Evaluating interventions to improve ethical decision-making in clinical practice: a review of the literature and reflections on the challenges posed

Agnieszka Ignatowicz, Anne-Marie Slowther, Christopher Bassford, Frances Griffiths, Samantha Johnson and Karen Rees

Corresponding author: Prof Anne-Marie Slowther, Professor of Clinical Ethics, Division of Health Sciences, Warwick Medical School, The University of Warwick, Coventry, CV4 7AL.

Authors:
Agnieszka Ignatowicz, Institute of Applied Health Research, College of Medical and Dental Sciences, University of Birmingham, Birmingham, B15 2TT. E-mail: a.m.ignatowicz@bham.ac.uk

Anne-Marie Slowther, Division of Health Sciences, Warwick Medical School, The University of Warwick, Coventry, CV4 7AL. E-mail: a-m.slowther@warwick.ac.uk

Christopher Bassford, Division of Health Sciences, Warwick Medical School, The University of Warwick, Coventry, CV4 7AL and University Hospitals Coventry and Warwickshire NHS Trust, Clifford Bridge Road, Coventry, CV2 2DX. E-mail: christopher.bassford@uhcw.nhs.uk

Frances Griffiths, Division of Health Sciences, Warwick Medical School, The University of Warwick, Coventry, CV4 7AL. E-mail: f.e.griffiths@warwick.ac.uk
Samantha Johnson, The Library, Warwick Medical School, The University of Warwick, Coventry, CV4 7AL. E-mail: s.a.johnson@warwick.ac.uk

Karen Rees, Division of Health Sciences, Warwick Medical School, The University of Warwick, Coventry, CV4 7AL. E-mail: k.rees@warwick.ac.uk

Keywords
ethical decision-making, clinical practise, evaluation tools, evaluation instruments

Word count: 3641

Statements:

Funding
This paper presents independent research funded by the National Institute for Health Research (NIHR) under the Health Service and Delivery Research programme (project number 13/10/14. The views expressed in this publication are those of the authors and not necessarily those of the NIHR or the Department of Health and Social Care.

Acknowledgments
Not applicable

Competing interests
AMS, FG, KR and AI received grants from the UK National Institute of Health Research during the conduct of the study.

Ethics approval statement
The study that this systematic review is part of was approved by the National Research Ethics Service Committee West Midlands – Black Country (Ref. 15/WM/0025).
Contribution Statement (Specific contribution of authors in the paper)

AMS and CB led the study from design through to writing up study reports. FG led the qualitative component of the study. KR led the literature synthesis component of the study. AI, AMS and KR undertook this systematic review. SJ structured the database searches for the systematic review. AI and AMS drafted this paper. All authors contributed to writing the paper and read and approved the final version.
Abstract

Since the 1980s there has been an increasing acknowledgement of the importance of recognizing the ethical dimension of clinical decision-making. Medical professional regulatory authorities in some countries now include ethical knowledge and practice in their required competencies for undergraduate and post graduate medical training. Educational interventions and clinical ethics support services have been developed to support and improve ethical decision-making in clinical practice, but research evaluating the effectiveness of these interventions has been limited. We undertook a systematic review of the published literature on measures or models of evaluation used to assess the impact of interventions to improve ethical decision making in clinical care. We identified a range of measures to evaluate educational interventions, and one tool used to evaluate a clinical ethics support intervention. Most measures did not evaluate the key impact of interest, that is the quality of ethical decision-making in real world clinical practice. We describe the results of our review and reflect on the challenges of assessing ethical decision-making in clinical practice that face both developers of educational and support interventions and the regulatory organisations that set and assess competency standards.

Background

Since the 1980s the ethical dimension of clinical decision-making has received increasing attention from academic ethicists, from those responsible for training future health care professionals and from health care organisations and practising clinicians themselves. Advances in medical science, changing demographics and limited resources create ethical dilemmas across the spectrum of care including treatment decisions, sharing of information, and rationing access to interventions. Individual clinicians must make decisions using their
clinical knowledge and skill, taking into account their patient’s values and wishes, and work within the normative framework of wider society. Medical schools and professional organisations have recognised the need to include relevant education and assessment around the ethical dimension of clinical decision-making. The Association of American Medical Colleges (AAMC) (1) has published the "Entrustable Professional Activities" (EPAs)– a competency-based list of clinical activities used in undergraduate and graduate medical education to assess the skills that students and trainees can be trusted to perform with minimal or no supervision (2). The EPAs are divided into units of professional practice and include activities around demonstration and understanding of ethical principles in provision of care. In the UK, the General Medical Council, which is responsible for licensing medical schools, has included ethical knowledge and skills in its required learning outcomes for graduates since 2009 (3). The Institute of Medical Ethics has published an updated core curriculum for medical training in medical ethics and law (4) and some professional organisations now include reference to recognising and applying ethical principles in relation to clinical practice in their specialty training curricula (5). The method of assessing ethical knowledge and skills in clinical practice at both an undergraduate and postgraduate level is however less clearly defined (6, 7). The emphasis in medical curricula on the ethical dimension of clinical decision-making and the requirement to achieve competency in this element of clinical practice recognises that ethical decision making can affect patient care with poor ethical decision-making having potentially harmful outcomes for patients. There is therefore a moral imperative to describe and assess the competencies required for good ethical decision making in clinical practice.
Recognition of the ethical dimension of clinical practice, and the ethical challenges faced by clinicians, has also resulted in the emergence of clinical ethics support services in hospitals and community health care organisations. This international phenomenon includes a diverse range of services for providing advice and support to health care professionals facing difficult ethical decisions related to treatment and care of patients. Clinical ethics committees, ethics consultants, and moral deliberation groups are three of the commonest examples of such services. Despite the proliferation of these interventions, there has been little evidence of robust evaluation, specifically in relation to the ethical decision-making of the health care professionals these services aim to support.

To investigate this apparent lack of evaluation of the impact of either educational or ethics support interventions on the ethical decision-making of health care professionals in practice we conducted a systematic review of published literature, as part of a larger project focusing on the process of referral and admission decisions for intensive care (8), to answer the following question: what measures or tools of evaluation have been used to assess the impact of interventions to improve ethical decision-making in clinical practice? Based on the findings from the review and other literature, we explore how competency in ethical decision-making is currently assessed and reflect upon broader challenges of assessing ethical decision-making in education and real-word clinical practice.

The paper proceeds as follows. First, we briefly consider development of interventions to improve ethical decision-making in clinical practice, and a parallel development of tools to evaluate ethical sensitivity and ethical judgment more generally. We note that this is some overlap in these two streams of research but argue that a robust assessment of such interventions needs to go beyond ethical sensitivity and judgment and capture the process of
ethical decision-making in the clinic. We next describe our systematic literature review which focussed on evaluation tools or measures specifically used to assess interventions to improve ethical decision making in clinical practice. We present an overview of the review findings and conclude that none of the tools identified work-based assessments of ethical decision-making. Finally, we sketch out the problems that exist for assessing ethical decision-making in education and real-word clinical practice and discuss the need for further work on developing valid and reliable instruments to evaluate clinicians’ ethical decision-making in practice.

Interventions to improve ethical decision-making

Interventions to improve ethical decision-making in clinical practice can be broadly divided into educational interventions aimed at equipping health care professionals with the knowledge, skills and attitudes required for decision-making, and interventions that provide real time support for clinicians facing ethical challenges in their work. Educational interventions have largely focused on medical and nursing students rather than postgraduate trainees. The development of clinical ethics support services and their integration into front line care has been documented in the literature (9-12). In the UK, both the Royal College of Physicians and the Nuffield Council on Bioethics have referred to the importance of support for clinicians in dealing with the ethical dimension of their work (13, 14). However, clinical ethics support services have faced a persistent challenge from health care funders and some clinicians to demonstrate the impact of these interventions on clinical decision-making and patient care. Authors have noted the lack of robust studies demonstrating effectiveness of clinical ethics support (12, 15-18). Schildmann et al. specifically looked at outcome criteria used in evaluation studies of clinical ethics support. They did not identify any studies that evaluated clinician’s decisions following advice in an ethics consultation, or the ethical
quality of decision-making within the service itself (12, 19). The Euro-MCD Instrument, specifically designed to measure outcomes of moral case deliberation, focuses on how participants perceive the importance of outcomes and experience these outcomes after the deliberation (20, 21). Recent systematic and literature reviews on clinical ethical support cite a number of other evaluation tools, but conclude that evaluation is still an underdeveloped area (22, 23). Research on moral deliberation groups or individual ethics consultations have found that clinicians find them helpful and report that they reduce conflict, save money and improve the overall quality of patient care (24, 25), but little is known about whether and how these actually shape and influence health care professionals’ decision-making in practice (26).

Evaluation tools measuring ethical sensitivity and judgment

Concurrent with, but unrelated to, research on interventions to support healthcare professionals in ethical decision-making in practice, there has been a stream of research focused on the development of reliable and valid tools (often referred to as frameworks, instruments or methods in the literature) to assess ethical reasoning and judgement. Some of these have been used, or adapted for use, in the evaluation of ethics educational interventions. Early tools originated in moral psychology and were generic and profession non-specific. The most extensively used tool to study moral reasoning is the Defining Issues Test (DIT) (27), which is designed to measure default schema by which individuals interpret moral issues. The DIT assesses one of the four components of Rest’s model of moral behaviour (moral judgment), the other three components being ethical sensitivity, moral motivation, and moral character (28-30). Some profession-specific instruments have been developed for use in medicine and dentistry, based on the DIT. The Medical Ethical Reasoning and Judgement Test (MERJT) (31) uses ethical dilemmas relevant to medical students and doctors. Other
instruments include the ‘Dental Ethical Reasoning and Judgement Test’ (DERJT), the Nursing Dilemmas Test (32) and Ketefian’s Judgement About Nursing Dilemmas Test (33). Several authors have recognised the need to extend assessment of ethical decision-making to include the other three components of the four-component model (34-36). The Dental Ethical Sensitivity Test (DEST), for example, measures ethical sensitivity in dentistry (37), and Hebert et al.’s vignette questionnaire tests the ability to recognise ethical issues in undergraduate medical students and healthcare professionals (38). Research in behavioural ethics and business ethics suggests that other factors including cognitive error, social, organisational, and contextual factors may also play a significant role in ethical decision-making (39). In 2002, Bebeau commented on the relative neglect of moral motivation and moral character in education and assessment in the professions compared to the focus on ethical reasoning and sensitivity and there has been increasing focus on professionalism and professional values within healthcare education in the last decade (40). However, the ultimate challenge for assessment of moral reasoning and behaviour is to capture its implementation in practice. Well-developed ethical sensitivity and reasoning skills that perform well in hypothetical situations do not necessarily predict ethical competency in implementing action plans in the high-pressured environment of clinical practice. There is a need for valid and reliable instruments to evaluate how clinicians make ethical decisions in this environment.

**Literature review**

In collaboration with an experienced information specialist (SJ), we searched MEDLINE, EMBASE, PsycINFO via OVID and Web of Science (SCI and SSCI). We used specific Medical Subject Heading (MeSH) terms in Medline and their equivalent for the different other databases. Our initial search was run on 21st March 2016. We repeated the search in
March 2018 and November 2020 to capture any studies published since the original search. See Supplementary file 1 for full search strategy.

We included empirical studies that:

- evaluated an intervention(s) aimed at improving ethical decision-making in clinical care (we used the term “intervention” to refer to any strategy used to inform, build or encourage healthcare professionals’ or students’ skills in dealing with ethical challenges in clinical practice); and

- described tools or instruments that evaluated one or more components of the intervention(s) aimed at improving ethical decision-making in clinical care.

The combined searches yielded 3594 papers after deduplication (465 of these were from the updated search in 2020). Two primary reviewers (AI, AMS) independently screened all included papers on the title and abstract and identified 86 potentially relevant papers for full text review. During the full text review process a further three papers were identified by a bibliography search of included papers. 14 papers (13 studies) were included for data extraction. See Supplementary file 2 for PRISMA study flow diagram.

AI and AMS independently carried out data extraction for each study. All included were evaluated for methodological quality using an adapted version of items from the COnsensus-based Standards for the selection of health status Measurement INstruments (COSMIN) checklist (41) (please see Supplementary file 3 for evaluation of methodological and reporting quality). We used a narrative approach to summarise the findings.
Results of the systematic review

Characteristics of the included studies are presented in table 1. All studies except one (42), evaluated interventions that were educational in type. These educational interventions were diverse and included: a general medical curriculum with some lectures and discussion relating to ethics in the Introduction to Medicine course (43); specific ethics course within a medical or nursing curriculum (44-48); an integrated ethics thread in a medical curriculum (49, 50); a specific educational tool for teaching ethics in a nursing curriculum (guided design) (51); and a general medical or nursing undergraduate curriculum as part of the medical or nursing curriculum in ethics (40, 52-54). Eight studies recruited medical students, four studies nursing students and one study clinical ethics consultants as their participants.

INSERT TABLE 1 HERE

Table 1. Summary of included studies.

Tools and instruments to evaluate interventions to improve ethical decision-making in clinical practice

Almost all evaluation tools (12) were administered to medical and nursing students and assessed educational interventions to improve ethical decision-making related to clinical practice. Amongst these 12 instruments, five were already existing instruments and seven were new instruments developed for the purpose of the study. Ten out of 13 studies included described evaluation tools based on written assessments (43-51, 54), two described tools that included an Objective Structured Clinical Examination (OSCE) station/s (52, 53), and one a combination of performance based assessment with a standardised patient and written assessment of a clinical case (40).
Of the ten studies describing written assessment evaluation tools, three studies used the previously developed and validated tools. Turner and Bechtel (51) and Kim and Park (48) used Judging About Nursing Decisions (JAND) test (55) that assesses nurses’ ability to judge which course of action in a series of scenarios most closely accords with the American Nursing Association’s code of ethics and how likely the participant is to follow it. Akabayashi et al. (43) modified the Defining Issues Test and combined it with the Problem Identification Test. Both, DIT and PIT are questionnaire surveys based on vignettes and participants are asked to list the ethical issues in the vignette (PIT) or choose the most suitable action from a list (DIT). The other seven studies that used written assessment developed the new instruments for the purpose of the study. Three studies used case vignettes but the number of cases varied from one (The Ethical Reasoning Tool)(45) to 12 (Ethics and Health Care Survey Instrument)(49, 50, 54)). Three tools asked students to state and justify what they would do in each case vignette (44-46), and one tool required students to choose from a pre-specified list of actions for each vignette and then to justify their decision (49, 50, 54). One tool combined the performance based assessment with a standardised patient and written assessment of a clinical case (40). Students were asked to complete ten OSCE stations and interact with the standardised patient. Following the encounter with the standardised patients, students had a pre-defined time to list the moral conflicts in the case and briefly analyse at least two of these conflicts. In one study, the description of the written assessment evaluation tool - the nursing ethical decision-making ability scale (47) - was not described well enough to establish whether case vignettes were used.

Of the performance-based tools, two studies used OSCE as an assessment tool to evaluate medical students’ and residents’ performance in the ethics stations (52, 53). The studies were designed around either six or four ethics stations based on actual clinical and legal cases.
Students’ performance was scored using a checklist that was developed using the comments made by practising physicians who were videotaped playing the role of the student and interacting with the standardised patients. Each item on the checklist corresponded with the comment made by the physicians and students were scored by two independent raters.

Only one study described an instrument for evaluating ethical decision-making in actual clinical practice rather than using hypothetical scenarios. The instrument (Ethics Consultation Quality Assessment Tool – ECQAT) was used to evaluate written records of case consultations, which then form part of the patient clinical record. The ECQAT was based on a holistic assessment model covering four key elements in the case consultation: identifying the ethics question; eliciting consultation specific information; ethical analysis; and making practical recommendations. The key elements have sub-elements that explain the characteristics of the element and serve as the basis for rating the quality of the ethics consultation. Each key element is then scored on a rating scale of 1-4 with 1 being poor and 4 strong. An overall assessment of acceptable/less than acceptable was also given. Interrater reliability was 43% for the individual key element scores and 74% for the overall holistic assessment score.

Discussion

This review aimed to identify and describe instruments that were specifically designed to evaluate interventions to improve ethical decision-making in clinical practice. Of the 13 studies identified, 12 described an evaluation tool that could be used to assess or the use of an existing tool to assess, educational interventions to improve ethical decision-making in medical or nursing students. None of these tools included work-based assessments with
health care professionals. A single study described a tool to evaluate clinical ethics case consultation in practice using consultation records.

A striking finding from our review was that we found no educational interventions aimed at post graduate practising clinicians. The evaluation tools and instruments for educational interventions identified focussed on students’ skills in reasoning about and articulating principles for ethical action with the aim of improving ethical competence in future practice. Despite the emphasis on clinical veracity in the use of clinical case reports and simulated patients, the tools were not designed to be used as a workplace assessment. This is perhaps not surprising given the interventions were aimed at students, although work place assessment of clinical skills can form part of medical and nursing education. Thus, while the literature acknowledges the importance of recognising the ethical dimension of clinical decision-making, currently available evaluation tools and instruments for assessing interventions to improve ethical decision-making in clinical practice appear to be limited in this respect.

Assessing knowledge and reasoning skills in an educational setting is an important part of developing competencies in health care professional students as a foundation for competent clinical practice in the workplace. This is true of both clinical and ethical decision-making. Assessment of clinical competency is a requirement of continuing professional training and development. However, the use of workplace assessment for ethical competency, however defined, is more challenging than similar assessment of clinical procedural skills. Firstly, there is the complexity of assessing how ethical decision-making happens in clinical practice, and therefore precisely what are the elements of good ethical decision-making. Ability to recognise and articulate ethical issues or concerns (moral sensitivity); to draw on ethical
principles and consider arguments for alternative courses of action (ethical reasoning) and to make a judgment based on ethical reasoning will clearly be needed. But ethical decision making in the clinic, like clinical decision making, is a dynamic and interactive process, requiring dialogue between clinician and patient, and often a patient’s family, identifying perspectives and values of those involved, and knowledge of personal, organisational and societal constraints on decision-making in a specific situation. Thus, any assessment tool for ethical decision making in clinical practice needs to first identify the full complement of competencies that the tool needs to include for a comprehensive evaluation. This will also include a discussion of what are the aims of good ethical decision making and whether the tool can measure whether these aims have been achieved.

The importance of clarifying the key aims and components of the process to be evaluated have been highlighted in the literature on evaluation of clinical ethics support services. A recent systematic review on ethical case interventions and their impact on care for patients found no data on decisional conflict, moral distress, patient involvement in decision-making, quality of life of patients or ethical competency (56). Another review of tools used to assess clinical ethics consultations concluded that the diversity of these tools used in studies stem from the diverse goals of assessing consultations, different contextual factors and practical limitations (57).

Even with an agreed set of competencies for ethical decision making in clinical practice underpinning an evaluation tool, there remains the challenge of how to implement such a tool in a workplace setting. Ideally evaluation of ethical decision-making should be embedded in overall assessment of clinical practice and therefore it might be useful to look to current models of workplace assessment for clinicians for inspiration. The UK foundation doctor
training programme includes a range of ‘supervised learning events’ that contribute to the
trainee’s portfolio which forms the basis of the decision regarding their competency to
progress. These include case-based discussions and ‘Mini Cex’ assessments involving direct
observation of a doctor’s interaction with, and clinical management of, a patient. Both
learning events use a structured framework for assessing competency in specific domains that
guide the supervisor (58). Inclusion of a framework that evaluated ethical decision-making
could be incorporated into this kind of assessment. In the area of communication skills
training for clinicians, studies have described using observation and feedback from senior
clinicians and patients and families in the assessment of communication skills for trainee
physicians (59, 60). Similar approaches may work for ethical decision-making training and
evaluation.

The recent calls for setting standards for training and evaluating the impact and efficacy of
ethics consultation in the U.S. have also led to the development of new tools. The Assessing
Clinical Ethics Skills (ACES) tool (61) is designed to be used in an educational setting with
simulated ethics consultation cases and assesses a range of interpersonal skills, including
specific behaviours that the trainee ethics consultant should demonstrate. (7). Adapting such a
tool to capture the elements of ethical decision-making in clinical practice could be a
powerful educational tool for use in both the classroom (with simulation) or in clinical
practice.

These workplace and educational assessment tools and models have potential for
development of assessment of ethical decision-making that translate into clinical practice but
they are resource intensive (62). Furthermore, direct observation and feedback on a very
limited number of cases may not capture consistency of ethical decision-making across the
diversity and complexity of clinical situations that health care professionals encounter. There is a need for valid and reliable tools that can evaluate not only whether individual clinicians have the competencies for ethical decision-making but also whether ethical decision-making is implemented consistently in practice.

Conclusion

Despite previous calls for research to develop evaluation methods that address elements of ethical decision-making other than moral judgment and in particular assessment of ethical decision-making in practice (35), our review found that little progress has been made. Given the increasing focus on the ethical dimension of decisions relating to patient care, and the potential harm to patients of poor ethical decision-making, there is a moral obligation for clinicians, their trainers, and those providing ethics support to clinicians, to demonstrate that educational and other interventions have an impact on this element of clinical practice. There is a clear need for further work to develop valid and reliable instruments to evaluate clinicians’ ethical decision-making in practice. These could be used as part of formative assessment and learning in clinical training and continuing professional development, in addition to providing a mechanism for evaluating interventions aiming to support and improve ethical decision-making in relation to patient care.

List of abbreviations

UK – United Kingdom
EPA - Entrustable Professional Activities
NIHR - National Institute for Health Research
PIT - Problem Identification Test
MERJT - Medical Ethical Reasoning and Judgement Test
18

DERJT - Dental Ethical Reasoning and Judgement Test

DEST - Dental Ethical Sensitivity Test

OSCE - objective structured clinical examination

ECQAT - Ethics Consultation Quality Assessment Tool

References


<table>
<thead>
<tr>
<th>Authors and year</th>
<th>Country</th>
<th>Name/brief description of evaluation tool</th>
<th>Target population</th>
<th>Validity testing</th>
<th>Reliability testing</th>
<th>Intervention evaluated</th>
<th>Language of tool</th>
<th>What was measured</th>
</tr>
</thead>
<tbody>
<tr>
<td>Siegler, 1982 (44)</td>
<td>US</td>
<td>A series of case vignettes with questions related to clinical and ethical dimension of the case; students asked to give reasons for their answers to the individual question</td>
<td>Medical students (36 in the experimental group and 29 in the control group)</td>
<td>Scoring categorisation of reasons developed by several members of weighting of reasons reflected values of teaching staff</td>
<td>Two independent scorers each scored 10 students’ assessments and reached agreement on 88% of responses</td>
<td>Experimental teaching course in ethics</td>
<td>English</td>
<td>Ethical reflectiveness and reasoning</td>
</tr>
<tr>
<td>Smith, 1994 (40)</td>
<td>US</td>
<td>Performance based clinical skills assessment; students assessed on performance with standardised patient based on five behaviours and on written element of the assessment which asked students to list the moral conflicts identified and analyse 2 of them.</td>
<td>511 medical students</td>
<td>Not described</td>
<td>For written portion: the Spearman rank-correlation coefficients for pairs of readers who jointly rated more than ten students</td>
<td>Medical curriculum</td>
<td>English</td>
<td>Moral reasoning and ethical judgement</td>
</tr>
<tr>
<td>Singer, 1994 (52)</td>
<td>Canada</td>
<td>Objective structured clinical examination (OSCE); six ethics OSCE stations; stations based on actual cases described; scoring checklists developed using videotaped encounters between attending physicians and standardized patients.</td>
<td>66 medical students and residents</td>
<td>Performance of eight expert clinicians in response to the scenarios</td>
<td>Interrater reliability determined using intra class correlation coefficient Internal consistency reliability calculated using Cronbach’s alpha</td>
<td>Medical curriculum</td>
<td>English</td>
<td>Performance in the OSCE</td>
</tr>
<tr>
<td>Singer, 1996 (53)</td>
<td>US</td>
<td>Four ethics stations on the objective structured clinical examination (OSCE); cases developed based on legal cases; scoring checklists developed by videotaping performances of 4-6 staff physicians on each of the stations, then transcribed and reviewed by the physicians to identify comments most commonly mentioned and consistent with bioethical principles.</td>
<td>88 final year medical students</td>
<td>Content validity tested by use of staff physicians in development of station</td>
<td>Interrater reliability scored using inter-class correlation coefficients.</td>
<td>Medical curriculum</td>
<td>English</td>
<td>Performance in the OSCE</td>
</tr>
<tr>
<td>McAlpine, 1997 (45)</td>
<td>Australia</td>
<td>Ethical Reasoning Tool (ERT). Case reflections are scored for each component of ethical reasoning against three professional response levels (traditional/traditional reflective/reflective). And eight components of ethical reasoning: (1) recognition of ethical issue; (2) use of ethical framework; (3) use of personal values; (4) use of professional values; (5) perception of the nurse’s role; (6) perception of therapeutic nurse-patient relationship; (7) communication patterns; (8) potential action.</td>
<td>30 nursing students</td>
<td>Content validity- assessed by panel Construct validity Wilcoxon matched pairs signed rank test used to test changes in scores from pre-test to post test. Confirmed by a content analysis of students’ reflections</td>
<td>Philosopher not connected with the study used the tool to score a random sample of 25% of papers. At least 75% agreement on level of response was achieved for 11 of 15 students.</td>
<td>Ethics study unit in medical curriculum</td>
<td>English</td>
<td>Cognitive reasoning</td>
</tr>
<tr>
<td>Authors and Year</td>
<td>Country</td>
<td>Description</td>
<td>Sample Size</td>
<td>Methodology</td>
<td>Content Validity</td>
<td>Test-Retest Reliability</td>
<td>Assessment of Performance</td>
<td>Language</td>
</tr>
<tr>
<td>------------------</td>
<td>---------</td>
<td>-------------</td>
<td>-------------</td>
<td>-------------</td>
<td>-----------------</td>
<td>------------------------</td>
<td>--------------------------</td>
<td>---------</td>
</tr>
<tr>
<td>Turner and Bechtel, 1998 (51)</td>
<td>US</td>
<td>Ketefian’s Judgment about Nursing Decisions (JAND), six stories with ethical dilemmas in practice; respondents rank which behaviour is most professionally desirable (moral reasoning) and which is most likely to occur (ethical decision-making).</td>
<td>Community health nursing students (149 students)</td>
<td>Content validity of JAND reported as being established with internal consistency measures giving alpha coefficients from 0.66 to 0.73 for ethical decision-making</td>
<td>Not described</td>
<td>Not described</td>
<td>Not described</td>
<td>English</td>
</tr>
<tr>
<td>Ketefian, 1998</td>
<td>US</td>
<td>Six vignettes constructed to reflect ethical issues arising in clinical practice; answers to vignettes evaluated by three markers with formal training in philosophy/ bioethics and experience of teaching medical ethics and using a set of principles/marketing criteria developed for that purpose.</td>
<td>Medical students (30 scripts assessed)</td>
<td>Content validity assessed by naive markers scores compared with marks by primary markers using the marking scheme.</td>
<td>Test-retest reliability evaluated by the extent to which the same student answering the same script two months later was given the same mark, from the same rater.</td>
<td>Not described</td>
<td>Not described</td>
<td>English</td>
</tr>
<tr>
<td>Savulescu, 1999 (46)</td>
<td>UK</td>
<td>Six vignettes constructed to reflect ethical issues arising in clinical practice; answers to vignettes evaluated by three markers with formal training in philosophy/bioethics and experience of teaching medical ethics and using a set of principles/marketing criteria developed for that purpose.</td>
<td>Medical students (30 scripts assessed)</td>
<td>Content validity assessed by naive markers scores compared with marks by primary markers using the marking scheme.</td>
<td>Test-retest reliability evaluated by the extent to which the same student answering the same script two months later was given the same mark, from the same rater.</td>
<td>Not described</td>
<td>Not described</td>
<td>English</td>
</tr>
<tr>
<td>Goldie et al., 2002 and 2004 (49, 50)</td>
<td>UK</td>
<td>Ethics and health care survey instrument (EQUAT)/12 case vignettes which include an ethical dimension; nine have consensus opinion regarding preferred answer and 3 where there is reasonable dissent; participants asked to choose preferred answer and justify their decision.</td>
<td>238 medical students</td>
<td>Not described</td>
<td>Not described</td>
<td>Not described</td>
<td>Integrated medical curriculum</td>
<td>English</td>
</tr>
<tr>
<td>Akabayashi et al., 2004 (43)</td>
<td>Japan</td>
<td>Two component survey - 1. Japanese version of the ethical sensitivity test (Problem Identification Test (PIT) Students are asked to list all the ethical issues related to each case in 3 vignettes. 2. Two vignettes from the Japanese version of the Defining Issues Test (DIT). In the DIT students are asked to choose the most suitable action, list reasons for that action and order four most important reasons.</td>
<td>Medical students and graduates (residents) (559 medical school students and 272 residents)</td>
<td>Referred to validity of the test in other papers</td>
<td>Medical curriculum with second year medical ethics lectures</td>
<td>Not described</td>
<td>Not described</td>
<td>Japanese</td>
</tr>
<tr>
<td>Lohfeld et al., 2012 (54)</td>
<td>UK</td>
<td>EHCQ-2 (Ethics in health care questionnaire) version 2 - ethical dilemmas in 12 clinical vignettes; subjects are asked to choose the best option from several pre-set responses; rationale for the choice is also explored by asking subjects to write a short answer that explains their thinking. These explanations are then scored through a formal coding system.</td>
<td>Medical students (20 final year McMaster University students and 45 final year Glasgow students)</td>
<td>Content validity was ensured by having a team of experts review the cases and reach consensus on the final versions.</td>
<td>Assessment of the performance of medical students on two occasions, separated by 2 weeks, using 2 or 3 trained raters at each site</td>
<td>Medical curriculum (McMaster - problem-based programme; Glasgow University - integrated, problem-based curriculum)</td>
<td>Medical curriculum with second year medical ethics lectures</td>
<td>English</td>
</tr>
<tr>
<td>Pearlman et al., 2016 (42)</td>
<td>US</td>
<td>A records-based assessment using the record of a clinical ethics case consultation. Scoring is based on four key elements of an ethics consultation</td>
<td>Clinical ethics consultants (14)</td>
<td>Verbal feedback from nine reviewers who were members</td>
<td>Scoring of a sample of case consultation records as part of an ASBH quality attestation</td>
<td>Not described</td>
<td>Not described</td>
<td>Clinical ethics consultation</td>
</tr>
<tr>
<td>Study</td>
<td>Country</td>
<td>Methodology</td>
<td>Subjects/Design</td>
<td>Scoring/Reliability</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------------------</td>
<td>----------</td>
<td>-----------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chao et al., 2017 (47)</td>
<td>Taiwan</td>
<td>Nursing ethical decision-making ability scale Questionnaire survey of 30 questions reflecting four dimensions of ethical decision-making recognising differences, comparing differences, self-dialogue and identifying implications. Self-assessment.</td>
<td>Nursing students (51 in the experimental group and 49 in the control group)</td>
<td>Not described Reference validity testing in an unpublished paper</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Web based ethics course</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Taiwanese</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Self-assessment of ethical decision-making</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kim and Park, 2019 (48)</td>
<td>Korea</td>
<td>Ketefian’s Judgment about Nursing Decisions (JAND), translated and customized for the Korean context by the authors, with six patient-care vignettes each containing moral or ethical implications</td>
<td>64 senior years nursing students (35 in the debate group and 29 in the lecture group).</td>
<td>Content validity of Korean JAND reported in another referenced paper by the authors</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Experimental debate-based ethics education</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Korean</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Moral judgement</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>