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Evaluating interventions to improve ethical decision-making in clinical practice

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1	Evaluating interventions to improve ethical decision-making in clinical
2	practice: a review of the literature and reflections on the challenges
3	posed
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- 53 AMS and CB led the study from design through to writing up study reports. FG led the
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- 55 AI, AMS and KR undertook this systematic review. SJ structured the database searches for
- 56 the systematic review. AI and AMS drafted this paper. All authors contributed to writing the
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- 58
- 59
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- 61

62 Abstract

63 Since the 1980s there has been an increasing acknowledgement of the importance of 64 recognising the ethical dimension of clinical decision-making. Medical professional regulatory authorities in some countries now include ethical knowledge and practice in their 65 required competencies for undergraduate and post graduate medical training. Educational 66 interventions and clinical ethics support services have been developed to support and improve 67 68 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 69 70 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 71 educational interventions, and one tool used to evaluate a clinical ethics support intervention. 72 Most measures did not evaluate the key impact of interest, that is the quality of ethical 73 decision-making in real world clinical practice. We describe the results of our review and 74 reflect on the challenges of assessing ethical decision-making in clinical practice that face 75 both developers of educational and support interventions and the regulatory organisations that 76 set and assess competency standards. 77

78

79 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 86 within the normative framework of wider society. Medical schools and professional 87 organisations have recognised the need to include relevant education and assessment around 88 the ethical dimension of clinical decision-making. The Association of American Medical 89 Colleges (AAMC) (1) has published the "Entrustable Professional Activities" (EPAs)- a 90 competency-based list of clinical activities used in undergraduate and graduate medical 91 92 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 93 94 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 95 schools, has included ethical knowledge and skills in its required learning outcomes for 96 97 graduates since 2009 (3). The Institute of Medical Ethics has published an updated core 98 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 99 to clinical practice in their specialty training curricula (5). The method of assessing ethical 100 knowledge and skills in clinical practice at both an undergraduate and postgraduate level is 101 however less clearly defined (6, 7). The emphasis in medical curricula on the ethical 102 dimension of clinical decision-making and the requirement to achieve competency in this 103 element of clinical practice recognises that ethical decision making can affect patient care 104 105 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 106 ethical decision making in clinical practice. 107

Recognition of the ethical dimension of clinical practice, and the ethical challenges faced by 108 clinicians, has also resulted in the emergence of clinical ethics support services in hospitals 109 and community health care organisations. This international phenomenon includes a diverse 110 range of services for providing advice and support to health care professionals facing difficult 111 ethical decisions related to treatment and care of patients. Clinical ethics committees, ethics 112 consultants, and moral deliberation groups are three of the commonest examples of such 113 114 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 115 116 professionals these services aim to support.

117

To investigate this apparent lack of evaluation of the impact of either educational or ethics 118 119 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 120 on the process of referral and admission decisions for intensive care (8), to answer the 121 following question: what measures or tools of evaluation have been used to assess the impact 122 of interventions to improve ethical decision-making in clinical practice? Based on the 123 findings from the review and other literature, we explore how competency in ethical decision-124 making is currently assessed and reflect upon broader challenges of assessing ethical 125 decision-making in education and real-word clinical practice. 126

127

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 133 focussed on evaluation tools or measures specifically used to assess interventions to improve 134 ethical decision making in clinical practice. We present an overview of the review findings 135 and conclude that none of the tools identified work-based assessments of ethical decision-136 making. Finally, we sketch out the problems that exist for assessing ethical decision-making 137 in education and real-word clinical practice and discuss the need for further work on 138 139 developing valid and reliable instruments to evaluate clinicians' ethical decision-making in practice. 140

141

142 Interventions to improve ethical decision-making

Interventions to improve ethical decision-making in clinical practice can be broadly divided 143 into educational interventions aimed at equipping health care professionals with the 144 knowledge, skills and attitudes required for decision-making, and interventions that provide 145 real time support for clinicians facing ethical challenges in their work. Educational 146 interventions have largely focused on medical and nursing students rather than postgraduate 147 trainees. The development of clinical ethics support services and their integration into front 148 line care has been documented in the literature (9-12). In the UK, both the Royal College of 149 Physicians and the Nuffield Council on Bioethics have referred to the importance of support 150 for clinicians in dealing with the ethical dimension of their work (13, 14). However, clinical 151 ethics support services have faced a persistent challenge from health care funders and some 152 clinicians to demonstrate the impact of these interventions on clinical decision-making and 153 patient care. Authors have noted the lack of robust studies demonstrating effectiveness of 154 clinical ethics support (12, 15-18). Schildmann et al. specifically looked at outcome criteria 155 used in evaluation studies of clinical ethics support. They did not identify any studies that 156 evaluated clinician's decisions following advice in an ethics consultation, or the ethical 157

quality of decision-making within the service itself (12, 19). The Euro-MCD Instrument, 158 specifically designed to measure outcomes of moral case deliberation, focuses on how 159 participants perceive the importance of outcomes and experience these outcomes after the 160 deliberation (20, 21). Recent systematic and literature reviews on clinical ethical support cite 161 a number of other evaluation tools, but conclude that evaluation is still an underdeveloped 162 area (22, 23). Research on moral deliberation groups or individual ethics consultations have 163 164 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 165 166 these actually shape and influence health care professionals' decision-making in practice (26). 167

168

169 Evaluation tools measuring ethical sensitivity and judgment

Concurrent with, but unrelated to, research on interventions to support healthcare 170 professionals in ethical decision-making in practice, there has been a stream of research 171 focused on the development of reliable and valid tools (often referred to as frameworks, 172 instruments or methods in the literature) to assess ethical reasoning and judgement. Some of 173 these have been used, or adapted for use, in the evaluation of ethics educational interventions. 174 Early tools originated in moral psychology and were generic and profession non-specific. 175 The most extensively used tool to study moral reasoning is the Defining Issues Test (DIT) 176 (27), which is designed to measure default schema by which individuals interpret moral 177 issues. The DIT assesses one of the four components of Rest's model of moral behaviour 178 (moral judgment), the other three components being ethical sensitivity, moral motivation, and 179 moral character (28-30). Some profession-specific instruments have been developed for use 180 in medicine and dentistry, based on the DIT. The Medical Ethical Reasoning and Judgement 181 Test (MERJT) (31) uses ethical dilemmas relevant to medical students and doctors. Other 182

instruments include the 'Dental Ethical Reasoning and Judgement Test' (DERJT), the 183 Nursing Dilemmas Test (32) and Ketefian's Judgement About Nursing Dilemmas Test (33). 184 185 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 186 Sensitivity Test (DEST), for example, measures ethical sensitivity in dentistry (37), and 187 Hebert et al.'s vignette questionnaire tests the ability to recognise ethical issues in 188 189 undergraduate medical students and healthcare professionals (38). Research in behavioural ethics and business ethics suggests that other factors including cognitive error, social, 190 191 organisational, and contextual factors may also play a significant role in ethical decisionmaking (39). In 2002, Bebeau commented on the relative neglect of moral motivation and 192 moral character in education and assessment in the professions compared to the focus on 193 ethical reasoning and sensitivity and there has been increasing focus on professionalism and 194 professional values within health care education in the last decade (40). However, the 195 ultimate challenge for assessment of moral reasoning and behaviour is to capture its 196 implementation in practice. Well-developed ethical sensitivity and reasoning skills that 197 perform well in hypothetical situations do not necessarily predict ethical competency in 198 implementing action plans in the high-pressured environment of clinical practice. There is a 199 200 need for valid and reliable instruments to evaluate how clinicians make ethical decisions in this environment. 201

202

203 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.

210

211 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.

218

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.



232 Results of the systematic review

Characteristics of the included studies are presented in table 1. All studies except one (42), 233 234 evaluated interventions that were educational in type. These educational interventions were diverse and included: a general medical curriculum with some lectures and discussion 235 relating to ethics in the Introduction to Medicine course (43); specific ethics course within a 236 medical or nursing curriculum (44-48); an integrated ethics thread in a medical curriculum 237 238 (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 239 240 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. 241 242 **INSERT TABLE 1 HERE** 243 Table 1. Summary of included studies. 244 245 Tools and instruments to evaluate interventions to improve ethical decision-making in 246

247 clinical practice

Almost all evaluation tools (12) were administered to medical and nursing students and 248 249 assessed educational interventions to improve ethical decision-making related to clinical practice. Amongst these 12 instruments, five were already existing instruments and seven 250 were new instruments developed for the purpose of the study. Ten out of 13 studies included 251 described evaluation tools based on written assessments (43-51, 54), two described tools that 252 included an Objective Structured Clinical Examination (OSCE) station/s (52, 53), and one a 253 254 combination of performance based assessment with a standardised patient and written assessment of a clinical case (40). 255

Of the ten studies describing written assessment evaluation tools, three studies used the 257 previously developed and validated tools. Turner and Bechtel (51) and Kim and Park (48) 258 259 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 260 Nursing Association's code of ethics and how likely the participant is to follow it. 261 Akabayashi et al. (43) modified the Defining Issues Test and combined it with the Problem 262 263 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 264 265 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 266 but the number of cases varied from one (The Ethical Reasoning Tool)(45) to 12 (Ethics and 267 Health Care Survey Instrument)(49, 50, 54)). Three tools asked students to state and justify 268 what they would do in each case vignette (44-46), and one tool required students to choose 269 from a pre-specified list of actions for each vignette and then to justify their decision (49, 50, 270 54). One tool combined the performance based assessment with a standardised patient and 271 written assessment of a clinical case (40). Students were asked to complete ten OSCE stations 272 and interact with the standardised patient. Following the encounter with the standardised 273 patients, students had a pre-defined time to list the moral conflicts in the case and briefly 274 analyse at least two of these conflicts. In one study, the description of the written assessment 275 evaluation tool - the nursing ethical decision-making ability scale (47) - was not described 276 well enough to establish whether case vignettes were used. 277

278

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.

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Only one study described an instrument for evaluating ethical decision-making in actual 287 288 clinical practice rather than using hypothetical scenarios (42). The instrument (Ethics Consultation Quality Assessment Tool - ECQAT) was used to evaluate written records of 289 290 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: 291 identifying the ethics question; eliciting consultation specific information; ethical analysis; 292 and making practical recommendations. The key elements have sub-elements that explain the 293 294 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 4 295 strong. An overall assessment of acceptable/less than acceptable was also given. Interrater 296 reliability was 43% for the individual key element scores and 74% for the overall holistic 297 298 assessment score.

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300 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 caseconsultation in practice using consultation records.

308

A striking finding from our review was that we found no educational interventions aimed at 309 post graduate practising clinicians. The evaluation tools and instruments for educational 310 interventions identified focussed on students' skills in reasoning about and articulating 311 312 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 313 314 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 315 assessment of clinical skills can form part of medical and nursing education. Thus, while the 316 literature acknowledges the importance of recognising the ethical dimension of clinical 317 decision-making, currently available evaluation tools and instruments for assessing 318 interventions to improve ethical decision-making in clinical practice appear to be limited in 319 this respect. 320

321

Assessing knowledge and reasoning skills in an educational setting is an important part of 322 developing competencies in health care professional students as a foundation for competent 323 clinical practice in the workplace. This is true of both clinical and ethical decision-making. 324 325 Assessment of clinical competency is a requirement of continuing professional training and development. However, the use of workplace assessment for ethical competency, however 326 defined, is more challenging than similar assessment of clinical procedural skills. Firstly, 327 there is the complexity of assessing how ethical decision-making happens in clinical practice, 328 and therefore precisely what are the elements of good ethical decision-making. Ability to 329 recognise and articulate ethical issues or concerns (moral sensitivity); to draw on ethical 330

principles and consider arguments for alternative courses of action (ethical reasoning) and to 331 make a judgment based on ethical reasoning will clearly be needed. But ethical decision 332 making in the clinic, like clinical decision making, is a dynamic and interactive process, 333 requiring dialogue between clinician and patient, and often a patient's family, identifying 334 perspectives and values of those involved, and knowledge of personal, organisational and 335 societal constraints on decision-making in a specific situation. Thus, any assessment tool for 336 337 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 338 339 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. 340

341

The importance of clarifying the key aims and components of the process to be evaluated 342 have been highlighted in the literature on evaluation of clinical ethics support services. A 343 recent systematic review on ethical case interventions and their impact on care for patients 344 found no data on decisional conflict, moral distress, patient involvement in decision-making, 345 quality of life of patients or ethical competency (56). Another review of tools used to assess 346 clinical ethics consultations concluded that the diversity of these tools used in studies stem 347 from the diverse goals of assessing consultations, different contextual factors and practical 348 limitations (57). 349

350

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 356 trainee's portfolio which forms the basis of the decision regarding their competency to 357 progress. These include case-based discussions and 'Mini Cex' assessments involving direct 358 observation of a doctor's interaction with, and clinical management of, a patient. Both 359 learning events use a structured framework for assessing competency in specific domains that 360 guide the supervisor (58). Inclusion of a framework that evaluated ethical decision-making 361 362 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 363 364 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 365 evaluation. 366

367

The recent calls for setting standards for training and evaluating the impact and efficacy of 368 ethics consultation in the U.S. have also led to the development of new tools. The Assessing 369 Clinical Ethics Skills (ACES) tool (61) is designed to be used in an educational setting with 370 simulated ethics consultation cases and assesses a range of interpersonal skills, including 371 specific behaviours that the trainee ethics consultant should demonstrate. (7). Adapting such a 372 tool to capture the elements of ethical decision-making in clinical practice could be a 373 powerful educational tool for use in both the classroom (with simulation) or in clinical 374 375 practice.

376

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.

385

386 Conclusion

387 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 388 389 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 390 potential harm to patients of poor ethical decision-making, there is a moral obligation for 391 clinicians, their trainers, and those providing ethics support to clinicians, to demonstrate that 392 educational and other interventions have an impact on this element of clinical practice. There 393 is a clear need for further work to develop valid and reliable instruments to evaluate 394 clinicians' ethical decision-making in practice. These could be used as part of formative 395 assessment and learning in clinical training and continuing professional development, in 396 addition to providing a mechanism for evaluating interventions aiming to support and 397 improve ethical decision-making in relation to patient care. 398

399 List of abbreviations

- 400
- 401 UK United Kingdom
- 402 EPA Entrustable Professional Activities
- 403 NIHR National Institute for Health Research
- 404 PIT Problem Identification Test
- 405 MERJT Medical Ethical Reasoning and Judgement Test

- 406 DERJT Dental Ethical Reasoning and Judgement Test
- 407 DEST Dental Ethical Sensitivity Test
- 408 OSCE objective structured clinical examination
- 409 ECQAT Ethics Consultation Quality Assessment Tool
- 410
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Table 1. Summary of included studies

Authors and	Country	Name/brief description of evaluation tool	Target	Validity testing	Reliability testing	Intervention	Language	What was
Siegler, 1982 (44)	US	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	Medical students (36 in the experimental group and 29 in the control group)	Scoring categorisation of reasons developed by several members of weighting of reasons reflected values of teaching staff	Two independent scorers each scored 10 students' assessments and reached agreement on 88% of responses	Experimental teaching course in ethics	English	Ethical reflectiveness and reasoning
Smith, 1994 (40)	US	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.	511 medical students	Not described	For written portion: the Spearman rank-correlation coefficients for pairs of readers who jointly rated more than ten students	Medical curriculum	English	Moral reasoning and ethical judgement
Singer, 1994 (52)	Canada	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.	66 medical students and residents	Performance of eight expert clinicians in response to the scenarios	Interrater reliability determined using intra class correlation co- efficient Internal consistency reliability calculated using Cronbach's alpha	Medical curriculum	English	Performance in the OSCE
Singer, 1996 (53)	US	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.	88 final year medical students	Content validity tested by use of staff physicians in development of station	Interrater reliability scored using inter-class correlation coefficients.	Medical curriculum	English	Performance in the OSCE
McAlpine, 1997 (45)	Australia	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.	30 nursing students	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	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.	Ethics study unit in medical curriculum	English	Cognitive reasoning

				on completing the post test.				
Turner and Bechtel, 1998 (51)	US	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).	Community health nursing students (149 students)	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	Not described	Nursing curricula (nursing students enrolled in the study from three undergraduate programmes)	English	Ethical decision- making and moral reasoning
Savulescu, 1999 (46)	UK	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/marking criteria developed for that purpose.	Medical students (30 scripts assessed)	Content validity assessed by naïve markers scores compared with marks by primary markers using the marking scheme.	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.	Medical ethics course in medical curriculum	English	Ethical awareness and core critical thinking skills
Goldie et al., 2002 and 2004 (49, 50)	UK	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 disscensus; participants asked to choose preferred answer and justify their decision.	238 medical students	Not described	Not described	Integrated medical curriculum	English	Proposed behaviour in ethical situation
Akabayashi et al., 2004 (43)	Japan	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.	Medical students and graduates (residents) (559 medical school students and 272 residents)	Referred to validity of the test in other papers	Not described	Medical curriculum with second year medical ethics lectures	Japanese	Moral sensitivity and reasoning
Lohfeld et al., 2012 (54)	UK	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.	Medical students (20 final year McMaster University students and 45 final year Glasgow students)	Content validity was ensured by having a team of experts review the cases and reach consensus on the final versions.	Assessment of the performance of medical students on two occasions, separated by 2 weeks, using 2 or 3 trained raters at each site	Medical curriculum (McMaster - problem-based programme; Glasgow University - integrated, problem-based curriculum)	English	Ethical sensitivity
Pearlman et al., 2016 (42)	US	A records-based assessment using the record of a clinical ethics case consultation. Scoring is based on four key elements of an ethics consultation	Clinical ethics consultants (14	Verbal feedback from nine reviewers who were members	Scoring of a sample of case consultation records as part of an ASBH quality attestation	Clinical ethics consultation	English	Identification of ethical issue, relevant

		(ethics question, consultation specific information, ethical analysis, conclusions and recommendations. Each element is scored within 2 categories acceptable/less than acceptable using 4 key descriptors: poor; less than adequate; adequate; and strong. Each element has a set of descriptors about what should be included in the record.	different consultations)	of the SBH Quality Attestation Presidents Taskforce	pilot. 43% inter rater agreement between scores and 74% agreement regarding acceptable/not acceptable categories			information gathering, ethical analysis and ethical decision- making
Chao et al., 2017 (47)	Taiwan	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.	Nursing students (51 in the experimental group and 49 in the control group)	Not described References validity testing in an unpublished paper	Not described	Web based ethics course	Taiwanese	Self-assessment of ethical decision- making
Kim and Park 2019 (48)	Korea	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	64 senior years nursing students (35 in the debate group and 29 in the lecture group).	Content validity of Korean JAND reported in another referenced paper by the authors	Not described	Experimental debate-based ethics education	Korean	Moral judgement