INTRODUCTION

Complementary and alternative medicine (CAM) is a heterogeneous set of professions, disciplines, and artefacts of healing with a presence in the healthcare landscape of the developed world. The varieties of modalities constituting this field are exceedingly diverse and are derived from distinct sets of theories with attendant claims and warrants. They are patronised to varying degrees by all strata of society, are located in isolated rural areas as well as large urban settings, and their remedial substances can be found in home first aid kits and tertiary healthcare centres. There is state support for some professions alongside state-sponsored suppression of fringe areas, with scientific evidence existing for selected therapies and assertions of scientific implausibility for others. Collectively this makes CAM a vibrant topic in contemporary healthcare.

CAM practitioners apply work practice techniques that integrate knowledge typologies sourced from a variety of philosophical perspectives. Primary within this are clinical actions derived from a commitment to the values of holism. Here, the patient is perceived as an interconnected whole with the capacity for self-healing; a belief that interprets patient presentation and analyses the interaction between their healing capacity and their experiential world. Thus this philosophical position directs clinical decision making, which leads to the epistemology of CAM practitioners being perceived as unique among the healthcare professions. This shapes wider discussions about the practice and patronage of CAM and its place in contemporary healthcare practice.

Accordingly, there is a large variety of interactions between CAM and other areas of the healthcare and academic world, and this thesis is particularly interested in two current relationships. The first emerges from the various academic disciplines that have previously had minimal interest in CAM healthcare practices. These fields of inquiry are diverse and range from

anthropology, sociology and philosophy through to bioethics, education, law and economics. These, or rather their different knowledge practices, pique the curiosity of this researcher. The second area is the field of evidence-based medicine (EBM), which resides within the natural sciences.

There are multiple types of inquiry that are applied to investigating the CAM disciplines. As practice is embedded in a particular philosophical position, it is proposed there are more or less appropriate methods that can adequately assess the practice this develops. Such an assertion states that if CAM practitioner decision making is based on a holistic cognition that forms the reasoning underlying action, then methods that inquire after therapeutic techniques and clinical outcomes will need to consider this perspective. In research terms, this refers to model validity, or the accurate representation of the healthcare practice under review (Jonas & Lewith, 2011).

At this point in time, the primary research approach to CAM healthcare is EBM, with its emphasis on controlled trials, experimental research design and causal association. There are disagreements about the appropriateness of this model for the research of CAM practices, with the primary contention being the suggestion that EBM findings cannot validly move from controlled laboratory settings to the uncontrolled real world, thereby omitting a myriad of contextual components residing within the therapeutic relationship. This implies it is the association between the internal validity of controlled trials and their capacity for adequate model and external validity that is contested. This brings to the fore questions related to the nature of knowledge and the ways it is produced, reasoned, and endorsed in society.

Of particular interest is the perception that the emergent debate about the research of CAM healthcare knowledge is purely an epistemological subject, when in actuality this area is said to be better explored from within the ontological and metaphysical arenas (Mumford, 2014). This is because a particular philosophical lens is always applied to recognising the world, and from this emerges typologies of knowledge that lay claim to explaining

humans, their being, and their place in nature. It is curiosity about these types of presuppositions, their philosophies, their role within CAM and EBM, and the associated reasoning that shape the general thrust of this inquiry.

The research problem and question

All healthcare delivery has philosophical foundations that shape knowledge underlying practitioner action in practice (P. Thomas, 2006). How this action is researched and interpreted - itself a philosophically dependent process - leads to distinct representations of such practice. Within this area of inquiry it is generally accepted that professional action is unique and variable between and across disciplines, and because of this there is no single way of explicating a unified understanding of the breadth of healthcare practices (A. Miles, 2009; Petticrew et al., 2013; Sturmberg, 2007a, 2007b).

However, the perspective that these different knowledge types require a range of inquiry to develop adequate understanding is not universally held. Alternative viewpoints are found within the comments of proponents of EBM, who promote this model as the knowledge generation enterprise *par excellence* and advocate this as the most accurate way to explain healthcare interventions, irrespective of their discipline knowledge. This collection of research methodologies and methods is proposed to have greater validity than other forms of knowledge inquiry, and as such it can explore, explain, and order healthcare delivery.

Consequently, the recommendation to arise from these quarters is to gauge evidence for healthcare practice through the EBM knowledge generation approach. The result is the upper echelons of this framework providing a level of knowledge substantiation that is used to determine useful or non-useful healthcare interventions and practices.

The pertinent issue within this position lies in the consideration that although EBM offers insight into causal association in controlled

environments, the ability of these to be extrapolated to the multivariate real world is limited. This means the internal validity of EBM is sufficient but its external validity is not. Thus, the proposal that EBM can judge healthcare practice effectiveness despite this appears puzzling. This is the crux of the research problem: the ability of EBM outputs to be represented as wholly valid knowledge for contextually dependent healthcare services.

Concomitant to this are intransigent interpretations of EBM and associated attempts to delimit healthcare practices. These manifest in philosophically situated assertions of inadequate evidence and therapeutic ineffectiveness that are used as rhetorical devices within argumentation. The use of EBM as a tool in this way is claimed to reflect a 'strong' construal of evidential criteria and associated claims and warrants that overreach methodological capacity. This is viewed as rationally problematic, and it is the analysis and response to this that shapes much of the argument in this thesis.

Focussing on the possibility that EBM knowledge generation methods fail to adequately represent a healthcare practice creates numerous directions for inquiry. Because of the presence of philosophically laden and contested debates on this topic, research possibilities are condensed to a focus on the philosophical foundations of knowledge generation and the practitioner experience and negotiation of these. This references the research problem, which focuses on daily work practices and the experience of demands for a particular style of knowledge implementation that inadequately represents practice. Thus the research question addressed here is:

> How does evidence-based medicine affect the beliefs and work practices of practitioners working within complementary medicine?

Here it is the intersection between CAM beliefs and ways of working, and EBM and its knowledge generation model that is the focus of inquiry. In this work, this point of interaction is referred to as the 'CAM–EBM interface' or the 'practitioner–EBM interface'.

The proposed argument

Healthcare practice requires skill in decision making. This is a process of problem identification, clarification, intervention and resolution, with cognitive processes active throughout this undertaking. The primary intellectual pursuit within this is reasoning, which is a universal human action. In relation to the research problem and the attendant question, it is known that different forms of reasoning are applied within public healthcare practice compared to EBM knowledge generation, with the former employing practical reasoning and the latter, instrumental reasoning.

This thesis argues CAM practitioners primarily apply practical reasoning derived from patient–practitioner decision making in practice and not the instrumental reasoning based on technical processes as per EBM. Moreover, this practical reasoning uses cognition reflecting established philosophical perspectives. Thus it is argued a philosophically reasoned use of knowledge within CAM practice situates EBM relative to its contextual relevance, thereby shaping and enacting the CAM–EBM interface.

Aim and significance of the research

Assessing whether or not EBM has an effect on the beliefs of CAM practitioners is the primary aim of this thesis. Associated with this is an attempt to understand how the CAM–EBM interface may manifest for participants and the extent to which their beliefs may be affected through this interface. Thus the aims are to explore practitioner engagement with EBM, establish effects that may arise from this, and comprehend how these may influence work practice.

This thesis utilises a theoretical framework that recommends a process of dissemination of findings to the community involved with the research. Associated with this is the explicit prioritisation of practitioner voice in the

project. Consequently, the contained examples of participant utterances may resonate beyond these pages to reach the broader CAM community, and as such this invites review, critique, analysis and action by those who are the focus of this research. Therefore, the research subjects, their peers, and their professions determine the primary significance of this work.

Concomitantly there are those external to these professions who may find degrees of significance within this thesis. Thus there is the potential for widespread engagement and critique. Whatever the emergent response, the content and its significance should be acknowledged as interpretive, as this forms the analytical basis of this work.

The thesis structure

This thesis contains seven chapters entailing the following: a literature review; description of the theoretical framework; overview of research design; thematic analysis; critical discourse analysis; theoretical discussion; and conclusion. The content frequently utilises visual representations of theoretical and analytical material, and there are also numerous pictorial models and frameworks. These expand on the relevant content and also serve as graphic markers related to surrounding discussion. The chapters are structured as follows:

- *Chapter 1* reports on a review of the literature. This begins with a description of the aims, objectives, searching strategies and analysis processes that were applied to the accessed work. Based on the results, the literature is channelled into separate domains containing four key concepts and three topics of debate. These are reviewed and the findings discussed within found understandings, proposed recommendations, unanswered questions and gaps this thesis may address.

- *Chapter 2* provides an overview and discussion of the theoretical framework. This presents a rationale for the choice of particular theory

that can respond to the research problem and the literature review. A brief historical background for the applied theory is presented, and the way the research topic interacts with this is discussed. The specific theory, its supporting principles, and the relation of these to this thesis follow. A theoretical model that can be applied to analysis is constructed and criticisms of the theory are addressed.

- *Chapter 3* discusses the research design through review of the primary considerations that guide the applied research. This includes the methodological structure and the directions taken in methods choices. The theory that directs these are examined and the ways methodology and methods represent and facilitate the theoretical framework are discussed. A review of sampling, quality criteria, ethics, and reasons for specific choices and not others completes the chapter.

- *Chapter 4* presents the first of three analysis chapters. This focuses on thematic analysis of data and emphasises participant voice in relation to the literature and theory. Themes are generated from the data through iterative phases of analysis that are studied in relation to documented similarities and theorised against known concepts. The findings that arise are collated and taken forward to the next chapter.

- *Chapter 5* is the second of the three analysis chapters and integrates the key theoretical analysis element. This applies techniques that take apart participant quotes and interrogate them for precise linguistic features. This enables the detailed examination of utterances and incorporates a different type of analytical emphasis that adds to the previous findings. The outcomes of this are collated and taken forward to the next chapter.

- *Chapter 6* completes the third phase of analysis by utilising the theoretical framework to theorise the emergent findings. This is undertaken within the boundaries of the chosen theory and applies the model developed in Chapter 2. This theorises the data findings and allows speculative

propositions to emerge. These are refined and deliberated within the discussion that completes the chapter.

- *Chapter 7* is where conclusions are drawn from the information provided by the previous chapters. There is a focus on the understandings gained that are balanced against the research limitations and remaining problems and questions. This chapter culminates with a discussion of future directions where a proposal for the professions is developed. Prospective areas of research are also identified.

A reference list and appendices complete the thesis as a whole.

CHAPTER 1: LOOKING TO THE LITERATURE

CAM is a healthcare phenomenon with considerable usage in the developed world. A high level of patronage across multiple countries occurs despite the current low scientific evidence base of CAM, which leads to considerable concern for those who favour science-based public healthcare. For individuals with such perspectives, the current public engagement with CAM systems is perceived as erroneous, whereas for others it represents active patient agency and effective engagement with non-orthodox ways of healing.

It is the CAM–EBM juncture that is active in the relations between advocates of CAM disciplines based on holism and multiple ways of knowing and proponents of the primacy of EBM-style scientific evidence in healthcare practice. This interface is the focus of this chapter, and is discussed through the appraisal of both general and specific healthcare literature. The analysis is primarily theoretical as the majority of reviewed material originates from this category, and the findings are organised into four domains: literature structuring, key concepts, key debates, and discussion.

1.1 Aims and objectives

In relation to the research question, this review considers the philosophical basis of CAM and EBM, the role of this within professional belief, claims, and warrants, and the reasoning underlying the use of these for the construction of knowledge for both CAM and EBM. This is an exploration that aims to clarify ontological and epistemological positions, establish their validity and determine their relevance to knowledge claims. This leads to two further aims: first, a review of the EBM model; and second, a synthesised review of the CAM–EBM interface. Identification of ontological and epistemological debates and how the literature contributes to knowledge in this area are primary objectives of this chapter. Additionally, what is omitted and how this research can assist in furthering knowledge are discussed.

1.2 Search strategies

Numerous disciplines throughout the natural and human sciences probe CAM as a field of inquiry. The ensuing research emerges from branches of knowledge with varied scope, meaning the available body of literature is widely distributed across differing intellectual positions and a range of research approaches. Access to the breadth and depth of this material therefore required the use of search terms that could capture multiple interpretations of a broad and nuanced field.

Thus, the classificatory criteria developed for the Cochrane Collaboration by Wieland, Manheimer and Berman (2011) were applied. This is a taxonomic framework that differentiates a healthcare construct (described as the theoretical definition) from the tests used to determine whether a healthcare practice falls under a specific construct (termed the operational definition). This realises interrelated higher and lower order characteristics of healthcare professions in a way that can identify similarities and differences, which can then guide search terms and filter documentation. In this way, it is possible for standardised, objective, reproducible, and systematic content to be extracted for review.

The theoretical and operational definitions that were applied to differentiate CAM were sourced from existing descriptive statements. In their current form these are appropriate for the construction of search terms; however, it is acknowledged these are contested terminologies. Some definitions are said to serve as counterpoints to biomedicine as opposed to describing independent stand-alone healthcare practices, and because of this they are viewed as constructions that serve to monitor and control professional boundaries (Caspi et al., 2003; Jütte, 2001; Low, 2001; Singer & Fisher, 2007; Stone & Katz, 2005). Such criticisms are currently unrefuted, which has significance to the debates that emerge from within the literature. With this in mind, Table 1.1 provides the existing terminologies that fulfil theoretical criteria for the CAM field.

Table 1.1: CAM theoretical definitions

Term	Literature-based definition
Natural medicine	Healthcare practices recognising and assisting the healing force of nature (Inglis, 1979, p. 9).
Alternative medicine	Health practices regarded as offering optional healthcare to biomedicine (Kaptchuk & Eisenberg, 2001, p. 196).
Complementary medicine	Healthcare practices that complement mainstream by contributing to a common whole, by satisfying a demand not met by orthodoxy, or by diversifying the conceptual frameworks of medicine (Ernst et al., 1995, p. 506).
Complementary and alternative medicine	Complementary and alternative medicine (CAM) is a broad domain of healing resources that encompasses all health systems, modalities, and practices and their accompanying theories and beliefs, other than those intrinsic to the politically dominant health system of a particular society or culture in a given historical period. CAM includes all such practices and ideas self-defined by their users as preventing or treating illness or promoting health and well-being. Boundaries within CAM and between the CAM domain and the domain of the dominant system are not always sharp or fixed (Office of Alternative Medicines Panel, 1997, p. 50).
Traditional medicine	The sum total of the knowledge, skills, and practices based on the theories, beliefs, and experiences indigenous to different cultures, whether explicable or not, used in the maintenance of health as well as in the prevention, diagnosis, improvement or treatment of physical and mental illness (World Health Organisation, 2013, p. 15).
Traditional and complementary medicine	Traditional and complementary medicine merges the terms traditional medicine and complementary medicine, encompassing products, practices and practitioners (World Health Organisation, 2013, p. 15).
Traditional, complementary and alternative medicine	Traditional, complementary and alternative medicine refers to traditional medicine concurrently practised in countries to which they have been imported with the complementary and alternative medicines practiced in that country (Bodeker, Kronenberg, & Burford, 2007, p. 9).

Three of the definitions in Table 1.1 were deemed suitable as search terms: alternative medicine; complementary medicine; and complementary and alternative medicine. These reflect the diverse and overlapping nature of the various professions as they are found throughout the literature. Reference to traditional medicine was excluded as this refers to healthcare practised by cultures from non-industrialised countries, and the term natural medicine is currently rarely applied. To aggregate these, complementary and alternative medicine was selected and its acronym CAM was applied.

Many CAM healthcare practices fit within operational definition guidelines, with Wieland et al. (2011) identifying more than 50 eligible therapies. However, this includes non-normative and fringe healthcare practices, which means additional benchmarking is needed to eliminate searching that may include these in returned results. Therefore Kaptchuk and Eisenberg's (2001) delineation of professionalised from non-professionalised CAM groups was used. Here, definitions of professionalisation were applied, with included groups required to have mechanisms of function and sufficiency, licensure, teaching institutions, specialist associations, regulatory oversight (including voluntary self-regulation), and an accredited body of knowledge.

Applying these criteria, the following CAM healthcare practices were included: traditional Chinese medicine; Ayurvedic medicine; homeopathic medicine; naturopathic medicine; Western herbal medicine; therapeutic massage; osteopathy; and chiropractic. This continued to be a large heterogeneous grouping, meaning a targeted literature search remained difficult. To refine this, practices with relevant published research and within the researcher's domain of knowledge were extracted; thus the naturopathic and Western herbal medicine professions, represented by the acronym N&WHM, became the focus at the operational level. Definitions for these are provided in Table 1.2.

Table 1.2: Operational definitions for selected CAM professions

Term	Literature-based definition
Naturopathic medicine	Naturopathic medicine is a distinct primary health care system that blends modern scientific knowledge with traditional and natural forms of medicine. It is based on the healing power of nature and supports and stimulates the body's ability to heal itself by treating the root cause of disease. Naturopathic medicine is the art and science of disease diagnosis, treatment and prevention using standard diagnostics and natural therapies (World Naturopathic Federation, 2015a, p. 50).
Western herbal medicine	Western herbal medicine (WHM) is a clinical practice of healing using naturally occurring plant material or plants with little or no industrial processing. Medicines or extracts from crude plant material, such as root, bark, and flower, are used in multiple plant formulations to treat persons with disease and dysfunction and to promote health and well-being (Niemeyer, Bell, & Koithan, 2013, p. 112).

The accuracy of the definitions in Table 1.2 is debatable, as contrasting classifications of practice exist across these professions (McIntyre, 2005; Zick, Schwabl, Flower, Chakraborty, & Hirschkorn, 2009). For example, the therapeutic interventions of the former incorporate those of the latter, and both professions assert a blend of science with tradition and philosophy. Bearing this in mind, these definitions capture the similarities and distinctions across and between these professions.

Thus these definitions constructed the literature search queries, with the theoretical level focussing on the field as a whole and the operational level on profession-specific parameters. When constructing search terms, these served as prefixes and acronyms, and when partnered with additional terms from the literature, the following search descriptors were applied:

> Alternative medicine OR alternative therapies OR complementary medicine OR complementary therapies OR complementary and alternative medicine OR CAM
>
> AND/OR
>
> Naturopathic medicine OR Naturopathy OR Western herbal medicine OR herbal medicine OR phytotherapy OR phytomedicine OR botanical medicine.

Theoretical definitions can be used as prefixes and the search terms phrased in a variety of combinations. For example, when searching for systematic reviews of CAM usage the following was applied:

> Alternative medicine OR alternative therapies OR complementary medicine OR complementary therapies OR complementary and alternative medicine or CAM AND use OR usage OR access OR patronage OR consumers AND systematic review.

The literature search accessed sources comprising seminal texts, peer-reviewed academic journals, conference papers, policy documents, CAM institution reports and validated websites. Non-peer-reviewed journals, opinion pieces, grey literature, media articles and non-validated websites

were excluded. English literature only was accessed from the fields of health, medicine, social science, science & technology, humanities and education.

Database searching occurred within Academic Search Elite, Cochrane Library, CINAHL Complete, Clinical Key, EBSCO, EMBASE, Gale, Google Scholar, Informit, JSTOR, Medline, OvidSP, PsycINFO, Philosopher's Index, ProQuest, PubMed, Science Direct, SAGE Journals, Scopus, Sociological Abstracts, SpringerLink, Taylor and Francis, Web of Science and Wiley Online Library. Accessed websites included the International Society for Complementary Medicine Research, World Health Organization, Research Council for Complementary Medicine, Interdisciplinary Network for Complementary and Alternative Medicine Research, National Centre for Complementary and Integrative Health, National Institute of Complementary Medicine, and Stanford Encyclopaedia of Philosophy.

1.3 Processing and analysing sources

The returned literature was included or excluded based on the relevance of the text narrative or document abstract to the research topic. Suitable literature was subjected to a full-text review and allocated to two analytical domains: non-empirical theoretical, philosophical, sociological, anthropological, and psychological literature; and empirical quantitative, qualitative, and mixed methods works. The literature containing a combination of these was placed within the domain capturing the hypothesis or research question. The schematic for this process is shown in Figure 1.1.

Analysis and synthesis processes for Domain 1 include examination of proposition and logic through concept and argumentation analysis (Baronov, 2004; Hospers, 1997; Toulmin, Rieke, & Janik, 1984) and Domain 2 applies validity, reliability, reflexivity, and trustworthiness criteria via review of theoretical orientation, research design, sampling, data collection, data analysis, and congruence between methods and narratives (Alvesson & Sköldberg, 2009; Babbie, 2016; CASP, 2015; Shadish, Cook, & Campbell,

2002). The resultant thematic outcomes were synthesised and arranged into concepts and debates, which are the focus of the remainder of this chapter.

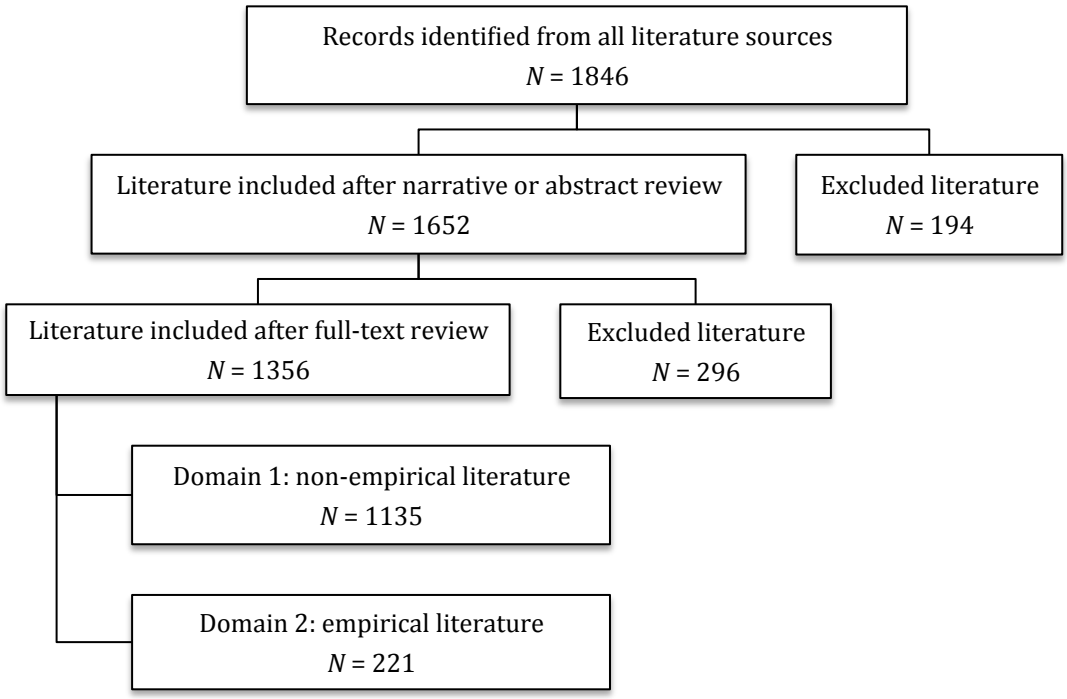

Figure 1.1: Literature search schematic

1.4 Key concepts

The key concepts emerging from the literature are discussed in relation to CAM as a theoretical construct in the industrialised world, with a specific focus on the practice of Australian N&WHM where possible. The emergent concepts appear in the following sequence:

- the dynamics of CAM healthcare service delivery
- ontological underpinnings of CAM
- epistemology informing the practice of CAM
- philosophy of the EBM model.

These set the stage for discussion of key debates, identified as:

- ontological debates
- epistemological debates
- debates of reasoning.

These are then summarised with a review of the emergent understandings, recommendations, and remaining questions.

1.4.1 The dynamics of CAM healthcare delivery

The CAM professions play a significant role in the healthcare landscape of multiple countries, and it is this phenomenon that has contributed to the majority of the current debate surrounding these therapies. Public access to these services is dependent on numerous factors, and utilisation of CAM can be divided between people using publicly funded healthcare systems who experience a biomedical or allied health service referral to CAM, and those who pay out-of-pocket or by private insurance for direct access to services (Bodeker & Burford, 2007). This duality is said to occur because the delivery of CAM in the primary healthcare context takes place within a variety of regulatory arrangements that affect access across population profiles (World Health Organisation, 2001).

World Health Organization (2009) resolution WHA62.13 urges the formulation of policy, regulation, licensing, and professional standards for all publicly accessed CAM healthcare services. Member state implementation of this recommendation is irregular globally, with 17 CAM healthcare services delivered in Australia and no national overarching policy in place to govern these (World Health Organisation & Australian Institute of Health and Welfare, 2012). In this country, osteopathy, chiropractic, and traditional Chinese medicine are statutorily regulated (Australian Health Practitioner Regulaton Agency, 2015), with the remainder of the professions operating under self-regulation in the private sector. Thus N&WHM in Australia are excluded from statutory regulation, meaning delivery of these services is dependent upon conditions of utility that arise from this exclusion.

Table 1.3 provides estimates of CAM delivery, patronage, and financial outlay for all professions across industrialised regions; with the Australian N&WHM professional subset shaded.

Table 1.3: Profile of CAM healthcare service delivery

Country	CAM service providers	Estimated patient visits	Estimated expenditure	Citation
United Kingdom	54,000 CAM practitioners	31 million (1999)	£450 million (1999)	(Dixon, 2008)
European Union	Unknown number of CAM practitioners	100 million (2003–2004)	€3.5 billion (2003–2004)	(World Health Organisation, 2008)
North America	380,000 CAM practitioners	629 million (1997)	US$12.2 billion (2005)	(Dixon, 2008)
Canada	18,000 CAM practitioners	5.4 million (2003)	C$1.8 billion (1997)	(Park, 2005)
Australia	8500 CAM practitioners	750,000 (two-week period in 2003–2004)	AUS$494 million (two-week period in 2003–2004)	(Australian Bureau of Statistics, 2008)
Australian N&WHM profession subset	Sample of 795 N&WHM practitioners	1.9 million (2003)	AUS$85 million (2003)	(Bensoussan, Myers, Wu, & O'Connor, 2004)

A feature of the literature is reference to high public usage of CAM services throughout industrialised nations. Since Eisenberg et al.'s (1998) landmark publication of North American adult use between 1990 and 1997 - showing 42 per cent of 1539 participants accessing CAM products and services - surveys across diverse geographical areas and various cohorts have reiterated this as representative usage. This is confirmed by Cooper, Harris, Relton and Thomas' (2013) systematic review describing little change over two decades for five CAM services across 12 industrialised countries. However, the accuracy of these data is contested, as heterogeneity across the CAM professions provides significant analytical challenges. Eardley et al. (2012) experienced this when they were unable to generate valid estimates from a systematic review of studies sourced from European Union literature.

Such anomalies lead to invalid comparison between and across findings, which creates uncertainty as to the actual level of public use of CAM. [1] While this potential inaccuracy is acknowledged, it is agreed that sizeable population numbers access CAM services, with Table 1.4 showing service and product usage for eight industrialised nations throughout a 13-year period.

Table 1.4: CAM usage surveys 2002–2015

Country	Study method	Sample	Use (%)	Citation
United Kingdom	Cross-sectional 2005 patient-completed questionnaire survey	189 multi-ethnic paediatric cancer outpatients in a London hospital	37	(Robinson et al., 2008)
Italy	1999–2000 face-to-face interviews	A representative sample of 30,000 Italian families	16	(Menniti-Ippolito, Gargiulo, Bologna, Forcella, & Raschetti, 2002)
Germany	Population-based computer-assisted telephone interviews	1001 adults in Lubeck, northern Germany	42	(Bucker, Groenewold, Schoefer, & Schafer, 2008)
Switzerland	Longitudinal study beginning 1979; last data collection 1999	591 participants born in 1958 or 1959	30	(Rossler et al., 2006)
North America	Retrospective data review of the 2012 National Health Interview survey	34,525 adults and 10,218 children in North America	33 (adult) 12 (child)	(Clarke, Black, Stussman, Barnes, & Nahin, 2015)
Canada	Telephone survey data inquiring about use in the previous year	2000 randomly selected adults across Canada	54	(Esmail, 2007)
Australia	Cross-sectional 2005 telephone interview from random digit dialling	1067 adults in the general population of Australia	70	(Xue, Zhang, Lin, Da Costa, & Story, 2007)
New Zealand	2002/2003 representative National Health Survey	12,529 people aged >15 years	23	(Pledger, Cumming, & Burnette, 2010)

[1] This can arise in the following way: two workforce studies were conducted, with the first sourcing official government data and the second, professional association database holdings (Leach, 2013; Leach, McIntyre, & Frawley, 2014). The findings were contradictory. As official databases fail to recognise multiple professional membership, this creates non-comparable information due to distinct datasets; thus professional associations are recommended as the primary CAM workforce information source in Australia (Grace, 2012).

The World Health Organization (2013) outlines three reasons for this level of usage: (1) the desire for individualised and patient-centred care from a patient population burdened with chronic illness; (2) user recognition of spiralling costs for available healthcare services; and (3) population experience of current healthcare service inadequacies. This organisation views CAM as capable of revitalising healthcare systems and fulfilling patient demand for suitable primary care, a proposition that orients much of the reviewed literature.

Concomitant socio-demographic profiling of users has occurred by narrative review (Bishop & Lewith, 2008), healthcare survey data theorisation (Grzywacz et al., 2007), and regression analysis of longitudinal health data (Rossler et al., 2006). These show similar findings and describe the dominant CAM user group as female, aged 35–49 years, tertiary educated, middle to high annual income, chronic ill-health, strong feeling of subjective suffering, similar healthcare beliefs as their provider and treatment satisfaction. This congruence of belief between patient and practitioner forms a notable attraction towards CAM services.

CAM patient pull factors are synthesised to three themes: (1) the ability to have an active role in shared treatment decisions within an inter-subjective and caring relationship; (2) agency, control, and empowerment; and (3) the effectiveness of therapeutic interventions. Conversely, patient push factors away from biomedicine are (1) dissatisfaction with the doctor–patient relationship; (2) concern over pharmaceutical side effects; and (3) a lack of treatment efficacy (Berger, Braehler, & Ernst, 2012; Birch & Nissen, 2013; Bishop, Yardley, & Lewith, 2010; Danell, 2015; C. Little, 2009, 2011; O'Connor, 2000; Sointu, 2013). Thus, CAM patients share society's general shift away from technocratic healthcare service delivery towards pluralism of provider, self-control of health, and embracing of the complementarity of healthcare services (Eastwood & Correa, 2000; McQuaide, 2005; D. Morris, 2000; Upchurch & Rainisch, 2015; Walach, 2010). This reflects the stated

World Health Organization description of patient agency having high activity in the search for desirable features in healthcare services.

Different research methods explore this phenomenon. For example, Stratton and McGivern-Snofsky (2008) apply sociological theory to analyse CAM usage and identify deliberate decision making regarding practitioner choice with value similarity between patient and practitioner. McFadden, Hernandez, and Ito (2010) apply an attitudes and locus of control survey to 65 healthy North American psychology and neuroscience graduate students to explore their CAM use, and note similarities between patient and practitioner philosophy. Similarly, Bishop, Yardley, and Lewith's (2007) qualitative systematic review of user beliefs identifies a preference for philosophical congruence with the chosen provider that is strongly associated with values towards nature and postmodern pluralist thinking.

This literature reveals Australian self-regulated CAM healthcare servicing a high use, high expenditure and demographically specific population. Detailed push and pull factors exist and patient–practitioner philosophical congruence is a pivotal factor in usage dynamics. This practitioner philosophy plays a key role in practice method and patient response and is now explored in detail.

1.4.2 The ontological character of CAM

Any discussion of the philosophy of CAM service delivery must consider the argument of Mertz (2007). This author calls for greater clarification of CAM propositions in relation to individual professions and their ontology (belief in reality, existence and being), epistemology (knowledge and the known), axiology (values), ethics and semantics. This emerges from a review within the context of academic philosophy, which for this author exposes a lack of scholarship, irrationality, and inadequate theorisation of philosophical principles. This reveals challenges when reviewing literature purporting to explain CAM philosophy, primarily as the available scholarship is limited in depth and those commenting on this are liable to reiterate insufficiencies.

Acknowledging this, the majority of the literature clearly proposes holism and vitalism as foundational principles across the CAM professions (e.g. Di Stefano, 2006; Kotsirilos, Vitetta, & Sali, 2011; Micozzi, 2011). These are the philosophies examined here, with the caveat that a unified set of principles is countered by criticism of attempts at such universalisation. This is due to the presence of (1) continuums of practitioner philosophical commitment where weak or strong positions exist (Boon, 1998; Inge-Bert, 2004); (2) ontological and epistemological cherry-picking in practice (Baer, Beale, Canaway, & Connolly, 2012; Baum, 2010; Peters, 2003; Schneirov & Geczik, 2003); and (3) the philosophical labelling of professions to create demarcation within professional boundary debates (Shroff, 2011). Thus there is debate within the literature discussing CAM philosophy, and this signifies the difficulties involved in developing clarity on numerous issues in this area.

These problems in the literature necessitate a purposefully critical review of the philosophical propositions underlying CAM; first from an ontological basis and then through a detailed analysis of the described epistemological position.

1.4.2.1 Holism

In Western academic philosophy, holism is a foundational theory with a presence across every intellectual school. This is often referenced to as Eta 6 of Aristotle's *Metaphysics* (Lawson-Tancred, 1998):

> Now anything that has a plurality of parts, but is not just the sum of these, like a heap, but exists as a whole beyond its parts invariably has a cause (p. 248).

Although isolated from Aristotle's extensive writings, this quote relates to his interest in existential matters and the natural sciences, and it discusses wholes and causative powers that form the whole beyond its parts. This is a topic of philosophical debate regarding matter, reality, and causality that

remains relevant. Such an object of inquiry is taken up by Smuts (1926), who describes the conceptual basis of holism within his oft-repeated phrase:

> The organism consists of parts, but it is more than the sum of its parts, and if these parts are taken to pieces the organism is destroyed and cannot be reconstituted by again putting together the several parts (p. 101).

These passages describe the speculative thrust of holism and the majority of literature discussing medical and healthcare philosophy references such sentiments (e,g. Adinolfi, 2014; Boorse, 2011; Carlson, 1979; Marcum, 2015; Pellegrino & Thomasma, 1981). These describe two ways of 'seeing' the patient within the clinical encounter. The first, termed the holistic position, states that the patient is a whole with individual properties that cannot be reduced to their component parts, where to do so equates to reductionism. This latter position contrasts holism and entails two claims: the human organism can be reduced to fundamental components, and these fundamental components can explain what exists at higher levels (Beresford, 2010; Keating & Cambrosio, 2004). CAM principles are embedded within the former of these concepts, notably within the ontology of clinical practice, which leads to a certain perspective towards the patient.

Schaffer (2010) theorises an holistic ontology contributes to a monistic view of the whole as prior to any parts, which is a position Darling (2005) says leads to perceiving life as inseparable from 'space, time, matter and energy' (p. 5). This viewpoint proposes a relational interconnectedness across and between all aspects of an individual's existence, where change in any part will have an effect on the whole, and any change to the whole will affect the parts. Within CAM theorising this is the proposed ontological position, which manifests somewhat differently for each profession. For example, traditional Chinese medicine has a complex model of human–universe interaction with multiple interfaces that focus on recognising internal responses to external events (Nestler, 2002), whereas naturopathic medicine has a more linear

model that identifies and addresses change in a parts-dependent whole reacting to disrupted stability (Zeff, Snider, Myers, & DeGrandpre, 2012).

From these descriptions it is evident that while each CAM profession holds distinct theoretical orientations that relate to their clinical practice method, in actuality these all propose similar theorisations of holism. Virtually all CAM practices can be said to align to the perspective that holistic systems have a stable state where parts form an emergent whole, and any imbalance within the embodied system can contribute to symptoms within the lived existence of the patient. Thus for CAM, symptoms of illness are an expression of an imbalance within a system, as opposed to a part developing dysfunction in isolation from the larger entity, as proposed within reductionism.

There is little to add to this understanding of holism, as it is clearly elucidated and does not present significant problems in clarity of conceptualisation or philosophical perspective. The same cannot be said for the ensuing topic.

1.4.2.2 Vitalism (teleology)

The vitalist concept has a significantly greater metaphysical endowment than holism as well as a highly speculative nature, potential for obscurantism, and resistance to empirical assessment (Greco, 2009). These features are highly problematic as they shape linguistic constructions of vitalism throughout the literature. Thus there is the need for a specific review strategy, and concerted explanation within synthesis is required to refine semantic fuzziness, situate concepts in academic philosophy, and gain analytical clarity.

The premise underlying vitalism can be summarised with the statement: *nature has an innate and intentional striving that perpetuates life in a self-sustaining and purposive manner*. [2] The CAM literature discusses this concept

[2] This phrase presents a synthesis of numerous descriptions from the N&WHM literature. This conception changes in the ensuing section due to the academic philosophy that is reviewed here.

by explanatory phrases such as 'all living things are dependent upon this universal life force for health and life' (L. Morgan, 1998, p. 36) or 'whatever its material nature, some kind of "vital force" was required literally to animate living substance … the vital force was the source of life, health and healing' (Peters, 2001, p. 200). These ambiguous statements cause commentators to describe vitalism as an 'explanatory fiction' (Hyland, 2011, p. 22), 'exquisite problem' (Milgrom, 2002, p. 27) or 'untenable perspective' (Greco, 2005, p. 15). Due to such poor clarification and retention of highly speculative semantics, it is not unusual to read statements such as ' to be branded a vitalist is the ultimate in analytic invective' (Shanker, 2003, p. 322).

This leads to the literature discussing vitalism having vague, flippant, derogative, and antagonistic comment, making objective review challenging. In saying this, it is clear that many authors apply the viewpoint that vitalism is an 18th century oppositional idea to mechanistic philosophy (Reill, 2005) associated with the *Naturphilosophie* movement (Beiser, 2003; Nassar, 2010) and carried into early 20th century texts (e.g. Bergson, 1911; Driesch, 1914; Thurston, 1900). Thus they do not to perceive its independent ontological standing or its intellectual foundations. As Oderberg (2007) states:

> This term has in fact been much abused and it is often not clear what it means in the mouth of a given philosopher or biologist … like most characterizations born of scientific prejudice and philosophical ignorance of Aristotelian metaphysics, it is a caricature (pp. 182-183).

A review of vitalism in chiropractic philosophy similarly asserts 'the centuries following Aristotle saw a confusing mixture of Naïve Vitalism, characterized by random, poorly developed ideas of life forces, generative fluids, and animal heat' (L. Morgan, 1998, p. 36). Thus the literature discussing vitalism contains misguided philosophical concepts, meaning that discussion and debate based on this addresses an erroneous explanation. Compounding this, contemporary authors are also reticent to apply this term due to its vagaries, negative connotations and capacity to invoke disapproval.

However, where vitalism is discussed in historical context there is consensus on its relevance. For example, Normandin and Wolfe's (2013a) analysis of emphasises 'the ideas and concepts embodied in the word are as old as medical and biological thought' (p. 6), and Lash (2006) describes it as a perpetual philosophical notion. This means vitalism can be reviewed in the ontological sense through scholarship that can rescue its tenuous situation, albeit with linguistic flexibility. This requires suppleness of interpretation, acknowledging Greco's (2005, p. 16) insistence that 'semantic polyvalence' must be considered in any serious analysis. This makes review of associative terms necessary to ensure ample capture of the academic literature (LaPorte, 2009), which comprises purpose, intention, conatus, and teleology. The latter of these is an appropriate term for review as it refers to the 'property of objects whose behaviour is or appears to be directed at attaining or maintaining some goal, purpose, end or aim' (Burkhardt & Smith, 1991, p. 885). This adequately reflects the CAM vitalist concept and its use enables access to an increased breadth of literature with greater analytical capacity.

The philosophical concept of teleology arises from Aristotle's theory of material, formal, efficient, and final causes (Charles, 2012; Falcon, 2015; Matthen, 2013). These discrete classifications represent matter, form, motion, and end (*telos*), with the latter describing why a thing occurs. Woodfield (1976) defines this as signifying immanent purpose and the inherent goal of a thing in itself. This illustrates the notion of intrinsic properties in natural forms as opposed to the perception of nature imbued with external agency; thereby negating theistic forces or exterior powers within teleological explanation (B. Morton, 2007; Perlman, 2004; C Smith & Hung, 2009). This is an interpretation that is intentionally chosen as it proposes an *a priori* metaphysic where teleology represents action based on inherent qualities. Thus it avoids the question-begging that is rife within CAM vitalist literature where purposeful natural things can have vague and mystical exterior powers attributed to their action.

Such a theory of teleology is bedded in the proposal that substance forms the structure of the world, the essence of life in the world and the intent to action within life. This implies matter is characterised by essential properties of being, known as real essences, that contribute to the existence of forms of matter, which are termed natural kinds (A. Bird, 2009). This interpretation of reality is called essentialism, a viewpoint that says natural kinds emerge from substance with inherent essential properties of matter that imbue their form. These essential properties are intrinsically teleological in quality, and substance and essence exist at a deeper level than living species, causing them to be unknown to observers of kinds due to lack of readily apparent properties (Ellis, 2014; Oderberg, 2007).

Not all philosophers agree that teleology imbues properties of kinds, and Bird (2009) and Ellis (2001, 2002) omit this possibility by discussing essentialism in the context of potentialities, dispositions, and tendencies. Similarly, Oderberg (2007) preferences immanent and not teleological as the definition of self-directedness as cause. Nonetheless, some contemporary essentialism retains explicit teleological thought, and Turner (2013) and Oyama (2010) identify this as a recurring theme within past and present discussions of the development and adaptation of life.

Irrespective of the position taken, all essentialist authors grapple with the question of empirically accessing essence due to its speculative nature. For example, the indirect knowledge approach states:

> All we ever apprehend is being in its various manifestations, and since we do this we are already in a position to affirm that things have essences, that everything is something or other. It is enough for us to get started on the hunt for essence (Oderberg, 2007, p. 56).

Mumford and Anjum (2013) disagree with this proposition and question the capacity to access an essential substance from perceptions of other things; they preference empirical experience to achieve understanding. These viewpoints reveal the general nature of the debates regarding essentialist

philosophy, the manifestation of teleology within this and the empirical justification of these philosophical perspectives. These are important deliberations for CAM as they have significant philosophical relevance.

Most importantly, Greco (2005) proposes that teleology can be interpreted in metaphysical or naturalistic ways, with both explaining reality based on properties prior to sense experience. Fraser, Kember and Lury (2005) interpret the first position as the act of becoming over the constancy of being, whereas Strawson (2006) emphasises the second as a realist and physicalist position positing organic laws underlying a matter-based reality. These two positions are equivalent to Wolfe's (2011) finding of substantival and functional vitalism within Enlightenment biology and chemistry debates, which various authors say remain active - albeit in different guises - to this day (Barnes, 2011; LaPorte, 2009; Oderberg, 2008).

For the N&WHM professions, this essentialist and teleological conception manifests in the Hippocratic notion of *vis medicatrix naturae* (Bradley, 2012; Tobyn, Denham, & Whitelegg, 2011), translated as the healing power of nature (Schiefsky, 2005) or 'nature's helping hand' (Bynum, 2001, p. 21). This is the healing potential of the living world where natural forms and environments contribute to human health (Logan & Selhub, 2012). In the clinical practice context this is defined by Zeff et al. (2012) as the tendency for physiological systems to gain equilibrium via intentional self-organisational processes - a phrase open to metaphysical or naturalistic interpretation.

This position is exemplified within the propositional statement *human beings are essentially persons*, which is an essentialist perspective describing the properties of personhood. In CAM ontology this is analogous to *the human organism consists of matter that is essentially (purposeful).*[3] This serves to

[3] Dependent upon ontological positioning, interchangeable terms here are identified as conscious; procedural; forceful; animate; a natural system; a natural law; physiological; mathematical; physics-based; or complex-systems-based (Snider & Pizzorno, 2013).

encapsulate the proposition of vitalism as it currently exists within the CAM literature and resituate it within an increasingly rigorous philosophical foundation. Although remaining speculative, the discussed essentialist teleological interpretation reduces obscurantism and offers greater philosophical clarity. Thus, ensuing discussion can move away from poorly formed conceptions to a clearer process of ontological review and analysis.

1.4.3 The epistemological expression of CAM

The CAM professions have belief in a specific ontological state of affairs that leads to the development of propositional statements arguing for claims and warrants. This takes place when CAM healthcare strives for epistemological coherence through theories of relational interdependence and teleological forms in nature. The expression of these propositions is fluid and the degree of epistemological daring for these depends on whether a metaphysical or naturalistic ontology is present for the proposition holder (Greco, 2005).

Commitment to an essentialist holistic ontology entails an interconnected view of wholes and parts, and an emphasis on exploring interrelationships. This is reflected in the literature where causality in CAM is discussed as a dynamic array of entwined influences interacting to contribute to health and illness (e.g. Alexander & Williams, 2013; Barrett et al., 2004; Barrett et al., 2003; Marian, Widmer, Herren, Dönges, & Busato, 2006; Myers, Hunter, Snider, & Zeff, 2003). In epidemiology, this is referred to as the web of causation (Krieger, 1994) where biological and social determinants of health interact in a multifactorial blend of necessary and sufficient causes. In contradistinction, the CAM perspective presupposes humans are more than physical entities operating solely in social contexts. Rather, recognition of the physical, mental, emotional, spiritual, social, cultural, and existential aspects of being is present and these influence causality by necessity. This leads to specific expressions of clinical knowledge.

Dunne et al. (2005) and Nissen (2011b) explain this as the human organism developing symptoms of illness when lived existence becomes imbalanced. When part of an individual's extended whole becomes at variance, symptoms arise and the aim for practitioners is to then address the perceived cause(s) and assist teleological restabilisation between interdependent elements. Danzer, Rose, Walter, and Klapp (2002) and Tada (2004) say this is reflective of an interactionist, non-linear, and indeterminate perception of causality with an inherent lack of predictive certainty. This is due to individual patient manifestations of imbalance leading to treatment protocols targeting an identified area of disequilibrium. Thus each patient responds to a therapeutic intervention in an individual manner due to the discrete nature of his or her causative element(s). This epistemological position and its associated ontological, methodological, and methods presuppositions are synthesised and shown in Table 1.5 (Mason et al., 2010; A. Morton, 1997; Possenti, 2002; Scott, 1998, 2003; Segal, 2014; Sointu, 2013; von Glasersfeld, 1990; S. Williams, Birke, & Bendelow, 2003).

Table 1.5: Synthesis of CAM healthcare epistemological claims

Ontological priority	Essentialist, holistic, and teleological exploring emergent properties of the whole arising through interaction of self-organising parts of the whole. Formative of inviolate laws of nature.
Characteristics	Recognition of substance forming natural kinds from grouped attributes that can explain system-based emergent phenomena.
Ways of knowing	Inductive synthesis targeted to relationships and networks. Predominantly idiographic.
View of the body	Monistic focussed on interactions within the whole. Subjectified intentional indeterminate physical/mental/emotional/spiritual/ socio-cultural/existential body where health is inter-relational.
Methodologies	Non-linear, complex, unpredictable, collaborative, and observational. Participatory with the subject. Value inclusive. Pluralist interpretation of lived experience of bodily domains via hermeneutics, phenomenology, and post-positivism.
Clinical methods	Primarily narrative based with a primacy of multiple methods and triangulation of data. Pattern oriented with a focus on lived experience and quality of life.
Therapeutic model	Holistic patient-centred, contextualised individualisation of treatment with recognition of unique response. Therapeutic conservatism targeted to dominant domain within a causal nexus with therapies underpinning equilibrium mechanisms.

An additional epistemological consideration for the N&WHM professions relates to the use of medicinal plants. These fall into the category of *traditional knowledge*, defined as 'an extensive history of use, often measured over thousands of years … (by) an accumulated repository of systematic observation' (World Health Organisation, 2000:41). This knowledge can be specific to an established medical tradition or may be shared across diverse cultures through space and time. Barsh (1997) explains this as a knowledge form that matures through ongoing assessment of an aggregate effectiveness across assorted pharmacopoeia, which leads Helmstädter and Staiger (2014) to describe this as a socially validated epistemology generative of knowledge structures that are receptive to inquiry and capable of claims and warrants.

Developing empirical evidence for a CAM philosophical position that differs from an embedded realist reductionist perspective requires a pluralistic stance towards understanding knowledge (Cant & Sharma, 1999; De Vreese, Weber, & Van Bouwel, 2010; Schaffner, 2002). However, Hufford (2003) says such an acknowledgment of diverse epistemologies creates challenges for current methods of inquiry due to 'the particular ways that scientific knowledge, theory, and method are configured and arrayed rhetorically, and in the social context that science operates' (p. 198). It is the debates that arise between pluralism and the current linear arrangement and social context of scientific methods that are the focus of the ensuing sections. Setting the groundwork for this requires examination of the current knowledge development model permeating contemporary healthcare practice.

1.4.4 Philosophy of the EBM research model

The conceptual development of EBM has its roots in the reflections of Cochrane (1972) and his experience as a medical officer in World War Two prisoner camps. With minimal therapeutics he observed patients healing through the 'recuperative power of the human body' (p. 5) while also witnessing unnecessary and often fatal interventions. This caused him to argue against therapies or procedures with questionable benefit. His

observations were later coupled with research showing variance in medical care and patient outcomes across large geographical regions (Wennberg, 1984). Along with other key works, these informed the development of an approach to grading healthcare evaluations for clinical merit, thus signalling the origins of EBM. As a concept this was formalised within clinical epidemiology (Bluhm & Borgerson, 2011; Evidence-Based Medicine Working Group, 1992), and a review of this discipline enables a deepened understanding of the current expression of the EBM knowledge framework.

Epidemiology is defined by Greenberg, Daniels, Flanders, Eley, and Boring (2015) as the application of statistical group comparisons to the distribution and determinants of health and disease in human populations. Broadbent (2013) characterises it as a discipline focussed on inferential causation derived from observational case studies, and Bruce, Pope, and Stanistreet (2008a) say it is a systematic, rigorous, reproducible, and repeatable discipline applying experimental methods to human population healthcare. This latter description privileges controlled experiment over real-life cases, and the conceptual underpinnings of the current EBM model are derived from this background. There are numerous descriptions of EBM, and Table 1.6 shows the most commonly cited definitions, including evidence-based complementary and alternative medicine (EBCAM) in the shaded area.

Table 1.6: EBM definitions

1.	de-emphasizes intuition, unsystematic clinical experience, and pathophysiologic rationale as sufficient grounds for clinical decision making and stresses the examination of evidence from clinical research (Guyatt, Cairns, Churchill, & et al., 1992, p. 2420).
2.	the judicious use of current best evidence in making decisions about the care of individual patients (Sackett, Rosenberg, Gray, Haynes, & Richardson, 1996, p. 71).
3.	the integration of best research evidence with clinical expertise and patient values (Sackett, Straus, Richardson, & Haynes, 2000).
4.	integration of the best research evidence with our clinical expertise and our patient's unique values and circumstances (Straus, Richardson, Glasziou, & Haynes, 2011, p. 1).
5.	the use of mathematical estimates of the chance of benefit and the risk of harm, derived from high-quality research on population samples, to inform clinical decision making (Greenhalgh, 2012, p. 94).
6.	the conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients, recognizing the unique aspects of CAM and value systems of its providers and patients (K. Wilson & Mills, 2002b:104).

M. Kelly and Moore (2011) and Wyer and Silva (2009) define EBM as an information management system enabling categorisation, graduation, and utilisation of scientific research. Timmermans and co-authors (Timmermans, 2010; Timmermans & Alison, 2001; Timmermans & Berg, 2003; Timmermans & Mauck, 2005) agree and identify a standardisation process based on the best available evidence to deliver uniform, simple, practical, and quality care. The overriding feature of the EBM model is the assessment for bias that leads to a quality ranking system, framed as an evidential hierarchy as shown in Figure 1.2.

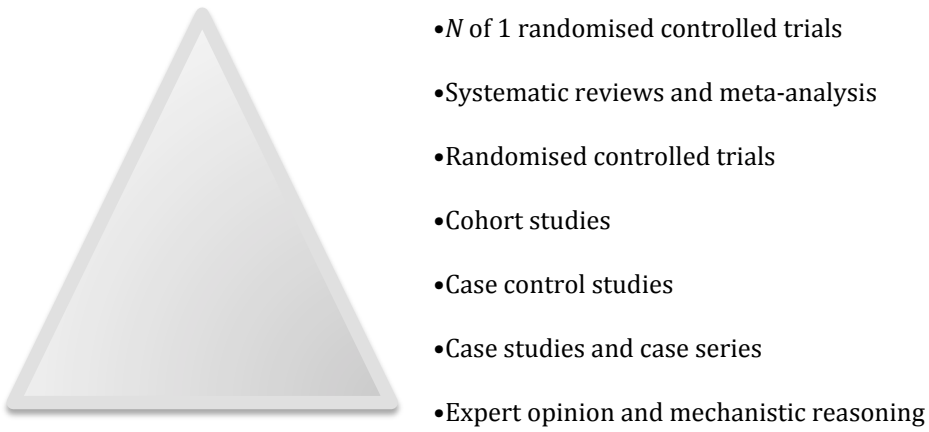

Figure 1.2: The EBM research hierarchy model

Although this model has been superseded by a horizontal grading system (Guyatt, Oxman, Schünemann, Tugwell, & Knottnerus, 2011; Guyatt et al., 2008), the reasoning behind this hierarchy remains and as such this illustration successfully represents the segregation of research methods into their preferred levels of quality. This has diverse functionality and can be separated into domains to provide levels of confidence for different practice areas (Burns, Rohrich, & Chung, 2011). Within this hierarchy the upper three sets of research methods are regarded as most effectively identifying causal relationships with the least degree of subjective interpretation, and therefore to generate the most objectively accurate and bias-free research findings.

Proponents of EBM propose this model emerges from scientific logic, which is said to justify its purpose. However, this is insufficient rationalisation for those who criticise the absence of any philosophical basis for EBM (Bluhm, 2010; Tonelli, 1998, 2011b; Walsh & Gillett, 2011). This lack of detail is evident in Guyatt et al.'s (2002) stark description of EBM philosophy with no ontological principles, and Howick's (2011) emphasis on logic of scientific discovery and causal inference without clear epistemological foundations. Authors such as Curd and Psillos (2014a) criticise the deficient philosophical development of such scientific endeavours, considering the depth of available material that can underpin such proposals of knowledge structuring.

Thus, several publications aimed at addressing this deficit have emerged (e.g. Djulbegovic, Guyatt, & Ashcroft, 2009; Kulkarni, 2005; Worrall, 2010) and these situate EBM in the broad context of the philosophy of science. As a result it can be said that the most commonly defined features of the current manifestation of EBM are an ontology of realism and an epistemology of logical empiricism and critical rationalism (Devitt, 2014; Gower, 1997; Irzik, 2014; Klemke, Hollinger, Rudge, & Kline, 1998; Mumford, 2014; Newton-Smith, 2000; Uebel, 2014). Therefore it is these philosophical aspects that are reviewed here as a way to understand the capacities of the EBM model.

Marcum (2015) describes ontological realism as the perspective that objects and events exist independently of the observing individual and discrete from conceptual interpretation. Psillos (1999) agrees, and says realism objectively examines a mind-independent world through the study of natural forms. This is a notion of the world existing separately from its interpretation, which is conceptualised to Cartesian dualism where matter exists separately from consciousness (Antony, 2009; Leder, 1992a). As with any ontological concept, a strong or weak realist position occurs with varying degrees of ontological commitment (Brock & Mares, 2007).

Associated with this is a logical empiricist perspective of independent reality as amenable to objective sense-dependent examination of stable, universal,

and eternal objects (P. Thomas, 2006; K. White & Willis, 2002). These objects are, by and large, reduced in their properties because matter is perceived to consist of indivisible basic elements where 'ultimate priority is given to the ultimate parts' (Schaffer, 2010:44). These parts function mechanistically and generate action via physiological processes; thus when the parts and their interactions are explicated, reality can be perceived (G. Allen, 2005). The epistemological claims that arise from this perspective are then warranted by formal logic and the critical assessment of confirmation and falsifiability. If endorsed, the claim is admitted to the body of knowledge and subjected to ongoing refutation; if durable, the claim has truthlikeness that increases over time (Hjørland, 2011; Irzik, 2014; Oddie, 2014; Popper, 1959, 1966).

Intrinsic to this examination of objects are experimental methods that aim to distinguish genuine and accidental causal relationships (Hitchcock, 2014; D. Steel, 2011). These consist of a framework of intervention and assessment that create prediction, stabilisation, and reproducibility. They are associated with determinism, where all matter of the present forms matter of the future; thus it is possible to explain and predict events through environments that control initial and ongoing conditions (Loewer, 2014; Russo & Williamson, 2010; Salmon, 1997). Extrapolated to EBM, the upper evidence hierarchy contains methods where controlled environments explain causal factors and forecast future outcomes for the studied intervention. The involved research designs emphasise internal validity where regulated actions and replicable results lead to standardised interventions and reproducible outcomes.

In terms of causal reasoning, the EBM model is grounded in Bacon's (1893 [1605]) alignment to material and efficient - not Aristotle's formal and final - causes. This rejects abstract and metaphysical causal interpretation and requires understanding of nature to be based on physical phenomena. Thus matter and motion, the observable physics of life, have preference over form and end, which are the metaphysical and non-observable aspects of existence (Klein, 2015). This approach to causality informs individuals such as Locke (1836 [1690]), Hume (2000 [1739]), Mill (1889 [1843]), and Bradford Hill

(1965), among others, in ways that profoundly shape the role of causality in the philosophy of science and theorisation of epidemiology (Coughlin, 2010).

A synthesis of the epistemological positioning of the EBM model is shown in Table 1.7 (Bluhm, 2010; Djulbegovic et al., 2009; Goldenberg, 2006; Howick, 2011; Jenicek & Hitchcock, 2005; Leder, 1992a; Loughlin, Bluhm, et al., 2013; Straus et al., 2011; Worrall, 2010).

Table 1.7: Synthesis of EBM epistemological claims

Ontological priority	Realist, dualist, reductionist, and mechanistic exploring distinct parts based on physical, chemical, atomic, and molecular causal processes. Subject to inviolate laws of nature.
Characteristics	Recognition of substance-independent natural kinds and their attributes that can explain isolatable phenomena.
Ways of knowing	Deductive analysis targeted to objects and categories. Predominantly nomothetic.
View of the body	Dualistic focussed on interactions between parts. Objectified deaminated/material/physical/deterministic body where illness symptoms are epiphenomenal.
Methodologies	Stabilised, controlled, predictable, logical, and reproducible experiments. Separated from the subject. Value exclusive and critically rationalised. Positivist and post-positivist with primary reliance on statistical inference from quantitative analysis.

The translation of findings from the experimental methods of EBM and the systematic review or meta-analysis of these into the clinical setting is known as evidence-based practice (EBP) (Dawes et al., 2005; T. Hoffmann, Bennett, & Del Mar, 2013). Here the best evidence is aligned to practitioner expertise and patient values and preferences, as depicted in Figure 1.3. This model has a presence throughout healthcare, with the emphasis of each component of the Venn diagram contested.

Contrasting the philosophical basis of CAM practice to that of EBM reveals differences in perceptions of reality and how that reality manifests and can be known. It is these differences, and the knowledge propositions that arise from these, that play a central role in the ensuing debates within the literature.

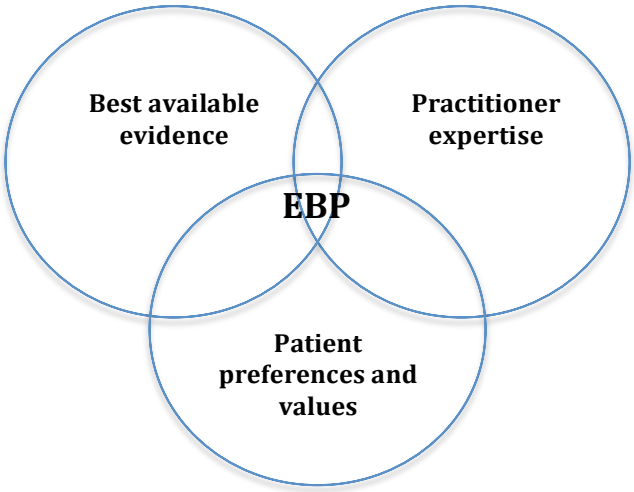

Figure 1.3: The EBP model

1.5 Key debates

The healthcare literature identifies dissatisfaction with the privileging of specific research methods in the EBM model. Criticisms note a lack of flexibility within these that leads to an inability to assess multiple aspects of patient care. Conversely, CAM is accused of an implausible basis for its own claims and warrants. These are particularly poignant interactions for the CAM-EBM interface, and this section synthesises debates arising in this area.

1.5.1 Ontological debates

Coward (1989) reiterates the numerous ontological problems that exist for CAM and identifies an epistemology lacking in propositional validity because of underdeveloped metaphysical ideas and inadequately reasoned assertions. Baer (2012), in reviewing CAM holism in capitalist society, agrees, which Richardson (2011) also reiterates when critiquing a CAM position that is said to refuse to locate illness in anything other than a rigid understanding of an ultimate thing. Consequently, Baum (2010, p. 39) says CAM represents 'arid and closed belief systems' that form confused epistemologies.

What emerges from examining these viewpoints is a lack of scholarly grounding for the CAM philosophical perspective, which contributes to the presence of poorly framed justifications for claims and warrants. In terms of academic philosophy, this reflects inadequate explanation of premises and reveals the potential for the simple demolition of core concepts within logic and argumentation. This is problematic because as time progresses and CAM is increasingly patronised, there is an equivalent rise in the critical analysis of its conceptual underpinnings. Subsequently there is the emergence of scepticism towards CAM philosophy, as outlined above, with critics consistently asserting inadequate theoretical rationale, unclear reasoning, and gross empirical implausibility (Beyerstein, 2001; Ernst, 2009b; Hansen & Kappel, 2012; Stoneman, Sturgis, Allum, & Sibley, 2013).

However, when CAM philosophical premises are more rigorously discussed, the literature identifies their merit. With regard to essentialism, Oderberg (2007) emphasises that this can describe human existence as derived from matter and form, an approach to understanding that Mumford (2012) says is yet to be invalidated. Barnes (2011) also outlines how chemistry and biology express molecular essentialism in attempts to find an unchanging essence. Thus essentialism has value as it forms part of the perpetual collective drive to understand reality. Thus while some commentators claim the metaphysical position is implausible due to an inability for experimental assessment, others state this argument is inapplicable as it can only access natural kinds and not real essences, and they continue to discuss an ontological teleology within either a metaphysical or a naturalistic discourse (e.g.: J. Bennett, 2010; Bensaude-Vincent, 2009; Fraser et al., 2005; Garrett, 2006; Mathews, 2003). So, although the CAM essentialist and teleological position is currently lacking in empirical confirmation, the concepts themselves are not universally regarded as implausible.

Nonetheless, as the literature remains situated in philosophical alleyways, the debates retain their intellectual fatuity. The most common response to emerge from CAM towards assertions of ontological immaturity has been

counterargument based on practitioner-patient philosophical congruence as public validity of ontology (Bishop et al., 2007), high levels of access as proof of patient agential engagement (Broom, Meurk, Adams, & Sibbritt, 2014), and embodied engagement with therapies as evidence of legitimacy (Barcan, 2011; I. Pedersen & Baarts, 2010; Sointu, 2013; Willis & White, 2004). Thus there are tensions between intellectual criticism on one hand and the use of social endorsement and clinical legitimacy as a rationale within *argumentum ad populum* responses on the other. This is captured by Molassiotis (2005):

> There are very few things in health care that have met with so much scepticism, controversy and hostility, evoking such strong (negative and positive) feelings and being debated so much in recent years by the scientific community than the complementary and alternative medicine (CAM) movement. Yet, patients overwhelmingly prefer and do use CAM, irrespective of its many opponents (p. 112)

This type of response is regarded as an inadequate riposte to pointed criticism, and by and large it strengthens the allegations of fallacious argument arising from within CAM as a means of avoiding critical analysis.

While these debates remain active, Nissen (2011b) documents a shift in philosophical perspective for Western herbal medicine (WHM) practitioners within a multi-method study. She cites commitment to holism and inter-relational viewpoints remaining strong, albeit in fluid expression, while an orientation towards teleological intention lessens and becomes subsumed within notions of holism. Hiller (2013) describes this as proof of a lack of heuristics for vitalism and evidence of refuge in appeal to philosophy. However, this latter argument is representative of the lack of philosophical sophistication in the discussed debates and shows the erroneous inference that can arise from this.

More clearly described by critics is the purported link between essentialism and magical, religious, and childish thinking (Demoulin, Leyens, & Yzerbyt, 2006; Gelman, 2003; S. Morris, Taplin, & Gelman, 2000; Toosi & Ambady,

2011). This position emerges from developmental psychology literature and is an argument used against CAM ontologies (e.g. Beyerstein, 1999; Beyerstein, 2001; Greasley, 2010; Lindeman & Saher, 2007; Mertz, 2007; Saher & Lindeman, 2005; S. Wilson, 2013). Here the exclusion of CAM from serious consideration is based on the rationale that essentialism is magical, limited in rationality, and implausible. Currently this appears to be a one-sided interaction as there is little documented response from within the CAM field. Nevertheless, these propositions also suffer from underdeveloped philosophical analysis.

Situated within and alongside such debates lie well-worn clashes between holism and reductionism (Carlson, 1979; Federoff & Gostin, 2009; Healey, 2009; Járos, 2002; Krecek, 2010; Looijen, 2000; Mason et al., 2010; Okasha, 2000; Pigliucci, 2014; Raman, 2005), and vitalism and mechanism (Cheng, 2005; Garrett, 2006; Greco, 2009; Hein, 1972; Kanamori, 2005; Kirschner, Gerhart, & Mitchison, 2000; Stollberg, 2001). These tend to be located in differing philosophical viewpoints that are encapsulated in the discussion so far, and these are not explored further. Suffice to say they remain as points of contention and occur in varying degrees of erudition.

It is these philosophically situated positions that underpin the disputes about the way CAM knowledge is represented in clinical practice. CAM ontology, epistemology and claims and warrants are consistently contrasted to EBM and its knowledge, and these distinctions emphatically shape the literature.

1.5.2 Epistemological debates

While contestations to the CAM epistemological position exist, it must be recognised that the validation of applied knowledge within any healthcare practice is itself vigorously debated. Thus it is helpful to examine the general landscape of this topic and this section reviews three key areas: conceptions of healthcare knowledge, debates around the capacity for EBM to represent

this knowledge, and the recognised features of the interface between CAM and EBM knowledge in practice.

1.5.2.1 Healthcare knowledge

Solomon (2015) identifies four main approaches to the development of knowledge for healthcare delivery: consensus conferences, EBM, translational medicine, and narrative medicine. These are said to reside in authority, empiricism, causal reasoning, case-based reasoning, experience, and professional judgment, each with epistemic strengths, weaknesses, and overlap. These represent an intermingling of medical science and medical humanities and are proposed to encapsulate the art and science of medicine.

What constitutes this art and science is debated in relation to two knowledge forms, an inner subjective know-how called *tacit knowledge* and an outer objective view of the world termed *explicit knowledge* (Malterud, 2001; Stange, 2010; Sturmberg & Martin, 2008). The former represents experience, perception, belief, values, and emotions and the latter reflects the technical understanding derived from systematic investigation of natural kinds. Various authors place these as equal in importance: Henry (2010) says these have balanced roles in healthcare as tacit knowing underlies explicit knowledge; Montgomery (2006) outlines clinical practice as inherently uncertain and therefore requiring cognition across objective and subjective domains; Tauber (2002, 2006) is of the view that neither is preferential as healthcare is a values-based practice applying an ethics of care as much as it is a fact-based delivery of research findings; and Brook (2010) describes the necessity for simultaneous clinical delivery of subjective passion and emotion, and objective scientific research.

This perspective of equal knowledge value is debated, and differing opinions over the shape of healthcare delivery frame the tacit and explicit as polarised options (e.g. Asp & Fagerberg, 2008; Barry, Stevenson, Britten, Barber, & Bradley, 2001; Berger et al., 2012; Lingiardi & Grieco, 1999; M. Little,

Lipworth, Gordon, Markham, & Kerridge, 2012; Quah, 2003; Schoot, Proot, Meulen, & Witte, 2005; C. Smith et al., 2005; A. Steel & Adams, 2011a; Sullivan, 2003). The outcome of this dualistic categorisation is the situating of knowledge in distinct philosophical and methodological camps (Lincoln, Lynham, & Guba, 2011; Teddlie & Johnson, 2009), a separation that is highly pertinent to the manifestation and interpretation of the CAM-EBM interface.

1.5.2.2 EBM and healthcare knowledge

The literature is dense with discussions on the merits and limitations of EBM. Of particular relevance is the description of intransigent interpretations of EBM within highly defined knowledge structures. The holding of such a position leads to a particular construal of evidence and a specific belief in its ability to represent and inform healthcare practice. This locates the debates of significance to CAM and is the focus of the reviewed literature.

Some commentators suggest the appropriate way to develop healthcare knowledge is to base clinical decision making on findings from the upper levels of the EBM hierarchy and to disregard evidence from lower levels or from outside the EBM model (e.g. Kotsirilos et al., 2011; Straus et al., 2011). In this manifestation of EBM the recommendation from the forbearers to avoid exclusive use of research outcomes based on randomised controlled trials (RCT's) (e.g. Guyatt & Rennie, 2002; Sackett et al., 1996) is ignored, and reliance on these methods as the arbiter of clinical decision making is promoted (Hutchison & Rogers, 2012; Loughlin, Lewith, & Falkenberg, 2013; A. Miles, 2009).

This understanding of EBM is said to rely exclusively on 'epistemological claims about the ability of RCTs to eliminate certain forms of bias and to establish whether or not there is a causal relationship between an intervention and an outcome' (W. Rogers & Hutchison, 2015, p. 1). For those with a strong philosophical perspective comparable to that described for EBM, this statement is a logical summation of these trials and their collation

by systematic review and meta-analysis. However, for those with a differing philosophical orientation, this is a puzzling proposition, primarily because it furthers explicit knowledge while omitting tacit knowing. As these both occur in clinical practice, this reliance on RCTs appears dubious as it inadequately embodies the field it purports to examine.

The literature consistently problematises this: for example, Henry (2006) describes this interpretation of EBM as an error based on 'a fundamental epistemological deficiency that stems from the mistaken belief that all real knowledge must be wholly explicit and formalizable' (p. 205). In opposition to this model, Sehon and Stanley (2003) also suggest that knowledge is not formed from an exclusive set of methods but rather is a web that develops across different forms of knowledge inquiry. Thus the absence of tacit knowledge is seen as an exclusory position, and Yun (2008) declares that intentional omission of methodologies capable of competently exploring such knowledge amounts to marginalisation that serves to hinder healthcare understanding. Similarly, Goldenberg (2006) takes the position that this perception of EBM obscures the subjectivity relevant to all human inquiry and creates a false representation of the world as it is lived by practitioners and patients. Therefore it is said that this type of EBM limits understanding of healthcare realities, particularly when other valid and relevant forms of evidence generation are available (Bauer, 2014; L. Bird, Arthur, & Cox, 2011; Grossman, 2008; Loughlin, Bluhm, et al., 2013).

Timmermans and Berg (2003) identify specific risks within this style of EBM that include situated knowledge controlling the criteria of 'valid evidence', potential for dictation of practitioner and patient agency in ways that have little relevance to needed action, and political agendas reordering practices for ideologically driven outcomes. This latter point is reiterated by others who claim that such an EBM model is susceptible to manipulation by ideological, political, and economic interests (De Vries, Lemmens, & Bosk, 2008; Greenhalgh, Howick, & Maskrey, 2014; Hunter & Grant, 2005; Jadad & Enkin, 2007; Jagtenberg et al., 2006). Contained within these assertions are

charges that this 'strong' style of EBM can engender a certain type of knowledge that supports particular power structures in healthcare through the generation of biased knowledge claims.

Greenhalgh et al. (2014) investigate this latter issue through a theoretical analysis and literature review and describe accumulation of evidence in profit making and government-funded areas of research coupled with omission of investigation or concern for patient perspectives, individual circumstance or practitioner expertise. This describes the concentration of a certain type of evidence, manipulation of the EBM model by vested interests and the presence of multiple biases. This is seen to have consequences for the development of knowledge that become embedded throughout the EBM model, including corrupting its role as a useful informant of clinical practice.

The claim that arises is that an ideology of scientism is active within this EBM because proponents assert authority in areas where scientific methods are unsuitable or can only be applied as a complement to other forms of inquiry (Loughlin, Lewith, et al., 2013; Pigliucci, 2015). Haack (2013, p. 40) defines this as an 'over-enthusiastic and uncritically deferential attitude toward science, an inability to see or an unwillingness to acknowledge its fallibility, its limitations, and its potential dangers'. This manifests in defined ways: using the term science honorifically; the uncritical adoption of scientific discourse; preoccupation with demarcation and scientific method; looking to science for answers beyond its scope; and denial or denigration of forms of inquiry outside the scientific method. Such a position forms claims that say only science can generate accurate perceptions of reality. In this perspective, elements of healthcare such as values, desires, personal preferences and a plethora of subjective experiences are dismissed as non-scientific and epistemologically redundant. Thus this conception of EBM informs healthcare from a purely scientific standpoint.

This clustering of a certain type of knowledge at the expense of the multitude of non-scientific healthcare elements is said to be fatal for the application of

EBM as a normative framework (Campbell-Scherer, 2012; Pearce, Raman, & Turner, 2015; H. Wilson, 2008). As a result Jansen et al. (2010) suggest in-depth critical reflection of the EBM project to address this distortion of knowledge. Subsequently there have been attempts to differentiate what is termed Real EBM from Rubbish EBM or Bad EBM (Centre for Evidence-Based Medicine, 2014), with the latter two terms said to represent primal reliance on RCTs and their outputs at the expense of core EBM principles.

Various authors identify flaws in uncritical alignment to RCT-based EBM evidence generation. For example, Ioannidis (2005) states most published RCT research is false due to design and bias problems, an allegation Kaplan and Irvin (2015) endorse after finding benefit of intervention fell from 57 per cent to 8 per cent in 55 RCTs published from 1970 to 2012 post compulsory compliance. Horton (2015) confirms poor RCT standards when stating at least 50 per cent of the biomedical research base is doubtful due to lack of reproducibility and reliability, which Every-Palmer and Howick (2014) and Ioannidis (2016) reiterate when explaining the thwarted potential of EBM.

The danger associated with this low quality of evidence is public harm from research outcomes that are perceived as valid and uncritically translated to healthcare practice. This is a risk that Prusova, Churcher, Tyler, and Lokugamage (2014) identify within obstetrics and gynaecology where best quality evidence underpins less than one-eighth of clinical practice guidelines, despite assertions of a sound evidence base. Accordingly, moves are underway to develop solutions for these poor research and evidence standards, with three examples being Naci and Ioannidis' (2015) suggestion that non-conflicted entities generate, synthesise, and interpret evidence to reduce bias; organisations such as AllTrials (2015) calling for registration and full transparency of all aspects of research trials; and the instigation of the Evidence Based Medicine Renaissance Group that aims to reappraise EBM to counterbalance Bad EBM (Greenhalgh et al., 2014).

While these modifications occur within the existing model, extensions, and

alternatives are also pursued, where the suggestion is integration of a broader range of evidence types. This is recommended to reorient the appropriateness and validity of evidence and to help understand patient inclusiveness, patient experience, practitioner attitudes towards evidence, clinical decision making, and clinical action (e.g. Engebretsen, Vøllestad, Wahl, Robinson, & Heggen, 2015; Henry, Zaner, & Dittus, 2007; Hirschberg, Seidel, Strech, Bastian, & Dierks, 2013; Ho, 2011; J. Little, 2002; Malterud, 2001; A. Miles, 2009; Mulley, Trimble, & Elwyn, 2012; Rohrbacher, Marx, Schaufler, & Schneider, 2009; Sestini, 2010; Silva, Charon, & Wyer, 2011; Tallon, Chard, & Dieppe, 2000; Upshur, 2005). A smaller but well-articulated selection of the literature also recommends a practice-based evidence model to translate explicit and tacit knowledge by basing inquiry within the practice setting and exploring the above-mentioned areas (Ammerman, Smith, & Calancie, 2014; Green, 2008; Jansen & Hoeijmakers, 2013; Parsonson, 2012; Pomernacki et al., 2015; Reed & Lawrence, 2008).

There is also recognition of the need to assimilate the theory of causal networks due to philosophical and theoretical progress in this area (Craig et al., 2008; Galea, Riddle, & Kaplan, 2010; Hooker, 2011; May, 2006; P. Rogers, 2008; Tugwell & Knottnerus, 2015). This leads to examination of additional research methods, including *N*-of-1 trials, while also reconsidering the nature of causality (Parascandola & Weed, 2001; Sloman, 2005; Thagard, 1998). For example, Kerry et al. (2012) and Anjum, Kerry, and Mumford (2016) propose causality as a dispositional phenomenon where context-sensitive and individualised causes tend towards outcomes. This shifts away from abstract degrees of probability from controlled events towards locating cause as a unique and singular occurrence. Similarly, Anjum et al. (2015) promote a vector model where complex causes coalesce and then trigger a threshold to create symptoms. These conceptualisations challenge standardisation, emphasise individualisation and have the potential to cultivate a different set of methods and models within healthcare evidence (Anderson et al., 2013; Petticrew et al., 2013). Thus bifurcation, change, and challenge appear within EBM as a knowledge system (Fuller, Flores, Upshur, & Goldenberg, 2014).

There are a variety of topics within the debate between CAM as a profession delivering healthcare and EBM as a framework providing knowledge for clinical practice. These mirror the discussions up to this point, although several unique knowledge development issues are documented. To situate these, relevant issues are presented as thematic topics: CAM knowledge in practice; engagement with EBM principles; problems related to engagement; proposed solutions; and debates that arise from the proposed solutions.

1.5.2.3 CAM knowledge in practice

As per the healthcare professions generally, tacit and explicit knowing coexist within CAM practice, with the former having a leading role in clinical decision making due to affiliation between practitioner and patient values (Leach, 2010; A. Steel & Adams, 2011b; Tyreman, 2011). This prioritisation of tacit knowledge is not unusual as values strongly influence knowledge users and they play a pivotal role in determining clinical action for patient benefit (Badcott, 2011; Collins, 2010; Duggan, 1997; Ho, 2011; M. Little et al., 2012; McCarthy & Rose, 2010; Pattison & Pill, 2004; Petrova, Dale, & Fulford, 2006). For CAM this does not reflect a specific values-based practice where decision making negotiates value systems through a defined skill set (Fulford, 2011). Rather, epistemological pluralism is applied where 'there is a multiplicity of truth concepts or regimented ways of conceptualizing truth' (N. Pedersen, Linding, & Wright, 2012) and clinical decisions are formed from knowledge sources applied to contextually sensitive presentations where values are considered in relation to each case (De Vreese et al., 2010; Kölbel, 2009).

Overall the CAM disciplines define evidence in broader terms than outputs generated from the EBM hierarchy. Thus a breadth of knowledge sources are applied in clinical practice, which are identified as scholarly and professional journals, industry literature, professional development literature, research databases, traditional evidence sources, clinical experience, patient preferences, individual response to therapy, and expert knowledge (L. Braun et al., 2013; Hadley, Hassan, & Khan, 2008; Leach & Gillham, 2008; Suter,

Vanderheyden, Trojan, Verhoef, & Armitage, 2007; Tilburt et al., 2009). For CAM, the placement of EBM-derived knowledge tends to have an adjunct as opposed to primary role and EBM findings are implemented alongside other information sources, as per the balanced EBP model (Dew, 2012).

This epistemological pluralism is also based on practicalities related to an underdeveloped research base. With funding allocation ranges of between 0.08 and 1.0 per cent of total health budgets across nation states for CAM, there is a lack of adequate research infrastructure and an inability to attract competent researchers (Coulter, 2007; Ernst, 2003; Ernst, Schmidt, & Wider, 2005; National Institute of Complementary Medicine, 2008). This is problematic because, as a result of the increasing public use, there have been calls for the assessment of safety, efficacy, and effectiveness of therapies and for understanding of the provision, regulation, and equity of access for CAM (Bensoussan & Lewith, 2004; E. Cooper, 2004). Within the theory of EBM, an evidence base should provide information in these areas, and thus the onus has been on CAM to meet the requirements of EBM (Vickers, 2001).

1.5.2.4 CAM engagement with EBM principles

To engage with EBM, the theory, teaching, and practice of this has been presented under the title of evidence-based complementary and alternative medicine, or EBCAM (K. Wilson, 2002; K. Wilson, McGowan, Guyatt, & Mills, 2002; K. Wilson & Mills, 2002a, 2002b; K. Wilson, Mills, Hollyer, Vohra, & Guyatt, 2002a, 2002b; K. Wilson, Mills, McGowan, & Guyatt, 2002; K. Wilson, Mills, Ross, & Guyatt, 2002). This model promotes a knowledge system similar to EBM, but with the caveat that it should be consistent with CAM principles. An additional series on EBM within CAM promotes a similar model (Chiappelli, Navarro, Moradi, Manfrini, & Prolo, 2006; Chiappelli, Prolo, & Cajulis, 2005; Chiappelli, Prolo, Rosenblum, Edgerton, & Cajulis, 2006) and Zhang, Xue, and Fong (2011) also outline a developed rationale for evidence-based herbal medicine. Alongside these, numerous comparable publications exist.

As a result of the requirement for increasingly structured inquiry within the EBM model, three main planning components have been prioritised: research capacity and literacy stocktake; research training; and collaboration with education providers to train future research leaders (E. Allen, Connelly, Morris, Elmer, & Zwickey, 2011; Boon & Verhoef, 2002; Connelly, Elmer, Morris, & Zwickey, 2010; Finch, 2007; Grey & Bailey, 2001; Kreitzer & Sierpina, 2007; Lewith, Verhoef, Koithan, & Zick, 2006; Wayne, Buring, et al., 2008; Wayne, Pensack, et al., 2008; J. Williams, Mulkins, Verhoef, Monkman, & Findlay, 2002). These projects continue, and while the number of researchers originating from within the professions remains small (Witt & Linde, 2008), research outputs are growing.

1.5.2.5 Problems related to CAM engagement with EBM principles

As these developments have progressed, salient problems have emerged. Primary among these are issues with EBM outputs in the CAM field, notably the inability to develop meaningful systematic reviews (Linde & Coulter, 2011). This has arisen due to the production of research from those with little understanding of their field of inquiry. This is exemplified in instances when the Consolidated Reporting of Trials (CONSORT) statements for herbal medicine are under-implemented (Gagnier et al., 2006a, 2006b; Gagnier, Moher, Boon, Beyene, & Bombardier, 2011), which leads to inaccurate inferences emerging from error-ridden research (B. Bennett & Balick, 2014; E. Davidson, Vlachojannis, Cameron, & Chrubasik, 2013). Other problems include a lack of heterogeneity in trial design and the lack of effectiveness studies or studies in systems of care as opposed to individual therapies (Coulter, 2007; Wider & Boddy, 2009). These issues contribute to a paucity of useful research for implementation into the practice setting (Jonas & Lewith, 2011).

Concomitant to these difficulties is criticism of EBM for its lack of ability to successfully assess multivariate practice environments (Fitter, Thomas, & Thomas, 1997; Jonas & Lewith, 2011; K. Thomas & Fitter, 1997) and its

absence of outcome measures able to reflect the complexities of therapeutic interventions (Bauer, 2014; Clark, 2013; Paterson, Baarts, Launso, & Verhoef, 2009; Verhoef, Vanderheyden, Dryden, Mallory, & Ware, 2006). Consequently the evidence generated from the EBM model presents findings with minimal external and model validity (Flatt, 2012), thus leading to frustration for practitioners wishing to practise effective EBP (Zick & Benn, 2004).

This reflects the inherent limitations of RCTs, where construct validity is prioritised over external validity (Golden, 2012), a shortcoming recognised by Shadish et al. (2002) who state 'to different degrees, all causal relationships are context dependent, so the generalisation of experimental effects is always an issue' (p. 5). Because of this limitation Borgerson (2005), Eskinazi (2000), Tilburt (2007) and Tonelli and Callahan (2001) state that commitment to the EBM model by CAM is premature. Such comment challenges a specific way of knowing that is seen to limit the capacity to generate usable CAM research, and by extension it questions the ability of EBCAM to integrate principles that differ in any meaningful way from the EBM model (Jagtenberg et al., 2006; Quah, 2003; J. Richardson, 2002).

1.5.2.6 Proposed solutions to the manifest problems

This leads to the call for research designs that can successfully expand the range of research methodologies to capably examine CAM practice (Dhillon, 2011; Khorsan et al., 2014; le May & Gabbay, 2011). Recommendations include incorporation of multiple methods to capture multivariable datasets, with the most notable suggestion being whole systems research (Bell & Koithan, 2006; Elder et al., 2006; Herman, Sherman, Erro, Cherkin, & et al., 2006; Kessler & Michalsen, 2012; Koithan, Bell, Niemeyer, & Pincus, 2012; Niemeyer et al., 2013; Ritenbaugh et al., 2010; Ritenbaugh, Verhoef, Fleishman, Boon, & Leis, 2003; Verhoef, Koithan, Bell, Ives, & Jonas, 2012; Verhoef et al., 2004; Zick et al., 2009). This entails a composite of methods tailored to the system of care under review and marries with the current

evolution in complex systems and causal network inquiry occurring within selected fields.

There are also recommendations for *N*-of-1 trials to replace controlled trials to incorporate patient individualisation (Lillie et al., 2011; Schork, 2015; Van Der Greef, Hankemeier, & McBurney, 2006). This design resolves many of the problems inherent to RCTs (Guyatt et al., 1988) and is promoted within the EBCAM model (K. Wilson & Mills, 2002a), yet it has largely been ignored in healthcare research programs. Practice-based evidence is also underway within CAM research undertakings (A. Steel, Adams, & Sibbritt, 2014).

A noteworthy proposal comes from Jacob's (2015) socio-legal perspective, which perceives CAM as a disciplinary ecology capable of its own research program. This describes EBM providing insufficient understanding for CAM knowledge development and echoes Kidd's (2013) criticism of proponents of tightly held scientific criteria refusing to explore CAM on its own terms, as well as the call for independent conceptual frameworks for CAM research (Boon et al., 2007; Borgerson, 2005; Tonelli, 2011a). To develop a discipline-specific knowledge model creates and consolidates autonomy and governance over knowledge production that is respectful of the epistemic autonomy and authority of the professions. While acknowledging the financial restrictions faced by the professions, this emphasises the value of research that is in direct relation to CAM practices and not to the objectified abstractions that are perceived to permeate the EBM approach.

1.5.2.7 Debates arising from responses to the proposed solutions

These dynamics within the interface of CAM and EBM lead to a variety of responses from proponents of the EBM knowledge framework. Primary among these are statements that CAM is unscientific because it does not show an evidence base; criticisms that it fails attempts at empirical assessment because of pseudoscientific concepts; and assertions that it should be excluded from state funding and higher education status because it

represents a waste of taxpayer investment (Ernst, 2009a; MacLennan & Morrison, 2012; Novella, 2012). Such discussions lead to two observations within the context of a critical review.

This perspective universalises CAM as a homogenous entity, and thus the capacity for sufficient nuance is limited. This is apparent in Pigliucci and Boudry's edited volume (2013b) containing discussion on CAM where the term 'alternative' is used to encompass distinct CAM professions despite the opposing literature consensus (Pigliucci & Boudry, 2013a). There is also inconsistency as to whether CAM is completely pseudoscientific (Boudry, 2013), borderline pseudoscientific (Shermer, 2013), or amenable to scientific investigation (Jerkert, 2013). Thus these types of arguments against CAM are disparate and currently seem incapable of accurately identifying their topic.

The second observation is that this discourse holds rhetorical constructions of EBM that promote controlled trials as the arbiter of evidence (Flatt, 2013), misrecognise and deny academic CAM (Brosnan, 2015; Myers, Xue, Cohen, Phelps, & Lewith, 2012), and discount universities as centres of inquiry that reflect and inform society (Chatfield, Partington, & Duckworth, 2012). Thus questions arise that are similar to those directed at Bad EBM, such as the negation of other types of knowing based on the use of evidence as boundary markers (Derkatch, 2008) and the presentation of certain knowledge as dominant to use this as a strategic demarcation tool for ends that serve vested interests (Hunter & Grant, 2005; Walach, 2009b).

Currently CAM is maturing to accommodate structured inquiry, with the professions identifying research needs in terms of external and model validity. Such a position brings resistance from some quarters, with the emergent discourse asserting a lack of reasoning as the basis for CAM's objection to EBM. This subject shapes the final section of the review.

1.5.3 Debates of reasoning

Reasoning in healthcare is often discussed in the context of clinical decision making and the degree of value attributed to either the art or science of healthcare practice. Disputes over reasoning are reviewed through this lens here and are located in two distinct styles of practice and purpose: praxis and practical reasoning, and poiesis and instrumental reasoning.

Praxis emphasises the art of practice and is aligned to implicit knowing and intangible activities that produce action from phronesis, or practical reasoning (Collins, 2010; Pellegrino & Thomasma, 1981; Tyreman, 2000). This is the taken-for-granted background knowledge that Polanyi (1973) terms tacit knowing or 'know-how' and is a form of reasoning residing within a community of practice where knowledge is embedded within the members. In contrast, poiesis emphasises science and theory and is associated with explicit knowledge and the craftsmanship arising from individualised techne, or instrumental reasoning (B. Hofmann, 2003). This is the knowledge of codified tasks, or the 'know-that' of expert individuals that can be explicated from the knowledge holder (Schwandt, 2007b). Crossover between practical and instrumental reasoning occurs, with the former concentrating on the ends of experience and the latter on the means of technicalities (B. Smith, 1988). It is the implications for decisions about action that arise from these different knowledge types that underpin debates about reasoning.

To differentiate, practical reasoning directs decisions towards the outcome that is relative to context, and it necessitates a flexible approach to choice of means to achieve ends for discrete circumstances. Thus practical reasoning applies means that are servile to the ends (known as ends–means coherence) by emphasising values-based decision making (Bedke, 2008; H. Richardson, 1994; Svavarsdóttir, 2008; Walton, 1990). In contrast, instrumental reason prioritises means that direct ends, necessitating rationalisation of the requirements that can fulfil the means. This orients to achieving an outcome through techniques known to create specific ends. Such reasoning prioritises

the means that have the greatest probability of achieving a goal (means–end coherence) and is characterised by decision making derived from technical information (Giere, 1989; Way, 2011).

Public healthcare is generally associated with practical reasoning (Davis, 1997; Henry, 2010; Walseth & Schei, 2011; Widdershoven-Heerding, 1987), while there is correlation between instrumental reasoning and the experimental and quasi-experimental methods of the EBM model (Buchak, 2010; Plant, 2004; Shadish et al., 2002). Within EBP, one cannot exist without the other, and it is the prioritisation of clinical reasoning to either of these that is the crux of debate. However, resolving these differences is not simple because reasoning is multifaceted and contextual. Callahan (2002a) perceives clinical reasoning as an ethical choice that must be morally defensible within social, cultural, professional, political, and economic contexts, which Duckett and Willcox (2015) confirm when they say healthcare delivery operates within a socio-political environment that intersects with every aspect of clinical work. Thus the means and ends within clinical decision making are not free-floating and independent rationalisations, but rather are choices shaped by multiple factors that are constitutive of both the reasoning process and the means and the ends themselves.

In brief, CAM clinical decision making involves interpretation and reflexive theorising of dynamic situations for patients who develop illness within multivariate environments. There is an emphasis on outcomes-based decision making within the application of knowledge in these situations, meaning the choices made within the clinical encounter are oriented towards moral decisions that are ends focussed. Because of this, the knowledge applied will ideally represent outcomes with clinical relevance; in other words they will have external validity. Similarly, because outcomes develop within a contextual environment, it is recommended that applied knowledge has model validity to reflect that environment. This contributes to an emphasis on practical reasoning due to practitioners acknowledging the complexity of intersecting factors that affect judgment. This causes their

decision-making processes to challenge the capacities of EBM in the following way.

Instrumental reasoning in EBM focuses on means–end coherence within a framework creating prediction, control and reproducibility, which are characteristics that support theories of stability and perpetual universality. Jointly these are exemplified in the controlled trial where research design emphasises internal validity through regulated processes that contribute to replicable outcomes. The reasoning underlying this structure separates object and subject, and mediates the space between knower and the known, meaning the framework controls any action that may operate outside selected means (Buchak, 2010; Carson, 2010; Giere, 1989; Greenhalgh et al., 2014; T. Kelly, 2003; Tauber, 2006). The result is a model that can identify causal associations with high internal validity but with a reduced emphasis on, or capacity for, external, and model validity.

This contributes to debates centred on the following. When findings from EBM are extrapolated to situations outside controlled environments, the research design (i.e. the means) is incapable of satisfactorily encapsulating the ends; in this case the patient lived experience. Because complex variables mediate the ends in this situation, instrumental reason operating according to controlled internal consistency struggles to create means–end coherence in this uncontrolled reality (Carson, 2010; Mann, 1999; Schecter, 2012; Sturmberg, 2009). Solomon (2011) identifies pertinent examples of this as unacknowledged and endemic confounding variables in trial design, the inability to accurately extrapolate confidence intervals from a controlled to an uncontrolled environment, and the manipulation of means by vested interests to direct research findings to a pre-determined end.

The main point of contention here is the way ends are constructed to stabilise the instrumentally reasoned means. When manipulation of ends is applied, such as selection of patients unrepresentative of common clinical presentations or surrogate outcomes that represent a controlled reality, this

type of research reduces multifaceted lived realities to abstract criteria that can be controlled, predicted, and replicated. This is the reduction of the ends user to scientific criteria (Schwandt, 2007a). The problem with this is that these ends originate from the theoretical orientation of the means thinker and not from the lived realities or desires of the ends thinker (Rosen, 1996). Thus patient contextual realities remain excluded, which Greenhalgh et al. (2015) discuss as the EBM bias against patients and carers. Thus, to employ this model as the dominant form of knowledge in practice raises moral and ethical questions about appropriate care (Bauer, 2014; Verbeek, 2002).

Therefore instrumental reasoning appears patently unfeasible to developing representative research outputs for CAM as a complex healthcare system, so practical reasoning becomes the preferential tool of decision making. This requires acceptability criteria, which in this instance are patient outcomes that are assessed on the degree of effectiveness afforded to the ends. This is acquired by therapeutic result, which reinforces or forces re-evaluation of the applied practical reasoning. As all ends, being clinical outcomes, are emergent within complex lived experience, the utilised ends are contingent and do not have a bounded logic or structure that act to stabilise their means. Thus there is a lessening of the control and prediction existent in EBM knowledge structures (Hampton, 1998), which means EBM is unlikely to develop the needed ends-focussed research through instrumental reasoning.

However, this is not the wholesale dismissal of EBM outputs, but is the location of these within the broader practice context. What emerges is the evident need for a balanced approach to reasoning, which is where the original EBP model has significant merit. The use of instrumentally reasoned evidence in an accompanying capacity to practical reasoning is entirely conceivable within epistemological pluralism. The extent to which this may transpire is relative to the ontological and epistemological commitment of the individual (De Vreese et al., 2010). Thus the debate between the validity of these forms of reasoning is negotiable via a pluralistic stance based on situated reasoning that is focussed on the best means to generate the best

ends in context (Croskerry, 2009). It is the recognition, understanding, and integration of the multiplicity of concomitant factors that accompany healthcare reasoning that creates consistent challenge.

Instrumental and practical reasoning can be differentiated and are aligned to the EBM model and CAM work practice in distinct ways. Therefore debates that dismiss either CAM or EBM through poorly thought-out arguments that ignore these aspects to clinical decision making require rethinking. Applying a developed awareness of reasoning perspectives, rather than the commonly cited overbearing viewpoints lacking insight in this area, is recommended.

1.6 Findings

The literature contains a wide range of perspectives that explore various aspects of the CAM–EBM interface. The content that has been reviewed here has been ordered into thematic areas and is now discussed in relation to the following: the temporal evolution of the literature; the understandings, recommendations, and questions that have emerged; and the way this research may add to this area of inquiry.

1.6.1 Temporal evolution of the literature

Although numerous disciplines publish on CAM, this section focuses on three particular areas with high publication rates. The first reviews the evolution of literature internal to the CAM professions; the second discusses temporally developed themes within biomedical literature responding to CAM; and the third is a précis of a published review from the sociological canon.

CAM publications have temporally increased in numbers, with Danell and Danell's (2009) review of the CAM category in the PubMed database between 1966 and 2007 identifying 29 indexed journals. Expressly noted is the cumulative presence of evidence-based research over time, due to a 'general drive for scientific proof/validity … and acceptance from the scientific and

medical establishment' (p. 545), a comment reinforced by Hirschkorn (2006) in an analysis of CAM legitimacy claims. This is further evidenced in Evans' (2008) content analysis of a 1930s herbal medicine *materia medica*, a contemporary desktop herbal medicine guide, and a purposeful sample of 1989–2008 articles from a leading herbal medicine journal. Identified is a trend towards increased scientific content at the expense of entries on the role and value of philosophical and traditional knowledge. Thus these authors note a temporal change towards a scientific discourse across the academic CAM literature.

For biomedical publications, Winnick's (2005) content analysis of 102 articles from five highly cited American medical journals between 1965 and 1999 finds themes falling into three areas: condemnation (1960s to 1970s), reassessment (1970s to 1990s) and integration (1990s onwards). The current phase is said to apply evidential criteria to CAM as a control mechanism. In comment from a later time series analysis of the same data (Winnick, 2007) it is asserted these publications serve a surveillance role to monitor market competition. With a different focus, Lewis's (2012) content analysis of the representation of CAM risk and efficacy in a leading Australian medical journal from 1966 to 2008 identifies a greater than 70 per cent frequency of risk articles. Proposed reasons are a lack of familiarity with the field of inquiry, construction of risk boundaries between the professions and publishing bias against CAM. As a rule, the biomedical literature pivots off these themes and depending on the projected argument will concentrate on one of these particular areas.

In the field of sociology, Gale (2014) systematically reviews 15 years of CAM analysis and identifies themes that coalesce over time. Included are the use of CAM terminologies as boundary markers; the phenomena of increasing usage within the context of the postmodern bricolage; medical pluralism; a discourse of professionalisation; scientisation of the CAM knowledge base; hybridisation of CAM therapies; integration of CAM with biomedicine; power relations between CAM and the healthcare community; biomedical boundary

work; and CAM activism against perceived professional injustices. The questions to emerge are centred on the need for proof of efficacy and the significance of embodiment and inter-subjectivity for patients. Overall the analytical importance of the sociology of knowledge and the necessity for critical engagement is emphasised.

In synthesis, the temporal literature reveals changes in knowledge from within the CAM professions, attempts to control CAM through an evidence and risk discourse within biomedical journals, and postmodern public engagement with CAM as personalised embodiment from sociology.

1.6.2 Understandings, recommendations and questions

The literature shows CAM usage by populations is partially structured through congruence with practitioner philosophy. The current ontological and epistemological position of CAM serves populations but contrasts EBM, and engagement with this instrumentalised knowledge model contributes to a research base for CAM that is highly constrained. Reasoning differs between CAM applying contextualised therapies and the structuring of EBM methods; therefore research techniques that incorporate practical reasoning are recommended. The ensuing engagement with different knowledge forms occurs through the integration of holism and complexity theory in evidence generation as a way to better reflect CAM healthcare practices.

It is evident that CAM and EBM have distinct knowledge structures. These arise from unique philosophical positions and lead to different emphases on reasoning. Concomitant to this is the CAM usage of epistemological pluralism to meet highly contextualised practice demands. From this information it is possible to visually represent the distinctions between CAM and EBM, with Figure 1.4 presenting the knowledge-in-practice relationship model that emerges from this review. Because of the diversity of ontological and epistemological positions for CAM practitioners and those adhering to EBM, this illustration does not reflect a strict division. Rather it indicates positions

within a continuum of philosophy, reason, and clinical knowledge, where commitment to any or all of these areas must integrate the individualised needs of the presenting patient; as such this creates a variety of possible intersection points within this nexus.

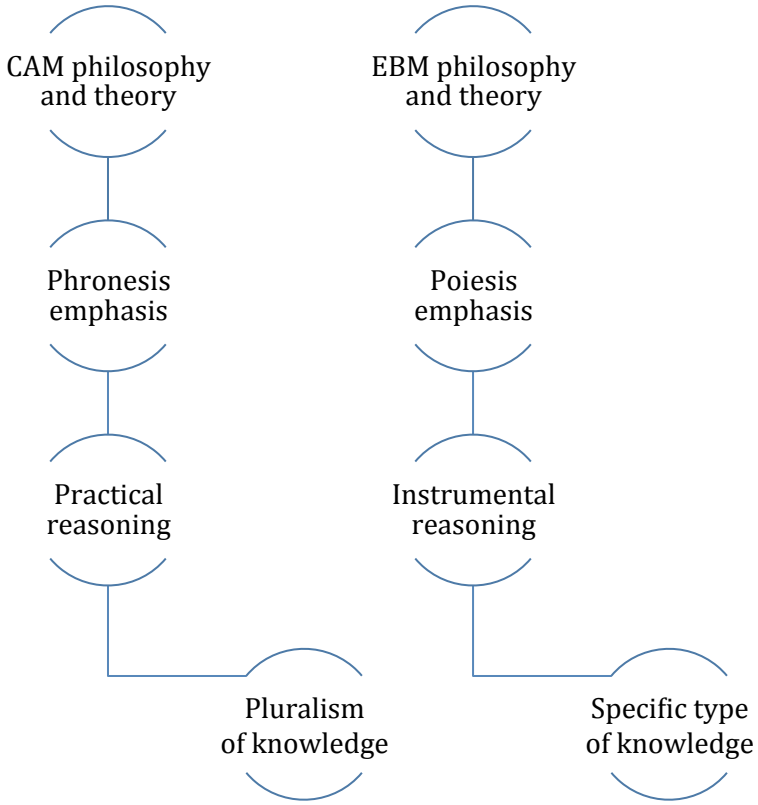

Figure 1.4: CAM–EBM philosophy–reason–knowledge nexus

Having said this, the literature consistently describes strict binaries between objectivity-subjectivity, reason-unreason, and science-pseudoscience that serve rhetorical arguments between CAM and EBM rather than developing understanding about either entity. When such variants intersect in debates about knowledge generation, the linguistic reproduction of epistemological distinction occurs, which often collapses to ideological disputes that reinforce differences. This reveals dogmatism from all involved (Loughlin, 2008), which hinders progress in understanding the role of CAM in society and the way EBM can serve patient and practitioner needs.

Thus the main recommendation to emerge from this review is agreement with the requirement for critical analysis in exploring the interrelationship between CAM and EBM (Adams, Hollenberg, Lui, & Broom, 2009; Gale, 2014). This need is evident from debates regarding divergent knowledge systems that entail strategies protecting professional boundaries, heated discussion on evidential types, assertions of acceptable or unacceptable evidence, and the exclusionary and inclusionary strategies that play out as a result of these factors (Gieryn, 1983; Saks, 2015).

There are many questions that can be said to be unanswered for CAM in the literature. Of particular relevance to practitioner beliefs and work practices are four areas that focus on the philosophy, discourse, and context of CAM:

1. The interrelationships between the philosophical position of practitioners, the effect of this on evidence application and the ways this application is reasoned are unexplored within the literature. How this manifests for involved practitioners is a primary question.

2. CAM philosophical conceptions are superficial, lacking in clarity and contribute to straw man debates. This leads to the need for clear and precise ontological and epistemological statements. Therefore, how CAM may successfully integrate academic philosophy into the development of valid and rigorous knowledge propositions is an unanswered question.

3. The ability to identify causal forces that can apply to populations is limited for CAM due to the individualisation afforded to patients. While dispositional causality and causal vector modelling have been promoted, the CAM conception of causality requires consideration. The teleological theory of causality has a degree of relevance within practitioner belief but the realist EBM model challenges this. Thus another unanswered question is, how may CAM causality be explored?

4. The dominant methods of reasoning applied by CAM practitioners affect perceptions of knowledge assessment and the validity of research findings. How practical reasoning and ends–means coherence operate in the practice context, and whether there is the capacity for this to underwrite research agendas and inform causality for CAM, forms a further unanswered question.

Although these questions remain unresolved, the groundwork for their investigation is present in the literature.

1.6.3 How this research may add to the literature

A noted deficiency in the literature is the in-depth expression of CAM practitioner perspectives within the discussed topics. By and large the voice of practitioners is absent, mainly because the debates take place at the theoretical level. However, this should not preclude the knowledge of practitioners from research that discusses their practices, and as such the absence of these knowledge holders is undesirable. Consequently this research attempts to share the voices of CAM practitioners who are asked to discuss their perception and application of knowledge in practice.

This research examines CAM healthcare delivery in communities to assess the foundations of the provided services. Therefore, the theoretical literature reviewed here can be augmented by knowledge obtained from those practising within the discussed professions. However, because of their general omission from the literature, participants will be first asked to assess the findings discussed here for accuracy relative to their experience. Thus the conducted research is a critical review of existing literature as much as it is novel research into CAM knowledge application. Therefore the outcomes of this review must be considered in relation to the forthcoming research and its findings.

1.7 Conclusion

This review has shown that CAM implementation of knowledge in healthcare practice is located in three areas: ontological commitment, epistemological pluralism, and an emphasis on practical over instrumental reasoning. This orients towards a knowledge framework that differs from the EBM model, and the desire for representative evidence for CAM leads to tensions between the inherent limitations of EBM and the demands placed on CAM to apply its outputs as the evidential standard. This suggests that CAM practitioner engagement with EBM could affect beliefs and work practices.

This interaction reflects a disputed milieu and within this space practitioners apply a variety of knowledge sources to contextualised cases, where EBM fulfils an adjunct role in EBP as able. Proponents of the strong conception of EBM view this as anathema to their understanding of the role of evidence in healthcare and they raise arguments against the validity of CAM as a result. Counterarguments identify a lack of accurate recognition by these groups that in turn creates resistance to the perceived use of EBM as a tool of manipulation. Thus the literature identifies a high level of contested activity at the CAM–EBM interface that has the potential to influence practitioner beliefs and work practices.

CHAPTER 2: FRAMING THE KNOWLEDGE INTERFACE

The knowledge form inherent to CAM differs from that of EBM due to distinct expressions of philosophy, epistemology and reason. Neither CAM nor EBM communicate their philosophical positions well, and this contributes to a contested boundary at the CAM-EBM interface that promotes conflict more than mutual understanding. As the current literature contains both sophisticated discussion and problematic content, it tends to be assumptions and inaccuracies that pervade the discursive space. Some excellent points are made but there are also rolling straw man debates containing uncritical thinking, inaccurate perspectives, intransigent dogma, biased positions, boundary wars, and mutually disrespectful interactions.

The relationships between reasoning, the communication of epistemology, and situational worldviews drive the majority of disagreements in these documented interactions. Accordingly, there is interest in the way these are formed, their mode of presentation, and how they may be analysed. As such, this thesis follows the literature review recommendations of Gale (2014) and Adams et al. (2009) who suggest the investigation of this subject and its elements from a critical analysis perspective. This decision is justified throughout this chapter.

Based on this choice the thesis takes as its *raison d'être* critique, which is a broad form of analysis with multiple manifestations across academic work. This chapter sets out an account of this approach to inquiry and reveals an accompanying theoretical framework that can capably analyse the CAM–EBM interface. This explanation entails a succinct historical basis of pertinent areas of critique, review of the theories that make up the analytical structure containing the applied critique, and discussion of associated criticisms and shortcomings. A concise conclusion closes the chapter.

2.1 Backgrounding critique and Critical Theory

In common parlance, *critique* is construed to mean disapproval expressed on the basis of perceived faults or mistakes. In academic inquiry the term refers to the structured interrogation of knowledge, the reasoning underlying knowledge use, and the interaction of these with legitimating agencies (Butler, 2012; Macey, 2000; Sinnerbrink, Deranty, & Smith, 2006). Such critique takes numerous forms within a variety of theoretical positions, and the practice best able to engage with the requirements of this work originates from the discipline of Critical Theory. This school of thought interrogates ideological presumptions within knowledge claims, breaks open their reasoning and targets the contradictions that may exist within the ideology–knowledge-reason relationship (Boudon, 1989; Feur, 1975; Forst, 1996). There are many formative influences in critique and Critical Theory, and the following is a brief resume of those shaping the style of critique applied within this work.

Critique emerged as a technique of analysis in the Socratic era, but it is from the mid-18th century onwards that it developed as a method with a specific focus on the role of reason within knowledge in society. In a work regarded as the genesis of its modern form, Rousseau (1761) identified an ideological construal of reason sanctioning social inequality and protecting the French elite. In a time of Enlightenment-derived modernity when reason was held as the object of human freedom, Rousseau applied critique to the reasoning processes underpinning political and sovereign power, and determined that the civil rhetoric of the elite contradicted the lived realities of the population. For Rousseau it was evident that reason was manipulated to maintain social stratification and to embed wealth and power. Thus he is credited with developing a structured critique and 'birthing the tradition (of) critical philosophy' (Honneth, 2014; Quadiro, 2012, p. 48).

Some two decades later, Kant (1950 [1781]) also queried the role of reason - this time within theological power - and challenged 'the dogmatic procedure

of pure reason, without previous criticism of its own powers' (p. 33). This refers to the reflexive critique of subjective reasoning, where reason in daily life and its role in knowing, speaking, and acting are interrogated for internal contradictions in order to develop self-realisation (McQuillan, 2012). Shortly thereafter Hegel (1971 [1807]) proposed that reasoning was a process where ideas, their negation, and their reformulation were expressed in triads such as thesis, antithesis, synthesis; positive, negative, emergent; or subject, object, whole. This illustrated the way reason could create self-realisation by taking an idea, proposing a counterargument, and deriving a conclusion (de Boer, 2012). This extended Kant's reflexive critique by developing techniques that could be used to assess, critique, and resolve knowledge assertions and contribute to the potential for liberation from the suppressive use of reason.

In the latter half of the 19th century, Marx (1952 [1867]) based critique on the analysis of interpersonal to material relationships in society where labour relations become material relations that were in turn reified as social relations. Marx saw this as an intentional production and profit technique rationalised through a capitalist ideology that created a false awareness of lived experience (Celikates, 2012; Norman & Sayers, 1980). The outcome of this was alienation from lived reality, and this method of critique exposed the depth of ideological penetration of reasoning and the susceptibility of humans to manipulation by this. Weber (1930 [1905]) took this further and outlined social injustice operating through instrumentally rationalised action. This manipulated reason was posthumously described as intentionally using 'conditions or means for the attainment of the actor's own rationally pursued and calculated ends' (1968 [1922], p. 24). He evidenced this within state and capitalist superstructures that created disenchantment for those situated outside the rationalising elite, where reasoning operated through ideological ideals and generated ends that served that elite (Brubaker, 1991). This pinpointed the location and action of ideology within reasoning and provided the tools for a defined method of critique.

These forms of critique remained unrelated until a unified theory emerged from the Frankfurt Institute for Social Research (*Institut für Sozialforschung*). Here a politically engaged philosophical and social theory, primarily based on Hegel, Marx, and Weber, was collated and formalised within the School of Critical Theory (Horkheimer, 1989 [1930]). This was an intellectual group that specifically focussed on socio-philosophical critique to analyse normative social situations. Methodologically this was unique and entailed substituting the study of nature with culture, the scientific method with historical analysis, and the development of objective facts with social action and value-laden content (Arato & Gebhardt, 1982; Bohman, 1996; Bronner, 2011; Rush, 2004a). Using theoretical and social analysis methods, communications at the societal and individual levels were interrogated for the presence of ideology and the dominating use of reason. This work program shaped critique into a formal structure with a procedural skeleton that provided a theoretical framework for critically analysing any selected topic.

The focus for Critical Theory at this time was reasoning, its manipulation by ideology, its association with knowledge claims, and the intersection of this with state-sponsored legitimation for social engineering. To the involved theorists knowledge had become, after Weber, instrumentally reasoned and directed to specific outcomes that furthered political gains at the expense of an equal society. The consequences were that practical reason was being overridden by a politically driven instrumental reason that directed daily life and influenced autonomy. It was argued that society at large was imprisoned within this ideological reason, and this had created alienation by eliminating criticism derived from other reasoning processes that offered alternatives for human existence. Thus the critical theorists saw their role as critiquing and analysing knowledge claims for ideologically distorted instrumental reason. The aim was to reclaim non-instrumental reason and ensure recognition, justification, autonomy, reclamation of subjective power, and freedom from imposed objectivity (Adorno & Horkheimer, 1944; Horkheimer, 1947, 1974 [1961]).

Within the immediate post-World War II period Critical Theory enjoyed considerable recognition as its methods allowed insight into the collapse of Soviet socialism into dogma, the brutal extent of Nazism in Europe, and the North American totally administered technocratic society (Hoy & McCarthy, 1994). However, due to the rise of corporate capitalism and technocratic science in the latter half of the 20th century, the critical theorists perceived their ability to effect change as progressively minimal. This culminated in the Frankfurt institute's director predicting a pessimistic future overwhelmed by instrumental reason and lacking in emancipatory potential (Adorno, 1973). At this point the Frankfurt School of Critical Theory foundered in a vicious circle of philosophical intransigence, and as a consequence the formal entity dissolved. However, the institute that gave birth to this form of critique remains active, and directors and affiliates are key theorists within this theoretical framework.

The legacy of this intellectual movement is the provision of a framework of inquiry that enables analysis of post-Enlightenment knowledge. The premise of this views Enlightenment reason as successfully lessening superstition and religious dogmatism within public life but simultaneously creating alienation, loss of meaning, and existential insecurity. Thus, although a reason-based society provides emancipation from fixed thought, authoritarian rule, and a lack of civil liberties, it also underwrites the use of uncompromising means to control the world for interests that operate behind the backs of citizens. The negative effects that arise from this *carte blanche* attitude to the dominance of the natural and human world are most profound when ideological power manipulates means for its own ends. Thus for Critical Theory, while reason is viewed as the foundation of human possibility and action, how it is applied and used to act on theories and 'truths' can and should be questioned.

The theoretical and analytical structure of Critical Theory enables critique of the context, assumptions, value, and limits of knowledge and can reveal how action is shaped by reason, particularly when equality, recognition, and justice are threatened or subsumed by obtuse forms of reasoning (Honneth,

2004). Therefore the principal application of the critique of Critical Theory in this work is the exploration and analysis of reason within the formation and expression of knowledge.

2.2 The CAM–EBM interface and Critical Theory

The ontological, epistemological, and reasoning premises of CAM are situated at a considerable distance from EBM, leading to the knowledge claims of the former having a different basis, form, and rationale than those of the latter. Subsequently, there is the potential for a lack of recognition or unintentional misrecognition of claims by those unfamiliar with the basis of either CAM or EBM.

Recognition and legitimation are identified issues for CAM in this context. Saks (2015) views the majority of CAM professions as marginalised within the politics of healthcare and subordinated to a dominant ideology of evidence that maintains social closure of professions. Baer (2006a) agrees when describing evidence-based legitimation as always partial for CAM as it is 'forced to comply with the structures, standards, and processes that are dominated …' (p. 82). This use of 'dominant' and 'dominated' implies the presence of power or control over another, and Radford (2008) describes this taking place within knowledge statements that gain authority through their relationship with those in control of legitimation processes. This implies the use of knowledge as a tool for inclusion and exclusion, which Oguamanam (2006) asserts occurs across healthcare through a discourse of evidence that constructs and maintains knowledge boundaries. Holmes, Murray, Perron, and Rail (2006) agree and say such a discourse currently leads to numerous epistemologies existing outside specified models of knowing and being unrecognised, marginalised and having their legitimacy questioned.

The conjecture is that knowledge claims are currently reliant on alignment to the sanctioned EBM model for legitimacy, and thus are contingent. For CAM this is demonstrated by Broom and Tovey (2007) when investigating cancer

care. Within this research, interviews with hospital clinicians reveal EBM forms treatment legitimacy and serves as a discursive tool to delimit CAM services. Patient treatment objectives are less important than the scientific rationale underlying these, and even though therapeutic outcomes are met, CAM practitioners are consistently marginalised due to a lack of the required EBM standards. CAM practitioner epistemology is belittled, their autonomy is reduced and the EBM discourse maintains the professional hierarchy.

Similar events are outlined by Polich, Dole and Kaptchuk (2009) in interviews with CAM researchers, who describe disregard for their knowledge by non-CAM colleagues and the need to appear more scientific to gain legitimacy in the research setting. A consequence of such behavioural change is alignment to certain methodological frameworks that lead to 'a kind of hyper-performance of the experimental genre through an exaggerated empiricity - a strategic over-description of salient trial features that increase their association with scientific methods' (Derkatch, 2008, p. 378). In these instances, the structural framework of EBM with its sanctioned status serves as an instrument to demarcate, legitimate, and reproduce knowledge.

It is argued that the ideological use of instrumental reasoning within EBM operationalises this function. This means–end reasoning is most noticeable when EBM evidence is unquestionably applied across healthcare and used to reduce the patient–practitioner encounter to formats that are scientifically analysable (Carson, 2010). Hampton (1998) considers that when reasoning is applied in this way it is imbued with objective authority and pretensions to normativity that deem its use beyond question. This leads to other knowledge being overridden as a result of a reasoning process that aims to capture healthcare practice and resituate it within a specific epistemological frame. Toulmin (1990) designates this as a shift from a valuable humanism based on Enlightenment reasoning to an undesirable logic unable to incorporate human value and agency and devoid of reflexive critique. From a

Critical Theory perspective these comments reflect an ideological application of reasoning to maintain one form of knowledge and suppress alternatives.

A particular component of the Critical Theory interpretation of ideology has resonance for CAM. Adorno and Horkheimer (1944) detect ideological manipulation of reasoning within statements associating instrumental reason and science with freedom from the constraints of famine, illness, and scarcity of resources. Due to the benefits derived from the control of nature in such instances, it is proposed that this justifies the global use of scientific and technocratic means. The critical theorists interpret this as an attempt to legitimate the use of means-based thinking to the detriment of all as, while there are undeniable improvements in human existence, the open reference to these as the basis for extending the applied means beyond their remit is flawed. This is because the aim is not merely to provide human benefit but to replace traditional human–nature relationships with acceptance of a normative estrangement from nature and a state-sanctioned scientific authority embedded across society (Dant, 1991). The critical theorists see this as the ideological manipulation of ends justifying the use of means to rationalise the penetration of authoritarianism in all areas of life.

This aspect of estrangement from nature has significance because CAM practitioners apply natural therapeutics as an ethically grounded therapeutic stance, where any degree of disconnect between humans and nature is seen as an aetiological consideration in illness (D. Hoffmann, 2004; Nissen, 2015). Thus the control of nature, while bringing benefit, is perceived to contribute to a separation between humans and the healing properties of natural ecology that reduce the capacity of humans to see themselves as self-determining and liberated agents within the natural world (Mathews, 2008). CAM plays an intercessional role in this estrangement and loss of agency by recognising and using nature as a healing entity as opposed to perceiving this as a fearful force to be controlled. This engagement with natural therapeutics is an aspect of CAM practice that is identified as a pull factor for patients.

Thus knowledge, reasoning, contested evidential frameworks and ideological interests that legitimate or exclude knowledge outline the relevance of Critical Theory as a theoretical framework for this work. How this can be applied is now examined.

2.3 Applied theory

Contemporary Critical Theory has numerous figureheads who continue the intellectual tradition of their predecessors. The theorists chosen for this work have directorial links to the *Institut für Sozialforschung* or are associated with the institute; thus they have intellectual origins in the concepts discussed to this point. These scholars are discussed here in three interrelated directions, with their roles displayed in Table 2.1.

Table 2.1: Theoretical framework structure

Theorist and role	Theory and analytical function	Analytical process
Jürgen Habermas Central theorist	Theory of Communicative Action Guides primary analysis through the provision of theoretical tools of critique	Critical analysis of data findings through model of system–lifeworld interaction
Axel Honneth Supporting theorist	Recognition Theory Provides theoretical tools of recognition to augment the primary analysis	Critical analysis of data findings by criteria of recognition
Rainer Forst Supporting theorist	The Right to Justification Provides theoretical tools of justification to augment the primary analysis	Critical analysis of data findings by criteria of justification

The primary theorist is Jürgen Habermas and his *Theory of Communicative Action* (1984, 1987). This work continues the Critical Theory project from the perspective that Adorno's pessimism regarding the limited capacity of critique is mistaken. The proposal is that instrumental reason is indeed corrupted by power and ideology, and thus a reconstruction of the European Enlightenment conception of reason is necessary. The solution is to lessen reliance on reason derived from subject-object relations and their cognitive interpretation, and instead focus on consensus reasoning emerging from

inter-subjective relations between free and equal participants. This construal of reason preferences the practical over the instrumental, most particularly in knowledge arenas where social contexts dominate.

The possibilities offered by this premise apply to multiple sectors of social inquiry, with no less relevance for healthcare matters (Scambler, 2002, 2015, 2001). Examples of areas explored and analysed through this theoretical lens include interaction between CAM practitioners and health models (Schneirov & Geczik, 2003), doctor–patient relationships (Barry et al., 2001; Greenhalgh, Robb, & Scambler, 2006; Nathenson, 2010), lifestyle interventions (Walseth & Schei, 2011), complex health beliefs (Germond & Cochrane, 2010), health activism (Zoller, 2005) and others. Thus this theory has plasticity that can extend in numerous directions.

Significantly, since the publication of Theory of Communicative Action, advances in critical theorisation have occurred that enable expansion of Habermas's work in relevant ways. Accordingly, Axel Honneth's Theory of Recognition and Rainer Forst's theory of the Right to Justification are integrated into the theoretical framework. These augment the primary theory by providing added analytical tools that increase the scope of critique. Thus the framework is structured with a central theory and supporting theories that act as supplemental tools of analysis. Each of these is now explored in detail.

2.3.1 The Theory of Communicative Action

The central theory emerges from a commitment to resolve the unfavourable prognosis for critique proposed by Adorno's (1973) late philosophical bleakness. The suggestion that instrumental reason was unable to be challenged in any meaningful way was an untenable position that had to be resolved, and this fortified the theoretical inclinations that developed into the Theory of Communicative Action. Underpinning the entire enterprise is belief in the concept of reason within Enlightenment principles of liberation and

justice. Thus for Habermas, reclaiming reason extends beyond correcting the course of Critical Theory and sits squarely in progressing society.

As noted by his predecessors, instrumental reasoning serves a beneficial role in appropriate circumstances, but its misapplication creates, reinforces, and exacerbates social inequalities. For Habermas (1968), this can arise because certain knowledge interests influence three particular applications of reason *a priori*: 1) empirical–analytical and technical interests reason the prediction and control of processes to adapt to and manipulate nature; 2) historical–hermeneutic and communicative interests reason relations as a way of negotiating and understanding lived existence; and 3) emancipatory–critical interests reason freedom from dominance to be free from coercion. The first of these applies instrumental reasoning for means-based objectified ends whereas practical reasoning is applied to inter-subjective ends-based understanding within the latter two. These knowledge distinctions form the basis of Habermas's ensuing theory.

Thus, although the Critical Theory project stalls due to instrumental reasoning being perceived as an intractable feature of contemporary life, for Habermas other forms of reasoning can better reflect and benefit society. The misuse of reason associated with ideological instrumental means can be countered by prioritising practical ends derived from communication. Although those with technical interests perceive instrumental reasoning subsuming all other forms of reason, those with communicative and emancipatory interests directed towards values-based outcomes favour practical reasoning to best inform action (Kolodny & Brunero, 2013). Thus the most effective way to neutralise the manipulation of instrumental reason is to reorient reason to recognising and realising its practical form. This leads to the distinctions between instrumental and practical reasoning being presented as contrasting positions that envision and resituate reason.

2.3.1.1 Communicative action and practical reasoning

The Habermasian interpretation of practical reason originates from the salons and coffee houses of 18th century Europe, where civic discussion is integral to the Enlightenment ideal of reasoned decision making in society (Habermas, 1962). Reason's potential is considered to lie within linguistic interaction that contributes to the maturity of 'communicative competence' (Habermas, 1984, p. x). The possibilities of this discursive reasoning reside within a process of inter-subjective claim making, the negotiation and defence of claims, and the retention or revision of claim validity. Therefore this forum is inherently practical as consensus is reached from shared and contextualised dialogue that has been iteratively reasoned.

Seen from an argumentation analysis perspective, this public sphere reflects shared dialogue examining the grounds, warrants, and backing of knowledge claims where understanding for action emerges from collaborative scrutiny of statements, responses, and conclusions (Toulmin et al., 1984). This reflects Kant's notion of subjective self-realisation, although here it is shared subjective self-realisation about a common problem. From collective interrogation of topics by individuals with shared considerations it is possible to reach consensus on action that reflects participants and the reproduction of their input into shared reasoning, which leads to coherence between participants and the resultant action. Habermas sees this as symbolic reproduction of the participant lifeworld (a person's social and cultural meaning, understanding, and tacit knowing) and terms this 'communicative action' (Habermas, 1984, pp. 75-96; 1987). Within this, the lifeworld represents the site where knowledge claims relating to lived existence are interrogated, thus making it the location for assessment of all epistemological matters (Husserl, 1936).

To ensure validity in the agreements that arise from communicative action, this forum is rigorously formalised within linguistic and ethical obligations. Dialogical interaction within communicative action requires speech acts to

conform to conditions of respect and recognition, equality, inter-subjective mutuality, and freedom from coercion, deception, and self-delusion (Habermas, 1984, 1987, 1990, 1993). When these are fully present, all knowledge claims can be successfully interrogated through the reasoned assessment of their representative accuracy, contextual rightness, and personal authenticity, which reflects social relevance based on the lived experience of objectivity and subjectivity as the arbiters of knowledge (Kihlsrtöm & Israel, 2002).

2.3.1.2 Strategic action and instrumental reasoning

Contrasting with communicative action is strategic action. This emerges from material reproduction of the economy and state, and applies instrumental reason to achieve ends. It houses hierarchical power-based financial and technical orientations that implement pre-determined ends derived from specific interests (Habermas, 1984). It does not subscribe to understanding derived from a shared communicative forum with consensus, but rather preferences technical environments subjected to iterative means–end procedures that test warrants, generate ends, and assert knowledge. The action that derives from these sources is strategised for inherent non-communicative concerns; in other words it sets out to achieve particular purposes that are pre-established according to strategic needs. These are system based in origin, and reproductive of specific imperatives that aim to structure and organise society. Therefore the orientation towards action from knowledge generated via instrumental reasoning is termed strategic action (Habermas, 1984, 1987).

Decisions in this strategic environment are based on action resulting from analytical as opposed to holistic cognition. While this approach 'realises defined goals under given conditions' (Habermas, 1971, p. 91), the outcomes are valid only in relation to the truthlikeness of propositions assessed against alternatives. Because judgments about these choices are directed towards strategically beneficial outcomes, by proxy values and philosophical positions

underpin the structure of decisions within strategic action. Thus while instrumental reason orients action, it is ideology that approves or disproves means to ends and determines decisions. This ideology differs from that of communicative action where the lifeworld and its orientation to a meaningful whole act to structure judgments. These distinctions form the basis of the critical analysis models applied within this theoretical framework.

2.3.1.3 System-lifeworld interaction

Thus action for individuals and systems resides in interest orientations that generate knowledge through reasoning processes within communicative and strategic forums. These reflect lifeworld needs or system imperatives, which are mutually dependent processes with a variety of interactions. For example, the system requires lifeworld commitment to its strategies (e.g. agreement to use personal time to labour for businesses with strategic aims) and the lifeworld takes system materiality for its own needs (e.g. fiscal compensation for work to purchase goods to improve living standards). Thus the lifeworld legitimises system imperatives and the system provides societal stability. This is a dynamic relationship that can be modelled. To understand how the models that are applied here have developed, interaction between the system and the lifeworld is first visualised, as per Figure 2.1.

Here the lifeworld represents individuals using communicative action based on practical reasoning to understand lived existence, and the system represents the societal superstructure employing strategic action based on instrumental reasoning to deliver imperatives. Logic, ideals, and knowledge criteria exist within each, with communicative action attempting to expose and reflect on hidden assumptions to exist in freedom; whereas strategic action leaves these unexamined as they are irrelevant to its aims (Scambler, 2015).

Based on the content to this point, it is proposed that knowledge claims for CAM practice are formed within communicative environments of practitioner

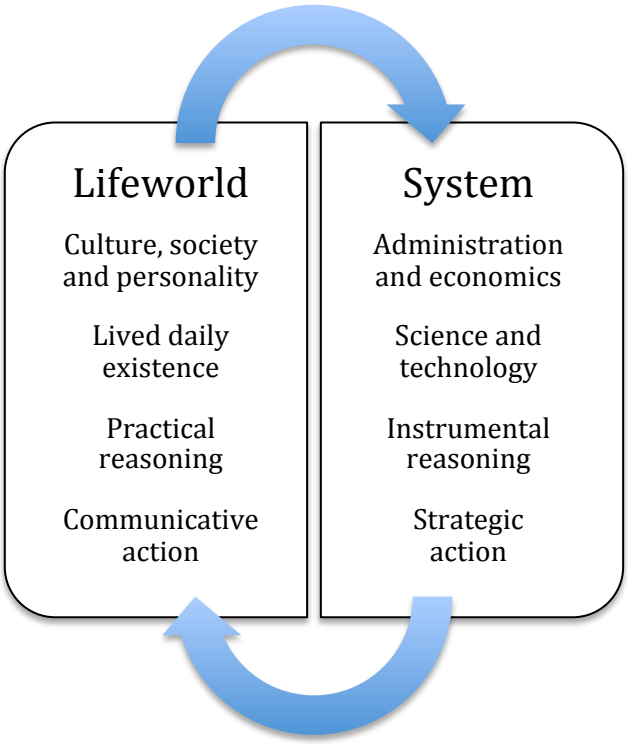

Figure 2.1: Lifeworld–system interaction model

lifeworld existence and EBM from controlled environments producing strategic imperatives. For CAM, lived communicative existence is the site of knowledge development and reasoning that originates from key areas of dialogic interaction: patient and practitioner; practitioner and peers; and practitioners and the profession. Figure 2.2 illustrates this.

This intersection of communicative forums holds knowledge of practice realities that shape the lifeworld of the practitioner. Thus knowledge claims for practice are developed and interrogated through a shared mode of reasoning about action. For the CAM practitioner, interactions with system imperatives are continual and, depending on their nature, there are numerous possible outcomes for practice. Because comparable and contrasting lifeworld needs and system imperatives occur, it is entirely possible that benign, tenuous, or fractious interactions may eventuate from the lifeworld–system interface, or in this case the CAM-EBM relationship.

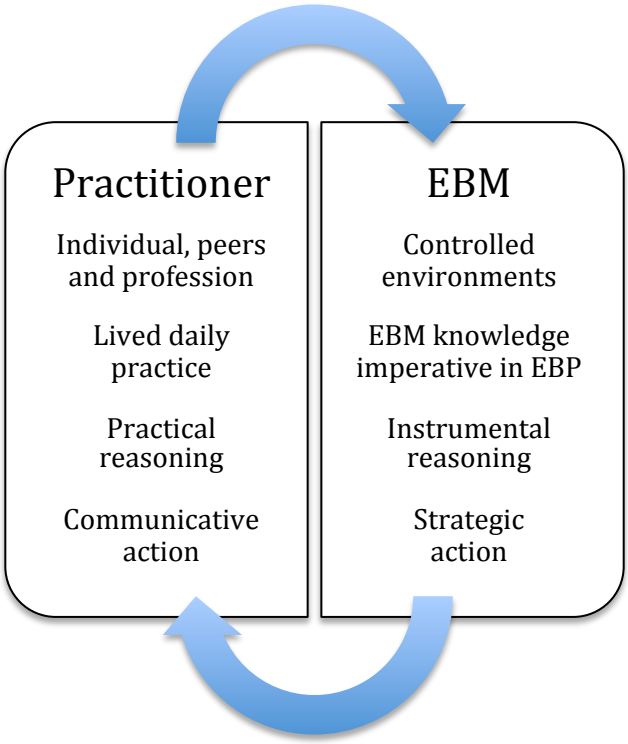

Figure 2.2: CAM practitioner–EBM interaction model

To demonstrate these consequences, three theoretical models with structural and reproductive components are developed that illustrate lifeworld existence and outcomes that arise from interaction with system imperatives. Within these, the horizontal axis represents culture, society and the individual as constituents of reality, and the vertical axis shows cultural values and norms, social integration, and socialisation as reproduction aspects of the lifeworld.

2.3.1.4 Modelling lifeworld–system interaction

Lifeworld interaction with system imperatives can be beneficial when the imperative is accepted into consensually communicated environments and successfully integrated into lived existence. This occurs when the ends of strategic action are openly stated and the instrumentally reasoned benefits within this match practically reasoned actions (Habermas, 1984). In such instances, when the relationship between the system and the lifeworld is straightforward and mutually beneficial, lifeworld integrity, and function are

normalised (Figure 2.3). Lifeworld disturbances are absent, and the structure and reproduction of lived existence are unhindered and free from coercion or manipulation (Habermas, 1987).

Figure 2.3: The balanced lifeworld model

If CAM practitioner lifeworld (i.e. the daily practice experience and all this entails) is represented in EBM outputs, then the outcomes of this interaction will reflect uninterrupted communicative action successfully interacting with system imperatives. In such instances those practitioners following EBM theory and guidelines will apply the available evidence base as best as possible within appropriate reasoning processes (Wardle, 2015). However, current EBM research outputs are confined to the investigation of isolated practice components within controlled environments through the application of instrumental reasoning to practitioner experience. Therefore the scenario of a balanced lifeworld is more likely to occur with strategic imperatives outside the EBM model, such as whole system research that is more able to reflect the clinical situation (Kessler & Michalsen, 2012; Ritenbaugh et al.,

2010). Therefore the balanced lifeworld model of the current CAM–EBM interface would seem to represent those practitioners with a similar philosophical and reasoning orientation to EBM.

The second model explores outcomes arising from conflict between the lifeworld and the system. In instances when the distinct nature of strategic action and its imperatives penetrate the lifeworld in an unwelcome manner, a disjunction occurs, termed the 'uncoupling of system and lifeworld' (Habermas, 1987). Because the communicative forum of the lifeworld is consensual, all knowledge propositions and judgments are made from collaborative dialogue in contextual situations. However, the system applies strategic imperatives derived from decontextualised processes to achieve specified ends. If these imperatives are authoritarian in nature or are colonising in intent, then the previously balanced relationship is altered.

This occurs when system imperatives attempt to gain legitimacy when they contradict the lifeworld. In such instances rhetoric can be used to induce acceptance, system resources of money or the media present the imperative as beneficial or necessary, or power and ideology force legitimacy. Acceptance takes place when the imperative infiltrates the lifeworld and its consensus-based decision-making process. Here the imperative becomes normalised, lifeworld communication becomes oriented towards this, and it gains reproductive capacity. This is colonisation of the communicative forum of the lifeworld to legitimate an intrusive or unwelcome imperative using 'systemically distorted communication' (Habermas, 1984, p. 332).

What is described here illustrates the Critical Theory proposition that ideology is applied to reason for specific ends aligned to certain interests. Within this model of lifeworld-system interaction these interests attempt to penetrate the communicative action setting through disingenuous means to manipulate consensus and cause integration of ideology. This extends the Marxian theory of false awareness of lived experience by describing strategic action infiltrating practical reasoning, to be perceived as normative even

though it is parasitic on reasoning. The problem for the lifeworld in this instance is that because the imperative is generated externally, it can distort normal communicative action and contribute to the generation of lifeworld unease. This occurs when instrumental reasoning infiltrates practical reasoning and implants ideological interests into dialogue. Beilharz (1995, p. 57) interprets this as the 'smothering' of communicative phronesis through colonisation by instrumental reason. The result is instrumental orientations overriding practical reasoning and 'uncoupling' of interaction. Figure 2.4 reveals possible outcomes from this (Habermas, 1987).

Figure 2.4: The colonised lifeworld model

The omission of lifeworld considerations by EBM means research exclusive to the contextualised realities of CAM decision making creates incongruence between practice and EBM knowledge said to represent practice. If such research is accepted as representative, colonisation may result in unsettling an individual's philosophical base. Schneirov and Geczik (2003) use this model to describe system imperatives overriding CAM knowledge and contributing to the depletion of meaning when CAM theories of disease aetiology are summarily dismissed. Jackson and Scambler's (2007)

interviews of acupuncturists find EBM is viewed as colonising due to its reductionist nature, lack of recognition of holism, and potential to negatively transform practice. Firenzuoli and Gori (2007) also note differences in the way CAM practitioners perceive risk related to plant medicines used in the traditional manner compared to those used within a scientific framework. Similarly, Doel and Segrott (2004) identify changes in relationship to signature materials of practice, due to their change in status from traditional medicines to dangerous products due to similar assessment.

Two themes emerge here: philosophical colonisation and reproduced perception of risk. When CAM is instrumentalised through philosophical reduction, feelings of loss of control of therapeutics and transformation of traditional knowledge into a reduced and mechanised form no longer truly representative of practice are documented (Singer & Fisher, 2007). Similarly, publications emphasising negative plant interactions with pharmaceuticals abound, mainly as case studies, leading to a high level of risk discourse that affects prescribing habits. However, the bulk of interactions are now to be reassessed due to poor study quality and recognition of immature knowledge in this area (Briggs, 2015). These examples show systemically distorted communication where philosophies are misrepresented and an inaccurate rhetoric of risk infiltrates lifeworld communication and ruptures tradition.

Interestingly, this systematic distortion also happens *within* the EBM model where Matheson (2008) and Barbour et al. (2016) identify pharmaceutical industry manipulation of controlled trials for commercial ends. The extent of pharmaceutical company influence over research conduct is well known, and the literature is replete with examples of data manipulation and withholding of negative studies. Thus this serves as a useful example from outside the CAM field of the ideological manipulation of instrumental reasoning within the EBM model to construct and disseminate inaccurate knowledge.

In the third model system imperatives are rejected by the lifeworld. This resistance to colonisation occurs when individuals come together in reaction

to the presence of illegitimate imperatives. The community and its lifeworld assess the feasibility of the proposed imperative and regard this as unsuitable in this instance. This leads to the rejection of system imperatives through communicative action that reinforces the validity of lived existence. Alternatives are developed through shared decision making that leads to judgments that are representative of reflexively reasoned meaning and the values of the lifeworld. Thus an alternative is presented or reproduced from an existing pool, and the lifeworld is reinvigorated through resistance, as per Figure 2.5 (Habermas, 1987).

Figure 2.5: The resistant lifeworld model

Resistance can be observed in instances of critique of EBM by communicative action via collaborative authorship and Delphi rounds (Jonas & Lewith, 2011; Ritenbaugh et al., 2003). The outcome of these is the unacceptability of the EBM model for multiple areas of CAM practice and the development of numerous alternatives with varying degrees of removal from EBM and increasing proximity to CAM. A profound example of the act of resistance to colonisation here is the development of the whole systems research model,

which represents a complete alternative to EBM methods that is representative of CAM, and by proxy the associated lifeworld.

Consequences that arise due to resistance from within the lifeworld are attempts at re-establishing the authority and legitimacy of the imperative. This occurs through restructuring the imperative, using system resources such as the media to reorient the perception of the imperative, financial incentives to reduce resistance, or power to force acceptance. There are distinct outcomes that arise from this, including acceptance of the ideology and renewal of authority; lifeworld ambivalence unwittingly facilitating domination by the imperative; selective integration of beneficial aspects of the imperative; or rejection of the imperative and its ideology and the reiteration of lifeworld alternatives (Habermas, 1987; Hetherington, 1998; Rosen, 1996). Each of these will contribute to a further cycle of system–lifeworld interaction that again situates responses within these models.

2.3.1.5 Comment on the Theory of Communicative Action

This explains the central theory as it is conceived by Habermas. At this stage this could suffice, but it would omit two important considerations that appear in the Critical Theory literature discussing his work. The first is the assertion that effective communicative action requires acknowledgment that '(r)ecognition is at the heart of the matter' (Calhoun, 1995, p. 212). This identifies the necessity to apply recognition as a prerequisite for ethical conduct within communication across knowledge interfaces. Second, as the role of CAM and EBM in healthcare is a politically and ideologically fractious phenomenon (De Vries et al., 2008; Saks & Lee-Treweek, 2005) the mutual respect and recognition of the epistemological justification of all parties entering into discussions of knowledge is necessary. These considerations identify important analytical aspects that contribute to the decision to apply theories of recognition and justification to support the primary theory. Due to the intricacies of the CAM–EBM interface these aim to meet the demands of the topic and enable a more complete analysis.

2.3.2 The Theory of Recognition

Axel Honneth (1995b, 2007, 2012) explains how instrumental reason blocks other forms of reason though the deliberate manipulation of recognition. This explains how strategic action misrecognises individuals and groups to exclude them from societal rights and equal participation. This is used as a method to manage difference of philosophy, epistemology, community presence or public trust via the strategic use of legitimation tools and gatekeeping activities to negate recognition and block difference.

In the CAM-EBM interface an example of this is the use of evidential styles and standards as gatekeeping tools in legitimisation arenas. In these instances legitimating authorities stipulate the requirement to take existing CAM knowledge and force this to fit the imperative of specific evidence generation methods to gain recognition (Derkatch, 2008; Derkatch & Segal, 2005; Iyioha, 2010; Jacob, 2015; Walach, 2009b). One place this tactic can be seen is within the public record containing submissions related to regulatory change for the CAM professions, where there is a history of targeted lobbying by select groups via the strategic use of evidential and risk criteria as a way to manipulate and minimise recognition for CAM to protect self-interests (Baer, 2009; Dew, 2003; Spedding, 2012; Stone & Lee-Treweek, 2005). This blocking of recognition has parallels to the behaviour described by Habermas in his model of the use of instrumental reasoning aligned to system resources within strategic action to reinforce imperatives. This shows the value and relevance of recognition theory to Habermas's modelling, and explains the potential for its integration within this theoretical framework.

Honneth (2014) says the negotiation of lack of recognition is best managed by ensuring the presence of mutual recognition between reasoning actors to guarantee a 'normatively regulated interaction with others' (p. 65). This is a basic issue of respect, and in instances where this does not occur, disrespect based on ideology and power are the most likely impediments that block this prerequisite (Honneth, 2007). To ascertain the presence of recognition, lack

or abuse of recognition, and resistance towards a lack of recognition, certain features can be noted.

When recognition is in balance, the qualities of reciprocated love, respect, and esteem emerge from mutual identification, acknowledgment, and recognition. In instances of abuses of recognition there tends to be lack of recognition, frank misrecognition, or negative recognition that manifest as inadequate acknowledgment of individuals, their inter-subjective structures and their role in society. These contribute towards feelings of disrespect, misrepresentation, and domination, which can be ascertained from analytical procedures. When there is resistance to a lack of recognition there are symptoms of self-confidence, self-respect, and self-esteem, which lead to strong self-recognition (Honneth, 1995b, 2007, 2012; Ikäheimo & Laitinen, 2007; van den Brink & Owen, 2007a). These are matched to Habermas's models of system-lifeworld interaction and these seamlessly integrate into the theoretical framework.

2.3.3 The Right to Justification

Rainer Forst's (1996, 2007, 2013, 2014) focus is reason and its role in justice and toleration in society. He investigates hindrances to justice and the lack of rational forms of social order through a scrutiny of practical reason, how this is classed as unreasonable or irrational, and the unjustifiable use of dominative reason. Intrinsic to his work is a reflexive critique of justification underlying societal inequality and the requirements of justifications for claims and warrants. His work output analyses communicative action within the context of the fundamental right to justification, the duty that exists to justify action and the right to reject unjustifiable conditions.

This method of critique demands interrogation of justifications that 'determine the limits of what can be said and thought and, above all, of what is accepted and acceptable, what is justified' (Forst, 2014, p. 103). For example, when ideology structures boundaries to confine reason and impede

engagement in undistorted communicative action this indicates that '(h)aving power means being able to use, influence, determine, occupy, or even close off the space of reasons and justification of other subjects' (p. 9).

Within the CAM-EBM interface, examples of justification issues include the use of incongruent justificatory criteria to validate EBM evidence for CAM when it lacks model or external validity (Anlauf et al., 2015); when practically reasoned CAM responses to such inappropriate justification are summarily dismissed through unjustified instrumental reasoning (le May & Gabbay, 2011); when CAM is critiqued based on incorrect interpretations of core principles underlying reasoned action and justifications (Mertz, 2007); and when CAM therapeutic decision-making processes are queried for validation from the perspective of poorly justified assertions (Gilmour et al., 2011; M. Little et al., 2007). These issues intersect with the ground covered thus far, which explains the capacity of this theory for this work.

Similar to recognition theory, several points of reference exist for analysing justification. These include review of non-justifiable relations, critique of false or ideological relational asymmetries, interpretation of the motives underlying the presence of unjustified reason, analysis of the autonomous discursive practice among those affected by injustice, and establishment of a justified rationality able to withstand reflexive critique (Forst, 2014). Each of these can be integrated into the system–lifeworld interaction models as equitable justification, inappropriate coerced or forced justificatory criteria, and resistance to justificatory propositions where alternatives are consensually established. Accompanying symptoms include feelings of justification, domination, or independent confirmation.

2.4 Constructing the theoretical framework

Thus the works of Habermas, Honneth, and Forst are integrated into a single model to be used within analysis of the findings of this thesis. It is the Theory of Communicative Action that forms the basis of this analysis; the Theory of

Recognition and the Right to Justification support and extend this. From this, an integrated analytical model is developed, as per Figure 2.6 (Forst, 1996, 2007; Habermas, 1987; Honneth, 2012; van den Brink & Owen, 2007a).

		Structural components		
		Participant in clinical practice	***Society surrounding participant practice***	***Participant as practitioner***
Reproduction processes	***Cultural reproduction***			
	Social integration			
	Socialisation			
	Recognition			
	Justification			

Figure 2.6: Integrated analytical model

This is based on the frameworks reviewed so far, with the additions of recognition and justification as reproduction processes. These are located in this position as they are aspects of the CAM practitioner lifeworld that are present within the literature. They are commonly discussed as issues of lived daily practice that have an effect on the capacity to engage with society

surrounding practice, to practise as fully as possible, and to express a self-identity as a recognised practitioner with a justifiable position in society.

No theory is faultless, and criticisms and limitations of the theoretical framework used here require recognition, consideration, and negotiation.

2.4.1 Addressing criticisms

In terms of the Critical Theory applied to this thesis there are five criticisms that require consideration. These are (1) the alleged anti-science and political attitude of Critical Theory; (2) the effectiveness of critique per se; (3) the assertion of a universalising discourse within Critical Theory; (4) fixed boundaries between the knowledge interests and system and lifeworld; and (5) the potential for fallacies and faults to emerge from practical reasoning.

(1) Morrow and Brown (1994) say Critical Theory promotes an anti-scientific attitude, an allegation that can be traced to difference between the critical theorists and the critical rationalism of Popper (Adorno et al., 1976). Here disputes arose as Popper (1959) asserted the only feasible knowledge claim was one capable of withstanding attempts at falsification through controlled testing and error elimination, and such knowledge could educate society away from irrational beliefs and steer it towards a validated reality. The critical theorists regarded this as instrumental reasoning reinforcing the existing social order through a scientific form of knowledge domination. This dispute endured and the final consensus was that there were semantic differences and Popper viewed philosophical and social theory through a lens that collapsed to positivist philosophy (H. Wilson, 1976). This represents disagreement about knowledge and its legitimation, which can ideally be negotiated by pluralistic methods where distinct philosophies about the world are recognised and respected (Bohman, 1999). This approach is yet to be seen to be effective in the context of healthcare knowledge (Han, 2002).

(2) Schecter (2012) describes the central problem for Critical Theory as the inability to provide rigorous critique of knowledge without reproducing the premises of that knowledge. This is exemplified where dominant knowledge holders argue against critique by conflating their form of knowledge with common sense and reason while positioning the critique as nonsensical and irrational. In this situation, reproduction of the dominant system is often required so that recognition and consideration of the critique by those within the knowledge system under review can take place. This represents the necessary reproduction of strategic action by a critical theorist, which can be neutralised by ensuring the critique is reasoned, justified, and able to be recognised without distortion or deviation. In such instances the proposed alternative to the imperative under critique, if one exists, requires rigorous development to create resistance to counterargument.

(3) Critical Theory faces assertions of inappropriate universalising of reason and subjects. These claims have emerged from the postmodern worldview and focus on two main areas.

Critical Theory is accused of a totalising perspective that presents a grand narrative with a universal validity. This assumes shared identities, culture, and gender; generalises interests, goodness, and reasoning; and combines consensus and language into utopianism. This develops an unwarranted rationalised discourse of the public sphere, lack of acknowledgment of difference, and the privileging of an argument structure that omits other reasoning processes (Alvesson & Sköldberg, 2009; Cooke, 2012; Honneth, 1995a; Hoy & McCarthy, 1994; Lyotard, 1979; McKenzie, 2014; Sinnerbrink, Deranty, & Smith, 2006). These are significant challenges because, as Honneth (2004) states:

> The idea of a historically effective reason, which all of the representatives of the Frankfurt school, from Horkheimer to Habermas firmly endorsed, becomes incomprehensible if one can no longer recognize the entity of a single rationality in the diversity of established convictions (p. 337).

Concomitantly, due to the reliance on language in Habermas's theory, there is a lack of paralinguistic features, which omits areas of lived experience external to language. Thus there is a bias towards dialogue that ignores the possibility that instrumental reasoning may bypass communicative agents and act external to language, for example by taciturn lack of recognition (Johnsom, 2006; Niemi, 2008; Weinert, 1999).

In answer to these criticisms, it is recognised that Critical Theory can under-appreciate existing critical stances within communities, the critical character of some social norms, and the linguistic and paralinguistic acts of criticism within and across distinct philosophies (Bronner, 2011). As members of an intellectual movement attempting to develop a unified grand theory, the critical theorists are susceptible to holding the presuppositions contained in these accusations. These were positions of their time; they are not defended here but rather are addressed in relation to the current need for critique.

Strong and effective critique within the postmodern ethos is difficult to develop as this theory 'flattens the internal contradictions and tensions of modernity to the point where the legacy ceases to challenge, to provoke, and to probe' (Benhabib, 1996, p. 330). As postmodernism tends to apply a relativist perspective to society, there is the need to bypass this to isolate the knowledge preferences underpinning power and lifeworld imbalances. This requires that knowledge be seen not as viewpoints with neither superior nor preferential validity, but rather as perspectives that hold weight and provide power to specific interests. If this approach is accepted, it then remains that some type of cohesive action is required to protect the lifeworld from these interests.

The theories applied in this framework address this by valuing the use of reason situated in shared action derived from, and justified by, mutually recognised individuals. Therefore, this thesis takes the perspective that communicative action can transcend coercive and dominative techniques and engender resistance. Intrinsic to this is the recognition of both commonality

and difference (e.g. whether philosophical, epistemological, rational, cultural, gender, linguistic, or paralinguistic) that encompasses all social groups. Essentially this thesis is grounded in the attitude that shared values from those partaking in action (in the present case, the delivery of CAM healthcare) can unite divergent reason via common voicing of lifeworld and resistance, which is of greater consequence than solitary pockets of defiance.

(4) Habermas's separation of knowledge interests is criticised for its antirealist stance, and differences between the system and lifeworld spheres are said to be restrictive (Habermas & Lenhardt, 1973; Weinert, 1999). In response, the point must be made that this thesis is examining the application of a model of knowledge to a work practice with a differing philosophical viewpoint from that model. This is about the dynamics located at the interface between the holders of a certain philosophy, their work practices, and the model and its philosophy. It does not set about to deride realism or the usefulness of science as 'an explanatory store' (S. Turner, 2003). It is the manipulation of instrumental reason by ideological interests and the imposition of this across domains that is under investigation; not realism as a philosophy, which has intrinsic value. This extends to the interface between the system and the lifeworld, which can be highly porous and exceedingly interactive. There are many examples where crossover of the system into the lifeworld (here, EBM into CAM) is beneficial; such as the use of phytochemical analysis techniques (i.e. laboratory science) to better understand plant medicine applications.

(5) Cautions related to the reliance on practical reasoning lie in the potential for the consensual development of fallacies. In situations of discourse ethics and good practical reasoning these are unlikely to develop, but there is the possibility this will not be the case, and underdeveloped argumentation may occur. Such fallacies include 'appeal to the people' where propositions are said to be true because people believe it, and 'appeal to authority' and 'appeal to tradition', where experts and history take precedence (Bowell & Kemp, 2009). Similarly, if communicative action lacks criticality or depth of

reasoning it is possible to integrate philosophical or intellectual 'Achilles' heels into reproduction that weakens the representation of the lifeworld. This introduces susceptibility to infiltration from strategic action; for example the reproduction of a poorly explicated vitalism consistently enables attack from critics, which can be difficult to adequately refute. This reiterates the stipulation that communicative action must have considered and rigorous input from all participants.

2.5 Conclusion

These are the features the chosen theoretical perspective brings. The findings reviewed in Chapter 6 will be subjected to the theorising outlined here to provide analysis through models that can deepen understanding. Thus the Theory of Communicative Action combined with the Theory of Recognition and the Right to Justification will enable a deeper mode of analysis than the data analysis methods alone, in order to answer the research question in detail.

Habermas, Honneth, and Forst belong to a distinguished lineage of critical theorists and they reflect, reinforce, and reinvigorate a tradition of critique that has travelled alongside Enlightenment reason since its inception. The use of their theories is appropriate and applicable to the issues confronting the interface between CAM and EBM, and the comprehensive nature of their scholarship marries well with the aims of this research project.

This theoretical framework serves as a tool to assist with understanding the participants who partake in this research. It is not without criticism, and it is unlikely to provide findings that are immune from contestation. Its use is undertaken with this in mind, and the outcomes that eventuate emerge despite the noted imperfections. This is one possible way of analysing participant data, and it does not represent fact or finality in any way.

This chapter has elucidated key theoretical concepts that are to be applied to the discussion of the research findings. The reviewed material shows how critique of reason and knowledge can proceed; the focus on a systematic analysis of reason and its use by specific interests is especially relevant. Identification of instrumental reasoning as the architectural tool of EBM is fundamental to the force of analysis; communicative action, recognition, and justification allow a thorough investigation of this and the response to its presence and potential manipulation. The applied model of analysis can identify and examine a mutually beneficial relationship, a colonised situation, or reasoned resistance.

CHAPTER 3: STRATEGISING RESEARCH DESIGN

The philosophical premises and reasoning processes within CAM and EBM lead to the former applying phronesis within a clinical method oriented to action based on contextually bound situations, and the latter employing techne that is operationalised within controlled environments using specific methods oriented to objective outcomes. To enable analysis of the interface between these markedly distinct positions requires considered planning.

The boundary between these two positions is replete with interactional tension. This arises due to a variety of contributing causes that take their grist from stances towards philosophy, knowledge, and reasoning in the dual context of ongoing civil patronage and established state legitimisation. The underlying feeders for the various conflicts reside within ideological positions and it is because of this that the technique of critique within a Critical Theory framework is used here for analytical modelling. The integration of this is explained, as is the collection and analysis of data for use within this model, which requires a carefully thought-out research design.

This chapter describes the research approaches that can be used to meet necessary criteria. These are deliberately chosen theories and methods that function in concert and correspond to the focal point of the research; namely the prioritisation of the voice of the CAM practitioner. Thus the content of this chapter orients to, and pivots off, this as the fulcrum for research design decision making. Accordingly, what is described here are the main design considerations, the methodological orientation, the methodology that provides the theory, and the methods that serve as tools for data collection and analysis. Additional content relates to the necessities for conducting ethical and quality research, and this is completed with a defence against criticism and alternative design possibilities.

3.1 Research design considerations

The aim of the research design is to enable access to the practitioner experience of the dynamics that exist at the CAM-EBM boundary. This is a space where the formation of practical reason can be understood and its role in clinical decision making in the context of EBM clarified. However, this is not an unconstrained or neutral space, and the design must illuminate and analyse practitioner construction and use of reasoning while implementing a critique that can test for manipulated or distorted reasoning processes (Anfara & Mertz, 2006). Based on these requirements, there are four considerations for the design decision-making process.

3.1.1 Exploring experience

The experience of developing practical reasoning within the practice of CAM is associated with the production of action relative to a contextualised problem, with the involved knowledge inextricably bound to the knowledge holder (Schwandt, 2007b; Tierney & Sallee, 2008). This refers to the tacitly held 'knowing-how' and not the explicitly communicated 'knowing-that' (B. Smith, 1988). This dissimilarity is vital to note as it creates epistemological and methodological divergence in design by focussing on understanding tacit experience rather than explaining explicit techniques (Gadamer, 1983; Habermas, 1984; Polanyi, 1973). Therefore, exploring experience in this context requires ways of interacting with this tacit 'know-how'.

3.1.2 Understanding experience through language

Tierney and Sallee (2008) identify tacit knowledge developing from reasoning in interaction with one or more subjects, which O'Brien (2001) says leads to 'the art of acting upon the conditions one faces in order to change them' (para 8). Thus a design consideration lies in the recognition that for CAM practitioners who are applying tacit knowledge, reasoning occurs through the act of linguistically mediated consensus with other

people, making language the medium with which to understand experience (Habermas, 1984, 1987; Wittgenstein, 1953). Therefore the design must create access to the linguistic setting in the shared and paired information gathering context.

Importantly, there are dissimilarities in the perceived function of language between research that seeks to understand or to explain. The former focuses on unique utterances and explores the subjective ways these are shared and developed into meaning-based reason and action, whereas the latter investigates a stable meaning and action communicated via linguistic signs with designative functions explained by pattern recognition (Popper, 1959; Rumfitt, 2005; Stanley, 2008). These differences contribute to distinct approaches to design in instances where language is the analytical focus, notably due to contrasting perceptions of the ways to access an individual's dialogical reality and how that reality can be revealed. Within this work, language is perceived as 'the medium in which understanding takes place (in) contrast to language as a mere instrument of information' (Lafont, 1999, p. 92). Thus the design incorporates techniques to gather and analyse language from inter-subjectively communicated utterances.

3.1.3 Integrating criticality

The theoretical framework perceives knowledge to be enacted across society in ways that can release or constrain. Reasoning and knowledge synthesise within language that contains 'counterfactual elements that allow for a potential questioning of any given factual agreement' (Lafont, 1999, p. 123). These elements can appear as distorted, incoherent, or contradictory utterances that can be revealed through statements of exclusion; vigorous responses to seemingly innocent phrases; the use of terms that display cognitive infiltration when asserting agency; and a variety of other linguistic features that may reflect speaker unease (Budd, 2008; Ikäheimo & Laitinen, 2007; Morrow & Brown, 1994). The potential for these to occur have already been thoroughly discussed and the literature reveals the CAM-EBM interface

holding such features. This means techniques enabling critique are integrated into the design process.

3.1.4 Reflexivity

Inherent to this research is the acknowledgment that 'evidence never speaks for itself' (Kamberelis & Dimitriadis, 2011, p. 547), a statement that proposes that values, subjective cognition, selectivity of perception, politics, power, ideology and much more lie between reality and the evidence that attempts to represent that reality (Alvesson & Sköldberg, 2009). As such it is recognised that a value-laden researcher is an active component within all inquiry, and because of this the reflexive recognition of these values is essential (Denzin & Lincoln, 2011a; Guillemin & Gillam, 2004). This refers to the attention that is brought to the researcher's role and the implications this may bring to the research due to assumptions about the world, how this world may manifest, and the way this world can be known (Dowling, 2006).

Reflexivity is integrated through three stepped, researcher-held stances and one deliberate research design decision. These are (1) accepting that the researcher is a member of the participant professions and as such holds an insider position that can lead to depth of subjectivity and deficit of objectivity (Jarvis, 1999); (2) tolerating this within the recognition that - to fully enable participant voice, avoid cognitive dissonance, and integrate theoretical requirements - subjective interaction between researcher and participants is prioritised over objective examination (Denzin & Lincoln, 2011a; Haraway, 1988; Nagel, 1974, 1986; Polanyi, 1973; Quine, 1951); (3) incorporating these steps with the explicit recognition that participants apply pluralistic epistemologies with distinct beliefs that can be conceptually coherent and rationally defensible (Bohman, 1999; Novitz, 2000; Schwandt, 2000); and (4) noting that due to these considerations the research design structure will enable their integration and management.

Thus experience, language, criticality and reflexivity guide research design decision making. These necessitate theorisation by methodology and the use of methods that enable data collection and analysis within these guidelines.

3.2 Methodology

There are multiple methodologies that can address the research design requirements. The priority in choosing any one of these is that it fits the purpose of the research project, provides the necessary conceptual frame and tools, and is congruent with the position of the researcher and the researched. Similarly, because methodology is the 'bridge between theory and method' (Hesse-Biber & Leavy, 2006, p. 20) it must also clearly relate to the theoretical framework. To encapsulate these requirements, and to shape ensuing design decisions, an overarching methodological orientation guides the applied methodological theory.

3.2.1 The methodological orientation

A clear methodological emphasis guides the processes that allow phenomena to be revealed through the provision of chosen techniques. Qualitative research fulfils this role here, and is an approach to understanding the world that is often discussed by juxtaposition to quantitative research. This is a comparison that is instructive as it provides distinctions that clarify design decisions. The differences between these lie in non-standardisation and prioritisation of the research participant perspective through qualification, and standardisation and a focus on researcher categorisation of data by quantification. Neither qualitative nor quantitative research is appropriate in all instances, and each of these has strengths and weaknesses. For this project, qualitative research is best able to address the discussed requirements, primarily because it has a history of framing methods that support understanding arising from mutually shaped realities (Alvesson & Sköldberg, 2009; Maykut & Morehouse, 1994).

A feature of qualitative research, in contradistinction to quantitative approaches, is insistence on the primacy of reflexivity within all processes. This is 'an ongoing interplay between theory and methods, researcher and researched' (Hesse-Biber & Leavy, 2006, p. 5). Here the theoretical framework, data collection and analysis, position of the researcher, and role of the participants are simultaneously recognised and situated within the research design. There is also an emphasis on an idiographic stance, meaning the unique is prioritised and each individual or group of individuals is recognised as holding contingent knowledge shaped by their relationship to the larger world (Denzin, 2001). There is awareness and recognition of values and presuppositions within this contingency, making it necessary for the researcher and participants to collectively clarify viewpoints to ensure their accuracy. Consequently, qualitative research is inherently collaborative and is focussed on the authentic interpretation of any given situation.

A notable strength of qualitative research lies in its ability to explore and illustrate situations in depth and to develop understanding not possible by other means. Conversely, because inquiry is idiographic, all findings remain context sensitive, lack generalisability, and are largely valid only within the data collection environment. This is a weakness that is addressed through two mechanisms in this work: (1) repeated comparison across the data and between the literature, data, and theoretical framework to develop consensus across multiple sites; and (2) an audit trail recording decisions made throughout the research process to allow for reflexive theorising against earlier pre-decision points (Babbie, 2016; Melia, 2010).

This methodological orientation shapes design direction, and to fully incorporate the conceptual basis of qualitative research, a resultant methodology that is able to integrate with this and sufficiently direct further design choice is selected.

3.2.2 The methodological theory

Gaining understanding from participant language is the aim of this design, and there is the need to ensure the methodological theory can accommodate this task. This is clearly not a role for an observational methodology, as this does not achieve the necessary engagement required to meet the described qualitative demands. To understand phenomena in conjunction with others, as required here, compels interpretation; therefore the principal obligation is the understanding of meaning as opposed to explanation of action. Critically interpreting the dynamic and contextually dependent lived experience is also a consideration requiring integration.

Hermeneutics is a methodological theory that recognises the primacy of language. Its core utility is the use of interpretation to understand and translate meaning and experience in its various forms (e.g. spoken word, text, song, visual representation of linguistic signs, and spoken embodiment). Hermeneutics achieves this through methodological branches that turn towards either subjective or objective needs (Ramberg & Gjesdal, 2014), which Alvesson and Sköldberg (2009) explain as reflecting either 'the understanding of underlying meaning (or) the explanation of causal connections' (p. 91).

The remarkable ability of hermeneutics to bifurcate in this way leads to either qualitative subject-subject or quantitative subject-object orientations. These are termed alethic and objectivist hermeneutics, with the former aiming to understand concealed meaning in a world shared between the interpreter and the interpreted. Compared to the latter, it is this form of hermeneutics that is used in this thesis. Its role as the methodological theory is to provide structure to the data collection and analysis procedures, and ensure the interpretation of language is not merely reading and thinking about a superficial interpretation of words. In a manner similar to critique, there is an evolution to this methodology that explains its desirable features, and there are four key characteristics that form the basis of the applied form.

3.2.2.1 The hermeneutic circle

Hermeneutics has a history of use in the interpretation of scripture and the ancient classics; a largely idiosyncratic process derived from a diverse set of theoretical orientations. Schleiermacher (1985) collated these disparate conceptions into a unified theory for understanding linguistic meaning as opposed to interpreting only specific texts. Building on the much earlier work of Spinoza (1958 [1670]) who recognised the intricacy of text development, a primary aim for Schleiermacher was to ensure the integration of the milieu of textual origins. For example, it was necessary to know a text's location within a social or political environment, its relevance to other texts from the same period and the author's philosophical orientation, and so on.

This concept of the interrelationship between the text and its origins was not new; for example to understand a biblical verse it was known that it was necessary to understand the context of the Bible. This interconnectedness means the whole of the text is intimately related to and forms the text parts, and when these connect they supplement and reinforce the ongoing interpretive process, as per Figure 3.1 (Ramberg & Gjesdal, 2014) where a circular method is depicted. Due to this movement of hermeneutics away from a text-only focus towards understanding the meaning of language, this hermeneutic circle becomes more of a spiralling interpretive undertaking than the perpetual circular action implied by the name. Instead of consistently reiterating the part to the whole in a vicious circle, this newer style of interpretive relationship creates engagement with new meaning each time, causing an increasingly deeper interaction to take place.

This is the creation of an ongoing comprehension of the whole that leads to increased understanding of the parts, and on to a deeper understanding of the whole, then to a revised comprehension of the parts, and so on. Thus the action spirals forwards as opposed to remaining looped.

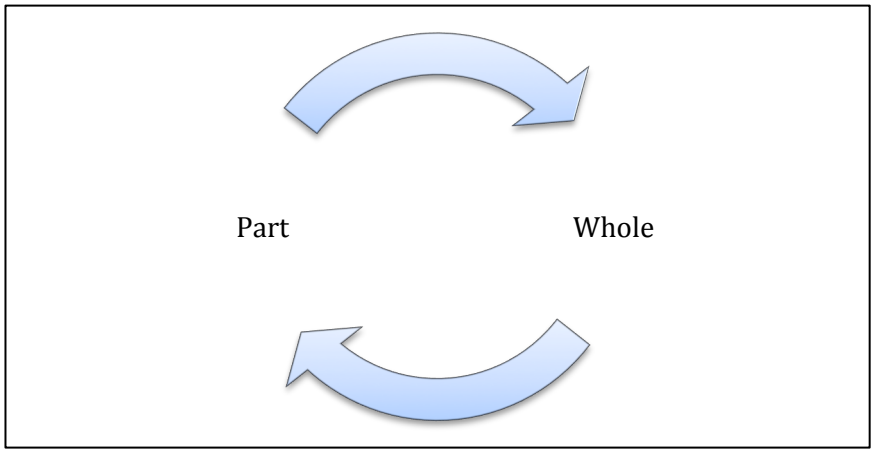

Figure 3.1 The hermeneutic circle

3.2.2.2 Foreknowledge

The concept of the hermeneutic circle is extended by Heidegger (1962) who formulates ontological and existential hermeneutics with lasting influence. *Dasein,* or 'being-in-the-world', is argued as a state of presence, engagement and understanding with one's surroundings. This is an intractable aspect of existence, and humans engage with this every moment of their lives to comprehend reality (Heidegger, 1985). The implications of this are that *Dasein* interprets an experience that becomes embedded in being. The understanding and experience associated with this then presuppose new *Dasein*. This means that what is learnt as a consequence of perpetual being becomes what is known in the context of contemporary being.

This is termed foreknowledge, and is a 'reflective consciousness' (Ramberg & Gjesdal, 2014, para 31) that represents self-understanding based on past experience combined with understanding created by current being-in-the-world. This builds on and is merged into the hermeneutical circle, as per Figure 3.2. This leads to recognition that the author of the text under interpretation brings more than the immediate expression of their existence to the text. Thus the text can never be objectified as a static representation and is instead a contextually developed entity with ontological status.

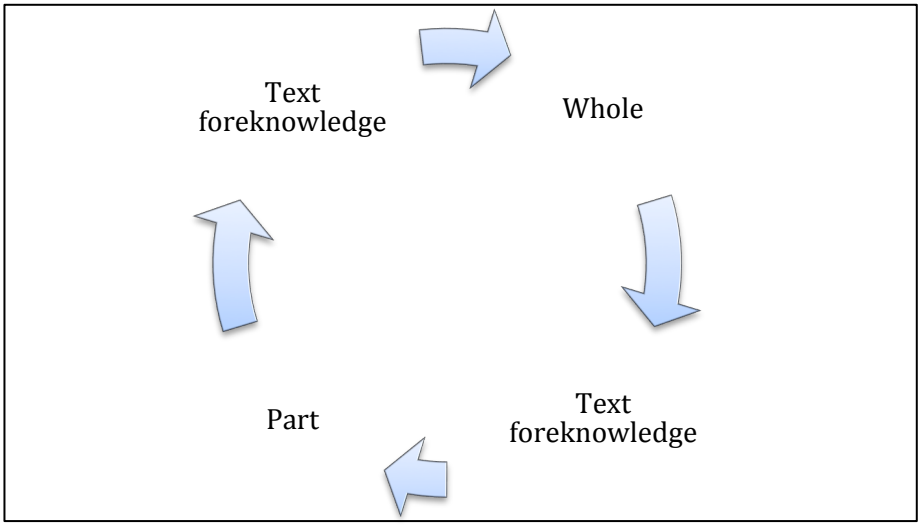

Figure 3.2: The hermeneutic circle and foreknowledge

3.2.2.3 The fusion of horizons

Gadamer (1976) further extends this by proposing that interpretive understanding demands review of knowledge sourced from *Dasein* and merged with historicised existence. Every facet of life has presence and being; thus historicity, temporality, and the presuppositions these carry are integral considerations for interpretation. This means texts are developed at a certain time, change over time, and any interpretation is temporal and relative. Thus any given interpretation is differently understood in the present compared to the time of inception and the period between.

Because text emerges from *Dasein*, interpretation and temporal relations, the applied language has vibrant being-in-the-world as much as the creator of that language because it exists separately from its interpreted self. This extends *Dasein* and foreknowledge by providing epistemological status to language. In other words, the text is knowledge in itself and the tradition the text carries is alive (Ramberg & Gjesdal, 2014). This means that this form of hermeneutic theory provides the text with ontological *and* epistemological standing; meaning language exists and carries being and knowledge, which, importantly, explains why words can have and reproduce power.

The consequence of this is that foreknowledge of the text inevitably intersects with interpreter foreknowledge. Gadamer terms these horizons, or vistas of knowledge, that are not to be purged in attempts to reach objectivity but are to be embraced through their fusion. Here the interpreter identifies the text foreknowledge and fuses their own foreknowledge with this to strengthen interpretation, as per Figure 3.3. The concept here is that the understanding within the text and self-understanding cannot be separated.

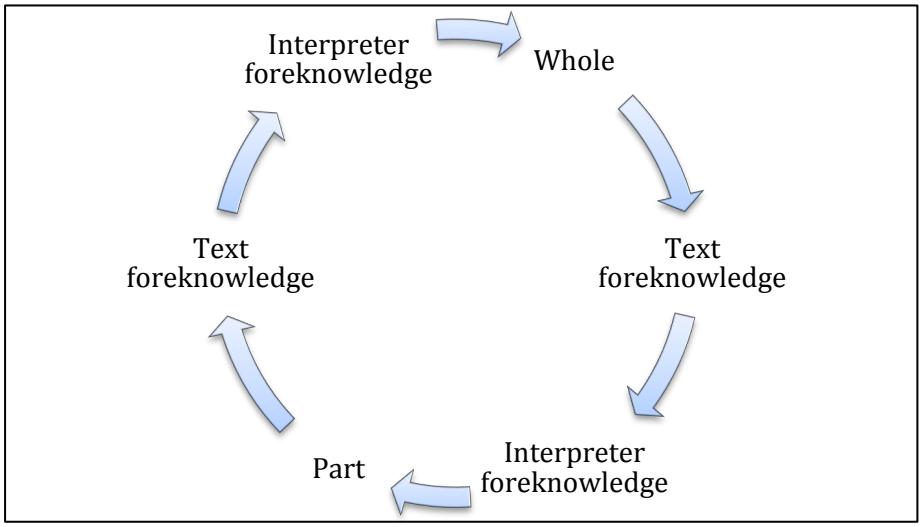

Figure 3.3 The hermeneutic circle and the fusion of horizons

The fusion of horizons is perceived as a tacit and phronetic process bringing an additional reflective component to the hermeneutical circle that increases interpretive quality. To implement this technique requires consistent attention within a reflexive consciousness.

3.2.2.4 Critical distance

Habermas (1985) takes issue with this form of hermeneutics and asserts it is politically naïve as it overlooks ideological penetration into social worlds, specifically the lifeworld.[4] In brief, it is critique that is needed to bring

[4] See How (1995) for a thorough review of the intricacies of the debate between Habermas and Gadamer.

hermeneutics into full proficiency as the interpretive tool of communicative action because all being-in-the-world is subject to emergent conception that can be manipulated. Ricoeur (1974, 1981) agrees that hermeneutics lacks critical depth because, as the critical theorists note, distorted meaning can reside within the linguistic expression of experience. Thus marriage between alethic and critical hermeneutics is necessary to enable analysis of distortion within language that is the medium of ontological and epistemological being.

This requires space between the interpreter and the language under review so a critical stance can be introduced. This is called 'distanciation' (Ricoeur, 1981, p. 131) and it reflects the insertion of what is termed the hermeneutic arc. This uncouples subjective interpretation and critique, and introduces distance to pinpoint distorted meaning by assessing for incongruity between the language and the foreknowledge under review. Once distance is achieved, critique can be applied to assess for manipulated reasoning within the communicative sphere. Figure 3.4 shows the point of insertion of critical distance within the hermeneutical circle, although the precise positioning of this can vary depending on the focus of critique.

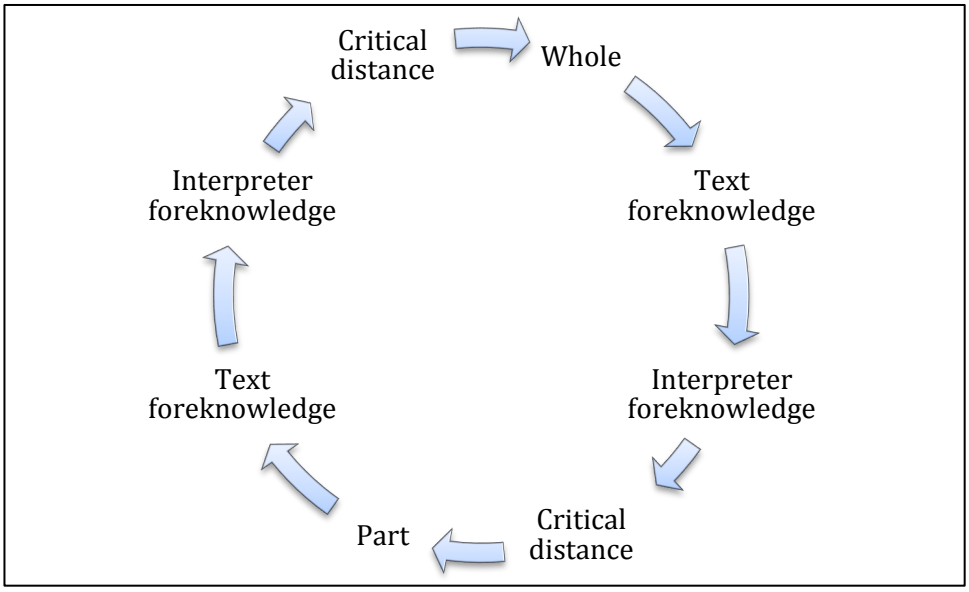

Figure 3.4 The hermeneutic circle and critical distance

These features guide interpretation within groundings that are congruent with the framework and requirements of this project. This methodological model is extrapolated to the specific needs of this work, and Figure 3.5 shows the relationship between the research participants and foreknowledge (practitioners and their practice-based experience), foreknowledge of the researcher (reflexive insider status), application of critical distance (analysis via critique and Critical Theory), and the transcript as the text with its whole and parts (transcribed data collection). This illustration represents the guidelines for the use of hermeneutics in this work.

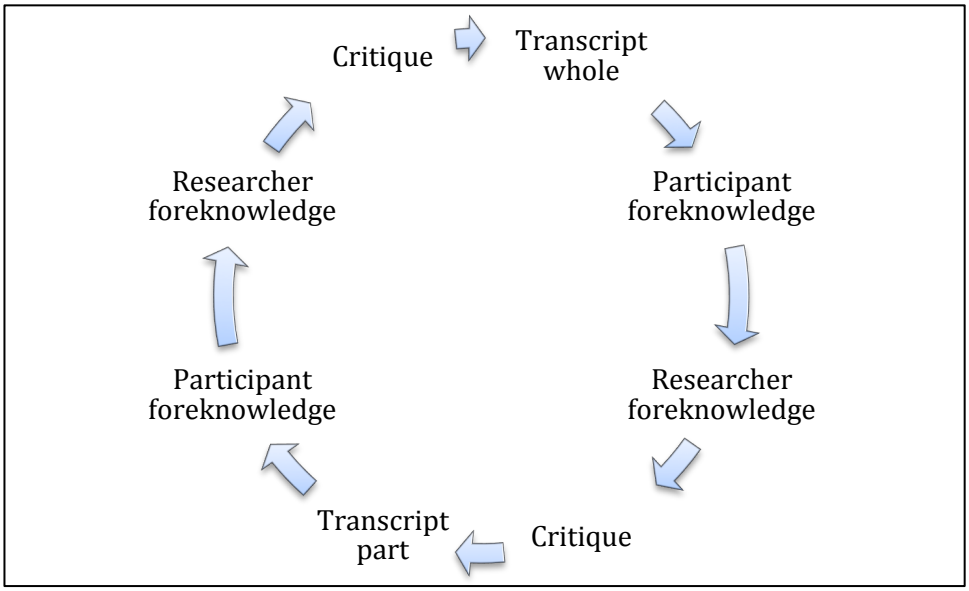

Figure 3.5 Hermeneutics as the thesis methodology

Currently this methodological theorisation takes place within a structured research umbrella. This now requires particular frameworks to implement hermeneutic requirements within data collection and analysis. From this point it is possible to select appropriate methods that can comfortably fit within this framework and advance the research design.

3.3 Methods

Research methods are structured approaches to capturing and analysing data. They vary in their arrangement and capacities, and specific methods are

chosen depending on the applied theory, the research question, and the literature findings. Thus Critical Theory, qualitative research, hermeneutics, and a focus on language orients towards a certain set of methods.

Emergent possibilities are extensive and these require significant refining to ensure correspondence between capacity and requirements. An aspect of qualitative research that benefits this contemplation is the recommendation to use multiple methods to address the various shortcomings of single methods (Ritchie, 2003). This refers to the concomitant or sequential use of more than one method to capture different datasets, analyse and triangulate findings, and increase trustworthiness (Morse, 2003). This facilitates the incorporation of various techniques through *bricolage*, loosely translated as the use of multiple methods to fulfil the complexity of research requirements (Denzin & Lincoln, 2011a).

This design strategy means complementary (i.e. able to balance and support one with the other) methods are needed. This refines choices while ensuring ample breadth remains to meet the stipulated requirements. Accordingly, the following choices are made to guarantee (1) testing of the outcomes of the literature review via a *focus group* method enabling the expression of shared perspectives; (2) discussing the findings with individual participants via in-depth structured *interview* methods; and (3) triangulating these methods against the literature, the theory, and the reflexive researcher to provide more rigorous data collection and analysis than either method alone (Hesse-Biber & Leavy, 2006; Ritchie, 2003).

Thus focus groups and interviews are applied and Figure 3.6 shows the integration of these into the data management process. As this illustrates, the data collection methods are punctuated by two phases of thematic analysis, one of discourse analysis, and a final theoretical analysis. Each data collection method is explored and rationalised in the ensuing section and the data analysis methods are briefly discussed through a general overview of their capabilities. Greater detail about these is provided in Chapters 4 and 5.

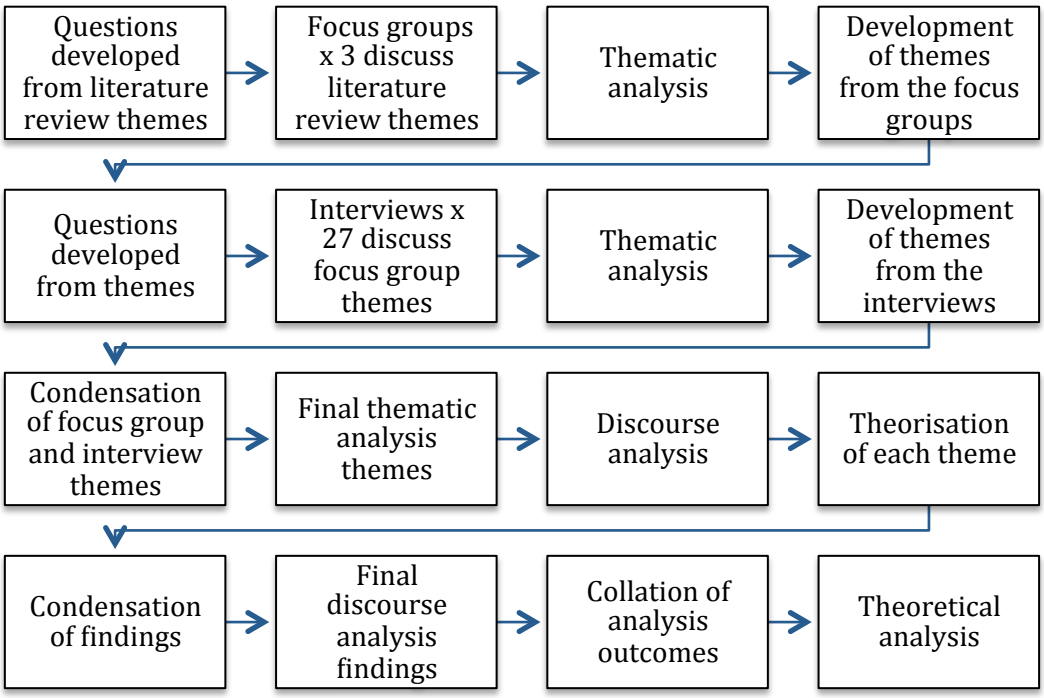

Figure 3.6: Data management method overview

3.3.1 Data collection

The applied multi-method approach requires compatible methods to ensure a seamless transition from the first data collection method to the next. Therefore the methods must be sufficiently distinct to provide differentiation between the styles of collected data and their points of analysis. The chosen methods that are discussed here are often combined in qualitative research projects (D. Morgan, 2003) and their features ensure that the discussed requirements are realised.

3.3.1.1 Focus groups

A primary necessity for this research design is access to a communicative forum where contextualised experience and processes of reasoning can be understood through the interpretation of language. This means gathering together individuals to interact within a method 'that collects data through

group interaction' (D. Morgan, 2003, p. 324). This describes the focus group method, summarily defined as the meeting of a group of individuals to discuss topics, and express opinions and viewpoints, through the production and expression of experience (Fielding, 2003; Liamputtong, 2013; Marshall & Rossman, 2011; Merton, 2003). The communicative forum created by this method enables the expression of interactive dialogue in a contained space where subjective perspectives can be validated, negated, or altered by shared participant viewpoints (Kitzinger, 1994).

A specific focus group benefit is the ability to fulfil a micro-representation of the public sphere and its formation of communicative action that is described within the theoretical framework. Thus this method offers access to a sculpted form of lifeworld-based reasoning and the mutual accord or discord that can develop from this. Therefore the focus groups can generate rich interaction that can assess the theoretical and empirical accuracy of the reviewed literature. They are also a suitable forum for those intimidated by interviews or in situations where it may be inappropriate to be alone with an interviewer or where gathering data may be difficult by other methods (Hesse-Biber & Leavy, 2006; Marshall & Rossman, 2011).

These features are realised through structured procedures that direct a focus group meeting. In this research participants came together in a comfortable, quiet, and secure location without interruption. In this research consent for to proceed was gained, ethical necessities were explained and a demographic form completed. The group dialogue began with introductions, preliminary questions and discussion, which were followed by transitioning questions oriented towards the main topics, focussed questions, and then summarising and concluding questions (P. Davidson, Halcomb, & Gholizadeh, 2010).

During the formal dialogic process electronic devices captured participant interaction in audio file format. Paralinguistic features were unable to be captured as only one researcher was present and video equipment was excluded to reduce participant unease. After the group completed their

interaction, transcribing of the recorded material occurred, which involved documenting the recorded audio file verbatim with the exclusion of linguistic segregates such as 'ummm', 'hmmm', 'uh-huh' and similar. Transcripts were prepared as Word files to enable text searching and retrieval (Ryan, 2004), and were sent to participants to assess for accuracy. Responses were received and changes made according to feedback and the recorded file.

There are several potentially disruptive aspects within focus groups that require management. These relate to the intricacies of group dynamics, the potential for unequal power relations, loss of topic control, participants generating answers to connect, production of trivial results, and the presence of moderator bias. Administrative techniques addressed these through an environment of safety, openness and respect, neutralisation of dominative discourse, orientation of participants to the questions, an intellectually rigorous process, and the reflexive engagement of the researcher (P. Davidson et al., 2010; Greenbaum, 2000; Krueger & Casey, 2009; Marshall & Rossman, 2011).

3.3.1.2 Interviews

Interviews were used within the second phase of data collection due to their in-depth investigative nature and ability to explore subjective experience and reasoned decision making (Broom, 2005; Flick, 2006). These are not merely a one-to-one interaction with boundaries around everyday conversation, but rather are an intentional in-depth process of questioning and listening with specific aims. Thus the interviews are used with a particular orientation and with a purpose that Kvale (1996) describes as 'to obtain descriptions of the life world of the interviewee with respect to interpreting the meaning of the described phenomena' (p. 6). Therefore interviews access and discuss lifeworld features with participants, and explore how these contribute to the development of reasoning.

The interview questions were generated from the focus group findings and

presented to interview participants, with any sought clarification resolved *in situ*. The focussed in-depth interview took place according to the criteria of neutral interviewer position, considered linguistic choices, precise and appropriate questioning, active listening, and verified interpretations of content. This structure delivers questions to participants on specific topics and allows both detailed dialogue and the freedom to discuss broader concerns (Hesse-Biber & Leavy, 2006; Kvale, 1996; Liamputtong, 2010). The benefits of this method include participant engagement where individuals are recognised as active conduits of knowledge, the generation of a flow of coherent communication, immediate validation or negation of topic areas, and generation of specific understanding (Johnson, 2001; Warren, 2001).

Data capture, transcript preparation, participant checking of accuracy, and the integration of any necessary changes occurred in an identical manner to the focus groups. Limitations of this method include possible power differentials, unclear answers, verbose interviewees, and false inferences about action that may exist outside the interview context (Flick, 2006; Huberman & Miles, 2002). These were addressed by the communicative competence of the researcher, revision of interview skills, and reflective practice.

3.3.2 Data analysis

Two methods of evaluation were applied to the data; thematic analysis and discourse analysis. These share common procedures, albeit with techniques and aims that interrogate information in unique ways. Each method identifies themes through a highly structured review process of participant transcripts as contextualised wholes in relation to their parts (Liamputtong, 2013, 2010). Concepts emerge from the text in an interplay between participants, the researcher, and the theory through reflexively 'questioning the data and reflecting on the conceptual framework' (Marshall & Rossman, 2006, p. 159). Therefore each method reflects the methodological orientation and theory.

The concepts that emerged from the data formed themes that were confirmed or disregarded as iterations of immersion and analysis took place, as per the hermeneutic guidelines. Reading and reflective theorising allowed reference points to arise from correlation between foreknowledge of the phenomenon under study, the data collected during the study and the foreknowledge of the researcher. This was a fusion of horizons, with the hermeneutic arc implemented in the latter of the two analysis methods. Both methods utilised iterations of transcript–literature–theory–transcript comparison to explore for confirmation or conflict across the data and between participant viewpoint, the literature and the theory, with commonalities and discrepancies noted (Silverman, 2006). Each of these methods is succinctly reviewed here, with detailed discussion occurring in Chapters 4 and 5.

3.3.2.1 Thematic analysis

This is the interpretation of the surface layer of language to identify patterns that emerge from topics, typologies, metaphors, analogies, similarities, differences, or absences (Ryan & Bernard, 2003b). This method of analysis does not integrate critical distance to allow for critique of distortions of meaning because it is concerned with participant assessment of the literature and the development of further questions. Therefore this is largely an exploratory analysis that serves to confirm or negate the literature through the eyes of practitioners with lived experience in the area of interest. The findings that emerge from thematic analysis of the focus group and interview data are collated into a set of themes that are then subject to the discourse analysis method. Much greater detail is provided in Chapter 4.

3.3.2.2 Discourse analysis

This is a broad set of analytical techniques, with the type chosen here capable of incorporating the hermeneutic arc and critique. The applied method is termed critical discourse analysis, which is described by its three distinctive

characteristics: (1) *Critical* refers to the Critical Theory context as applied within the theoretical framework; (2) *Discourse* refers to language as talk and text; and (3) *Analysis* refers to the application of critique in a structured way (Wodak & Meyer, 2009a). Therefore this is critique as analysis through a Critical Theory lens that presupposes linguistic exchanges are formed from interaction with dominant institutions that modulate and transform society (Fairclough, 1985). Its application is discussed in more detail in Chapter 5.

The findings from the thematic and discourse analysis processes are collated and taken forward for additional review within the theoretical framework provided in Chapter 2. This integrates both the literature and data collection and analysis outcomes, and leads to the development of theoretical findings. This is undertaken in Chapter 6.

3.4 Research miscellany

There are a variety of additional requirements that are essential for rigorous and ethical research, the salient aspects of which are discussed in this section.

3.4.1 Sampling and recruitment

The selection of participants for qualitative research is grounded in 'the researcher's judgement about which ones will be the most useful' (Babbie, 2016, p. 190). This describes purposive sampling, where small numbers of participants are selected for their ability to explore the phenomenon of interest in the most instructive way. Determining the purposive sample is achieved via information from the literature, existing research into groups that are representative of the desired sample, ease of access to the sought population, experiential circumstances comparable to those described in the literature, and a depth of experience that satisfactorily meets the demands of the research (Ritchie, Lewis, & Elam, 2003). Based on these requirements it is apparent that Australian N&WHM practitioners fulfil these stipulations.

The target sample encompassed individuals who are members of professions with a history of variable education standards, even though these are currently codified, formalised, and legitimised (Denham, 2005; Evans, 2000). Because of this, a range of practitioner competence and qualification remain across the numerous professional associations (Leach et al., 2014), which leads to the need for specified criteria to determine a baseline for inclusion. As with the literature review, the applied criteria were licensure, teaching institutions, and specialist associations that represent the N&WHM professions (Kaptchuk & Eisenberg, 2001). Thus, registered members of two professional associations were eligible for inclusion.

To recruit participants a step-wise process occurred. Targeted associations were emailed letters requesting permission to access their professional database, a request to distribute an invitation for participation, and a letter describing the research project. Associations provided written approval for the research to proceed and distributed a covering letter, invitation to participate, and ethical approval information. Interested individuals self-selected for participation and identified their preferred data collection point of engagement, with 4–15 participants required across three focus groups and a minimum of 12 interviews needed in total (Baker & Edwards, 2012; P. Davidson et al., 2010; Flick, 2007a; Krueger & Casey, 2009; Liamputtong, 2013). Participants were accepted if they understood and spoke English and excluded if they were unable to fulfil language requirements or needed financial assistance to participate. When the period for expressions of interest had passed, entry into the project closed, and at this point the sampling process was complete.

3.4.2 Quality criteria

Principal qualitative research quality criteria relate to the types of research techniques that are chosen throughout a project, the evident prioritisation of participant subjective experience, and mutuality between the researcher and the researched. Further criteria can be more or less relevant, depending on

the research design in use (Huberman & Miles, 2002; Liamputtong, 2013). In this instance the applied quality benchmarks relate to research design, ability to accurately represent participants, and the reflective stance of the researcher.

A sign of quality in qualitative research design lies in the prioritisation of the relationship between theory, methodology, and methods, with particular emphasis on theoretical orientation, sampling, fieldwork, data collection, data analysis, and ethical conduct (J. Lewis, 2003). While many of these have been discussed, it is emphasised there is an evident connection between language as the medium of inquiry and a focus on this within Critical Theory, qualitative research, hermeneutics, focus groups, interviews, and thematic and discourse analysis. Language can be investigated throughout the project due to the use of interpretive methods that focus on the subjective perspectives of practitioners. This occurs by continual interaction with the literature, the theory, and participant language.

Research design quality lies in triangulating focus group and interview data collection and analysis, testing the emergent findings against the literature, and cross-referencing the outcomes. Similarly, blending data through repeated comparison between the literature, the emergent themes and the relevant theory maintains quality by enabling validated confirmation or refutation of findings (Denzin & Lincoln, 2011a; Marshall & Rossman, 2011; Melia, 2010). In terms of findings, authenticity and empowerment are the required quality markers. The first of these relates to research outcomes that genuinely reflect participant involvement through representativeness of the topic under study and the potential for relevance to other settings in lieu of contextual accuracy. Participant feedback during the research project and the deliberate dissemination of results that can be affirmed or challenged meet these requirements. Empowerment results from the handing over of the research findings to the participant community for reflection, discussion, authentication, and action (Flick, 2007b).

Identifying and addressing threats to quality is necessary. For example, if a lack of coherence between data and theory emerges it may be necessary to revisit analysis or repeat comparisons; or if participant reasoning for action appears incoherent, then seeking confirmation from participants, revisiting the literature or undertaking reanalysis of the data may be required (Huberman & Miles, 2002; M. Miles, Huberman, & Saldaña, 2014). Researcher reflexivity has been discussed previously and needs no expansion here. The insider researcher status, subjective interactions, and plural epistemologies are able to manifest and be managed within the research design, thus fulfilling the need for their integration.

3.4.3 Ethics

No research is permissible without ethical approval, and considerations requiring attention for this project were similar to general research concerns. Having said this, the in-depth nature of some qualitative research methods requires specific attention in certain areas. General ethical requirements are voluntary and anonymous recruitment; suitable research settings; informed consent; opportunity for questions, privacy and confidentiality; participant right of withdrawal; data accuracy and security; and protection of participants and researchers from harm (Broom, 2006; J. Lewis, 2003; Stark & Hedgecoe, 2010).

Ethical compliance for this project was authorised by the University of New England Ethics Committee (Appendix 1), with university protocols aligned to Australian National Health and Medical Research Council guidelines. The information sheet supplied to associations (Appendix 2) and practitioners (Appendix 3) included the reference number for ethics approval and the research ethics officer contact details. Each participant completed a consent form (Appendix 4) prior to engagement with the project, with those participating by distance completing an electronic version. These processes resolved the primary ethical requirements that are common across research.

For additional requirements, all recruitment was undertaken voluntarily through an expression of interest to participate, allowing all participants to remain anonymous aside from those becoming known to each other within the collaborative environment of the focus groups. This threat to anonymity was explained prior to voluntary commitment to participate in these groups. Participant harm may manifest as psychological or emotional distress due to issues that may arise as a result of the interaction associated with the research. Advice for management of this was included in the information sheets and discussed prior to each data collection process, where details of service provision at community health centres were provided upon request. All data recording, transfer and storage was conducted through secure means, held for the required period, and then destroyed, thereby maintaining anonymity into the future.

An ethical consideration specific to qualitative research is the necessity for authenticity and accuracy in representing participant perspectives. This relates to respect of participants and their philosophy, knowledge, and right to speak; and for their utterances and intentions to be faithfully reproduced. This requires adherence to the information supplied to associations and participants and close observance of the discussed quality criteria (J. Lewis, 2003). This can also be assessed by participants themselves during their checking of transcripts and their review of disseminated findings.

3.4.4 Criticisms and limitations

The majority of criticism directed against the style of research design applied within this work lies in the prioritisation of a subjective environment that is perceived to lack control for bias. This is best explained and answered through the following example and rejoinder.

A complaint against alethic hermeneutics lies in the view that its reaction against objective approaches to understanding overstates problems with this form of inquiry (Harrington, 2001). This criticism says objectivity is inherent

within all research of the human and natural worlds, and the hermeneutics of Gadamer and the critical theorisation of Habermas rally against a positivist form of this that has been superseded. These authors are criticised for promoting an alternative that is based on subjective dialogical understanding that is a metaphorical construction.

This criticism originates from suspicion of subjective relationships and inter-subjective reasoning in research, poor awareness of the quality criteria of qualitative research, the necessity for rigorous reflexivity, and the concept of distance from subjective interpretation as a way to enable the hermeneutic arc. As such, these criticisms are relevant only with regard to limited aspects of the hermeneutics applied here, and because of the methodological structure that is used, these comments have restricted applicability.

Although this retort can be challenged from those with a preference for objective research, their position is viewed as untenable in relation to the utilised concepts and techniques. This work intentionally focuses on inter-subjectivity between participants, the researcher, and the data analysis, and this emphasis is undertaken within a reflexive environment that aims to produce findings from a heightened self-awareness of the perspective these develop within. To extend this point, the limits of the design described in this chapter can be summarised as:

> The virtues of qualitative methods should not be over or undersold. They do what they do and at their most useful, they generate theoretical insights and ideas to be applied elsewhere (Melia, 2010, p. 571)

The chosen design is one way of approaching the project requirements, and it has trustworthiness and authenticity inherent to its structure. Its application reflects deliberate choices taken to gain access to participant knowledge in a way that is perceived to best address the research question. The limitations that emerge from this design reside in innate restrictions of the choices made and the limited generalisability of idiographic and contextualised inquiry.

However, these are not perceived as prohibitive but rather as intrinsic aspects that are balanced against the benefits they provide. These are acknowledged, stated, and reflexively incorporated.

3.4.5 Contrasting design choices

Research design decisions are not singular and they are made within the context of contrasting choices that offer benefits and limitations in different areas of inquiry. There are two specific choices that required considerable thought when designing this research, and the reasons for the resultant decisions require justification.

3.4.5.1 Why hermeneutics and not phenomenology?

There are numerous similarities between these two methodological orientations, to the point where 'hermeneutic phenomenology' has a place in the literature (Danuta & Kristen, 2007). Thus the distinctions between these can be difficult to fully pinpoint, but suffice to say, phenomenology emphasises essence and consciousness to understand the individual development of experience from meaning. Therefore it focuses tightly on the individual and their unique experience and as a result often samples fewer than 10 people (Starks & Trinidad, 2007). This is one reason why hermeneutics is preferred, as larger participant numbers within and across the data collection methods allow a greater depth and variety of practical reasoning to emerge.

A further reason for choosing hermeneutics over phenomenology is that the former allows the researcher, theory, and external forces, to be fully integrated into analysis, which is particularly important when applying critique as these are fundamental to analysis. Phenomenology, most particularly its descriptive form, concentrates on the individual and brackets researcher foreknowledge and understanding to create a neutral position (Heidegger, 1985; Husserl, 1936). As explained in the previous section

discussing fusion of horizons, and in the section on reflexivity in Chapter 2, the efficacy of bracketing is improbable due to the continual presence of researcher subjectivity that interacts with the world. Thus bracketing is of dubious effectiveness and is deemed inappropriate for this project.

Hermeneutic phenomenology acknowledges this problem and allows the expression of the subjective researcher to a greater extent. The decision to avoid this as the methodology lies in the ease of use of hermeneutics within the data collection and analysis design. Because of its use by Critical Theory, particularly by Ricoeur and critical hermeneutics, pre-existing processes and criteria are available for implementation. Therefore the third reason to preference hermeneutics is its greater ease of use within the project.

3.4.5.2 Why thematic analysis and not content analysis or grounded theory?

Thematic analysis is a qualitative technique whereas content analysis is generally viewed as more quantitative. The former identifies, analyses, and reports patterns through a qualitative, detailed, and nuanced interpretation of various aspects of the research topic. The latter examines who says what, to whom, and with what effect within expressions that are read, interpreted, and acted on for meaning according to measures (Vaismoradi, Turunen, & Bondas, 2013). Thus content analysis quantifies by measuring different category and theme frequency, which may stand as a proxy for significance. Thematic analysis is purely qualitative, concentrates on patterns, and is less concerned with firm description of data. These differences are self-evident and have relevance to the qualitative research umbrella.

The theoretical framework of grounded theory tends towards positivist, constructionist, symbolic interactionist or critical realist orientations (Annells, 1996; Glaser, 2002; Mills, Bonner, & Francis, 2006) and not Critical Theory. It uses theoretical sampling, saturation of categories, and bracketing of researcher involvement, whereas thematic analysis uses purposeful sampling, identifies themes of importance, and places the researcher within

analysis (Liamputtong, 2013; Starks & Trinidad, 2007). Therefore grounded theory continually samples depending on emerging theory and the latter maintains the original sample of information-rich subjects (Coyne, 1997). Grounded theory may miss latent themes, underlying meanings of discourse, 'held-back' data, and researcher reflexivity. Similar to content analysis, it does not gel with the requirements throughout the research design.

3.5 Conclusion

The interwoven components of experience, understanding, language, criticality, and reflexivity are the driving considerations underlying research design in this thesis. The requirements that arise from these, coupled with the outcomes of the literature review and the orientation of the theoretical framework, mean design choices were made in specific ways for particular reasons. As a result qualitative research, hermeneutics, focus groups, interviews, thematic analysis, and discourse analysis were deemed the most appropriate tools to successfully develop findings for theoretical analysis.

Accessing the voice of research participants and analysing the information provided by these individuals is a process that can be undertaken from a variety of perspectives. Methodologies supply numerous possible methods that then lead to the generation of certain types of data. The choices made in the selection of each of these leads to the use of specific mechanisms at every step of the research process, and because of this their use requires a certain degree of intentional direction. As such the choices made here must be contextualised to the reflexive requirements of this research and to the ethical needs of research conduct in general and of the participants in particular.

It is these considerations that have been prioritised and as a result these have been intentionally placed at the forefront of research design decision making. Therefore an emphasis is placed on the idiographic nature of the research process and its focus on the participant and their voice.

CHAPTER 4: DEMOGRAPHICS AND THEMATIC ANALYSIS

Practitioner voice has a minor presence in the reviewed literature and is notably absent in publications of academic philosophy, epistemological pluralism, instrumental and practical reasoning, and scholarly investigations of belief and value. Therefore these areas of practitioner being, knowing, and practice are frequently dissected, analysed, and discussed by those with an exterior understanding of the complexity and nuance of these topics as they are lived. It is this issue that reiterates the base reason for the perspective taken in this thesis: the practitioner and his or her voice are prioritised and it is their language that is the focus of analysis.

This chapter presents the thematic data analysis process, which involves a review of participant demographic information followed by the analysis of focus groups and interviews. To recap, the literature elucidates areas of interest that formed seven questions for piloting by practitioner–academics from participating disciplines. This resulted in amendments, and eight questions were presented to three separate focus groups: one six and one five-member group in two separate high-density urban locations, and one six-member group in a regional location. From analysis of the gathered data, seven interview questions were developed and presented to 27 geographically dispersed interview participants via telephone or electronic media. Analysis proceeded and the findings were collated, with the two sets of distinct themes condensed to provide final thematic analysis findings.

The procedures for and findings from this process constitute the presented material. As per the research requirements, participant quotes serve as the fulcrum for the majority of the subject matter. These are presented as italicised blocks of content with a bracketed reference that de-identifies the

speaker. These references are omitted in quotes containing focus group dialogue from more than one participant.

4.1 Participant demographics

Participants completed demographic forms (Appendix 5), with three individuals omitting information on income due to non-practising status. The captured information was transferred to excel files, graphs developed and data compared to results from existing Australian research.

4.1.1 Participant gender

Figure 4.1 presents the participant gender balance: of 44 total participants 6 (14 per cent) were male.

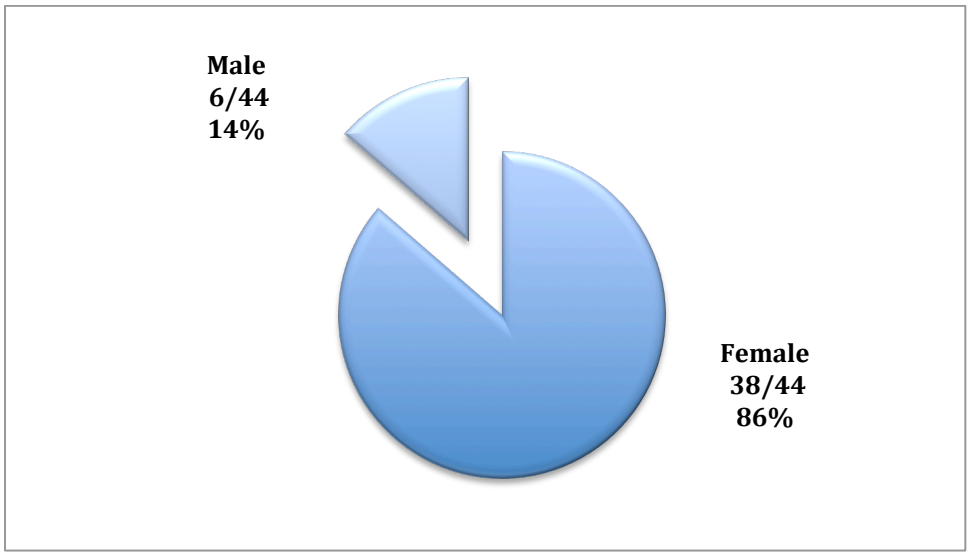

Figure 4.1: Gender balance of participants

Grace's (2012) collation of two national workforce surveys of Australian N&WHM practitioners identifies 75 per cent as female, whereas Leach et al.'s (2014) survey of 399 association members reports an 87 per cent female membership. The gender balance in the current study is similar to that in the latter demographic study.

4.1.2 Participant age

Of the 44 participants self-selecting for this project, 42 were over the age of 31, which is equivalent to 95 per cent of the sample (see Figure 4.2).

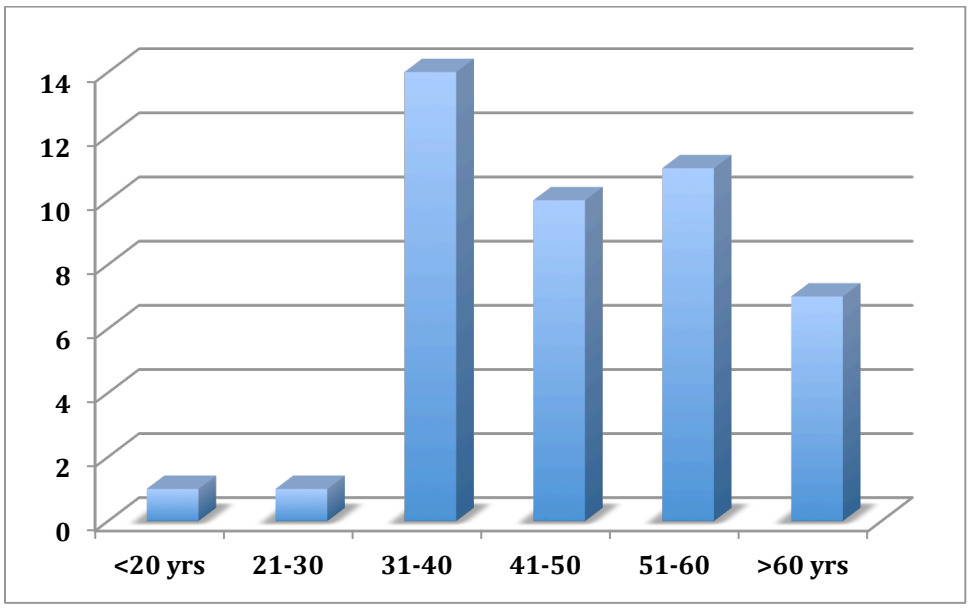

Figure 4.2: Age of participants

Australian statistics identify the number of N&WHM practitioners above 31 years old as 93 per cent (Leach et al., 2014) with the average age between 40 and 44 years (Grace, 2012). Thus participant age reflects current data. Seven of the participants, or 16 per cent of the sample, were over 60 years of age, whereas 12 per cent of Leach et al.'s (2014) study were situated in this age group. Similar proportions in each age band were recorded for the current study sample, meaning it is representative of the spread of ages across the described ranges in published research of Australian practitioners.

4.1.3 Participant education

Figure 4.3 shows that 38 (86 per cent) of the 44 participants had a bachelor's degree qualification or higher; roughly half of these (45 per cent) had a postgraduate qualification.

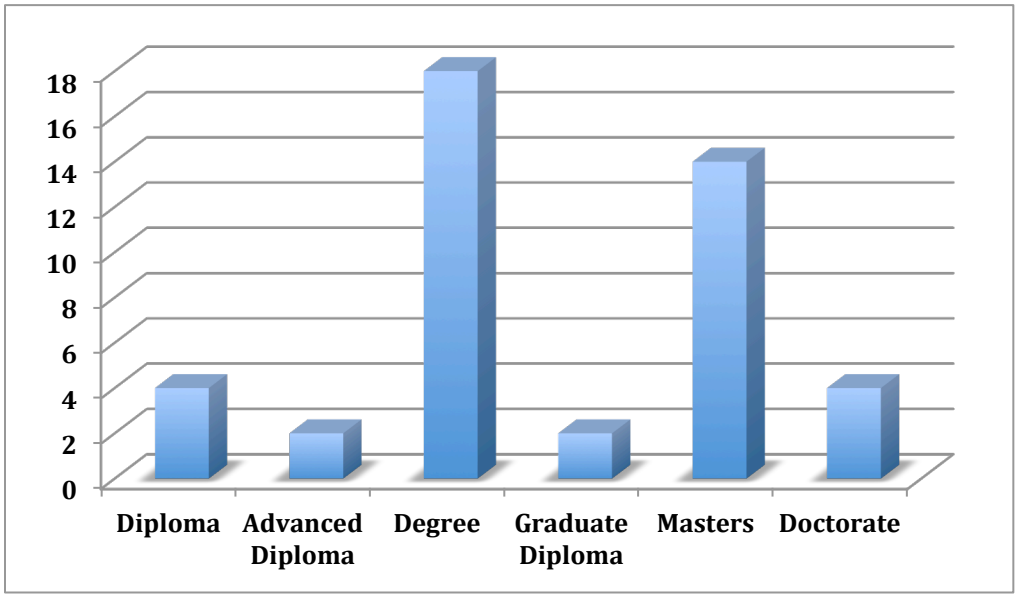

Figure 4.3: Level of participant education

72 per cent of those surveyed by Leach et al (2014) had an undergraduate degree and 35 per cent had postgraduate qualifications. Participants in this research on average had higher education standards than published data.

4.1.4 Participant practice

Figure 4.4 illustrates length of time in practice, with 37 (84 per cent) having at least five years clinical experience and 25 (57 per cent), at least 10 years.

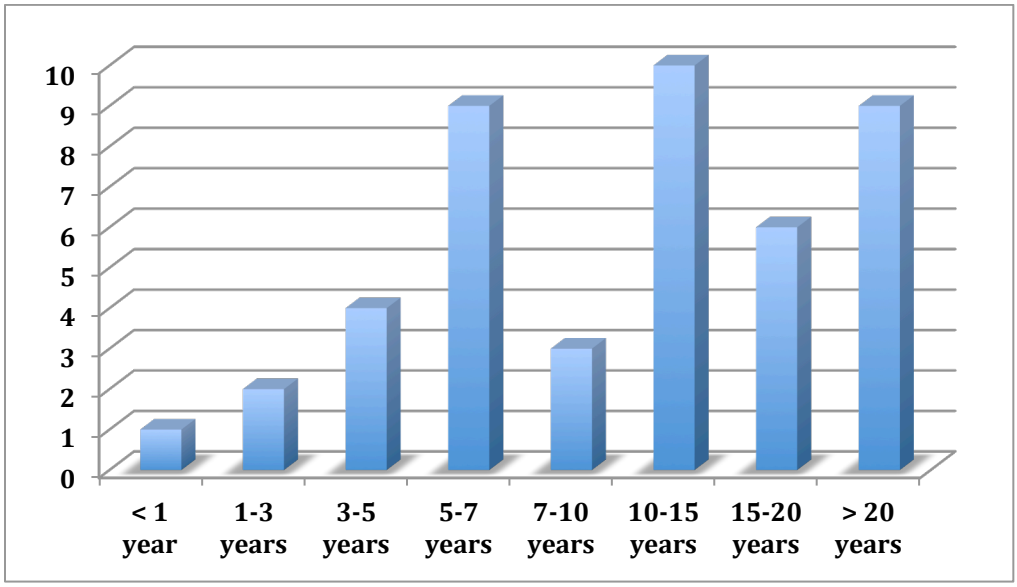

Figure 4.4: Length of time in practice

Leach et al. (2014) identify that 48 per cent of their sample had been in practice longer than five years, and 40 per cent more than 10 years, whereas Grace (2012) reports 61 per cent above five years, with an average of six and a half years practice. The self-selecting participants in the current study had noticeably more experience than this.

4.1.5 Participant income

Fourteen of the 41 participants (34 per cent) who completed the income question derived over 81 per cent of their total annual gross income from their clinical practice, whereas 10 (24 per cent) drew less than 20 per cent of their total income from this source (see Figure 4.5).

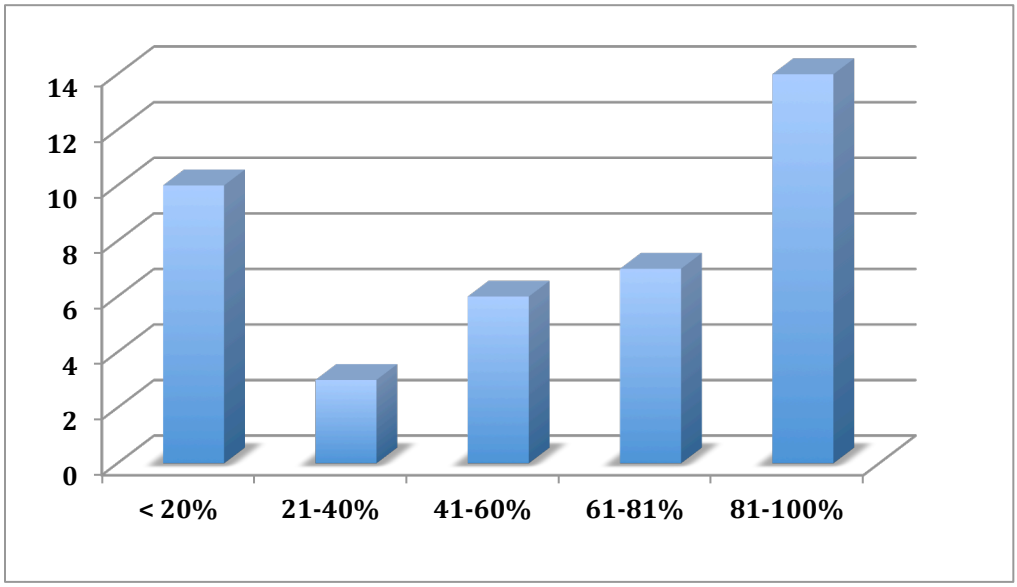

Figure 4.5: Percentage of total gross income derived from practice

These results are comparable to those of Bensoussan et al. (2004) who reported that 41 per cent of surveyed N&WHM practitioners had at least 81 per cent of their gross income drawn from work practice, and 16 per cent had less than 20 per cent of their total income drawn from this source. The data presented here are similar and may reflect individual preference for either part-time or full-time work practice, or they may indicate primary or other income-earning positions.

The demographic findings indicate the majority of participants taking part in this research were females over the age of 30, holding a minimum of a bachelor-level education, in practice for five years or more, and drawing varying levels of annual income from practice. This sample differs from demographic research of comparable cohorts in two notable ways: higher academic qualifications and a greater length of time in practice. Therefore this research attracted experienced practitioners who hold postgraduate qualifications. How this may affect findings is examined in Chapter 7.

4.2 Thematic analysis procedures

Themes emerged from focus group and interview data via iterative phases of text interpretation based on three procedures. The first of these involved initial impressions of the transcript set against the literature, and represents *descriptive* thematic tendencies. These arise by systematically grouping the data by relevance to the question, by repetition in the transcript, or by clear meaning, novel content, or grouping of keywords. The second of the three procedures was *focussed,* where theory is integrated and connections between this and the initial themes are identified. This results in grouping together the themes that are grounded in the presenting data, the literature, and theory. The final procedure was *interpretive* and involves greater theorising and reassembling, reorganising, or collapsing of previous interpretations to develop themes that are organised and merged according to commonalities. (V. Braun & Clarke, 2006; Krueger & Casey, 2009; Liamputtong, 2013, 2010; Silverman, 2006). Figure 4.6 shows this process as a flowchart.

The processing of themes within each of the descriptive, focussed, and interpretive phases was organised by coding, where connections between themes and sub-themes were categorised, numerically ordered, and tabulated. This created an audit trail and ensured ongoing revision and reviewing could occur (Gibbs, 2007; Richards, 2009; Ryan & Bernard, 2003a).

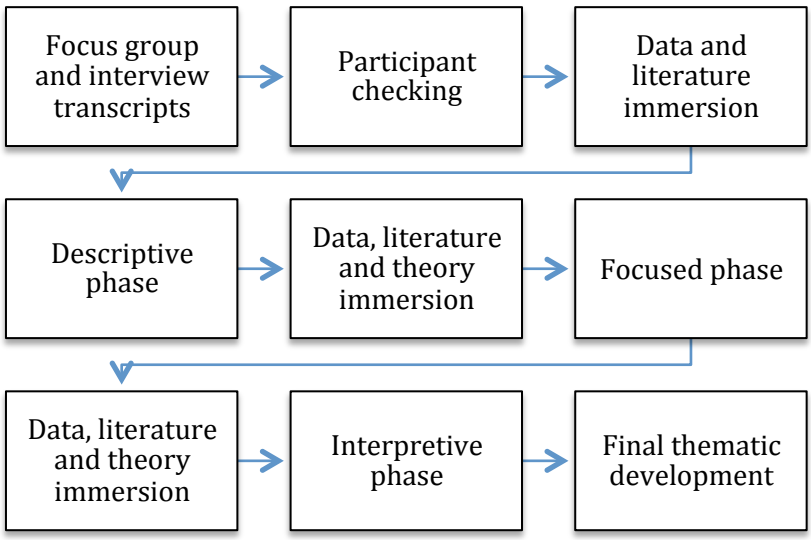

Figure 4.6: Focus group and interview data analysis flowchart

Essentially this was an iterative three-step process where the initial component was organising participant utterances into an excel spreadsheet to locate initial thematic tendencies (Meyer & Avery, 2008; Stockdale, 2002). This was followed by categorisation of the collated utterances into themes aligned to each question. The last step saw these interpreted into final themes. Each thematic category was aligned to a definition, an explanation of the category, its coding rules and the plain language theme (Liamputtong, 2013). This information was carried forward from the initial descriptive analysis phase to the focussed analysis where theoretical and categorical connections were identified and collapsed. The subsequent findings were then also carried forward for interpretive thematic development where final theorising and organisation took place. This entire process is termed 'data condensation' (M. Miles et al., 2014, p. 12) in which the transcript under review is simplified, abstracted, and transformed.

For thematic analysis, the main threat to quality lies within the imposition of researcher interpretation upon the data, as opposed to the effective fusion of horizons (Ryan & Bernard, 2003a). This concern was addressed here through the ongoing integration of researcher reflexivity and continual alignment to the research design guidelines. Repeated comparison is one feature of this

design that significantly lessens the potential for researcher influence due to the necessity for confluence between the data, literature, and theory. This corresponds to the obligation for authenticity in qualitative research and for the respectful interpretation of participant voice in relation to experience.

4.3 Focus group thematic data analysis

Data were collected from each of the three focus groups in which participants discussed and responded to a selection of piloted questions derived from the literature review (Appendix 6). The ensuing process of analysis generated 42 themes in the descriptive and focussed thematic phases (see Tables 4.1, 4.2 and 4.3) that were condensed to nine themes in the final interpretive phase (Tables 4.4 and 4.5). Following the presentation of this tabulated material selected participant quotes are transcribed and discussed in relation to the literature and theory. Several themes not seen in the literature review emerged from this analysis and these are reviewed in the summaries of each analytical stage. From this analysis, conclusions are drawn regarding the accuracy of the literature as it is perceived from the participant perspective.

4.3.1 Descriptive thematic analysis of focus group data

As shown in Table 4.1, 42 descriptive themes were developed from initial analysis of the focus group data; five from each of the first seven questions, and seven from the final question. Questions 1–4 generated themes focussed on knowledge, Questions 5–7 on evidence, and Question 8 focussed on a mixture of evidence and knowledge, and the construction and expression of these. These descriptive themes reiterated the literature review findings without noteworthy contradiction or conflict. Numerous novel thematic categories arose from Questions 2 and 7, associated with codes D6–D10 and D31–D35 in Table 4.1. These reflect the practitioner experience of evidence and the preferred methodological approach to researching their own practice. These themes expand on the reviewed literature by demonstrating

Table 4.1: Focus group descriptive themes

Focus Group Questions 1–8	Descriptive Themes 1–42
Q1: Please tell us what evidence in practice means for you. How do you use evidence in your practice? Can you give an example?	D1: Discerning knowledge
	D2: Channelling knowledge
	D3: Applying knowledge
	D4: Sourcing knowledge
	D5: Rationalising knowledge
Q2: Please tell us your experience of using evidence in your practice. Does this evidence affect your treatment plans? Does this evidence contribute to your clinical development?	D6: Experiencing knowledge
	D7: Transforming knowledge
	D8: Embedding knowledge
	D9: Justifying knowledge
	D10: Requiring knowledge
Q3: Does the evidence you use represent the therapeutic outcomes of your patients? Is the evidence you use clinically valid? Does the evidence you use lead to improved clinical effectiveness?	D11: Appropriate knowledge
	D12: Valid knowledge
	D13: Effective knowledge
	D14: Orientation of knowledge
	D15: Efficacious knowledge
Q4: Is the evidence you use compatible with your principles of practice? Does the evidence reflect your practice method? Is the evidence appropriate for your healing philosophy?	D16: Professional knowledge
	D17: Clinical knowledge
	D18: Philosophical knowledge
	D19: Individualised knowledge
	D20: Tailored knowledge
Q5: What is your understanding of evidence-based medicine and evidence-based practice? What do you see as the strengths of evidence-based practice? What do you see as the weaknesses of evidence-based practice?	D21: Evidence model
	D22 Evidence strengths
	D23: Evidence weaknesses
	D24: Evidence terminology
	D25: Evidence as power
Q6: Is the current evidence-based medicine research model suitable for your work practice? Does it accurately represent your work practice? How? Does it inaccurately represent your work practice? How?	D26: Evidence appropriateness
	D27: Evidence representative
	D28: Evidence non-representative
	D29: Evidence potentially representative
	D30: Evidence generation problems
Q7: How would you research your own work practice? What type of evidence could appropriately represent your practice? How can your healing philosophies and values be reflected?	D31: Evidence for practice
	D32: Evidence for method
	D33: Evidence for philosophy
	D34: Evidence generation
	D35: Evidence hierarchy
Q8: Is there anything more about your experience of evidence you would like to share?	D36: Evidence quality
	D37: Research of practice
	D38: Evidence derived from where?
	D39: Evidence derived from whom?
	D40: Sourcing evidence
	D41: EBM and power
	D42: Research literacy

the reasoned application of evidence to specific areas of work practice, and show a developed understanding of research methodologies. This represents the amalgamation of discrete areas within the literature; where CAM

knowledge in practice and the application of philosophically based practical reasoning to EBP mutually contribute to action in practice. These themes reiterate the literature by showing consensus that available EBM outputs are inadequate in numerous ways and options are available to address these inadequacies.

4.3.2 Focussed thematic analysis of focus group data

The descriptive themes were subject to further interpretation to theorise the initial descriptions. This second phase of analysis developed an equivalent number of focussed thematic areas, with Tables 4.2 and 4.3 showing the results of this process. At this stage there was ongoing immersion in the transcript whole and its parts, there was the fusion of horizons, and there was the continual checking of the descriptive themes to ensure their accuracy and relevance by repeated comparison. Theoretical notions were integrated into analytical interpretation to extend the descriptive themes. The resultant findings became increasingly focussed and integrative of the literature and theory relevant to each theme. This represents extension of the descriptive themes into focussed themes that are grounded in the presenting data, the literature, and relevant theory.

This increasingly theoretically informed analysis of the focus group participants reiterated the literature review themes and extended these into a variety of areas that show active reasoning underlying the use of different knowledges within work practice. The causative factors that play a role in the decision making of participants became clearer with this additional theorising, noticeably in Themes F16–F20, where practical reasoning processes are linked to action. Having said this, the majority of focussed themes reflected this to varying degrees. An interesting feature to emerge was the previously identified novel themes beginning to collapse back to the literature as deeper analysis proceeded. For example, the rationale for alternative research approaches became clearer across all focussed themes, which is indicative of a clearly thought-out response to the presence of a

limited EBM. Thus the application of theory and the ongoing repeated comparison to the literature began to create clarity in data analysis.

Table 4.2: Focus group focussed themes (1 of 2)

Descriptive Themes 1–20	Focussed Themes 1–20
D1. Discerning knowledge	F1. Practitioners consciously selecting knowledge sources
D2. Channelling knowledge	F2. Practitioners using knowledge strategically
D3. Applying knowledge	F3. Practitioners applying multiplicity of knowledge types to presenting cases
D4. Sourcing knowledge	F4. Practitioners sourcing multiple knowledges
D5. Rationalising knowledge	F5. Practitioners rationalising knowledge use with practice-based evidence and EBP
D6. Experiencing knowledge	F6. Practitioners cognisant of knowledge development in practice
D7. Transforming knowledge	F7. Practitioners constantly refining treatment planning based on knowledge development
D8. Embedding knowledge	F8. Practitioner use of new knowledge leads to professional development
D9. Justifying knowledge	F9. Practitioner knowledge use explains practice to a limited degree
D10. Requiring knowledge	F10. Practitioners require more knowledge to practise more effectively
D11. Appropriate knowledge	F11. The broader the knowledge sources the better the evidence for outcomes
D12. Valid knowledge	F12. Most knowledge is limited in its ability to reflect clinical methods; practice audit preferred
D13. Effective knowledge	F13. Knowledge effectively contributes to improving effectiveness
D14. Orientation of knowledge	F14. Most knowledge does not orient towards the uniqueness of individual patient cases
D15. Efficacious knowledge	F15. Knowledge is assessed as efficacious by reviewing patient outcomes
D16. Professional knowledge	F16. Practitioners are required to use multiple evidence sources to find evidence for practice
D17. Clinical knowledge	F17. Knowledge for clinical practice directs treatment planning where evidence exists
D18. Philosophical knowledge	F18. Practitioner philosophy of complex holism is rarely reflected in research evidence; so need a broader evidence scope
D19. Individualised knowledge	F19. Individual practitioner practice methods require evidence assessment for relevancy
D20. Tailored knowledge	F20. Practitioners tailor their knowledge sources to match work practice

Table 4.3: Focus group focussed themes (2 of 2)

Descriptive Themes 21–42	Focussed Themes 21–42
D21. Evidence model	F21. Practitioner interpretation of EBM is broad and reflects the triage of evidence/patient/practitioner
D22. Evidence strengths	F22. Practitioners view EBM as a beneficial component of work practice
D23. Evidence weaknesses	F23. Practitioners regard sole reliance on EBM as unreflective of work practice, reductionist and limiting
D24. Evidence terminology	F24. Practitioners view EBM as limited in evidence definition and breadth and susceptible to misuse
D25. Evidence as power	F25. Practitioners regard EBM as open to use as a tool of power by vested interests with scientistic ideals
D26. Evidence appropriateness	F26. Practitioners view EBM as limited in its ability to represent work practice
D27. Evidence representative	F27. Practitioners view EBM as limited in its ability to represent work practice
D28. Evidence non-representative	F28. Practitioners view EBM as limited in its ability to represent work practice
D29. Evidence potentially representative	F29. Practitioners have a concept of the type of research model they prefer, which reflects an original EBM/whole systems/complex systems model blend
D30. Evidence generation problems	F30. Practitioners recognise evidence generation problems exist for the profession and its valid research
D31. Evidence for practice	F31. Practitioners prefer practice-based evidence as their authentic evidence model
D32. Evidence for method	F32. Practitioners want a research model that reflects philosophy, practice method and knowledge within practice
D33. Evidence for philosophy	F33. Practitioners view patient responses as evidence of their philosophy and values in practice
D34. Evidence generation	F34. Practitioners view a variety of integrated research methods as valid for assessing work practice
D35. Evidence hierarchy	F35. Practitioners view a variety of evidence sources equally, but place a priority on patient outcomes as confirmation
D36. Evidence quality	F36. Practitioners recognise the need for skills to be able to discern good quality research
D37. Research of practice	F37. Practitioners regard aspects of practice as under-researched and lacking in evidence
D38. Evidence derived from where?	F38. Practitioners regard research generation and training as underdeveloped
D39. Evidence derived from whom?	F39. Practitioners want research to be generated from within discipline expertise where possible
D40. Sourcing evidence	F40. Practitioners have problems accessing good quality information easily
D41. EBM and power	F41. Practitioners resent the evidence discourse being used as power
D42. Research literacy	F42. Practitioners recognise the need for improved research literacy

4.3.3 Interpretive thematic analysis of focus group data

The focussed themes were subjected to further theorisation and interpretation that collated and condensed findings into final thematic areas, as per Tables 4.4 and 4.5. This developed nine plain language themes that

emerged from the reorganisation and collapse of themes, as can be seen from the assimilated left-hand column where the numerical allocation becomes out of sequence. These emergent themes developed within a frame of deepened theorising, conceptualisation, and review of the literature that was matched to the whole transcript and its parts, fused horizons, and the continual checking of accuracy and relevance through repeated comparison. While the previous analytical phase became increasingly integrative of the general body of literature, this stage specifically implemented conceptual and theoretical considerations that concentrated on particular areas.

Focus group interpretive Themes FG1, FG2, FG3, and FG5 are similar and describe a variety of knowledge sources applied throughout clinical practice. These are assessed against patient outcomes; practitioners recognise this as the primary measure of practice effectiveness. This points to the utilisation of a practice-based evidence model of knowledge assessment as opposed to the primal use of EBM outputs. Concomitant to this is acknowledgment of evidential problem areas for work practice in Themes FG4, FG6, FG7, and FG8; where there is recognition of a lack of quality evidence for areas of professional practice. This paucity appears to be due to the limitations of the EBM model, the low level of evidence generated from within the professions, and the dearth of research that can accurately reflect practice realities and patient experience. Additionally, in Theme FG9 is the suggestion that EBM is used as a delimiting tool against the participant professions. The literature describes such boundary work achieved through vested interests manipulating the EBM model for their own ends, and participants reiterated this observation.

Each of these final themes has a development pathway from the initial descriptive phase through to the conclusive interpretive phase. When these are collated, the emergent inference is that practitioners are acutely aware of the limitations of EBM, the lack of quality research for their practices, and the convergence of these on misuse of evidence by vested interests. Participants negotiate and resolve these problems through the application of a breadth of

knowledge types assessed against patient outcomes. This is a reasoned approach that addresses internal and external shortcomings within the application of EBM in the N&WHM practice setting.

Table 4.4: Focus group interpretive themes (1 of 2)

Focussed theme	Interpretive themes 1-5
F1. Practitioners consciously selecting knowledge sources	A variety of knowledge sources provide guidance for patient care **(Theme FG1)**
F3. Practitioners applying multiplicity of knowledge types to presenting cases	
F4. Practitioners sourcing multiple knowledges	
F2. Practitioners using knowledge strategically	Practitioners use multiple sources of evidence to generate practice-based evidence **(Theme FG2)**
F5. Practitioners rationalising knowledge use with practice-based evidence and EBP	
F8. Practitioners use of new knowledge leads to professional development	
F15. Knowledge is assessed as efficacious by reviewing patient outcomes	
F19. Individual practitioner practice methods require evidence assessment for relevancy	
F22. Practitioners view EBM as a beneficial component of work practice	
F31. Practitioners prefer practice-based evidence as their authentic evidence model	
F6. Practitioners cognisant of knowledge development in practice	Evidence use is woven throughout practice **(Theme FG3)**
F7. Practitioners constantly refining treatment planning based on knowledge development	
F13. Knowledge effectively contributes to improving effectiveness	
F10. Practitioners require more knowledge to practise more effectively	There is a lack of quality evidence for many practice areas **(Theme FG4)**
F37. Practitioners regard aspects of practice as under-researched and lacking in evidence	
F40. Practitioners have problems accessing good quality information easily	
F9. Practitioner knowledge use explains practice to a limited degree	Practitioner use of a variety of knowledge sources reflects the search for a holistic evidence base **(Theme FG5)**
F12. Most knowledge is limited in its ability to reflect clinical methods; practice audit preferred	
F14. Most knowledge does not orient towards the uniqueness of individual patient cases	
F16. Practitioners are required to use multiple evidence sources to find evidence for practice	
F17. Knowledge for clinical practice directs treatment planning where evidence exists	
F18. Practitioner philosophy of complex holism is rarely reflected in research evidence; so need a broader evidence scope	
F20. Practitioners tailor their knowledge sources to match their work practice	

Table 4.5: Focus group interpretive themes (2 of 2)

Focussed theme	Interpretive themes 6-9
F23. Practitioners regard sole reliance on EBM as unreflective of work practice, reductionist and limiting	The evidence-based medicine model is a limited tool for generating evidence of relevance to practise **(Theme FG6)**
F24. Practitioners view EBM as limited in evidence breadth and susceptible to misuse	
F26. Practitioners view EBM as limited in its ability to represent work practice	
F27. Practitioners view EBM as limited in its ability to represent work practice	
F28. Practitioners view EBM as limited in its ability to represent work practice	
F29. Practitioners have a concept of the type of research model they prefer, which reflects an original EBM/whole systems/complex systems model blend	Practitioners want evidence for practice to reflect and improve the patient experience **(Theme FG7)**
F32. Practitioners want a research model that reflects philosophy, practice method and knowledge within practice	
F33. Practitioners view patient responses as evidence of their philosophy and values in practice	
F34. Practitioners view a variety of integrated research methods as valid for assessing work practice	
F30. Practitioners recognise evidence generation problems exist for the profession and its valid research	Low discipline-specific research literacy and capacity contribute to insufficient evidence of relevance **(Theme FG8)**
F36. Practitioners recognise the need for skills to be able to discern good quality research	
F38. Practitioners regard research generation and training as underdeveloped	
F39. Practitioners want research to be generated from within discipline expertise where possible	
F42. Practitioners recognise the need for improved research literacy	
F25. Practitioners regard EBM as open to use as a tool of power by vested interests with scientistic ideals	Evidence-based medicine is used as a tool of domination and control by vested interests **(Theme FG9)**
F41. Practitioners resent the evidence discourse being used as power	

The next section reviews each of the nine final themes through the display of participant quotes and discussion of their relationship to the literature and theory. This provides a comparison that shows how themes are developed.

4.3.4 Focus group quotation–literature comparison

Preview of participant utterances that contribute to thematic development reflected the content of the collected data and provided insight into participant development of meaning, reasoning, and action. As the focus groups were a consensus forum, the provided quotes reflect the discussions associated with participant agreement reached in relation to provided

questions. Therefore this section reviews a variety of participant quotes to show the breadth of consensus across and between each of the three focus groups, and to review the ways these relate to the literature.

Theme FG1: A variety of knowledge sources provide guidance for patient care

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Knowledge sources in practice are derived from scholarly literature, discipline journals, empirical findings, practitioner and research databases, peer expertise, product literature, textbooks, clinical notes, and discussion groups. This multiplicity of evidential sources is common for Australian N&WHM practitioners, with L. Braun et al.'s (2013) survey of this cohort noting 'the vast majority have embraced scientific evidence whilst maintaining the importance of traditional evidence, personal experience and patient reports and feedback' (p. 62). The participants consistently stressed that the clinical application of multiple knowledge types ensures the best possible patient care. Thus therapeutic decision making is determined via knowledge use that is referenced to the patient. One participant succinctly described this as:

> *Evidence in practice; taking all of the information out there and putting it into a format that benefits the clients* (Focus group participant SB5).

Patient-centred care, where the illness experience and patient preferences are prioritised, emerged as a common model of practice for participants. This reflects an emphasis on the contextualised patient as the centre of the application of clinical knowledge, which was expressed by one participant as:

> *… there are three sources of information and they're our traditional training, the scientific evidence and other practitioner's experiences … and then you've got the patient. And it's their story that is unfolding, that is influencing your remedy selection* (Focus group participant AB51).

Here traditional and scientific knowledge are aligned to an emphasis on the recognition and interpretation of the patient's expression of illness. This is a style of narrative medicine, which is a technique applied to case taking grounded in the capacity to understand the significance and meaning of stories and to interpret these in parallel with other evidential sources (Charon, 2001; Charon & Wyer, 2008; Silva et al., 2011; Solomon, 2015). This corresponds to Conway's (2011) argument from phenomenology that the lived experience of the patient is the focal point within the WHM application of knowledge. Here a unique patient is prioritised and treated for their illness experience, which consequently lessens the emphasis on explicit knowledge that may 'conflate patient-centred consulting with use of decision tools' (Greenhalgh et al., 2015, p. 2). This is because these tools derive from EBM research outputs conducted on homogenous groupings of non-representative participants, meaning the resulting evidence has limited clinical validity outside this group (Bornhoft et al., 2006).

One participant described the negotiation of evidence in the clinical situation where filtering of traditional and scientific knowledge sources is used for patient outcome:

> *(I) draw on both traditional and research evidence and using a combination of the two to best suit my individual patient that's sitting there …. let's just say Kava might have the most research evidence for generalised anxiety that we have but it may not suit my patient* (Focus group participant SB8).

Thus the practitioner overrides research evidence through a reasoned decision that determines the best treatment for the patient in context. As Sackett et al. (1996) clarify, 'without clinical expertise, practice risks becoming tyrannised by evidence, for even excellent external evidence may be inapplicable to or inappropriate for an individual patient' (p. 72). Hence applied knowledge is sourced for relevance to the presenting case, leading to use of a breadth of knowledge types. One participant reiterated this knowledge–patient focus when discussing EBM and its usefulness in practice:

> *I'm not going to be blinded by that kind of evidence because it's still a case of if it doesn't fit the person it's not useful to me* (Focus group participant MB6).

This style of decision making necessitates access to and understanding of patient experience as it is located in context (Stewart et al., 2003). the action that emerges from reasoning derived from this type of interpretation requires access to a range of different knowledge types to meet the demands of particular cases.

Theme FG2: Practitioners use multiple sources of evidence to generate practice-based evidence

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Multiple knowledge use entails the integration of information arising from patient response to treatment, or more accurately the empirical assessment of the effectiveness of therapeutic approaches in the practice setting. One participant phrased this empirical approach as a combination of evidence integrated with experience:

> *Evidence affects my treatment plan because the more knowledge I have and the more things I can draw on the better. But I have, sort of, my own clinical evidence from what I have experienced, what works with clients* (Focus group participant SB80).

This describes a positive feedback loop between the practitioner and the patient that is an iterative interaction between knowledge developed from the practice setting and knowledge derived externally to practice. This again represents practice-based evidence, where the therapeutic intervention and the contextually applied knowledge reflect the intersectional triage of patient, practitioner, and researcher, and their pool of awareness, understanding, and experience (Ammerman et al., 2014). This participatory model of knowledge generation and use comprises narrative, interpretation, scientific method, and profession-specific epistemological components, and it denotes the type of knowledge in practice repeatedly described by the focus group participants.

For example, there was agreement that patient feedback is a primary component of practice knowledge, most especially when research evidence is limited. One participant discerned the external, internal and profession-specific components of the action taken in such instances, where science, traditional knowledge, and patient experience coexist and are applied in so far as they have the capacity to be of use:

> *... there's a lot more around Western herbalism that science can't offer. And that's really where it comes down to the traditional component and more importantly the patient's experience* (Focus group participant AB27).

In this instance the limitations of scientific investigation are identified and the integration of traditional knowledge with patient response to therapeutic intervention are prioritised as a way to access resources for patient-centred care. For participants, skill in the application of traditional evidence and phenomenological techniques of understanding meant clinical knowledge requirements and use extended beyond the EBM model. Thus a large degree of knowledge assessment is derived from practitioner-initiated practice-based evidence. As Parsonson (2012) explains:

> ... problems for the practitioner occur in translating research findings into day-to-day practice, including determining their relevance to the individual patient who may differ in many ways from the persons who constituted the research populations in terms of lifestyle, diet, general health status and in a range of unique physiological and psychological variables. Despite this likely variation in patient populations, there seems to be no real focus on the other side of the evidence-based practice coin, namely, practice-based evidence (pp. 98-99)

Resolution of patient cases *in situ* involves multiple knowledges to negotiate an evidence lack for individualised and contextualised patient care. Practical reason from empirical observation is employed to direct action in order to resolve problems within a patient–practitioner dynamic that emphasises lived experience, discipline-specific techniques, and diverse knowledge sources.

Theme FG3: Evidence use is woven throughout practice

Participants agreed that the use of multiple knowledge sources contributes to an increased ability to situate the patient and their needs as the focus of evidence application. This operationalises action within the clinical setting, and the knowledge applied to this action orients towards the end goal, that is, the patient outcome. This is identified by Barry (2006) as:

> … alternative practitioners have a knowledge system that is closer to that of anthropology than to science-based medicine; it is more grounded in the phenomenal world of everyday lived and embodied experience. In their view, the evidence needed is that which investigates not whether a therapy is working according to biomedical and scientific criteria, but whether it is making a difference to the bodies, beliefs, social and cultural experiences of its clients (p. 2655).

This perspective creates the necessity for a breadth of knowledge use to understand and address numerous aspects of the patients' lived existence. Therefore patient-focussed knowledge use is intertwined throughout all aspects of clinical practice, as these participants described:

> *… those experiences you have with your data gathering from all of your sources and experiences with patients, and you're constantly refining* (Focus group participant AB63).

> *… part of the definition of evidence-based practice is that we consistently go back and review our own practice and our own outcomes to make sure what we're doing is working* (Focus group participant SB251).

This describes reflective assessment of practice where care is reviewed to identify required action for change (Rees, 2003). Due to the philosophical orientation of CAM practitioners, each component of this process is reviewed within the context of the whole. This means clinical practice in its entirety is the therapeutic intervention, with pluralistic knowledge and the various types of evidence this entails reviewed in the context of the holistic nature of daily work. Because of the nature of the applied therapeutic techniques the

whole of clinical practice is evidentially derived from epistemologies located not primarily within reductive EBM but instead within the extensive nature of holistic practice. This perspective makes it particularly difficult for the current EBM model to fulfil participant knowledge needs.

Theme FG4: There is a lack of quality evidence for many practice areas

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Extending the requirement for extensive knowledge, the desire for quality evidence for practice is widely voiced because, as one participant described:

> *... you know, when you really look into it, when you really search hard for evidence, there's a lot that's just not there* (Focus group participant SB31).

Difficulties in evidence sourcing refer to the low level of EBM-based CAM knowledge generation and outputs, and the multiple areas of practice that remain unexamined by this model due to its epistemological orientation. This situation of limited EBM relevance is not especially unique to the CAM professions, with Knaapen (2013) describing the integration of academic literature, opinion, ethics, and practice standards in general healthcare clinical guideline development, making it clear that knowledge pluralism is necessary and appropriate in many instances (Zuiderent-Jerak, Forland, & Macbeth, 2012).

The aphorism of absence of evidence not equating to evidence of absence is pertinent in this case. While not an argument from ignorance or an assertion not proven false being therefore true, this is awareness of a lack of research per se, and even when present this may not be of sufficient quality. For example, adherence to the CONSORT statement for herbal medicine research is absent or underreported in multiple studies held in the Cochrane Library, suggesting the research results can be erroneous. However, because the research in question is taken from a legitimated source it can be mistakenly viewed as representative and integrated into systematic reviews (E. Davidson et al., 2013; Gagnier et al., 2011). These flaws aside, the majority of

participants remained keen for further EBM knowledge development, for example:

> *I definitely would like to see more of evidence-based, research-based practice uses* (Focus group participant AB5).

This sentiment demonstrates the desire for research to validate action in practice. This is reasoned to profession-specific understanding, and is not a naïve aspiration based on uncritical acceptance of the knowledge of the profession, particularly considering that the quality of non-EBM knowledge is also imperfect:

> *... not all the traditional evidence out there is that great either* (Focus group participant SB189).

Thus there can be a dearth of quality evidence for many areas of practice, and while this point is commonly made in relation to EBM-derived research, this occurs across numerous knowledge sources. Therefore participants were increasingly likely to engage with tacit, or practically accumulated knowledge due to its accessibility and contextualised reliability, as opposed to explicit knowledge that may be unreliable or unavailable.

Theme FG5: Practitioner use of a variety of knowledge sources reflects the search for a holistic evidence bases

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Participant engagement with pluralistic epistemologies within a holistic philosophy and practice led to specific perspectives towards different types of evidence, for example:

> *... because we do practice a different type of medicine to the orthodox system then perhaps we should be thinking about evidence in a different way* (Focus group participant SB129).

There is documentation that suggests that this is a valid proposition. Choi, Koo and Choi (2007) discuss how this may arise when they identify

differences between holistic and non-holistic cognitive processing , where a holistic perspective contributes to the following features:

> … attention tends to be oriented toward the relationship between objects and the field to which those objects belong … the presence of complex causalities and … the relationships and interactions between an actor and his or her surrounding situations … consider a greater amount of information … before making a final attribution (p. 692).

This is in contrast with analytical cognition where formal logic, isolated objects, and reduced attribution are central (Nisbett, Peng, Choi, & Norenzayan, 2001). These are important differences, particularly in information gathering and problem solving. Therefore, when holistic cognition is realised as underlying the reasoning of pluralistic evidence use, it is unsurprising to see the following utterance:

> *You take the best of every kind of evidence, you distil it, and you apply it appropriately to the situation* (Focus group participant SB196).

This reiterates a clear model of EBP and describes a reasoned process of filtering available knowledge to patient cases. Participants share the view that this leads to epistemological pluralism, particularly as the EBM model has limitations in its ability to provide outputs reflecting holistic cognition.

Theme FG6: The EBM model is a limited tool for generating evidence of relevance to practice

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This theme reiterates the content to this point and shows that the holistic application of evidence is not an arbitrary decision made without basis. The reasoning process residing within such decision making emerges from the inability of current EBM evidence to provide meaningful representation of a therapeutic intervention in real life. The following quote reflects on the upper hierarchy outputs of EBM:

> *... they just don't fit with actual practice well. You know, that's the biggest criticism* (Focus group participant SB185).

This reflects Barry's (2006) earlier description of the need for phenomenological and interpretive, as opposed to quantitative, methods. One participant described the intricacies of this problem in relation to the use of EBM across the healthcare profession generally:

> *... each person that walks in is different ... dealing with real people and those kind of variables which are never going to be reproduced in the type of model we have ... I don't even think it fits allopathic medicine very well, that's the thing, I mean, why do they use it? You know, we're all dealing with people here; it doesn't fit them either* (Focus group participant MB149).

This identifies the incongruity of applying evidence lacking in external or model validity, and it touches on Borgerson's (2005) series of questions that interrogate EBM:

> Where did this standard of evidence come from? Is this standard best designed to answer all questions of medical significance? What are the assumptions underlying this approach to medical evidence? Does this epistemological view presuppose a particular metaphysical commitment regarding the nature of health and disease? (p. 508)

Thus a holistic cognition and desire for evidence that is reflective of practice philosophy rapidly meets the limitations afforded by the philosophy of EBM. This causes practitioners to reason their depth of engagement with this model, which promotes methods for managing the perceived restrictions:

> *... people can get stuck within that model and not necessarily embrace everything else that does actually also constitute evidence, which is maybe not in the upper hierarchy* (Focus group participant MB129).

This identifies a variety of knowing that, although not validated in the EBM conceptual framework, is regarded as absolutely necessary to applying the best available evidence in practice.

Theme FG7: Practitioners want evidence for practice to reflect and improve the patient experience

The reasoning applied to the negotiation of limited available evidence leads to the consideration of alternative evidence generation methods. Some participants discussed ways in which such substitutes could encapsulate practice by prioritising model validity as a way to address the discussed limits:

> *I would say my healing philosophy is a holistic one. So if I was going to research my practice it would be holistic* (Focus group participant SB365).
>
> *… when we're looking at a research model there's … we need to find a separate way, a different way that's more suited to reflect actual practice* (Focus group participant AB219).

Participants had awareness of possible options, particularly whole systems research designs, and one described these in relation to clinical individuality:

> *You could still take that whole systems approach though and you could still have your baseline measures and your outcome measures and have individualised treatment. So you could have people with the same condition seeing, you know, in a naturopathic consult, and they might even be prescribed different things. But that's the way we actually practice* (Focus group participant SB246).

Dhillon (2011) situates this aspiration for valid evidence from different knowledge models as exceedingly relevant to the integration of philosophical considerations within CAM evidence generation:

> Understanding the philosophical differences between CAM and conventional western medicine, it is important to understand that the paradigm of illness and treatment used by CAM practitioners is a cornerstone in the development of high quality CAM research (p. 24).

This identifies the role of validity in relation to research quality. Therefore it is evident that requests for evidence generation methods with model and

external validity originate from a holistic cognition that underpins reasoning about evidence. Participants consistently reiterated the key role of philosophy within knowledge production and use, and they unfailingly related this to the ability to meet patient needs.

Theme FG8: Low discipline-specific research literacy and capacity contribute to insufficient evidence of relevance

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Low research literacy and capacity are problematic for the generation, interpretation, and implementation of all types of evidence in any healthcare practice. One participant stated:

> *... (what is) crucially needed is really user-friendly tools, how to evaluate traditional research, how to evaluate clinical trials, how to evaluate meta-analyses* (Focus group participant SB392).

The majority of the literature relates this topic to EBM outputs, but this participant identified traditional knowledge associated with the therapeutic application of medicinal plants as needing this attention. Because of the extensive use of this knowledge in the practice setting and the prevailing lack of research in this area, there is the need to develop literacy in the assessment of historical documentation holding traditional knowledge. Also required is skill in understanding the contemporary construal of this within educational and industry product literature. Thus the developed capacity for translation of knowledge into practice - in this instance traditional as well as scientific - is an area of practice requiring attention.

Participant consensus described educational providers holding the key to improving and increasing the type of knowledge translation they viewed as relevant. One participant identified the main issue in this area:

> *I think the problem is that if we're shooting out students where it's drummed in that they're meant to use clinical evidence then they have to be taught really well how to use clinical evidence and I think that that's the problem* (Focus group participant MB28).

This refers to clinical evidence in the pluralistic sense, and touches on the concerns expressed by participants of an emphasis on EBM training in education without a corresponding development of the breadth of knowledge required to fully meet holistic practice demands. In this context, literacy also refers to understanding the environment where knowledge is reasoned and acted upon.

While CAM research literacy and capacity development is often focussed on practitioners and the professions (Wardle & Adams, 2013), this topic also has a pivotal role in developing valid research, particularly as this applies to researchers and the part they play in generating useful evidence for integration into EBP, as Boon and Verhoef (2002) describe:

> The relative lack of CAM research is partly due to limited research capacity … and literacy … among CAM practitioners and limited understanding of CAM research issues among university-based researchers. To facilitate evidence-based practice research questions need to arise from CAM practice and research findings need to inform practice (p. 49).

Questions around practitioner capability in clarifying research outputs and the capacity of these individuals to identify and integrate a broad range of appropriate and valid patient-focussed evidence into practice occurred for participants, notably those with greater clinical experience.

Theme FG9: EBM is used as a tool of domination and control by vested interests

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There was consensus regarding the rhetorical use of evidence in arguments against CAM practice in Australia and the ways this reflected the agendas of vested interests. This stance is reflected in the literature (Komesaroff, Moore, & Kerridge, 2012; Myers et al., 2012) and the following quotes provide insight into participant perspectives on this issue:

> *Because what's used as, I think, tentatively I'd say is used as a weapon, the idea of evidence-based medicine, against our profession …* (Focus group participant MB6).
>
> *I think evidence has been used in a very negative way to pull down our profession* (Focus group participant AB269).
>
> *… we get told we're not practising evidence-based medicine* (Focus group participant SB201).

These participants framed their responses from a defensive position through the use of language laden with negative connotation. However, one participant perceived such assertions as meaningless and explained this in the following way:

> *I find the whole evidence argument quite facetious in that it tends to medicalise traditional naturopathic practice* (Focus group participant MB5).

This range of responses was reflected throughout the focus groups, and can be contextualised to larger issues. At this point these utterances react to the inappropriate use of rhetoric, and thus this theme requires critical analysis to develop deeper understanding of this interaction. Chapter 5 addresses this topic in greater detail.

While the discussed arguments contain intermingled agendas, the core assertion lies in the implausibility of applying EBM research techniques to healthcare professions that question the validity of EBM methodology. This is discussed by Derkatch (2008) as:

> … the problem of methodology in evidence-based analyses of CAM is a fundamentally rhetorical problem, situated within a boundary drama, and deeply rooted in the discursive practices of both science and medicine (p. 373).

Thus there are political and professional issues that are bound up in the rhetoric directed against CAM. This is referenced in many domains of the literature and is examined in greater detail in Chapters 5 and 6.

From the analysis of these themes, interview questions (Appendix 7) were developed to explore individual participant interaction with the research topic. These ensured an emphasis on the idiographic exploration of subject areas and generated individual viewpoints through rich in-depth discussion that was subjected to an identical process of hermeneutic analysis.

4.4 Interview thematic data analysis

Analysis of interview data proceeded in an identical fashion to the focus group data, with 24 descriptive and focussed themes generated and condensed to eight final themes in the interpretive analysis. The first two phases generated fewer themes than the focus groups, though these were broader in their discussed topics. While the general point of reference was still the matter of evidence, the themes that developed were generated from an extended breadth of conversation related to this.

Included in this was a greater variety of participant positions with respect to each question. There are several possible explanations for this, including the consensus processes within focus groups taking precedence over individual views; the complicit development of this consensus; a broader diversity of thought within the interview sample; interview questions leading to diverse responses; or the interview method creating the found diversity. Whatever the causative factor or combination thereof, the outcome was the provision of a rich dataset with a greater latitude of participant response. While this led to an increased range of topic areas it did not reduce agreement across participants in the majority of areas. Where diversity of opinion occurred this is presented here in the quotation–literature comparison and analysed in the context of appropriate utterances and documented content of relevance. Thus individual voice is not condensed towards a general theme but is identified as distinctive and discussed as such.

4.4.1 Descriptive thematic analysis of interview data

As shown in Table 4.6, 24 descriptive themes emerged from the initial interview data analysis process. Question 1 generated themes focussed on the use of knowledge in practice, Questions 2 to 6 on different interactions with evidence, and Questions 7 and 8 contain a mixture of thematic areas.

Table 4.6: Interview descriptive themes

Interview questions 1-8	Descriptive themes 1-24
Q1: How do you use different types of evidence in practice?	D1. Sourcing knowledge
	D2. Channelling knowledge
	D3. Distributing knowledge
	D4. Rationalising knowledge
Q2: How do you evaluate the effectiveness of the evidence you use?	D5. Clinically evaluating evidence
	D6. Intellectually evaluating evidence
	D7. Rationalising traditional evidence
Q3: Do you have any concerns related to the evidence you use?	D8. Applying evidence
	D9. Evidence for quality and safety
	D10. Evidence and ethics
	D11. Evidence and knowledge
Q4: Is gathering and applying this evidence easy or difficult for you?	D12. Evidence gathering
	D13. Evidence application
Q5: Does the evidence you use reflect your beliefs and values?	D14. Congruence of evidence
	D15. Enabling congruence of evidence
Q6: Does the need for evidence-based practice affect your work practice?	D16. Evidence practicalities
	D17. Evidence and epistemology
Q7: Do opinions about evidence-based practice affect your work practice?	D18. Opinions about CAM and EBM
	D19. Responses to opinions
Q8: Is there anything else you would like to add?	D20. Education and the future of the profession
	D21. Current notable problems for EBM
	D22. Evidence and legitimacy
	D23. Using EBP well
	D24. Philosophical integrity

For this first phase, Themes D1–D4 outline a knowledge application process related to the evidence gathering of Themes D12 and D13, with EBM viewed as one of multiple knowledge sources. This reflects knowledge sourcing, channelling, distribution, and reasoning in the practice setting; a finding of importance to practical reasoning dynamics. Themes D5–D11 reveal the chief

processes and concerns with regard to evidence use, and D14–D17 and D24 identify philosophical–knowledge interface topics of importance.

Theme D7 reflects reasoning of traditional knowledge as it relates to and integrates with other knowledge. This describes the negotiation of EBM limitations and a reliance on other knowledge due to evidence gaps. The majority of participants described this as a logical necessity that is applied to achieve patient care. Themes D18–D23 involve discussion on the negatives and positives of EBM, concerns about the resilience of philosophical concepts and knowledge forms in educational delivery, and discussion of the fit between EBM outputs and beliefs, values, and ethics. Aligned to this is the consensus view that knowledge generation must be reflective of the practice under assessment. Spurious use of evidence by the complementary medicine manufacturing industry was often regarded as unethical and of significant concern.

Those participating in the interviews displayed a variety of stances towards EBM evidence, with the majority perceiving this as a beneficial model of knowledge generation that has become increasingly removed from its original inception. This results in concern over the degree of misrepresentation and misalignment of evidence to healthcare practice and underscores difficulties with successful implementation of an EBM-based EBP model.

4.4.2 Focussed thematic analysis of interview data

From this point, the descriptive themes were subjected to further interpretation combined with theorisation that elaborated on the initial description. Table 4.7 presents the results of this analysis. This phase of analysis became increasingly integrative of the literature and theory relevant to each emerging area. The themes began to represent a greater depth of analysis of participant utterances and clarify, to a certain extent, the meaning and reasoning underlying these.

Table 4.7: Interviews focussed themes

Descriptive themes 1-24	Focussed themes 1-24
D1. Sourcing knowledge	F1. Practitioners drawing on a breadth of evidence sources
D2. Channelling knowledge	F2. Practitioners using knowledge strategically
D3. Distributing knowledge	F3. Practitioners applying hierarchical multiplicity of knowledge types to presenting cases
D4. Rationalising knowledge	F4. Practitioners rationally applying research evidence to practice
D5. Clinically evaluating evidence	F5. Practitioners selecting evaluation methods to assess applied evidence
D6. Intellectually evaluating evidence	F6. Practitioner assessment of the quality of the applied evidence
D7. Rationalising traditional evidence	F7. Practitioner methods used to rationalise the primacy of traditional evidence
D8. Applying evidence	F8. Practitioner concerns related to application of evidence in practice
D9. Evidence for quality and safety	**F9.** Practitioner concerns about product quality and safety
D10. Evidence and ethics	F10. Practitioner concerns about moral and ethical aspects of evidence
D11. Evidence and knowledge	F11. Practitioner concerns related to research evidence and professional knowledge
D12. Evidence gathering	F12. Practitioner process and issues around evidence gathering
D13. Evidence application	F13. Practitioner process and issues around evidence application
D14. Congruence of evidence	F14. Practitioner views of congruence of evidence with practice beliefs and values
D15. Enabling congruence of evidence	F15. Practitioner practical experience of integrating evidence with practice beliefs and values
D16. Evidence practicalities	F16. Practitioner practical experience of evidence in work practice
D17. Evidence and epistemology	F17. Practitioner experience of evidence changing knowledge in work practice
D18. Opinions about CAM and EBM	F18. Practitioner views on opinions about CAM and EBM
D19. Responses to opinions	F19. Practitioner responses to opinions about CAM and EBM
D20. Education and the future of the profession	F20. Practitioner views of education and future practitioners
D21. Current notable problems for EBM	F21. Practitioner identification of EBM problems in practice
D22. Evidence and legitimacy	F22. Practitioner views on legitimacy
D23. Using EBP well	F23. Practitioner views on positive aspects of EBP
D24. Philosophical integrity	F24. Practitioner philosophical concerns

This contributed to a deeper investigation of participant cognition, with a striking feature to emerge being the indication of considered reasoning

leading to practice-based action. This is most noticeable in Themes F1–F7 in combination with F14–F17, which indicate a deliberate handling of knowledge related to philosophical orientation and associated beliefs and values.

Theme F3 in particular, with its description of a hierarchical structuring of knowledge in response to a presenting case, exemplifies reasoning emerging from interpretation of meaning *in situ*. This is a fluid process, as F16 and F17 demonstrate, where the response to evidence is reflexive. Adjustments in understanding and knowledge from this are found in F14, F15, and F24, where an association between knowledge validity and beliefs, values, and philosophy is evident. This reveals interaction between interrelated meaning, reasoning, and action in practice alongside philosophical and value-based decision making. Themes F18–F19 focus on views and responses to external forces and these require a greater depth of analysis than is offered here; as such these are addressed in Chapter 5. Themes F20–F23 reflect the diversity of additional topics that arise during discussion and indicate the depth of penetration of the EBM model into all aspects of the professions.

4.4.3 Interpretive thematic analysis of interview data

These themes were subjected to deepened theorising and conceptualisation to condense findings. Eight final plain language thematic areas emerged from the reorganisation and collapse of the focussed themes, as shown in Table 4.8. Due to the breadth of participant responses, several of these themes integrate topic similarities as a way to capture the extent of participant viewpoint in one interpretive theme.

Theme INT1 reflects knowledge integration with practitioner expertise and patient needs, where combinations of these collaboratively interact to co-produce outcomes. This references the EBP model, with each of the evidence, practitioner and patient elements of this triad assessed for validity within the context of holistic practice and patient centredness.

Table 4.8: Interview interpretive themes

Focussed themes	Interpretive themes 1-8
F1. Practitioners drawing on a breadth of evidence sources	The patient, the practitioner and the evidence are co-producers of therapeutic outcomes **(Theme INT1)**
F16. Practitioner practical experience of evidence in work practice	
F2. Practitioners using knowledge strategically	Evidence is often referenced to traditional knowledge and evaluated against patient response **(Theme INT2)**
F3. Practitioners applying hierarchical multiplicity of knowledge types to presenting cases	
F4. Practitioners rationally applying research evidence to practice	
F5. Practitioners selecting evaluation methods to assess applied evidence	
F7. Practitioner methods used to rationalise the primacy of traditional evidence	
F6. Practitioner assessment of the quality of the applied evidence	Practitioners are concerned about research evidence quality and validity, its ethical application by industry, and epistemological values ascribed to different evidence **(Theme INT3)**
F8. Practitioner concerns related to application of evidence in practice	
F9. Practitioner concerns about product quality and safety	
F10. Practitioner concerns about moral and ethical aspects of evidence	
F11. Practitioner concerns related to research evidence and professional knowledge	
F12. Practitioner process and issues around evidence gathering	Gathering and applying evidence for CAM practitioners has common issues that reduce with experience **(Theme INT4)**
F13. Practitioner process and issues around evidence application	
F14. Practitioner view of congruence of evidence with practice beliefs and values	Evidence can align with, test and develop beliefs and values in work practice **(Theme INT5)**
F15. Practitioner practical experience of integrating evidence with practice beliefs and values	
F17. Practitioner experience of evidence changing knowledge in work practice	
F21. Practitioner identification of EBM problems in practice	Where available, appropriate and valued, evidence is used for clinical decision making **(Theme INT6)**
F23. Practitioner views on positive aspects of EBP	
F18. Practitioner views on opinions about CAM and EBM	Media opinions about CAM and EBM have a variety of effects on work practice **(Theme INT7)**
F19. Practitioner responses to opinions about CAM and EBM	
F20. Practitioner views of education and future practitioners	Philosophical and therapeutic traditions are disregarded by EBM, making clinical legitimacy primary **(Theme INT8)**
F22. Practitioner views on legitimacy	
F24. Practitioner philosophical concerns	

This is further unravelled in Theme INT8 where EBM limitations are negotiated via clinical legitimacy and practice-based evidence. This is connected to Theme INT6 and the assessment of evidence prior to integration with clinical decision making, and also to Theme INT2 and

traditional knowledge, notably in the therapeutic application of medicinal plants that leads to engagement with traditional indications and their contemporary interpretation.

Application of knowledge and tradition occurs within a framework of critical appraisal, with Theme INT3 identifying the dominant evidence concerns. The role of ethics within the formation and use of evidence, the quality and validity of applied evidence, and the improper use of evidence by profiteering agents emerge. The applied reasoning identifies problems that are addressed as best as possible prior to clinical action from knowledge. Theme INT4 reveals these types of practice-based concerns reducing over time as clinical experience extends, which Theme INT5 grounds in the capacity to integrate knowledge to test and evolve philosophical positioning and professional beliefs and values. Theme INT7 identifies different responses to external opinions about CAM and describes these creating a variety of reactions. These findings confirm and extend both the literature review and focus group themes, and they reiterate practical reasoning within the integration of knowledge forms into meaning-based action in practice.

4.4.4 Interview quotation–literature comparison

This section displays participant quotes and discusses their relationship to the literature and theory, with the provided content enabling the development of insight into participant meaning, reasoning, and action. Because interviews involve an individual interaction, the quotes do not reflect collective agreement but instead reveal discrete considerations that arise from singular engagement with questions. Therefore this section reviews utterances that reveal a breadth of individual responses, and where relevant identifies their merging with the thought of other participants or their preservation of independent viewpoint.

Theme INT1: The patient, the practitioner, and the evidence are co-producers of therapeutic outcomes

This theme emerged from discussion on the role of evidence in practice. Referencing the structure of EBP, participants emphasised patient-centred care and the assessment of knowledge in relation to therapeutic outcome. Intrinsic to this is a focus on the inherent capacities of the patient as an active healing agent and the ability of therapies to augment this. Thus treatment results arise from the intersection of applied knowledge, practitioner expertise, and the degree of patient engagement with a treatment targeting their own healing capacity (Dunne et al., 2005). The patient and practitioner understanding that arises from this relational interaction is co-produced, described by Realpe and Wallace (2010) as:

> Collaborative co-production challenges the usual relationship between professionals and service users. It requires the latter to be considered experts in their own circumstances and therefore capable of making decisions and having control as responsible citizens … At the same time, co-production also implies a change in the role of the professionals from fixers of problems to facilitators who find solutions by working with their clients (p. 9).

Co-production emerges from a shared decision-making environment that functions by inter-subjective communication, where the patient is the locus of agency and control and the practitioner is the facilitator of the therapeutic intervention based on the best available and contextualised knowledge.

This co-productive arrangement confronts reliance on EBM outputs and the proposal put forward by some proponents of this model that these have legitimacy over other applied knowledge. For these participants it is clear that the juxtaposition between a limited EBM evidence base and their own clinical legitimacy contributes to engaging with more ways of knowing than EBM can provide (Sturmberg & Martin, 2008). One participant discussed this in the context of credibility, validation of applied knowledge, and their engagement with co-produced knowledge in practice:

> *I think we look to see if there's something that backs up what we're doing that gives us more credibility in the eyes of whoever we feel we have to prove ourselves to. I'd like to think who I'm proving myself to and who I need credibility with is my patients. They are my first priority and their successes speak to their ability to help themselves in so far as I've been able to support them* (Interview participant 5B60).

This quote focuses on engagement with the healing relationship and patient agency rather than the pursuit of legitimisation from other areas. This was reiterated across the interviews where participants focussed on the importance of knowledge co-production and discussed response to treatment informing ongoing practitioner expertise and improved patient outcome. For example, when discussing their interpretation of the ways of assessing applied evidence in practice, one participant stated:

> *... the most immediate measure is whether the patient got better at the time ... (you) look back over a variety of different prescriptions ... going back to your own patient files and looking at them and making judgments about them* (Interview participant 4B14).

Thus evaluating and understanding the effectiveness of therapeutic interventions lies within the ability to engage with patient needs in the context of appropriate knowledge for the presenting case. To succeed, this co-production requires the practitioner to facilitate patient engagement within a shared decision-making structure, to prescribe in response to the patient's lived experience, and to recognise this as the fulcrum of the therapeutic relationship (Barrett et al., 2003; Berger et al., 2012). Thus the aim is to co-produce the best possible outcome for the patient.

Theme INT2: Evidence is often referenced to traditional knowledge and evaluated against patient response

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The majority of interview participants discussed the use of traditional knowledge in clinical practice and provided varying types of justification for this. The generally shared view describes the evidence for medicinal plant

effectiveness being assessed through comparison between scientific and traditional knowledge. The following quotes from participants describe the concomitant, and hierarchical, use of these within prescribing practices:

> *I do definitely look at scientific studies as applied to herbal medicine and I do see if there is a robust level of evidence for it. But I don't let that stand in the way of traditional use of herbal medicine, which I believe has large amounts of merit associated with it* (Interview participant 5B8).

> *So I'm balanced in terms of I'm open to modern evidence and to looking at studies but I'm also, I really look to traditional methods. And so that's my values, that's very much in line with my values* (Interview participant 27B20).

The reasoning for this preference towards traditional knowledge lies in the nature of the scientific evidence when compared to medicinal plant interventions applied in practice. The former assess isolated phytochemicals rather than whole plant extracts as they are practically applied, which leads to limited applicability of the parts-focussed evidence. Because medicinal plants are complex phytochemical agents with interacting relations, the research that represents a fraction of this in isolation has little bearing on actual clinical use. As Spelman (2005) explains from the WHM philosophical perspective:

> In research models Ockham's Razor is often utilized as an operational principle in understanding the outcomes of modelling. However this principle of parsimony may delay the progress of understanding phytochemical matrices and the emergence of synergy that can arise from their interaction with human biology (p. 31).

Thus the current reductive approach to developing an evidence base for medicinal plant use is the antithesis of the perspective of clinicians who apply these therapeutic agents to patients on a daily basis. The outcome of this is practitioner reference to traditional knowledge sources to access information that is germane to practice-based realities (Zick et al., 2009). The next quote describes the practical reasoning that is applied in this situation:

> *Hilariously reductive, in fact. You know, to the point where you sort of don't recognise it as herbal medicine really because it's had its traditional rug pulled out from under it, which is often the basis of how you administer* (Interview participant 5B26).

Thus evidence validity concerns are present for participants, with the dominant negotiation strategy found to be relating the medicinal plant to its traditional indications. The following quotes demonstrate this action within prescribing practices:

> *... it doesn't particularly worry me if I say I'm using Euphrasia, because it's been used for generations and I found it really clinically useful for hay fever and it doesn't have a particularly large evidence base because it's not been trialled, it doesn't worry me, I'd still use Euphrasia* (Interview participant 2B44).

> *... when I'm pouring herbs; that's not evidence-based. You know I know the herbs and their indications, some of which have been researched, but I haven't marked on my bottles strong evidence for this or weak evidence for that or no evidence yet for that, I'm just using the herbs I guess more traditionally* (Interview participant 6B6).

Thus traditional knowledge has high status as an evidential source over the bulk of scientific research due to its use across cultural practices where therapeutic remedies are matched to individual presentations (Barsh, 1997). This identifies participant preference for knowledge developed through use in context rather than knowledge bearing little resemblance to applied therapies. However, not all participants took this position, with the following utterance describing reliance on tradition as a barrier to acceptance of evidence for and by practitioners; implying that the validity of this is inappropriately prioritised over evidence that is validated externally to the professions:

> *.. from my experience practitioners now almost get offended when someone says well what's your evidence? Like it's almost a dirty word I think. ... There's still a real barrier to our profession because of this traditional philosophy that actually to be quite honest I think is misconstrued to a certain extent* (Interview participant 25B18).

This extended the focus group comments where the traditional knowledge base was described as 'not that great' and the need for increased literacy in interpreting this knowledge was identified. If certain traditional knowledge is flawed and there is a lack of ability in recognising this, then the potential to misconstrue this knowledge source is certainly evident. Therefore, while using traditional knowledge to negotiate invalid evidence is reasoned through reference to traditional and philosophically based prescribing practices, the accuracy and validity of such practices are contested.

Theme INT3: Practitioners are concerned about research evidence quality and validity, its ethical application by industry, and epistemological values ascribed to different evidences

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This multilayered theme relates to quality, validity, evidence generation, and translation difficulties that arise due to low external validity and poor patient centredness in EBM outputs. The quotes discuss the various components of this complex theme; for example in terms of validity one participant outlined their main problem in translating EBM evidence into day-to-day practice:

> *... I think the evidence base tends to provide a whole lot less information for a clinical practitioner. It doesn't tell you how to use (therapies) for the individual patient* (Interview participant 4B4).

This comment relates to the repeatedly discussed patient-centred nature of each participant's work practice and the inability of EBM research to reflect this. While this references the limited application of EBM research evidence for specific purposes in practice, similar concerns extend to the CAM manufacturing and sales industry and the way evidence in used in product claims and professional literature. As one participant stated:

> *(I) intentionally don't go to manufacturers conferences so I never accept anything from the maker of the product as evidence, although I do read some of the newsletters although only superficially because I assume that they're biased and I don't really trust them* (Interview participant 6B21).

The focus group and interview participants identified industry literature as an evidence source, and this quote suggests a high degree of critical appraisal is required when assessing this. This critique of company-based evidential claims and the heightened awareness of the way industry interests may manipulate knowledge to validate products relates to the ways research evidence is presented per se (Sarris, 2012; UK Health Forum, 2013).

Wading through the biases and validity problems within research is a cited issue for the healthcare professions generally (Glasgow & Emmons, 2007; Lenfant, 2003) and how this occurs for these participants is continually discussed. One interviewee explored the issue of reviewing the available evidence in the context of research translation into practice realities:

> *I think a big gap is between research, how wonderful research can be, but it's the way it's being quantified and I don't know whether it, you know what that bridging gap is, whether it's using a bit of the way perhaps we traditionally as herbalists and naturopaths would use a plant and combining that with a scientific compartmentalised …* (Interview participant 17B20).

The unfinished nature of this utterance reflects difficulty in finding a solution for this problem. Thus it is clear that while knowledge sources are critically appraised and reasoned action derives from this evaluative process, the ability to translate certain knowledge is challenging due to its clinically inappropriate and therefore inherently limited nature.

Theme INT4: Gathering and applying evidence for CAM practitioners has common issues that reduce with experience

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A novel theme to emerge from the interviews was length of time in practice determining the depth of concern about the capacity for EBM evidence to have relevance. Ease of knowledge use occurs as participant understanding and know-how grows and matures to reflect the ways 'knowledge, especially the concept of tacit knowing, seem suitable for description and discussion of clinical knowledge' (Malterud, 1995, p. 183). This is the expansion of

personal knowledge based on experience as it is applied to problem solving. Greater understanding arises from the patient-practitioner encounter and the decision-making processes that flow from this (Henry, 2006; Polanyi, 1973). The following quotes describe this as an evolutional process, with the first noting a change in knowledge emphasis and the second, the building of clinical knowledge through interaction with multiple evidence:

> *... when I was earlier in practice I held on to evidence as a way of creating or developing legitimacy. And I think when you have more experience you can rely more on your clinical legitimacy and less on what's published* (Interview participant 2B36).

> *... the evidence I was gathering and I was using was acquired knowledge, traditions, and stuff. And so it just accrued quite easily over the years. I'd take into account what different trials said or this or that, so it had a natural incremental thing so it wasn't really hard to put into casework* (Interview participant 8B36).

More experienced participants discussed this theme as a logical progression that occurs naturally over time. Familiarity with applying knowledge to patient cases and assessing the worth of this from an outcome-based perspective leads to a knowledge relevance hierarchy for these participants. This self-sufficiency in practice is documented as leading to a greater emphasis on clinical legitimacy that is also associated with an improved ability to critique knowledge:

> ... students who were about to embark on their internship year were highly conscious of the gap between answers they could find in the literature and the clinical decisions they had to make, feeling that they lacked the experience to confidently make 'that leap with the patient'. Experienced physicians recognize a gap but their confidence in their experience enables them to both be more critical of the EBM literature and less hesitant to make clinical decisions without EBM support or even contrary to EBM recommendations if clinically appropriate (Hay et al., 2008, pp. 709-710).

Therefore clinical experience is an important factor in determining the use of knowledge, and practitioners continually assess the role of all evidence to the practice setting, irrespective of its source.

Theme INT5: Evidence can align with, test, and develop beliefs and values in work practice

Numerous participants were enthusiastic about the benefits of the EBM model for the reinforcement, assessment, and transformation of practice. The following quotes describe two different perceptions of these benefits:

> *... for me the evidence-based thing is interesting because (it) let me question a lot of the things that I was taught and that I perhaps wasn't all that comfortable with. And so I feel like I can make more ethical and moral decisions in clinical practice* (Interview participant 26B44).

> *... for me evidence-based medicine can sometimes be helpful to query that belief-based system and, it doesn't have to overtake or be held up as the only form of evidence, I think it can be seen as a way of constantly questioning things that were believed to be true* (Interview participant 20B44).

For these participants EBM serves as a tool for testing existing knowledge in relation to beliefs and values. This is a particularly important function as the potential for these to be either beneficial or bias-laden is present for all professions (Koro-Ljungberg & Tirri, 2002; Markovits & Nantel, 1989). The holding of unreasonable beliefs can negatively affect healthcare delivery and can underpin a lack of patient centredness, determine negative perspectives towards different forms of knowledge and contribute to a lack of justificatory reasoning for clinical decision making (Hansen & Kappel, 2012; Wicclair, 2007). As one participant stated:

> *I'm actually a supporter for evidence-based medicine because I think we have to use what we know ... and have some structure around hearing what we know, and not run off on total madcap ideas ... I think it's really useful to guarantee or to help with a minimum standard practice. When well-used the idea of evidence-based medicine makes sense in that context* (Interview participant 2B36).

This clearly identifies the benefits of the EBM model for continually assessing professional knowledge. However, for some EBM proponents the presence of

beliefs in CAM practice per se is problematised (Lindeman, 2011). While the premise of this criticism is valid and EBM evidence can usefully challenge problematic belief, this argument asserts that 'CAM communicates with the intuitive mind' (p. 372) as opposed to deliberatively reasoning belief. The following quote contradicts this assertion:

> *I think the way I understand evidence and … use evidence reflects my beliefs and values absolutely. I would put traditional evidence and information that I have garnered from other people probably a lot higher on the scale … there's aspects of evidence-based information that I think can be incredibly useful and it can certainly tell us about interactions with drugs that really are something that we didn't conceive of essentially 30 to 40 years ago. But it's not the be all and end all for me … I'd put experience up there … certainly my own values come into it absolutely, and my own values are for individualised prescribing and for an understanding of the patient* (Interview participant 4B32).

This shows the application of deliberative reasoning to differentiate the value and limitation of EBM evidence relative to the practice context. Here it serves a role in relation to practitioner reasoning of philosophy, beliefs, values, and experience. The literature identifies these as components of praxis and explains their resonance to contextualised practice methods:

> Professional practice … is partly characterised by adherence to a set of values that define, not just the ethical behaviour of its practitioners, but a profession's way of conceptualising, thinking, working and prioritising; i.e., the profession's praxis. These values cannot be reduced to instruments; good outcomes and good practice may not easily be measured against set standards but require judgments that entail weighing a range of factors that are different in each situation (Tyreman, 2011, p. 210).

For participants the range of factors requiring reasoned judgment are assessed against the type of knowledge that can address the relevant demands. EBM evidence is universally applied for herb–drug interaction knowledge, which is situated at the base of the evidential hierarchy; whereas for the remainder of practice its use is situation specific and relative to the

problem requiring solving. The outcome is that EBM knowledge is used to improve knowledge and challenge belief where possible and appropriate.

Theme INT6: Where available, appropriate, and valued, evidence is used for clinical decision making

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The use of EBM outputs alongside other knowledge is reasoned as assisting understanding in practice. For numerous participants this is an ordered and structured layering of understanding. One participant described this in relation to medicinal plant knowledge:

> *… read it up as much as I can in … traditional accounts of how it's used. And that gives … a really good clinical basis for understanding the range of conditions that the plant might be used in … I will usually then sit down and read up what the active constituents are as far as they're known … And I'll look at and see if in fact any clinical trials … And in my own mind it gives me some idea, a very limited idea, about how a plant might be used, in a very circumscribed group of people … So I guess, you know there's this sort of, in the diagnostic process and in the treatment process, there's this rolling reiteration of information that comes from different sources* (Interview participant 4B12).

This epistemological pluralism is used because 'in order to answer questions in the best way possible, one needs more than one form and level of explanation' (De Vreese et al., 2010, p. 374). Such thinking extends to the philosophical arena where individuals 'may reject a view about the nature of philosophy very divergent from their own but still tolerate and value the challenge such diversity presents' (Shook, 2006, p. v). Such reasoning underpins contextualised and co-produced knowledge that strives for the best option for the best outcome. How this manifests relies upon the depth of available knowledges and their relation to the matter at hand:

> *I'm trying to get as many pieces of information that are all pointing towards the one thing, so there is a weight of evidence rather than just prescribing off one trial that might be pointing in the direction of a certain therapeutic agent* (Interview participant 21B24).

This is a reflection of evidence-informed practice where the contextualised use of EBM outputs is contingent alongside other evidence forms, which means 'to implement evidence into practice there needs to be a process of evidence particularization' (Rycroft-Malone, 2008, p. 405). This necessitates epistemological pluralism, which is situated within professional philosophy, ethics, and reasoning, as the following quote reveals:

> *I try to be very ethical in the way that I practice. I try to apply a gold standard, when I say gold standard I know that it's going to fall outside of the evidence-based gold standard, but in naturopathic terms I try to apply things in a very rational way* (Interview participant 13B56).

In this instance the gold standard is not the RCT of EBM but is instead a qualitative assessment of clinical effectiveness residing in the criteria of patient centredness and co-produced outcomes. Thus where EBM evidence is available, appropriate, valid, and valued it is applied to decision making relative to the use of all knowledge types. Therefore evidence derived from EBM is used as it is deemed relevant to the practice context and within the philosophical and ethical orientation of the reasoning individual practitioner; bearing in mind its contextualised capacity to challenge and transform these aspects of practitioner experience.

Theme INT7: Media opinions about CAM and EBM have a variety of effects on work practice

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As with the focus groups, interview participants identified that media and literature-based arguments asserting CAM practices lack evidence and are implausible. This contributed to a variety of responses to a specific question about this, with some participants being dismissive of this presence:

> *The only thing I would say is that the discourse infuriates me, with the lack of intellectual rigour in the arguments* (Interview participant 1B54).

> *I guess it's frustrating because quite often the way it is reported in the media and it hasn't actually … the reports have generally themselves, got a lot of holes in them* (Interview participant 24B24).

There is a pause in the last quote that indicates a searching for appropriate language; with the conclusion that the argument is flawed due to insufficient accuracy. Thus participants do not flippantly disregard the argument but rather examine and reason their response to it. Some had a different reaction, as exemplified in the following utterance:

> *You have to be very comfortable in saying this is actually why I'm doing this and then being very honest and saying there is no evidence to support what I'm doing except for my own clinical application. And generally that's received … as long as you're very upfront and honest with people, and they then make the decision for themselves* (Interview participant 26B42).

This recognises that a low evidence base for some therapeutic interventions does exist, which leads to this participant providing clear explanation to gain informed consent for treatment. This negotiation reflects shared decision making based on the best available evidence, practitioner expertise, and patient preferences, thus reflecting EBP and negating the argument that practitioners are not practising EBM. The reasoning underlying such responses can be extended in the following way:

> … the problematization of CAM … might itself be described as a flight from science; albeit not the science of randomized placebo controlled trials, meta-analyses, and preclinical mechanism-of-action studies that are usually advocated. For it does seem somewhat peculiar to account for the health care practices, choices, and preferences of individuals without paying particular empirical attention to the social context in which individuals take care of their health (MacArtney & Wahlberg, 2014, p. 114).

Participants are acutely aware of the inability of the argument proposed against CAM to incorporate this context, which is reflective of the limitations of the EBM model per se. This lack of recognition of contextualised healthcare practice exists for all professions, not just CAM specifically, and it underlies

participants' dismissal of this argument. This serves to counter these opinions through processes of practical reasoning operating in such contexts.

Theme INT8: Philosophical and therapeutic traditions are disregarded by EBM, making clinical legitimacy primary

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For participants EBM-derived evidence is situated relative to external validity and among other types of knowledge that can be translated into a philosophically informed practice. This results in a practice-based evidence assessment of the clinical legitimacy of applied interventions; the following quote outlines concerns that arise if this approach is disregarded:

> *... (the) empirical and holistic evidence and the base that naturopathy's come from is to a large extent being ignored. And this means that people become very narrow-based practitioners with really quite a poor knowledge base and are totally inculcated into the kind of narrow medical model of thinking, which is of great detriment and loss to their professional knowledge* (Interview participant 1B24).

This reflects apprehension that the lack of active implementation of the accumulated knowledge and philosophical base into practice reduces the effectiveness of N&WHM healthcare delivery. For example, one participant discussed the reductive parts-based research model of medicinal plant assessment and reiterated incongruities between this type of scientific evidence base and the realities of practice method:

> *Mostly if it's a single substance that's been researched or it's just been analysed for its phytochemical profile, well it's interesting. But my practice and my life approach is more holistic, focussing on treating the body/mind/soul medicine really* (Interview participant 14B30).

This reinforces the requirement for model validity of research evidence, and at this stage the EBM model is impotent in integrating this into its knowledge assessment model. Thus reliance on this model for validity in practice is seen as deeply flawed. Henry (2006) reasons this in the following way:

> EBM's attempts to create universal rules for medical practice have failed largely because its architects consistently encounter important concepts such as 'deep understanding' and 'clinical judgment and expertise' that EBM's framework cannot explain. An accurate, adequate theory of medical knowledge must account for the kinds of knowledge physicians actually use in practice (p. 188).

The discussed limitations of EBM are again identified here, and this further validates the need for pluralistic epistemology and clinical legitimacy as logical necessities. However, while all interview participants practice this pluralism, the role of philosophy was questioned in the following utterance:

> *I don't know whether it is a historical thing where the philosophy of, there's so much adherence and absolute belief in the philosophy of natural medicine that it's to the detriment I think of almost every, or to the exclusiveness of anything else* (Interview participant 25B18).

This identifies the dogmatic application of philosophical principles in practice that are not adequately challenged or revised, and shows the relevance of openness to the testing of all knowledge belief. This also touches on the intrinsic nature of CAM philosophy and its inadequate theorisation and reasoning in relation to the wider philosophical arena. The following quotes provide interesting perspectives on this:

> *… when it stands up against something that is philosophically tightly knit, whether that's Chinese medicine or biomedicine, you can see how weak natural therapies philosophy is, it just kind of crumples and falls to bits under philosophical examination* (Interview participant 8B94).
>
> *… you say vitalism and most people think oh here we go, woo woo department* (Interview participant 1B94).

This reveals problems with the stability and plausibility of CAM philosophy and a lack of adequate consideration of this issue within the CAM professions. This is because, although philosophical approaches are deemed valuable to practice, the clarity of expression of these for this selection of participants is insufficient. This important finding will be revisited in Chapter 7.

At this point the focus group and interview themes have been thematically analysed and compared to the literature. These are now subjected to an additional phase of condensation before the results are critically analysed.

4.5 Collating the focus group and interview themes

The focus group and interview themes were gathered and summarised to generate final themes. Table 4.9 shows the collation of the separate sets of themes and Table 4.10, the condensation of these into final themes.

Table 4.9: Collated focus group and interview themes

Code	Focus group themes 1-9	Code	Interview themes 1-8
FG1	A variety of knowledge sources provide guidance for patient care	INT1	The patient, the practitioner, and the evidence are co-producers of therapeutic outcomes
FG2	Practitioners use multiple sources of evidence to generate practice-based evidence	INT2	Evidence is often referenced to traditional knowledge and evaluated against patient response
FG3	Evidence use is woven throughout practice	INT3	Practitioners are concerned about research evidence quality and validity, its ethical application by industry, and epistemological values ascribed to different evidences
FG4	There is a lack of quality evidence for many practice areas	INT4	Gathering and applying evidence for CAM practitioners has common issues that reduce with experience
FG5	Practitioners use of a variety of knowledge sources reflects the search for a holistic evidence base	INT5	Evidence can align with, test, and develop beliefs and values in work practice
FG6	The EBM model is a limited tool for generating evidence of relevance to practice	INT6	Where available, appropriate, and valued, evidence is used for clinical decision making
FG7	Practitioners want evidence for practice to reflect and improve the patient experience	INT7	Media opinions about CAM and EBM have a variety of effects on work practice
FG8	Low discipline-specific research literacy and capacity contribute to insufficient evidence of relevance	INT8	Philosophical and therapeutic traditions are disregarded by EBM, making clinical legitimacy primary
FG9	EBM is used as a tool of domination and control by vested interests		

Table 4.10: Condensation to develop final themes

Condensed focus group and interview themes	Final themes 1-5
FG1: A variety of knowledge sources provide guidance for patient care	Practitioners use multiple sources of evidence to work with their patients **(Theme 1)**
FG2: The patient, the practitioner, and the evidence are co-producers of therapeutic outcomes	
FG3: Practitioners use multiple sources of evidence to generate practice-based evidence	
FG9: Practitioners use of a variety of knowledge sources, which reflects the search for a holistic evidence base	
FG4: Evidence is often referenced to traditional knowledge and evaluated against patient response	Research evidence has limited clinical validity, so practitioners weave traditional and experiential knowledge into outcomes-based patient-centred care **(Theme 2)**
FG5: Evidence use is woven throughout practice	
INT4: Practitioners want evidence for practice to reflect and improve the patient experience	
INT7: Philosophical and therapeutic traditions are disregarded by EBM, making clinical legitimacy primary	
FG6: Practitioners are concerned about research evidence quality and validity, its ethical application by industry, and epistemological values ascribed to different evidences	Research evidence is variable; research integrity, quality, relevance, and ideology is questioned; and practitioners are confident in their application of non-EBM knowledges and evidences **(Theme 3)**
FG7: Lack of quality evidence for many practice areas	
INT1: Evidence can align with, test, and develop beliefs and values in work practice	
INT2: The EBM model is a limited tool for generating evidence of relevance to practice	
INT3: Where available, appropriate, and valued, evidence is used for clinical decision making	With time in practice, evidence is gathered and applied in an individual hierarchical style reflective of practitioner beliefs and values **(Theme 4)**
INT6: Low discipline-specific research literacy and capacity contributes to insufficient evidence of relevance	
FG8: Gathering and applying evidence for CAM practitioners has common issues that reduce with experience	
INT5: Media opinions about CAM and EBM have some effect on work practice	Vested interests use evidence-based medicine as a tool in arguments against CAM practice **(Theme 5)**
INT8: EBM is used as a tool of domination and control by vested interests	

These themes are situated in participant quotes, have been assessed against the literature, expanded through theory, and constantly compared to ensure accuracy and authenticity. They emphasise patient-centred care and practice-based evidence; negotiation of the limitations of the EBM model through

reasoned epistemological pluralism; experience in practice solidifying practitioner values and beliefs; increasingly sophisticated knowledge ordering over time; and recognition of ideological interests in evidence generation and use, and the negotiation of this. Thus participants collectively and individually expressed meaning that reflects and reinforces reason-based, action-oriented praxis.

4.6 Conclusion

Thematic analysis of focus group and interview data reiterated the majority of comment from the literature without discrepancy and extended this into arenas not traditionally associated with discussion of CAM. These novel topics include the practical reasoning of epistemological concerns and the direct linking of this process to evidence application and patient-centred action. Participants articulated critically appraised pluralistic knowledge use in the context of daily holistic work practice and recognised rhetorical constructions of their profession with disdain or disinterest.

Omitted from this thematic analysis was implementation of the hermeneutic arc, and the ensuing chapter is dedicated to assessing participant language within this critical frame.