

50<sup>TH</sup> ANNIVERSARY SERIES

## Walking backwards into the future of health professional practice

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### Abstract

Health professional education needs to be designed so that future practitioners are well equipped for clinical and professional challenges. While the biomedical model has enabled major biological advances in all health professions, its inherent presuppositions have prevented progress in many of the more complex issues within healthcare, examples being health inequities, somatisation, chronic pain and student/clinician burnout. We suggest that students learn about the scientific origins and tacit assumptions of the biomedical model, such as reductionism, biological plausibility and clinical objectivity. Critical reflection, including interprofessional discussion, can enable students to explore the strengths and limitations of the biomedical model. Although biomedicine will remain the dominant paradigm in both training and clinical practice, other “ways of seeing” may be helpful, including biopsychosocial and Indigenous models. Complexity sciences now provide additional understandings of human physiology and socio-cultural processes within healthcare and could also be taught explicitly as core curricula. Student-selected components may enable faculty to pilot educational initiatives in relation to specific professional challenges, which could then be further developed for all students. Critical reflection and teaching innovation are core values of the Australian and New Zealand Association of Health Professional Educators (ANZAHPE). “Walking backwards into the future” in healthcare education means identifying and critiquing our taken-for-granted assumptions, then providing future clinicians with broader frameworks and skills to respond more effectively to persistent challenges in healthcare.

**Keywords:** health professional education; critical reflection; biomedicine; biopsychosocial; complexity science

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## Introduction

*Kia whakatōmuri te haere whakamua: I walk backwards into the future with my eyes fixed on the past* (Māori whakataukī /proverb) (Rameka, 2016)

“Walking backwards into the future” is a traditional Māori whakataukī in Aotearoa New Zealand. Through a better understanding of where we are from, we may better apprehend the challenges of the present. We contend that to address many of today’s complex health challenges, we need to understand the origins of Western medicine and their ongoing, but largely hidden, influences on contemporary health professional practice. While largely derived from medicine, the principles discussed here apply to all health professional training—physiotherapy, nursing, occupational health, dentistry, pharmacy and allied professionals.

The main purpose of healthcare is the relief of suffering (Cassell, 1982). Euro-centric models of healthcare approach this purpose through empirical research into the human body, diagnosis and treatment of patients with disease, and health promotion and disease prevention. This is known as biomedicine, a model that largely emerged from the scientific revolution in the 16th to 18th Centuries and remains the foundational paradigm for the training of health professionals (Little, 1995; Lock & Gordon, 2012).

Biomedicine is a powerful tool for understanding the structure and physiology of the human body (Angell et al., 2000) and in developing effective treatments for acute problems. However, the model has significant limitations; for example, it is unable to directly address the social determinants of health and the impact of colonisation (Marmot et al., 2012) that contribute to inequitable health outcomes (Dune et al., 2021; Sheridan et al., 2011).

We list key underlying biomedical principles in the first column in Table 1, including reductionism, linear-causation, biological plausibility and an artificial separation between “mind” and “body” (McWhinney, 1984; H. Wilson & Cunningham, 2013). These assumptions are embedded within a “positivist” philosophical position—that reality is “out there” to be discovered through empirical and quantitative research (Little, 1995) (definitions in the appendix).

Previous critiques of biomedicine have noted inappropriate biomedicalisation of life issues, market commodification of medical practice and marginal benefits from increasingly expensive healthcare (Clarke et al., 2003; Fee & Krieger, 1994; Thomas, 2006; Valles, 2020). Extending such critique further, some of the limitations of biomedical theory are noted in the right column of Table 1. For example, if biological plausibility and disease theory are key premises, then it is difficult to incorporate personal, family, spiritual or social-cultural influences on health. Similarly, the “objective observer” and traditional roles of doctor and patient inhibit awareness and ongoing interrogation of therapeutic relationships (H. Wilson & Hawken, 2021).

**Table 1**

*Foundational Principles or Underlying Assumptions of Biomedicine: Definitions of Key Biomedical Assumptions, Including Examples of Their Utility in Practice and Their Clinical Limitations*

<b>Assumption</b>	<b>Definition</b>	<b>Examples or Utility</b>	<b>Limitations or Problems Arising</b>
Reductionism and scientific method	The task is to identify the underlying parts or constituents of the body from gross anatomy down to the smallest level: cells, biochemical pathways, genes, telomeres	Major advances in understanding the human body and how to investigate it (Angell et al., 2000)	Does not adequately explain the complexity within human physiology (Rocca & Anjum, 2020) or within healthcare (Sturmburg & Martin, 2013; Tuffin, 2016)
Linear causation	There is a direct cause-and-effect relationship between the event or trigger and the effect in the body	Guides research into cause of disease, treatment and physiological thinking, e.g., a renal stone causes ureteric spasm which causes back pain	Leads to simplistic understanding of health issues for individual patients and of problems in healthcare delivery
Biological plausibility	Clinical phenomena must be explainable by anatomical, biochemical or physiological changes within the body	Helps to guide research into biological causes and treatments	Psychosocial influences on the body are unable to be quantified or are not considered
Disease theory	Diseases are considered to be the main cause of ill-health. The task is to classify diseases and their causes, usual progression and how they can be modified	Has identified bacterial and viral diseases and has led to successful vaccination programs	Not all problems are explicable under disease theory, e.g., loneliness, grief, suffering, substance and process addictions (Jutel, 2014). Minimisation of lifestyle and environmental factors in causation and treatment of illness
Mind-body split	The "body" is different and separate to the "mind" (thoughts, feelings, volition, relationships, social and societal factors)	Wound healing will occur regardless of how the patient thinks about it	Inhibits recognition of psychosocial factors in aetiology and how to incorporate them into clinical management
Objective observer	The interpersonal stance of the scientist is to be objective and impartial in relation to their object of study, e.g., study of bacteria	Enables clinical decisions to be based on available evidence	The doctor-patient relationship and its effect on outcomes are considered to be less relevant; conflation of scientific objectivity with interpersonal detachment; clinicians' own needs not examined
Traditional roles	Doctor as "expert", patient as "recipient" of doctors' skills and knowledge (McWhinney, 1984)	For some patients, seeing doctor as expert can increase their trust	Tendency towards paternalism and the "bogus contract" (Smith, 2003); doctors know best, learn to control patients' choices and suffer over-responsibility; patients become dependent with less personal agency

**Illustrative critique:** *"Modern medicine, therefore, is faced with a contradiction by which scientific advances and medical technology offer the best opportunities ever, but at the same time an increasing number of patients are over-medicalised, over-diagnosed, become chronically ill, do not find a place in the health system or feel that they are not met as whole persons in the healthcare system. The biomedical model seems to have played a central role in this development"* (Rocca & Anjum, 2020).

**Table 2**

*Ongoing Challenges Within Health Professional Practice, With Clinical Examples: Representative Complex Clinical Challenges That Have Not Been Solved Using Biomedical Assumptions*

Challenge	Details	How Biomedical Assumptions Can Act as Barriers to More Effective Training and Practice
<b>Polypharmacy unintended outcomes and side effects</b>	Patients with 5 or more medications have higher rates of unexpected drug interactions and side effects (Doherty et al., 2022); 5th leading cause of death in US.	The single disease cause-and-effect model means that research and clinical guidelines are unable to guide clinicians' understanding of multiple diseases and interactions of multiple medications within the individual patient.

*Clinical example: An elderly widower complains again to his doctor of chronic constipation and nausea, despite standard medical treatments for hypertension, depression, insomnia, osteoarthritis and constipation. Medications: Enalapril, Bendroflumethiazide, Omeprazole, Citalopram, Amitriptyline, Colecalciferol, Paracetamol, Tramadol, Prochlorperazine, Docusate and Senna.*

**Interpretation:** Both doctor and patient continue to assume a simple "cause-and-effect" relationship, i.e., that all symptoms are due to biological diseases, each of which requires "correct" treatment. Potential contextual factors (loneliness, isolation and lifestyle habits) and physiological complexity are unable to be adequately conceptualised within this framework. The patient may improve through careful deprescribing (Poots et al., 2020).

<b>Adverse events in healthcare</b>	Unintended negative outcomes from medications, surgery or other interventions (Donaldson et al., 2000; Reason, 2000).	Linear causation and narrow focus on biological disease inhibits recognition of institutional systems, teamwork and complexity within healthcare delivery that contribute to adverse events (Bamberger & Bamberger, 2022; Guo et al., 2022).
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*Relevant comment: "Teamwork plays an important role in the causation and prevention of adverse events. ... Staff's perceptions of teamwork and attitudes toward safety-relevant team behavior were related to the quality and safety of patient care" (Manser, 2009).*

**Interpretation:** "Complex systems thinking" is more likely to identify and address various interpersonal factors and teamwork issues that can contribute to adverse outcomes.

<b>Patient suffering</b>	The personal experience of threat to personhood, including the perceived threat of disease or death (Cassell, 1982).	Biomedical focus is on disease and bodily dysfunction rather than on patients' lived experience, so teaching and learning about patient personal suffering has been insufficient (Egnew & Schaad, 2009; Phillips et al., 2023).
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*Clinical example: A 35-year-old woman with brittle Type 1 diabetes since childhood bursts into (grateful) tears when her new doctor inquires of her: "What's it been like for you, living with diabetes all this time?" This is the first time anyone has asked about her personal experience of chronic illness.*

**Interpretation:** Undergraduate curricula now have more emphasis on "patient-as-person", which may enable graduates to better validate the patient's illness experience as part of a supportive doctor-patient relationship.

<b>End-of-life care</b>	Research and practice based on a curative disease model means palliative care receives less research funding or time and emphasis within curricula (Fox, 1997).	Traditional focus on biological parameters of disease rather than on the person with it. Focus on "cure" of disease implies less well-defined roles for clinicians when the patient is dying (Willmott et al., 2016).
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*Clinical example: Doctors are reluctant to talk realistically about prognosis to a 75-year-old woman with metastatic colon cancer or to refer her to palliative care.*

**Interpretation:** There have been strenuous efforts to improve training for palliative care (Billings & Block, 1997), but translation to clinical practice is still work in progress.

Challenge	Details	How Biomedical Assumptions Can Act as Barriers to More Effective Training and Practice
<b>Persistent somatic syndromes, bodily distress, somatisation, functional illness</b>	The expression of personal or psychological distress in physical or bodily sensations and symptoms (Broom, 1997).	Biological plausibility and mind-body split; clinicians are unable make links between personal life and bodily symptoms, searching instead for biomedical causes of symptoms.

*Clinical example: A 25-year-old junior doctor develops abdominal pain and intermittent diarrhoea over several months while on a stressful clinical rotation. Symptoms improve during weekends and holidays. Although there are no “red flags” in history or examination, his own doctor refers him for a colonoscopy.*

**Interpretation:** These two doctors may be colluding in “somatic fixation”, denying the temporal links between personal stress and bodily symptoms (Mann & Wilson, 2013).

<b>“Meaning responses”: placebo and nocebo</b>	Effects of unconscious positive or negative expectations about a disease or its treatment (Howick, 2012; Moerman & Jonas, 2002).	Biological plausibility and mind-body split; neither patient nor clinician can conceptually make links between bodily symptoms and personal, cultural and societal factors.
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*Clinical examples: Patients appear to recover better with antibiotics for upper respiratory infections (placebo responses). A patient develops side effects from a new formulation of thyroxine, after the brand was changed amidst a media outcry (Faasse et al., 2009); high rates of adverse outcomes in control arms of Covid-19 vaccination and other trials (nocebo responses) (Amanzio et al., 2022).*

**Interpretation:** Clinicians may be unaware of meaning responses as part of normal clinical practice. In order to address this knowledge gap, students will need to grasp how biomedical assumptions can inhibit awareness of these day-to-day phenomena (Petrie & Rief, 2019).

Modern healthcare has many challenges that have not, and will not, be solved by a purely biomedical approach (clinical examples in Table 2). It has long been recognised that adverse events are largely due to systems errors (Donaldson et al., 2000; Reason, 2000), but rates are not reducing (Avery et al., 2021; Elliott et al., 2021) and the “hidden pandemic” of problems from polypharmacy (side effects and iatrogenic complications) show no signs of ameliorating (Barnett & Garfinkel, 2018). Patients with “persistent somatic symptoms” (PSS), somatisation, or “bodily distress syndrome” continue to be marginalised within healthcare (Fink & Schröder, 2010; Rask et al., 2017), while their clinicians still feel inadequate and ineffective (Stone, 2014).

Another example of the limitations of biomedical thinking is student and physician burnout (Dzeng & Wachter, 2019). Initiatives for wellness and professional resilience have been largely ineffective within a historical culture of medicine that fosters individualism, stoicism, self-criticism and an unhealthy perfectionism (A. Wong, 2020)—social mores within medicine that may be related to an uncritical emphasis on objectivity and “detachment”.

We suggest that through critical reflection (Brookfield, 1990), training programs could make biomedical assumptions more explicit in order to apprehend their inherent limitations more accurately. We contend there are other models for conceptualising and approaching current professional issues that may enable further progress.

## Critical reflection

*Critical reflection is the process by which adults identify the assumptions governing their actions, locate the historical and cultural origins of the assumptions, question the meaning of assumptions, and develop alternative ways of acting.* (Cranton, 1996, p. 6)

Structured opportunities for critical reflection (Maudsley & Strivens, 2000) have been uncommon in health professional training (H. Wilson, 2020). Amongst other benefits, such opportunities may enable students to identify the strengths and weaknesses of the biomedical model, to use this model judiciously when appropriate and to realise when its naïve application to complex or “messy” clinical issues can inadvertently create further problems, including over-investigation and over-treatment (Levinson et al., 2018).

However, recognising our own taken-for-granted medical presuppositions (McWhinney, 1984) is not easy, as by definition, they are assumed as being “normal” or “how the world is”. Just like other social biases (Devine, 1989), biomedical theory becomes embedded, without question, during the socialisation process of health professional training. Student learning about these domains will require faculty who are themselves aware of their own assumptions and biomedical biases (Sukhera & Watling, 2018) and who can facilitate critical reflection. With respect to “alternative ways of acting” (Cranton, 1996), we suggest more explicit training and student understanding of the biopsychosocial (BPS) model, Indigenous worldviews and the complexity sciences.

The BPS model was mooted 4 decades ago (Engel, 1977) and has become an emerging thread within health professional curricula in Australia and New Zealand. However, the tension of integrating a reductionist model—where mind and body are considered as “separate”—with a model where biology, social world and the psychospiritual questions can be integrated and interdependent means that the BPS is yet to be well theorised by faculty or internalised by students (Gentry et al., 2021; Jaini & Lee, 2015; Larivaara, 2000).

Some educational innovators have already addressed these questions (Hassed et al., 2008), but in clinical practice, the BPS model is often reduced to an either-or dichotomy—the patient’s problem is either biological or psychological/social, rather than those issues being interrelated. Once such issues have been addressed, however, the model offers significant advantages over that of biomedicine (Borrell-Carrió et al., 2004; Gentry et al., 2021; W. Ng et al., 2021).

Health inequities exemplify the long-term outcomes of colonisation (Doyle, 2011), mediated in part through structural barriers to access (Sheridan et al., 2011) and unconscious bias of healthcare professionals (Sukhera & Watling, 2018). To address these systemic problems, curricula innovations need to be endorsed politically and displayed within day-to-day healthcare.

**Table 3**

*Comparison of “Simple” and “Complex” World Views\**

	<b>Simple Scientific Worldview, Reductionist or Linear System</b>	<b>Complex Scientific Worldview or Non-Linear System</b>
<b>Principles</b>	Understanding the whole is through understanding individual parts Defined by constituent components Linear cause and effect model Complicated, but still predictable Outputs are proportional to inputs Additive effects from components Quantitative Independent of context	The whole is more than the sum of its parts Defined by patterns of interactions Non-linear interactions Limited predictability and/or unstable Outputs not proportional to stimulus Multiplicative effects from interactions Quantitative plus qualitative Influenced by contextual factors Homeostasis and buffering of inputs will keep each system relatively stable until loss of internal resilience can lead to rapid and/or unpredictable change.
<b>General examples</b>	Newtonian physics	Weather, climate, financial markets, micro- and macro-ecosystems, social networks
<b>Healthcare examples</b>	Biomedical model: Research and predictability is based on large groups of patients in order to identify biological parameters that impact on health.	Biopsychosocial model: Health as a “dynamically balanced” state within and between complex internal systems and external contexts such as family and societal systems
<b>Healthcare improvement</b>	Protocols and guidelines (top-down approach) guided by evidence from randomised controlled trials.	Identify and understand all potential contributing systems in order to engage locally with staff and patients (Reed et al., 2018).

Adapted from *Handbook of Systems and Complexity* (Sturmborg & Martin, 2013) and “Implications of Complexity Theory for Clinical Practice and Healthcare Organization” (Tuffin, 2016)

\* Biomedical assumptions are based on a “positivist” philosophy or worldview that searches for direct cause-and-effect (reductionist) explanations for observed phenomena; in contrast, complexity worldviews recognise how multiple simultaneous inputs can create non-linear interactions with less predictable outcomes. Complex systems are the basis of the biopsychosocial model that can accommodate personal and social factors as well as biological ones.

In Aotearoa New Zealand, preferential selection of Māori and Pacifica medical students counters their historic exclusion from the workforce (Crampton et al., 2021). Indigenous understandings and healthcare models are now being taught, including Te whare tapa whā, a holistic (versus reductionist) framework of health and wellbeing (Rochford, 2004). The Indigenous Health Framework incorporates the Meihana model (see Appendix) (Pitama et al., 2007), which attempts to understand and respect persons within the dynamic context of their culture and history. The “Hui Process” (Lacey et al., 2011) is a consultation model with Māori whanau and advocates “whakawhanaungatanga”—the process of forming and maintaining relationships as if they are whanau or family—which posits that authentic engagement is central to improving health outcomes (D. Wilson et al., 2021).

These approaches are in contrast to the longstanding biomedical injunction to remain “objective and detached”. Exploring concepts such as *manaakitanga* or “mana-enhancing” care challenges students to create an environment of “welcoming respect” and to work from a strengths rather than deficits approach.

Australian initiatives to address Indigenous healthcare are gaining political momentum (Taylor & Guerin, 2019), with regulatory mandates for cultural safety within health professional training (Brumpton et al., 2022). Indigenous worldviews raise questions about traditional power dynamics within healthcare, where clinicians have been considered as “experts” and patients as “passive recipients” (McWhinney, 1984). Health professional students must be aware of biomedicine’s privileged position within Western society and the potential dissonance between biomedical worldviews and those of their patients. There is evidence that culturally safe consultations can improve health outcomes (S. Wong et al., 2021).

It is not commonly understood that the biopsychosocial model is based on complexity sciences or “complex adaptive systems” (Cilliers, 2002; Von Bertalanffy, 1972). Complexity sciences focus on relationships between subsystems and how various interactions work together. The more parts there are, the more complex the system is, including homeostatic buffering and feedback loops. This means it becomes difficult to analyse or predict future outcomes (see comparisons of “linear” versus “complex” worldviews, Table 3). Complexity sciences now offer refined understandings of physiology, individual health and illness (Billman, 2012) as well as of complex processes within consultations (Scott, 2013) and healthcare delivery (Rocca & Anjum, 2020; Sturmberg & Martin, 2013).

We suggest that current curricula on BPS, Indigenous models and complexity sciences are further expanded within health professional training. Pedagogical challenges include the development of relevant lectures to provide initial knowledge, which must then be reinforced and integrated through uni- and multi-professional small group discussions. Critical reflection will be required on the inevitable tensions arising from these different ways of seeing (O’Hagan & Eggleton, 2023).

In addition to exploring underlying assumptions and emerging models, students will also require specific professional training if they are to become more effective with the complex issues listed above and in Table 2. New curricular structures may be required.

### **Addressing complex health issues**

Student selected components (SSCs) are standard features within UK curricula, providing students with a choice of topics to explore more deeply (Riley, 2009). SSCs are not common in Australasia (Barrett et al., 2022) but could become useful vehicles for faculty to gain confidence in teaching students about key professional challenges. These educational initiatives could then be organised methodically as core material. Three examples now follow.

### ***Training for persistent somatic symptoms (PSS)***

Similar to training in the UK (Muirhead et al., 2021), it appears there are very few undergraduate curricula on PSS in Australasia or other guidelines for how to respond to symptoms not explained within a biomedical framework. Over the last 3 years, we (HW and MW) have been researching our final-year students' knowledge about these common and sometimes debilitating illnesses, finding gaps in the formal curriculum as well as unhelpful influences within clinical training (Shattock et al., 2013). Students are now receiving diagnostic and communication skills training for patients with PSS within an overarching curricular framework.

### ***Understanding chronic pain***

A biomechanical pathology model is ineffective in chronic back pain (Haldeman, 1990) and many other persistent pain conditions (Cohen et al., 2021). Students need to engage with emerging neurophysiology, such as neuroplasticity and the unconscious role of the brain in creating the sensation of pain (Nijs et al., 2021). This requires a fundamental shift away from seeing "mind" and "body" as separate. Students could usefully learn how to deliver pain neuroscience education (Butler & Moseley, 2013), which will reduce the unhelpful tendency to request investigations for chronic pain, looking for biomechanical or nociceptive causes (Fitzcharles et al., 2021; Kosek et al., 2021).

The outcomes of such a structured approach to these and other professional competencies could then be assessed by OSCEs and/or by direct clinical observation before graduation. This overall strategy may also address the oft-cited "hidden curriculum" (see Appendix) within training (Hafferty & Franks, 1994), where students' skills and attitudes can be influenced by negative role-modelling from clinicians (Gaufberg et al., 2010).

### ***Enhancing student wellbeing through reflective practice***

SSCs could also include well-facilitated small group reflective practice, which can validate students' initial observations of workplace culture and responses to patient care (Kind et al., 2009; Wald et al., 2019), encourage critical reflection and emotional intelligence (McNaughton, 2013) and address feelings of imposter syndrome or not belonging in training (Clandinin & Cave, 2008), all of which contribute to stress and burnout. Balint groups, which focus on clinical relationships (Otten, 2017), provide a good example and offer benefits for both students (Ryding & Birr, 2022) and clinicians (Kjeldmand et al., 2013). Balint groups are now well established within undergraduate curricula in the UK (Shoenberg, 2012) and in family practice training in the US (Diaz et al., 2015) but remain uncommon in Australasia (L. Ng et al., 2022; O'Neill et al., 2015). Authentic connection with peers through safe and effective group work may counteract moral distress (Dzeng & Wachter, 2019) and increase students' sense of community and professional identity (Moir et al., in press; Sharpless et al., 2015).

Other complex professional challenges (further examples in Table 2) require continual pedagogical attention. For example, effective preparation of students to prevent and

respond to adverse clinical events will require an understanding of systems science, then attention to patient safety concepts and advanced communication skills throughout their training (Walton et al., 2010), including interprofessional sessions. Consistently delivered sessions on problems arising from healthcare complexity, such as multimorbidity and polypharmacy (Watanabe, 2022) are also required, including specific training for deprescribing (Raman-Wilms et al., 2019).

### **Implications for healthcare education**

We acknowledge significant advances in health professional education in Australia and Aotearoa, especially over the last 20 years. Our suggestion is that such advances would be even more effective if taken-for-granted assumptions and models of care are made explicit and legitimate objects of study. Some educational innovators are already addressing these concerns, and there are many initiatives yet to be publicised. We have also not touched on the extensive barriers to curricular renewal (Baker et al., 1998), given the usual resistance to change within complex organisations.

Despite many previous critiques of the biomedical model, it remains the basis of health professional training and clinical practice. Biomedical knowledge and skills are essential; these can be augmented through the application of complexity sciences and other clinical models, especially when multiple factors are contributing to difficult clinical situations and when healthcare delivery is problematic. However, biomedicine's ongoing dominance means biopsychosocial and Indigenous models still struggle to make headway as viable conceptual approaches to healthcare.

The corollary is that if faculty and clinical teachers are to guide students in these ways, then they also need to identify and critique their own training and tacit assumptions about the nature of illness and of healthcare. Courses that enable faculty to engage in their own critical reflection are essential for further progress.

Our vision for health professional education is that future practitioners are better prepared for the persistent professional challenges in clinical practice that have resisted traditional approaches. Arguably, such preparation will require explicit recognition of the limitations of a purely biomedical approach as well as curricular frameworks to explore the utility of other models. Training would encourage critical reflection on cases and specific coaching in modern communication skills, the outcome being better responses to complex issues as yet unresolved by purely biomedical thinking. We contend that through understanding the past, students may better comprehend the present; this may help them respond more effectively to current challenges in healthcare delivery.

### **Conflicts of interest and funding**

The authors have no conflicts of interest or funding to declare.

## Acknowledgements

We thank the reviewers for their helpful comments.

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## Appendix

### *Definitions and Further Reading*

**Balint groups:** Clinical reflection in small groups with a trained facilitator, focusing on the doctor– or student–patient relationship. Doctors Michael and Enid Balint developed this group format in the 1950s. Balint societies around the world now provide training for facilitators or group leaders (see for example, the Balint Society of Australia and NZ: <https://balintanz.org/>).

**Bodily distress syndrome:** This term has been suggested to replace previous labels such as “somatisation”, “functional illness” or “medically unexplained symptoms”, all of which refer to bodily symptoms in relation to psychosocial and cultural influences (Fink & Schröder, 2010).

**Hidden curriculum:** Institutional and cultural influences (taken-for-granted customs, expected interpersonal behaviours, social rituals, “how things are done here”) that influence how students are socialised into their profession and into clinical practice (Hafferty, 1998), particularly in relation to what is considered important or less important. Examples are the relevance of psychosocial factors in aetiology and clinical management and how clinicians respond to patients with PSS.

**Hui process:** A framework for building relationships between health providers and patients based on a traditional format of greeting, introducing, starting a relationship and closure of an encounter within the setting of a medical consultation (Lacey et al., 2011).

**Mana-enhancing care:** Approaching clinical care according to values such as respect, kindness and hospitality within the consultation in order that the patient gains personal integrity and moral authority.

**Meihana model:** Based on socio-cultural perspectives, the Meihana model provides an understanding of the long-term impacts of colonisation on the experiences of Indigenous people and their healthcare (Pitama et al., 2007).

**Positivism:** A philosophical position that only accepts things that can be seen or proved; “truth” must be scientifically verified or capable of mathematical or logical proof. This position underpins empirical research within the biomedical tradition: “*Western medicine has evolved very strongly in a tradition of empiricism, realism, materialism and positivism, and for these reasons the scientific or experimental method is highly valued by medical scientists*” (Little, 1995).

### **Recommended texts**

The following texts expand further on the concepts introduced here:

Frankel, R. M., Quill, T. E., & McDaniel, S. H. (2003). *The biopsychosocial approach: Past, present, and future*. University Rochester Press.

- Sturmberg, J. P., & Martin, C. M. (2013). *Handbook of systems and complexity in health*. Springer.
- Anjum, R. L., Copeland, S., & Rocca, E. (Eds.). (2020). *Rethinking causality, complexity and evidence for the unique patient: A CauseHealth resource for healthcare professionals and the clinical encounter*. Springer Open.
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