INTRODUCTION

Beginning in Iraq, Iran, India and China approximately 10,000 years ago, civilisations have for millennia understood the workings of society, mind and body to be interdependent - biopsychosocial - an imbalance in one area leading to problems in another. The underlying processes for this early biopsychosocial paradigm were poorly understood and magical / spiritual explanations predominated.

Arguably, there have been only two major shifts (paradigm changes) in medical thinking since this time; firstly, the emergence of a biomedical paradigm and secondly a return to a biopsychosocial paradigm - this time with a more solid scientific background. We are currently living through this second paradigm change - making medicine an exceptionally interesting area to work in at present.

NEED TO KNOW

THE BIOMEDICAL PARADIGM

The first paradigm changes in medical thinking took more than 9,000 years to occur. In the 18th century people started to explain how the body worked in a new evidence-based rational way. To do this it was necessary to classify diseases, organisms, body systems and treatments. A single, usually external causal agent was assumed to cause illness. Alongside the huge advances in our understanding because of this approach, the holistic view of the body has undoubtedly been affected.

‘Functional’ disorders, ‘psychosomatic’ problems, divisions between medical and psychological, social care and medical care are all classifications that arguably now profoundly affect healthcare efficiency but are based on the rationale that diseases are either physical or psychological. This division between mind and body was an outcome of the new way of thinking and had not been present before.

The biomedical model focusses on diagnosing a disease and instigating treatment, but up to 40% of presentations to GPs do not represent disease, do not have a diagnosis and do not need treatment - they are symptoms only (1). It is clear then that the biomedical model of disease does not provide a sufficiently broad model for sole use in either community or acute settings.
To address this, a second paradigm change in medicine is currently underway. Starting with philosophical changes in the 1960s, the biopsychosocial paradigm (2) has been adopted by general practice and fundamentally alters how medicine is practised. This is a way of thinking that seeks to integrate and generalise, rather than classify and specialise and increasingly, the mechanisms underlying this way of thinking are being discovered - the field of psychoneuroimmunology.

We shall briefly examine the role of the ‘psych’ and ‘social’ parts of the model but with an emphasis on understanding how these factors impact on the physiology of humans. In this way we hope that it’s possible to reach a ‘scientific’ understanding of why psycho-social factors are important in treating human beings.

PSYCHOLOGICAL MEDICINE

Professor Kieran Sweeney was a great GP and writer who tragically died in 2010 at the age of 58 from mesothelioma, induced by his working environment:

- [https://www.youtube.com/watch?v=--uMNY55nw4](https://www.youtube.com/watch?v=--uMNY55nw4)

Before he died, Kieran produced a paper outlining how we can treat diseases in people without forgetting that they are people as well (3). We have seen how the power of scientific, evidence-based medicine can inform decisions about care (principle 1A). The trouble is that some individuals may not conform to the evidence and may not want the 'best' treatment. It turns out that if we get this part wrong then the power of the treatment will be reduced considerably. If we can get it right and align treatment with the patient, then the power is considerably increased (traditionally called the placebo effect - which can alter efficacy by as much as 30% (4).

Thus, the power of our patient’s thoughts and feelings (i.e. their neuro-endocrine system) can profoundly affect their treatment. It turns out that the chemicals that mediate our thoughts and feelings have a profound effect on our immune system and so paying attention to our patient’s thoughts and feelings (i.e. their psychology) is important in treating their physical or biological problems.

The relationship between doctor and patient is therefore of critical importance and influences the outcomes of disease through the mechanisms outlined above. We will explore this in subsequent sections.
Unfortunately, it is a fact that the poor and disadvantaged in our societies suffer with far more illnesses and have much poorer health outcomes: (5, 6). As doctors charged with improving the health of our patients it is vital that we know about this and can intervene where possible to improve our patient’s wellbeing. Again, the mechanisms that underlie these facts are only just beginning to be understood but again appear to hinge on the role of neurochemicals and the stress response. For example, if you live under the runway of a large airport, your stress response and neuro-endocrine system is triggered to a small extent every time an aircraft takes off and lands.

Over time, this can have profound effects as we now know that adrenaline and other stress response chemicals such as steroids have a significant effect on how our immune system functions - reducing the efficacy of killer T cells and lymphocytes (1, 7). People living in social conditions that trigger stress therefore have increased rates of mortality. For example, the average age of death in the poorest part of the UK is 58 (this is considerably less that most emerging nations and several third-world countries) - whereas the average age of death in Chelsea is 85. [https://www.theguardian.com/news/datablog/interactive/2011/jun/08/life-expectancy-uk-health-mapped](https://www.theguardian.com/news/datablog/interactive/2011/jun/08/life-expectancy-uk-health-mapped)

THE BIOPSYCHOSOCIAL MODEL OF ILLNESS

Now we need to put all the above together. We know that diseases are caused by disequilibrium within our bodies. We now also know that our psychological state and our social surroundings can have a profound effect on the cause and outcomes of disease.

The GMC document ‘Outcomes for Graduates’ (8) is structured using this arrangement (biological, psychological and sociological medical knowledge). It's an important document as it drives and defines all medical student assessments. It’s a heavy charge to take on responsibility to operate over such a wide range of human knowledge - but it is one that ultimately makes medicine such a fascinating career.
ACTIVE LEARNING

✓ Look up information about how the role of post codes (ie deprivation) plays a part in how GPs are paid (the Carr-Hill Formula). GPs are paid more to look after people from disadvantaged areas, as their use of health services is considerably increased. For example, try reading this article in ‘Pulse’ a Gp-oriented 'trade' magazine with a definite viewpoint – perhaps look at some of the comments received about this article from GPs:

http://www.pulsetoday.co.uk/news/hot-topics/nhs-finances/carr-hill-formula-very-unlikely-to-create-more-equitable-allocation-finds-study/20038898.article

✓ Try and get to know a patient really well by beginning to understand how biological-psychological and social are related. Look up information on how to follow up a ‘panel patient’.

✓ The biopsychosocial paradigm is eloquently explained in much greater detail in Ian McWhinney’s outstanding ‘Textbook of General Practice’ (1). Try reading the chapter ‘philosophical and scientific foundations of family medicine’.

FURTHER LEARNING


The following resources have been developed in conjunction with SAPC Heads of GP Teaching. If you have any queries or questions regarding the resources on offer, please contact Prof. Joe Rosenthal or Prof. Alex Harding, Co-Chairs of SAPC’s Heads of GP Teaching Group.