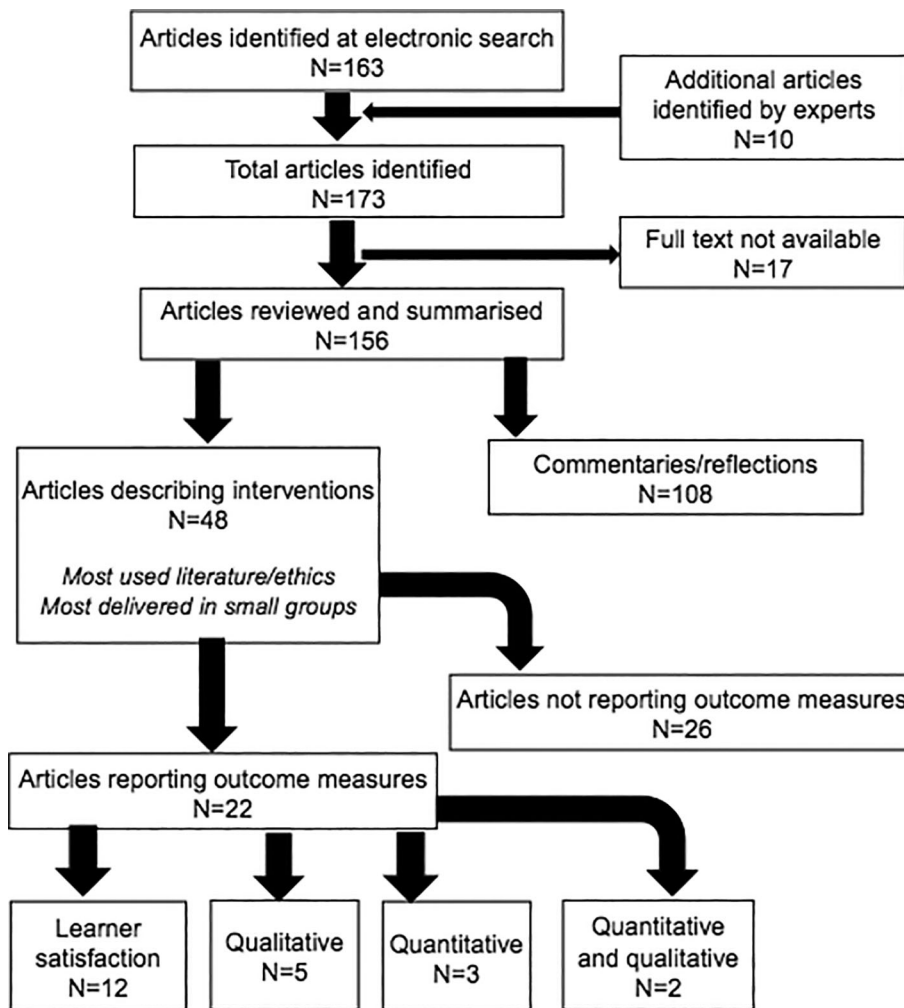


Figure 1. Flow diagram of search

Two of the educational interventions incorporated humanities teaching into an anatomy course to enable students to begin to understand the patient perspective of illness along with learning techniques of dissection (Bertman and Marks, 1985; Rizzolo, 2002). Of note, few of the 48 articles described an intervention delivered in a clinical environment or in the presence of a patient, using related humanities material (such as examples from literature describing a patient's experience of a certain illness) to help students comprehend the impact of different illnesses on patients (Ramani and Orlander, 2013; Kumagai, 2008; Wilson and Blackwell, 1980; Gurtoo *et al.*, 2013). Curricula were predominantly delivered in either a didactic or seminar-based format with no patient involvement, and many were elective courses. One intervention used social media (including Twitter, YouTube and Skype) to augment classroom teaching (George and Dellasega, 2011), while another hosted the content of a humanities clerkship on a website (Wiecha and Markuns, 2008), enabling students to access materials at times of their choosing.

Certain challenges were frequently identified throughout the literature. Lack of funding was a commonly cited problem, resulting in humanities curricula that could not be guaranteed a long-term place in medical training. Another common problem was difficulty scheduling the teaching amongst the multitude of other academic commitments held by learners.

Discussion

Summary of findings

Assessing the landscape of the literature on the integration of humanities curricula into medical education revealed that the majority of articles were not reports of original research; rather they were opinion pieces discussing the relationship between humanities and medicine, or arguing for the inclusion of humanities teaching within medical education. Forty-eight of these articles described a curricular intervention, but only 22 included any outcomes measurements on trainee

knowledge, attitudes or behaviours. A systematic approach to curriculum design was often lacking. None of the articles assessed the impact of humanities curricula on patients, or evaluated patient care outcomes.

Strengths and Limitations

A strength of this review is the assistance of an informationist to identify the terms used to search the electronic data base. The consultation with expert colleagues to identify any articles missed by the search could be viewed as a strength or as a limitation, as any expert has the potential to introduce bias into a search. A clear limitation of this review is the decision to include only articles published in English, as we may have missed relevant articles on humanities curricula that were implemented in non-English speaking countries.

Implications

Among the articles that described means of evaluating the effectiveness or impact of humanities interventions, qualitative feedback derived from learner interviews or written feedback was the most commonly used method. Although qualitative methodology enables participants to express themselves more freely and flexibly about issues and experiences that are important to them, it can be difficult to compare open-ended feedback from learners about educational interventions or to determine whether such interventions would be suitable for different population groups. The articles reporting use of a quantitative scale to evaluate impact typically used graded Likert ratings, although one study used the Empathy Construct Rating Scale (ECRS) and the Balanced Emotional Empathy Scale (BEES) (Shapiro, Morrison and Boker, 2004). Although all of these scales use self-reported measures and therefore are subject to bias, they may be considered more objective than open-ended or written feedback, which is vulnerable to variability in interpretation among raters.

This review identified a number of significant gaps in the literature, the most important being a lack of outcome data. This significantly limits the evidence base for the use of humanities in medical training, and which may make it hard to argue for permanent embedding of humanities curricula and more widespread inclusions in medical education. Future studies should focus on evaluating the impact of humanities-based didactics on trainees, either in the form of qualitative data or using scales already described in the existing literature.

Additionally, many of the educational interventions were undertaken as elective courses, potentially creating a self-selected group of interested learners. This could skew any evaluation results towards a positive impact. Evaluation of humanities curricular interventions that are integrated into the general medical curriculum will be especially valuable in determining impact on the training of physicians. Since the goal of including humanities curricula is to help trainees become more humanistic clinicians, it is important that future studies pursue assessment of whether such a curriculum improves humanistic practice by doctors.

Most of the curricula were described as running separately to biomedical teaching on areas such as pathology, biochemistry or physiology. They were often taught by arts educators, without clinician involvement. This could limit the potential for students to understand how humanities can contribute to all areas of medicine as opposed to simply communication or writing skills. Integrated collaborative teaching, delivered by arts educators together with clinicians and involving an understanding of both the biomedical underpinnings of illness and the experience of illness itself, could help to bridge the gap between science education and humanities education. It could therefore help to illuminate its relevance for facilitating a more holistic understanding of patients.

Finally, although many of the interventions were delivered during medical training, and students therefore participated in separate humanities courses contemporaneously with meeting patients and involving themselves in the ward environment, very few of the interventions actually involved the patients themselves. Including patients in medical education has been shown to enhance the student learning experience (Jha *et al.*, 2009; Ramani and Orlander, 2013). Speaking to patients, either in the classroom or at the bedside, could help students connect the 'standard patient' with classic symptoms described in medical textbooks to the patient read about in assigned literature or viewed in art. Effective humanities teaching also includes time for reflection and focused mentoring to ensure positive learning experiences are gained (Stern *et al.*, 2008). The human connection engendered in humanities interventions may help preserve empathy felt towards patients, which has been identified previously as an area of importance (Pedersen, 2010; Stratta, Riding and Baker, 2016).

Future humanities medical education interventions would benefit from grounding in principles of curriculum design and inclusion of formal evaluation of learner satisfaction, knowledge, and attitudes and behaviour towards patients. If possible, patients should be involved in curricular design and/or implementation, and be able to give feedback to learners.

Conclusions

The role of the humanities within medical education has been extensively discussed in theory, but very little has been done to evaluate its use in practice. This review identified a number of significant gaps in the literature, the most important

being a lack of rigorous evaluation of curricular interventions that include outcome measures. Future studies should focus on gaining qualitative and quantitative data regarding impact of curricular interventions on learners and/or patients.

Take Home Messages

- There is a need to help medical students and junior doctors retain empathy as they progress through training
- Humanities curricula have been shown to enhance reflection
- There is a lack of outcome data demonstrating impact on learner behaviour or the patient experience
- Collaborative teaching between clinicians, arts educators and patients may be considered in order to bridge the gap between science and humanities
- Challenges to long-term integration of humanities curricula include lack of funding and difficulty scheduling
- Future work should include assessment of the outcome of humanities-based educational interventions on medical learner and patient outcomes

Notes On Contributors

Anna Kathryn Taylor is an academic foundation doctor at East Lancashire Hospitals NHS Trust and a Pathfinder Fellow at the Royal College of Psychiatrists. She has five years' experience in medical education and curriculum development, focusing on global health, diversity training, and a holistic approach to patient care.

Susan Lehmann is associate professor of Psychiatry and Behavioral Sciences and Psychiatry Clerkship Director at the Johns Hopkins University School of Medicine in Baltimore, Maryland.

Margaret Smith Chisolm is associate professor of and Vice Chair for Education in Psychiatry and Behavioral Sciences at the Johns Hopkins University School of Medicine in Baltimore, Maryland.

Declarations

The author has declared that there are no conflicts of interest.

Ethics Statement

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Sultan Qaboos University

This review has been migrated. The reviewer awarded 3 stars out of 5

I am happy that the authors have taken the reviewers' comments on the first version into account, and have been able to address several of the issues. An area of weakness that does not appear to be addressed is that the paper searched only Medline. Although the response from the authors indicates that this was addressed ("Include the limitations of only one data base"), the limitations given in the paper do not state this: "A clear limitation of this review is the decision to include only articles published in English, as we may have missed relevant articles on humanities curricula that were implemented in non-English speaking countries." What has been ignored is that Humanities' Academic databases have not been consulted. In addition, the Results are still rather poorly reported, but the authors have removed the claim of a systematic review, so that mitigates it somewhat. On the strength of the revision, I do recognise the improvements in the paper, although it is a pity that the authors missed the opportunity to deliver a more enlightening paper. Still, it is worth reading by those involved in medical education.

Competing Interests: No conflicts of interest were disclosed.

Reviewer Report 21 August 2018

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Trevor Gibbs

AMEE

This review has been migrated. The reviewer awarded 4 stars out of 5

This is a difficult and complex area, but evaluation of our "humanities interventions" are very important. I believe that the paper is much clearer now and show how lax we are in our evaluations, even though we believe something is important. I am happy now to recommend this paper to all those involved in the Humanities teaching

Competing Interests: No conflicts of interest were disclosed.

Reviewer Report 13 August 2018

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Sandra Kemp

Curtin Medical School, Curtin University

This review has been migrated. The reviewer awarded 2 stars out of 5

My comments relate to this version of the article. I have not read the earlier version but noted the reviewers' comments. Therefore, I will highlight some areas for additional comment. I should indicate that I have an interest as my article (Kemp & Day 2014) was one of the articles included in the review. I think the value of a literature review like this is to synthesise, rather than describe. That is, the reader needs to understand what is important from the work done, what the work highlights, or what is yet to be investigated. Strengthening that focus would be useful. I would recommend that personal views are appropriately contextualised. For example, it seemed that interventions involving quantitative evaluation data were very desirable to the authors. This seemed to devalue complex program evaluation, drawing on social sciences-based methodology, which may be required for integrated curricula. Coherence across the arguments in the paper, underpinned by conceptual frameworks used in humanities, would be useful. I would like to clarify some detail in the statement: "Twenty-six of the 48 intervention articles did not report any formalised evaluation outcomes (Goodwin and Machin, 2016; Kemp and Day, 2014 ...). The article I wrote with Day focussed on guidance and practical suggestions for medical educators about how technology-enhanced learning design can support the learning outcomes associated with medical humanities. It was not an intervention, so ensuring all articles reviewed are classified correctly will strengthen any conclusions drawn. I agree that this area is important for medical educators and robust literature reviews can help to inform readers.

Competing Interests: No conflicts of interest were disclosed.

Reviewer Report 11 August 2018

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Nandalal Gunaratne

Faculty of Medicine, Wayamba University of Sri Lanka

This review has been migrated. The reviewer awarded 3 stars out of 5

Thank you for your effort to improve on your previous article and useful critical comments. The references are also useful. This revised article shows the difficulties including arts and humanities into a curriculum in an effective manner. The other major issue is to identify its impact. You have not made an attempt to identify a helpful way to do this. The questions that arise are 1. Do we have two arms for comparison? One group randomly chosen to follow this curriculum and the other not doing so? 2. How do we assess the impact on empathy and ethics as well as other end points? 3. When do we do this? As students complete or during their internship/residency? Any views or personal experiences are welcome. Thank you.

Competing Interests: No conflicts of interest were disclosed.

Version 1

Reviewer Report 06 June 2017

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P Ravi Shankar

¹ American International Medical University

² American International Medical University

This review has been migrated. The reviewer awarded 2 stars out of 5

Thank you for the opportunity to review an interesting paper. As suggested by the other reviewers I do agree that this is more of a literature review of humanities programs in medical education. I have been active in humanities education in Nepal and the Caribbean for a decade. As a researcher and an educator from a developing country I do not see descriptions of humanities education from South Asia and other developing regions. The developing world is not well represented and I agree that though humanities programs are more common and better established in the developed world, these are becoming increasingly common in developing nations also. Measuring the impact of humanities curricula is a challenge in the developing world also though studies about the short term evaluation of the programs have been published. Educators in developing nations struggle with a number of challenges and hurdles while trying to incorporate humanities in medical education. Searching other databases in addition to PubMed will yield a greater selection of articles. The authors can provide more details about the search criteria used to identify papers selected for this review. The challenges and limitations suggested by the authors are relevant. I and my colleagues, predominantly from a medical background have facilitated humanities modules in Nepal. In Aruba in the Dutch Caribbean we had also had facilitators from a humanities and a psychology background. A standardized patient was also a co facilitator in the module. We were not able to directly bring the 'patient voice' into the sessions. I do agree with the authors that outcome data is weak and can be strengthened. We expect learning of the humanities to contribute to more empathetic and humane doctors. Obtaining long-term outcomes data is a challenge as there are a number of factors which can influence the behavior of doctors and humanities education is only one among the many influences.

Competing Interests: No conflicts of interest were disclosed.

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Trevor Gibbs

¹ AMEE

² AMEE

This review has been migrated. The reviewer awarded 2 stars out of 5

A rather complicated paper that attempts to bring to the forefront of relevance a very important subject. I found it rather complicated to read because of the way that the authors put together their paper which did not flow and seemed to come to conclusions, within their Take Home messages section, not supported by findings in their text. Like my co-reviewer I wondered about how it was a needs assessment (so would think that the title is not appropriate) and how much of an in-depth systematic review this was.

To have experts providing another 10 significant papers without wondering where these papers came from (maybe non-medical literature) might have given a new viewpoint on the search characteristics and might have eventually provided more papers. I would not wish to re-iterate my co-reviewers comments other than to add that I was left wanting at the end of this paper- I was really looking for the "so what" factor- the transference of this large amount of hard work into a tangible way forward

Competing Interests: No conflicts of interest were disclosed.

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Subha Ramani

¹ Harvard Medical School, Brigham and Women's Hospital

² Harvard Medical School, Brigham and Women's Hospital

This review has been migrated. The reviewer awarded 3 stars out of 5

I agree with my fellow reviewers that the subject is timely and important to address, but I was left with the question, "what are the take-home messages for me". The authors should be commended for tackling this topic and it is very clear that they have reviewed the literature in great depth. " Needs assessment" in the title is misleading, should be more like- what are the gaps in this field?The abstract is very well written.Details of the search are not available under methods, perhaps figure 1 was meant to help with this- alas it is missing.The results section communicates fairly well the existing types of articles on humanistic curricula. Reading between the lines, I gathered that most of them were commentaries, a systematic approach to curriculum design was often lacking and program evaluation was either completely missing or touched upon Level 1 of Kirkpatrick- satisfaction. However, we should not have to read between the lines and these points could be emphasized more.The discussion mirrored the results in many parts and I would have liked to have seen- what next and why it matters.I agree with the take home messages overallWith the time that the authors have invested in this project, I highly recommend that they think of writing a 12 tips paper which would be much more useful for all educators interested in this subject or planning to design humanistic curricula.

Competing Interests: No conflicts of interest were disclosed.

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Ken Masters

¹ Sultan Qaboos University

² Sultan Qaboos University

This review has been migrated. The reviewer awarded 2 stars out of 5

Although this paper has approached a very interesting and timely topic, the authors have made fundamental errors that severely reduce the value of the paper. Title: I'm not sure that the paper really does describe a Needs Assessment. It is a Literature Review, and it would be better if the title reflected that. Methodology: As this is a systematic literature review ("systematic search"), I would like to see far more details of the search process, which is standard in such a search, beginning with the description of a search protocol and then the search processes (e.g. number of articles/abstracts on initial search, exclusions and exclusion criteria, etc.), and accompanied by a flow-chart showing the process. Without that, it is just a search, and there is nothing to tell us that it was indeed systematic. (The paper does refer to a Figure 1, but no Figure 1 has been supplied, so this comment may or may not be valid). Confining the search to PubMed/Medline only is extremely limited (although possibly off-set to some extent by the consultation with colleagues). The very nature of Humanities in medical education calls for a search of Humanities' databases. Searching for Humanities articles without using Humanities databases is strange indeed (the equivalent of searching for medical articles without using Medline), and undermines the validity of the search. When performing an interdisciplinary study of any type, it is crucial to bear all disciplines in mind. Results: The Results reporting could have benefitted by having the results displayed in tables, along the lines of a meta-analysis. One of the strengths of a literature review is that the reader can see the value of each paper at a glance: the way that these results have been reported makes it exceedingly difficult to do so. The authors are also sometimes very loose in their statements that require a more detailed explanation, leaving the reader confused or with no real information: "the most common type of intervention was one based around poetry, prose or ethics." Poetry and prose are forms of writing, while ethics is a topic or subject. Placing these three into a sentence like this without further explanation of how these are connected or contrasted makes little sense. There is also little sense of what was actually done with these interventions or how they were used or addressed. For example, instead of simply referring to a poem, if the students had been taught poetics or poetry writing, then that would alter its impact, but, the way it is currently described leaves the reader with no real insight into what was done. "Two of the educational interventions incorporated humanities teaching into an anatomy course to enable students to begin to understand the patient perspective of illness along with learning techniques of dissection." Again, while this is a good start, the reader is left hanging with little sense of what was actually done, apart from the incorporation of "humanities teaching" into the course, which is extremely vague. "Of note, few of the 48 articles..." "Few" is not a number to be reported in the results. The same is to be said for "predominantly" in the next sentence. Accurate numbers should be given; these words can be used in the discussion, if you wish, but only after the actual numbers have been given in the

Results.Discussion:The first part of the Discussion introduces new results, again, though, with vague terminology (the majority, few, very small minority). The second part of the Discussion shows greater potential for insight, but is undermined by the poor Results reporting.So, while the paper has tackled a worthwhile topic, the Title is misleading, there is a flaw in the study design (not examining any Humanities' databases), poor results reporting (the effect of which may or may not be reduced by the inclusion of the missing Figure 1), and a Discussion that is part Result-reporting and part Discussion. The authors have made a worthwhile effort, but the paper really does need quite a bit of work.

Competing Interests: No conflicts of interest were disclosed.
