

Ethics and evidence-based practice

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Ethics and Evidence-Based Practice

1. Introduction

Evidence-based practice is roughly the use of current best evidence in making decisions about the care of patients (Sackett et al. 1996). At first it seems hard to imagine how such practice could raise ethical concerns; and yet it has. These concerns are set out in the first section of this chapter. Much of the past discussion of these problems has focused on the epistemology of evidence, with critics suggesting that EBP is based on an overly narrow definition of evidence and knowledge. This chapter tacks differently, focusing instead on the epistemology of practice; in other words, what type of evidence or knowledge is needed in deciding how to act? Using the distinction drawn by Aristotle between practical and scientific knowledge it is suggested that evidence in the form of scientific knowledge, no matter how widely defined, cannot form the basis for practice because it cannot provide the goals that action requires; for EBP these must be provided from within practice itself, for example, nursing or surgery. However, ultimately the goals are provided by wider personal and social goals, in particular, human flourishing. Once this is accepted, it is possible to resolve the ethical concerns that have been raised about EBP, drawing on Aristotle's account of reasoning in the practice areas of craft knowledge and of practical wisdom.

2. Ethical concerns

At least four ethical concerns are found in the literature on EBP.

1) Some types of knowledge are not included in EBP

EBP downgrades or discounts types of knowledge that are used by practitioners and which are important for good practice; these include experience, intuition and anecdote (Barker 2000; Bax 2008; Milton 2007; Tonelli 1998). In health care, EBP fits best with tightly defined areas of practice, particularly pharmacology, but is ill suited for the more craft-like areas, such as surgery and nursing. In these areas,

experience counts for a great deal, and a patient would be better served by an experienced practitioner rather than one well-versed in recent research evidence. The obvious riposte here is that the patient is best served by one well-versed in both. However, the point is rather that experience and intuition can point in directions counter to those suggested by EBP. For example, whilst guidelines based on EBP might suggest a new treatment for all patients, a practitioner might believe that overall, some patients who are well established on the old treatment would be best left on it (for example, those who would find it difficult to establish new routines). A surgeon during a procedure might decide to try something new on the basis of a hunch, even though little or no EBP-evidence exists to support it (Stirrat 2004). Another type of example in the literature is described as a Lazarus case, in which the practitioners, despite EBP-based guidelines, decided to carry on treating a patient who unexpectedly revived and left hospital relatively well (Brant-Zawadzki 2012).

2) EBP runs counter to patient-centred care

This concern is a continuation: the type of knowledge that is discounted by EBP is often specific to case or circumstance. By insisting that all practice is based on up-to-date research evidence where it is available, patient-centred care, which requires case-specific knowledge and intuition, is undermined. The issue arises particularly where EBP enters protocols and guidelines which are supposed to be used as the primary decision-making aid for practitioner. There are two types of problem:

- Patients lose choice; they are constrained to have what the evidence tells them to, a phenomenon that has been described as evidence-based paternalism (Rysavy 2013; Slowther et al. 2004; Liberati 2004). Of course, it might be asked why patients would want a less effective treatment anyway. However, patients might have different notions of effectiveness to those measured in the research evidence. An obvious example is where the EB judgement includes cost effectiveness; for example, an individual patient might prefer a treatment of only marginally superior efficacy but much greater cost. But even where cost is not an issue patients might have factors that matter to them but which are not judged overly important in the outcome measures of EBP; for example, American guidance recommending statins for all patients with diabetes was rejected by many patients (Montori et al. 2013).

- Practitioners lose choice; they can no longer make choices that fit individual patients but which run counter to the guidelines of EBP (Loewy 2007; Kerridge et al. 1998; Gupta 2004b; Gupta 2003; Gupta 2014; Gupta 2004a). Again it might be asked why practitioners would want less effective or unproven treatments. However, we have already seen one case, that of allowing some patients to remain on the apparently inferior old treatment. Another might be a Health Visitor who senses that a new mother is under stress, struggling with breast feeding and in need of a kind of permission to give up and switch to bottle feeding. To encourage such a switch runs counter to evidence-based guidelines and yet in certain situations Health Visitors might do so. A cancer nurse might meld conventional EB treatment with a patient's own unproven (or even proven not to work) treatments. A mother using ineffective colic drops for their baby might be encouraged to wean the child off them rather than stop straight away, as EBP would suggest. It is almost certain that many, perhaps most, practitioners could give further examples. It is not simply that some practice has to be undertaken in the absence of good evidence, it is that practitioners' practical knowledge, based on anecdote, intuition or similar, can suggest practice that runs counter to that which is suggested by EBP.

3) *"Testable by RCT" is not the same as "most effective"*

EBP puts highest value on evidence from randomised controlled trials (RCTs). However, this can produce unethical results (Zwitter 2001; Vos et al. 2004; Vineis 2004; Rysavy 2013). Consider two treatments that are proposed to reduce rates of heart disease in an area. The first is a publicity campaign to reduce smoking; the second, a campaign focused on social determinants of heart disease which aims to reduce poverty through welfare advice and work on financial capability. It is relatively straightforward to test the first by RCT; researchers could, for example, use a cluster randomised trial in matched areas of the country. The outcomes could be easily measured by, say, six-week quit rates. And there would be no ethical concerns - the researchers would be in equipoise as to whether or not the campaign works. Equipoise is the state in which the practice community is genuinely unsure as to whether one treatment is superior to another; it is considered to be an ethically necessary condition prior to any randomisation; if it

does not exist then clinicians would be randomly and unethically allocating patients to a treatment they believed inferior (Ashcroft & ter Meulen 2004). By contrast, the social-determinant orientated intervention is harder to evaluate. There would be no immediate health-related scores, such as quit rates, that could be used. It would be possible to measure other scores, such as anxiety, but the link to health improvement would be slower and less obvious. There would also be an ethical concern concerning equipoise. The researchers do not know whether or not the intervention is useful in terms of health and as such equipoise exists and a cluster randomised design could be used. However, it is already known that interventions like this *are* effective in terms of reducing debt problems (Allmark et al. 2013). In such cases, it seems unethical to randomise people into a trial knowing that one group will get a less effective treatment than another. There are two key points from the example. The first is that the EBP pyramid can lead practitioners to prefer treatments that are testable by RCT but which may in fact be less effective than others which are not. The second is that practitioners might be pushed towards undertaking trials that are ethically dubious in order to meet the randomisation requirement.

4) Decisions based on EBP can be unjust

Those funding a health system would seem well advised only to fund interventions for which there is evidence. The preference for RCT-testable interventions described in the previous paragraph easily mutates into a preference for funding such interventions (Ashcroft & ter Meulen 2004; Vos et al. 2004; Kerridge et al. 1998; Jansen 1997; Hughes 1996; Hope 1995). This can result in what seem to be unjust decisions of various types. In the first place, rare conditions are difficult to test via RCTs as there are insufficient cases to run a trial likely to reach statistical significance. Patients with these conditions might find that promising but insufficiently tested treatments are unfunded. Other conditions are common but are such that it is difficult to find funding to run expensive RCTs of their treatment. This might be because the conditions are suffered by those with low economic power; an example might be diarrhoea in developing countries. Or it might be because the condition is such that successful treatment of it is low-profit. This has been the case with the development of antibiotics for multi-resistant bacteria; the problem here is that the drugs are used on too short-term a basis for companies funding research to recoup their research costs. By contrast, conditions that are widespread in affluent populations and which require long-term treatment are

likely to be supported by many treatments that are well supported by RCT evidence, depression for example. For similar reasons, certain types of patients may be poorly supported by RCT evidence, as is the case for those with multiple pathologies, the elderly and children. Finally, certain features of patients might be ignored or insufficiently accounted in RCTs meaning that it can be unclear whether a treatment is effective for patients on the basis of, for example, ethnicity or class. In summary, rationing based on EBP is likely to be unfair across a number of axes of inequality.

Summary

EBP has the foundational belief that practice should be based on the best evidence available. This implies that some evidence is better than others; the meta-analysis of multiple well-conducted RCTs is better than the intuition of a practitioner in deciding whether, for example, one treatment is better than another. However, implementation of EBP based on a hierarchy of evidence which puts RCTs at the top has resulted in a number of ethical concerns. EBP, it is said, can result in unethical practice where: i) it overrides the decisions of practitioners borne of their knowledge gained through experience; ii) it disempowers the ability of patients to choose on the basis of their own ideas and values; iii) it results in preference given for treatments that are most easily tested by RCTs; and iv) it is used in rationing and allocation decisions which tend to favour the existence of evidence over the presence of need.

3. Initial responses

The critical response to these concerns has focused on epistemology as the source of problems. Some critics reject outright epistemology that prioritises RCT-style knowledge, suggesting it is unsuitable for, say, nursing, which, it is claimed, is largely based on an entirely different type of practice knowledge (Barker 2000; Bax 2008). On first examination, however, this looks implausible. The EBP pyramid is not a production of *fiat* on the part of, say, doctors over nurses or quantitative researchers over qualitative ones. It is based on recognition of the nature of scientific method as being in large part concerned with the elimination of error. The literature on sources of error in reasoning is immense and overwhelming; if a nurse is to claim that she prefers by intuition to give treatment X to this particular patient in the face of strong RCT evidence preferring the contrary she will fall foul

of this evidence (Thaler & Sunstein 2009; Glass & McAtee 2006; Sutherland 1994). Her decision will be evidently wrong because it is less likely to achieve the desired goal than a decision based on the RCT evidence.

Others have emphasised the importance of the use of other types of evidence in practice. Some of these accept the EBP pyramid, which puts RCT and meta-analyses as the best basis for practice, but allow other evidence when the former is unavailable or unobtainable. An example is the Medical Research Council Guidance on so-called natural experiments (Craig et al. 2012). Such experiments are the use of environmental differences that are not in the researchers' control to assess an effect, for example, the introduction of legislation, or changes in taxation, on health behaviour. The MRC guidance leaves the pyramid unaltered, merely acknowledging that randomisation is either practically or politically impossible in some cases.

Other critics suggest that the pyramid itself is unsuitable for certain areas of practice. For example, Pawson and others suggest that RCTs are suitable only for research in relatively closed systems, such as drugs acting on bodies. In these closed systems it is relatively easy to remove or reduce the effect of confounding factors. However, RCTs are not suitable for open systems, such as social interventions to change behaviour of people in society (Pawson 2013). Here there are so many confounding factors that the attempt to impose control of them reduces the intervention to something that is nothing like what will appertain in practice. Thus, for example, you might show that an educational intervention to increase exercise works at 6 weeks after a stroke for under-65-year-old English speaking men attending a programme run by well-motivated researchers in Yorkshire in August 2010 but it is unlikely that the programme will be as effective (or effective at all) amongst Asian women in Lancashire in December 2014 (see Snelling's criticism in this volume of the 'ludicrous' level of compliance required in a randomised study of intentional rounding). The realist revolution in social research currently taking place is in part based on recognition of this. However, note that this does not get the critics of EBP very far. On the realist account, there is still a hierarchy of evidence; it is just that RCTs are not always at the top; they are replaced by something like realist synthesis (Pawson 2002); but even if this were done, the four areas of ethical concern set out above would remain in some form.

These initial responses to the ethical concerns have focused on the epistemology of 'evidence'. It will be argued now that as well as considering the 'evidence' in EBP it is also necessary to consider the idea of practice being 'based' in evidence. The argument draws upon Aristotle's account of practical reasoning and the various distinctions he makes. One such distinction is that between scientific and practical knowledge. It will be argued that EBP errs where it uses scientific knowledge as the sole or primary *basis* for practical decisions. For practice, scientific knowledge is only one element (or base) of what is required. This Aristotelian approach is then brought to bear on the ethical concerns that have been set out concerning EBP. The starting point is a brief account of Aristotle's theory of action, as set out in various places, including briefly in *Nicomachean Ethics* and in more depth in *De Motu Animalum* (Aristotle 2000; Aristotle & Nussbaum 1985).¹

4. Knowledge-based practice

Practice of the type identified in EBP is a type of action; it is purposeful or intentional action by practitioners with goals that are generally focused on the health or wellbeing of others. Action is, for Aristotle, a movement of some kind the origin of which lies within the thing that moves. Generally, these are living things; as such, they are able to act without being acted upon. When a tree blows in the wind it is acted upon; but when it grows or sucks up nutrition from the ground, it acts. However, it does so without intention, its action is autonomic. Animals too can be acted upon, like trees, and they can act autonomically, as when they digest food. However, they are also able to act on the basis of their internal states of desire in combination with their perception of external stimuli; a hungry animal that perceives food will, other things being equal, move to obtain and eat the food. Humans, as a type of animal, are capable of all such motion: involuntary, as when being acted upon, autonomic, as with digestion, and voluntary, as with acting in accordance with a desire in the manner of all animals. However, humans are capable of another layer of desire, rational or reasoned desire, which gives rise to another type of action, intentional action. This is a desire that does not just arise from their animal nature, like appetite for food or sex, but which is endorsed as

¹ Appendix 3 sets out some of the Aristotelian terms used in this chapter and compares them with alternatives found in translation as well as with the original Greek.

good or not by some process of reasoning. Thus a person who is hungry and perceives food that is easily obtainable might nonetheless avoid it because he has a reasoned desire to lose weight. To summarise in table form:

Object Type of action	Inanimate	Animate		
		Plant	Animal	Human/Rational animal
Involuntary: Moved with origin of movement outside self	✓	✓	✓	✓
Non-voluntary: Origin in self (no desire)		✓	✓	✓
Voluntary: i) Origin in self (with appetite-type desire)			✓	✓
Voluntary: ii) Origin in self (with rational desire) – intentional/purposive action				✓

Table 1: Types of action in inanimate and animate objects

Purposeful or intentional action is, then, action which is undertaken in the light of the agent's belief that some good is to be obtained through it. This good might be instrumental, constitutive or both. For example, the activity of working as a nurse might be instrumental, say, to obtaining money to do the things the agent wants. By contrast, building model boats might be constitutive, something the agent does that he views as good in itself. And working as a nurse could be both instrumental, to get money, and constitutive, because the agent views it as worthwhile or good in itself. The simple model of reasoned action is thus,

- i. Agent has a reasoned desire for x (where x is an instrumental or constitutive good)
- ii. Agent recognises the situation as one in which action ϕ (pronounced 'phi') is one that will achieve x without any negative effects that outweigh it
- iii. Agent decides to ϕ

iv. In the absence of countervailing forces, agent ϕ s

Evidence in this model comes into play in the second premise (ii); for example, the agent desires to treat an infection and knows that RCTs have shown treatment A to be most effective. However, note that no decision will form and no action take place without the first premise (i), the goal and desire. This point is important: evidence of itself does not have and cannot provide a goal. No action, be it practice or other, can be based on evidence alone.

"Mere thought, however, moves nothing; it must be goal-directed and practical" [Aristotle trans. Crisp 1139a].

Action requires, first, some kind of evidence such that the agent recognises the situation as one where a desire can be fulfilled *plus*, second, the desire. Thus in judging the reasonableness or otherwise of an action we need to consider at least two sets of evidence: first, the evidence by which the agent recognises the situation that requires ϕ in order to achieve x and, second, the evidence (or other considerations) by which the agent forms the reasoned desire for x at the outset.

The evidence referred to and discussed in relation to EBP belongs primarily in the first category, that is, it is evidence for ϕ as the most likely means to achieve x. Where does the evidence of the second type originate, that is, the evidence for the goal itself? Here it is useful to draw upon a distinction Aristotle makes between two categories of practical activity, production or craft (*techne*) and praxis. (The latter term is transliterated as it is awkward to translate; it will, however, be defined by explanation.) ²

Production/craft is practical activity best shown by examples, such as playing a musical instrument, constructing a boat, performing surgery and nursing a patient. Here, the goal is provided from within the craft, to play a tune, build a boat, repair an aneurysm or return a patient to reasonable living. And the goal will typically be broken down into stages, although this is more obvious in examples like building a boat than playing a tune. To do the production/craft well, the agent will need a

² Lipscomb, in this book, addresses the specific issue of how much and what research evidence a particular practitioner needs or could be expected to have. This is an important issue not specifically addressed in the current paper.

variety of attributes or, broadly, what Aristotle terms (craft-specific) virtues. For playing a tune, these might be specific technical abilities but also the discipline to practice and apply them. For nursing, the range of virtues required will be different, including knowledge of up-to-date research evidence; but as well as knowing this, the nurse will need the ability to apply it to specific situations. Finally note that the goals of production/craft do not have to be good for the agent or for the wider world. Assassination could be termed a craft; a good assassin would require a range of skills and knowledge; but being an assassin seems unlikely to be something that serves the individual or the world well in general.

Praxis is practical activity of which there is also a huge variety but (unlike crafts) in broad terms only one goal, that of living well. It is the activity undertaken by people as either constitutive of or instrumental to doing or living well (*eupraxia* and *eudaimonia*). As such, it might be thought that everything the agent does is praxis, including all her production/craft activities. The assassin has goals and skills internal to her craft but also presumably undertakes it in the belief it is instrumental to living well overall. However, for Aristotle, such a person may be a good assassin but be mistaken about living well, hence mistaken in her praxis. It might be better to say that everything the person chooses to do she does in part as praxis but that it is not necessarily good praxis. In order to achieve that, certain specific virtues and skills are required. These can be broadly divided into ethical and intellectual virtues.

Ethical virtues relate to desire. In order to act a person must desire; we noted the example earlier of the hungry dieter who forgoes available food. Ethical virtue is possessed by someone whose desires are in line with good reasoning, with the choices that will constitute good praxis. But for good reasoning itself the person needs intellectual virtues of various types. The overall one is practical wisdom (*phronesis*) but this has many elements key amongst which are:

- *Nous*, a word that has come down directly into English (usually pronounced ‘nowse’) to mean a kind of worldly-wise attitude, perhaps a slightly cynical one. In right action it has three roles: To i) read current circumstances correctly as, for example, something that requires urgent action; ii) recognise the features of the situation that are relevant prior to deliberating; and iii) recognise that deliberation is complete and an action settled upon.

- Good-end deliberation (*euboulia*), that is, reasoning well about living well, correctly reasoning about what goes into making a happy, flourishing life.
- Cleverness (*deinotes*) which is the ability to work out the particular means to particular goals. Aristotle recognises that this third element can be damaging if it is possessed by someone with bad goals.

These ideas can be summarised and developed as follows:

Productive activity	End	Virtue	Knowledge/evidence required
Praxis	Living or doing well	Ethical virtue	Knowledge of the good
		Nous	
		Good-end deliberation	
		Cleverness	
Production/craft	Craft-specific	Craft-specific	Craft-specific, sometimes including research evidence
		Quasi-nous	
		Quasi-cleverness	

Table 2: Two types of productive activity and their related features

As illustrated by the assassin, production/craft does not require ethical virtue; for similar reasons, neither does it require good-end deliberation. However, the craft-person does require types of nous and cleverness that are specific to the production. The nurse referred to earlier requires not just research evidence but also the nous-like ability to know that this is a situation in which it is pertinent. She also requires the ability to work out specific steps in particular situations to achieve a

goal, an ability termed quasi-cleverness in the table above. With this account of practical knowledge in hand it is now possible to return to the puzzles with which this chapter began and attempt to resolve them.

5. Practical knowledge and the ethics of EBP

The 'evidence' referred to in EBP relates largely to scientific knowledge, to what is, or is probably on current evidence, the case. In terms of its relation to action it is neutral because it is not tied to any particular ends. To take a simple example, the Romans and Ancient Greeks were aware that human effluent poisoned a water supply. One action that resulted from this scientific knowledge was building settlements such that effluent was disposed downstream. However, another was the earliest known example of chemical warfare when troops would deliberately poison the water supplies of cities under siege (Roffey et al. 2002). Here the same knowledge forms the basis for completely opposed actions. Thus one form of knowledge that EBP cannot supply is that of the right ends. Where does this knowledge come from and what evidence relates to it?

The ends of action can be provided from within a practice, such as nursing, surgery and assassin-craft (for want of a better word). The scientific knowledge of causes of infection will fuel different choices of action within each practice, surgeons and nurses avoiding it, assassins, perhaps, deliberately causing it. In this process they are likely to use other types of knowledge. The executive knowledge of cleverness results in their knowing how to develop a plan to achieve the end; the how-to knowledge of experience results in their knowing how to, for example, do things aseptically. With such practical knowledge, scientific type knowledge of the RCT-type seems tangential at best. Aseptic technique is learnt largely by doing, not by learning the results of experiments.

This gives purchase to some of the concerns about EBP; a nurse or surgeon making executive decisions of skill will use knowledge that is not of the EBP type, based as it is rather in the experience of the practitioner. However, this has not yet taken us to the heart of the problem. Proponents of EBP should have no difficulty

acknowledging that skill-type and executive-type knowledge will be required, as well as the scientific knowledge they champion. What they would not acknowledge would be the possibility of conflict between them; roughly, if you want to achieve ends within a practice, they would claim, then you should use the best scientific knowledge available; surgery requires practical skill but the surgeon should not use procedures, however skilfully, that have been shown to be less than best in terms of health outcomes.

It is then to outcomes and ends that we should look to resolve the concerns detailed at the beginning of the chapter. Table 2 shows that the ends of a practice are set by that practice such that different practices might use the same knowledge for contrary ends, such as saving lives and ending them. One way in which EBP might run counter to good practice would be where its proponents were advising the wrong ends. A number of examples where this might be claimed were given earlier: the nurse who advised some of her patients to stick with their old, apparently inferior, medication; the Health Visitor who did not advise breast feeding; the nurse who combines evidence-based medication with the patient's own preferred non-evidence based ones. If the goal of practice in this case was to provide EB care then such practitioners would indeed be wrong. However, it is not.

To take the Health Visitor example, the actual goal is, something like, to take the steps most likely to lead to a happy and healthy parenting of the child. Despite the Health Visitor knowing the breast-feeding is in general associated with healthier children, in this case she can see, on the basis of knowledge from beyond health-research, that it might well go wrong and that not pushing breast feeding is a better option. Much of this is down to nous, particularly here the ability of the Health Visitor to discern the relevant particulars (Sherman 1989). EBP-style evidence will be of great import but is defeasible by local particular factors. Thus the EBP evidence shows that babies who are breast-fed generally do better on a large number of indicators that are important in this specific case; as such, the Health Visitor will be inclined to recommend it. However, she discerns specific differences here; the mother's awkward relationship with her own body; her family's lack of support; her signs of emotional distress. And these cause the Health Visitor to choose a different action.

However, that this is a tricky and hazardous argument can be illustrated in the Lazarus-type cases. In these, practitioners make a decision to carry on treating apparently hopeless cases and then find themselves vindicated by successful outcomes. Might not such practitioners also point to nous, to discerning there was something about this case that made them feel they should press on? Such *post hoc* reasoning is notoriously unreliable. How can a distinction be made between the implausible magical-type nous claimed in some Lazarus cases from the more plausible examples, such as the Health Visitor's?

Broadie's discussion of practical wisdom and the present author's own example provides a possible answer (Broadie 1991; Allmark 2005). An old-master painting is for auction and an art expert is sent at short notice to bid for it on behalf of a client. He arrives late and bidding is apparently near its end. He has been told to bid above the present level but when he looks at the painting he instantly decides not to bid; he believes it a fake. The painting is sold and subsequently a legal dispute arises between the successful bidder and the auction house as to the painting's authenticity. In this case, the art expert could reasonably point to nous; he could sense something wrong about the painting. However, were he asked to set out in detail his concerns he could do so; the brush-strokes were too broad; the colours were of a type this painter never used; and so on. He didn't go through this step-by-step but, rather, he instantaneously used a chain of reasoning he could provide if called upon. The same must apply in these cases of particular judgement. The Health Visitor can provide such a chain; the Lazarus practitioner cannot. **This is an important caveat to notions such as reflection-in-action (see Rolfe's chapter in this book); reflexivity of itself is of little practical use unless it is in-principle visible and analysable.**

This gives sufficient detail to tackle the problems set out at the beginning of this chapter:

- 1) *Some types of knowledge are not included in EBP*
- 2) *EBP runs counter to patient-centred care*

Some types of knowledge are indeed not included in EBP, of which skill-type knowledge (know-how) and nous (knowing what to do and when to act) are particularly relevant to practice. However, these will only lead to apparent disputes

with EBP where there are specific details in the particular situation which are relevant and which are not accounted for in the evidence base, such as the mother's awkwardness. Practitioners calling upon such knowledge need to be cautious and need to provide a credible account of why such particulars are relevant in any particular case.

3) *"Testable by RCT" is not the same as "most effective"*

This concern was largely dealt with in section 3 above. As it stands, this is a problem not of EBP but of the inappropriate placing of RCTs at the top of the pyramid of evidence types. As stated earlier, recent developments in realist methodology have shown that alternative methods might sit atop the pyramid in relation to research in open systems. It remains the case that EBP, even of this type, may yet be what practitioners choose not to apply in particular cases for the reasons just given and with the same caveats.

4) *Decisions based on EBP can be unjust.*

Consider a nurse facing a patient with a pressure sore and another having a cardiac arrest; she would clearly prioritise the latter even though the evidence base for the treatment of the former might be stronger. Although this example is clear, in practice such decisions can go wrong in ways that are easily masked. Thus community practitioners might decide there is insufficient evidence to attempt a health-screening intervention in an under-researched community, such as the Roma, even though it is used successfully in the majority community. For the individual health care practitioner, the message is that the availability of evidence should not guide decisions about priorities of treatment; these priorities must be decided on the basis of the ends of the practice itself.

On a larger scale, funding decisions might be made by health commissioners, managers and, ultimately, politicians; and decisions about what to research will be made by research funding bodies, drug companies and the like. It is worth recalling that for all practitioners, their practice choices will also constitute praxis, that as well as meeting the goals of their practice they attempt to meet their overall goal of doing or living well. Some practices are such that their goals are likely to run foul of the goal of living well. Successful criminals, terrorists and assassins are

not, *pace* relativists, living well. But most practices, including those outlined here relating to healthcare and management, are compatible with living well; a good nurse will also be someone who, barring ill luck, lives well. Hence as practitioners they will be concerned that there is an insufficient evidence base in some areas of practice, or that there is injustice in resource allocation. This concern is seen in numerous ways, such as Government reports. The response to the injustice that relates to EBP should be to encourage research in those areas, not to turn away from EBP itself.

6. Conclusion

The practice of EBP is largely exonerated in this account; it does not of itself give rise to ethical concerns whereas failure to do so often would. However, right action requires more than good evidence; it requires also the right ends, the right desires and the ability to apply all this as a package in any particular situation. This latter ability is practical wisdom and combines various abilities, including the *nous* ability to discern the relevant particulars. And it is in the particular situations where EBP might appear to diverge from ethical best practice as the relevant particulars may diverge from those measured as important outcomes in the original research. There is a second way in which EBP might appear unethical: this is when strength of evidence is used as a method of prioritisation of health care; this seems obviously wrong once noticed but can slip through as apparently rational or 'scientific' if it is not. By providing the tools for practitioners and researchers to note the difference between epistemic wisdom and practical wisdom, Aristotle helps resolve one area of concern relating to evidence-based practice.

Appendix

Table 3: Terminology used in this chapter alongside Greek and alternative translations

Term used in this chapter	Greek Transliteration	Greek	Other translations		
			Crisp	Irwin	Important alternatives
Scientific knowledge	Episteme	ἐπιστήμη	Scientific knowledge	Scientific knowledge	
Good deliberation	Euboulia	ἔβουλια	Noble deliberation	Fine deliberation	
Practical knowledge	Dianoia Praktiken	διάνοια πράκτικην	Practical thought	Practical thought	
Practical wisdom	Phronesis	φρονήσις	Practical wisdom	Intelligence	
Cleverness	Deinotes	δεινότητα	Cleverness	Cleverness	
Voluntary	Hekousion	ἑκούσιον	Voluntary	Voluntary, willing	Intentional
Involuntary	Akousion	ἄκουσιον	Involuntary	Involuntary, unwilling	Unintentional
Desire	Orexis	ὀρέξις	Desire	Desire	
Desire of appetite	Epithumia	ἐπιθύμια	Appetite	Appetite	
Rational choice	Prohairesis	προαίρεσις	Rational choice	Decision	Choice

References

- Allmark, P. et al., 2013. Assessing the health benefits of advice services: using research evidence and logic model methods to explore complex pathways. *Health & Social Care in the Community*, 21(1), pp.59–68.
- Allmark, P., 2005. Health, happiness and health promotion. *Journal of Applied Philosophy*, 22(1), pp.1–15.
- Aristotle, 2000. *Nicomachean Ethics* R. Crisp, ed., Cambridge: Cambridge Univ Press.
- Aristotle & Nussbaum, M., 1985. *Aristotle's De Motu Animalium*, Princeton, USA: Princeton University Press.
- Ashcroft, R. & ter Meulen, R., 2004. Ethics, philosophy, and evidence based medicine. *Journal of Medical Ethics*, 30(2), p.119.
- Barker, P., 2000. Reflections on caring as a virtue ethic within an evidence-based culture. *International Journal of Nursing Studies*, 37(4), pp.329–336.
- Bax, A., 2008. Evidence-based practice: ethical questions for nursing. *Nursing science quarterly*, 21(2), p.183.
- Brant-Zawadzki, M., 2012. The Lazarus syndrome: The ethics of evidence-based versus experience-based medicine. *Radiology*, 263(3), pp.629–632.
- Broadie, S., 1991. *Ethics with Aristotle*, New York: Oxford University Press.
- Craig, P. et al., 2012. Using natural experiments to evaluate population health interventions: new Medical Research Council guidance. *Journal of Epidemiology and Community Health*, 66(12), pp.1182–6.
- Glass, T. a & McAtee, M.J., 2006. Behavioral science at the crossroads in public health: extending horizons, envisioning the future. *Social Science and Medicine*, 62(7), pp.1650–71.
- Gupta, M., 2003. A critical appraisal of evidence-based medicine: Some ethical considerations. *Journal of Evaluation in Clinical Practice*, 9(2), pp.111–121.

- Gupta, M., 2004a. Evidence-based medicine: Ethically obligatory or ethically suspect? *Evidence-Based Mental Health*, 7(4), pp.96–97.
- Gupta, M., 2014. *Is evidence based psychiatry ethical?*, Oxford: Oxford University Press.
- Gupta, M., 2004b. Reconsidering rationality and ethics in the evidence-based medicine debate: A reply to commentators. *Journal of Evaluation in Clinical Practice*, 10(2), pp.143–146.
- Hope, T., 1995. Evidence based medicine and ethics. *Journal of medical ethics*, 21(5), pp.259–260.
- Hughes, J.C., 1996. Evidence based medicine and ethics. *Journal of medical ethics*, 22(1), pp.55–56.
- Jansen, R.P.S., 1997. Evidence-based ethics and the regulation of reproduction. *Human Reproduction*, 12(9), pp.2068–2075.
- Kerridge, I., Lowe, M. & Henry, D., 1998. Personal paper. Ethics and evidence based medicine. *British Medical Journal*, 316(7138), pp.1151–1153.
- Liberati, a, 2004. Introduction to the symposium: what evidence based medicine is and what it is not. *Journal of Medical Ethics*, 30(2), pp.120–121.
- Loewy, E.H., 2007. Ethics and evidence-based medicine: Is there a conflict? *MedGenMed Medscape General Medicine*, 9(3).
- Milton, C.L., 2007. Evidence-based practice: Ethical questions for nursing. *Nursing Science Quarterly*, 20(2), pp.123–126.
- Montori, V., Brito, J. & Murad, M., 2013. The Optimal Practice of Evidence-Based Medicine Incorporating Patient Preferences in Practice Guidelines. *JAMA: Journal of the American Medical Association*, 310(23), pp.2503–2504.
- Pawson, R., 2002. Evidence-based Policy: The Promise of 'Realist Synthesis'. *Evaluation*, 8(3), p.340.
- Pawson, R., 2013. *The Science of Evaluation*, London: Sage.

- Roffey, R., Tegnell, A. & Elgh, F., 2002. Biological warfare in a historical perspective. *Clinical Microbiology and Infection*, 8(8), pp.450–454.
- Rysavy, M., 2013. Evidence-based medicine: a science of uncertainty and an art of probability. *Virtual Mentor*, 15(1), pp.4–8.
- Sackett, D. et al., 1996. Evidence based medicine: what it is and what it isn't. *BMJ*, 312, pp.71–72.
- Sherman, N., 1989. *The Fabric of Character: Aristotle's theory of virtue*, Oxford: Oxford University Press.
- Slowther, A.-M., Ford, S. & Schofield, T., 2004. Ethics of evidence based medicine in the primary care setting. *Journal of Medical Ethics*, 30(2), pp.151–155.
- Stirrat, G.M., 2004. Ethics and evidence based surgery. *Journal of Medical Ethics*, 30(2), pp.160–165.
- Sutherland, N., 1994. *Irrationality*, New Brunswick, NJ: Rutgers University Press.
- Thaler, R. & Sunstein, C., 2009. *Nudge: Improving Decisions about Health, Wealth and Happiness*, Harmondsworth: Penguin.
- Tonelli, R., 1998. The philosophical limits of evidence-based medicine. *Academic Medicine*, 73(12), pp.1234 – 1240.
- Vineis, P., 2004. Evidence-based medicine and ethics: A practical approach. *Journal of Medical Ethics*, 30(2), pp.126–130.
- Vos, R., Willems, D. & Houtepen, R., 2004. Coordinating the norms and values of medical research, medical practice and patient worlds - The ethics of evidence based medicine in orphaned fields of medicine. *Journal of Medical Ethics*, 30(2), pp.166–170.
- Zwitter, M., 2001. A personal critique: Evidence-based medicine, methodology, and ethics of randomised clinical trials. *Critical Reviews in Oncology/Hematology*, 40(2), pp.125–130.