F1. How Medicine Decides What Counts as Evidence

F1:1 Barron Lerner, *Bad Attitudes: Thomas Holmes and the Connection of Emotion to Disease*

Psychosomatic medicine, which studied the connections between emotional life and body processes, reached its peak in the United States between the 1930s and 1960s. One largely forgotten chapter in the history of psychosomatics was the theory that distinctive attitudes—which occurred in response to stressful situations—led to specific diseases. This paper revisits the work of University of Washington psychiatrist Thomas Holmes, who created not only written but visual representations of these purported associations.

There are many threads in the history of psychosomatics, but a prominent one is the work of the psychiatrist Franz Alexander. Alexander, a student of Freudian theories, popularized the notion of "psychosomatic specificity," arguing that particular emotional disturbances led to particular diseases. Holmes, who later achieved fame for his Life Stress Inventory, which correlated life stressors with the likelihood of becoming sick, built on Alexander's work, compiling a list of 24 attitudes that led to specific diseases. For example, persons with asthma felt "unloved, rejected, disapproved of and shut out." Those with hypertension felt "threatened with harm" and someone with an ulcer felt "deprived of what is due him and wants to get even." Holmes helped depict these attitudes with a series of evocative drawings featuring patients struggling with their particular illnesses.

Holmes never formally researched his proposed attitudes although others did study similar theories. By and large, such research was unable to prove that specific attitudes caused specific diseases. Indeed, most of the diseases in question are now seen not as psychological but related to genetics, immunity and inflammation.

But while Holmes' attitudes may seem naïve or purely speculative from a modern lens, they nevertheless hearken back to an interest in mind-body medicine that is often lacking in clinical medicine today. Holmes' attitudes and their accompanying images were a genuine effort to engage with the suffering of patients.

Learning Outcomes

- To revisit the history of psychosomatics, a mid-twentieth century movement to understand the mind-body connection.
- To examine the evidence used to argue that specific emotional attitudes led to specific diseases.
- To analyze the ways in which the study of attitudes represented a patient-centered approach to illness.

F1:2 Stephen Casper, *Why We Can No Longer Diagnose What We Discovered: A Genealogy of Traumatic Encephalopathy Syndrome*

In 2014, researchers introduced *Traumatic Encephalopathy Syndrome* (TES) to describe the clinical features of *Chronic Traumatic Encephalopathy* (CTE) in living subjects. This paper traces the paradox that made such a construct necessary. Throughout much of the twentieth century, physicians recognized the gradual neurological and psychiatric decline associated with repetitive head trauma through direct clinical observation and longitudinal study of living patients. Their work established the conceptual foundation for what would later become CTE.

Yet by the early twenty-first century, the evidentiary standards of medicine had changed. Knowledge that once emerged from descriptive observation and case-based reasoning on living patients now required postmortem confirmation, standardized instruments, and statistically validated study designs. Within this framework, CTE became a pathological rather than a clinical category, and the living patient—the original site of discovery—was rendered inaccessible to diagnosis. Historical observation made the disorder visible, yet the clinical practices that enabled its discovery have quietly disappeared from contemporary medical science.

Learning Outcomes

- Describe how diagnostic reasoning for brain injury has evolved from case observation to evidence-based confirmation.
- Analyze how changing standards of proof alter the visibility of disease.
- Evaluate the ethical and epistemological implications of restricting diagnosis to postmortem evidence.

F1:3 Johanna Schoen, *Pain and the Premature Infant*

Until the mid-1990s, infants undergoing surgery did not regularly receive anesthesia or pain medication during recover or for other painful procedures. Infants, clinicians maintained, did not feel pain and even if they did, they would not remember the events. The belief that preemies do not feel pain traces back to the postwar period. Because the most common approach of administering anesthesia during this time was an ether mask in which ether or chloroform were dripped in unmeasured concentrations, many infants suffered cardiac arrest or hypertension and died before the surgery, leading to concerns that anesthesia itself was bad for infants. Moreover, psychology researcher Myrtle McGraw had concluded in the early 1940s that infants who had been fed and swaddled did not respond to pain. Clinicians concluded that infants did not feel pain. Instead, they paralyzed infants with Curare, allowing surgeons to do their work but leaving infants fully able to feel pain.

By the mid-1980s, parents raised alarm about the lack of anesthesia and pain control for their infants and a number of clinicians began to publish their research confirming that even premature infants felt pain. In 1987, both the American Academy of Pediatrics and the American Society of Anesthesia recommended that clinicians anesthetize infants prior to surgery. Clinical practice was slow to change, however. Clinicians continued to deny that infants felt pain, that the administration of pain relief was appropriate even if clinicians did not understand the pain experience in neonates, and that administering pain relief to neonates was safe. Relieving pain inflicted in the process of performing medical procedures to save infant lives was not a priority to clinicians.

This paper will trace the development of the infant pain debate which was complicated by disciplinary boundaries – spanning neonatology/pediatrics, anesthesiology, and psychiatry/psychology – and by the lack of standing of those raising alarm about infant pain: parents and a young Sikh postdoctoral fellow and pediatric resident at Harvard Medical School and Boston Children's Hospital. It will highlight the complicated personal and professional factors that slowed the development and adoption of new scientific insights in clinical care.

Learning Outcomes

- To explore the complicated ways in which past physicians have evaluated evidence for various medical conditions.
- To understand how social and cultural factors can influence the way scientific conclusions are reached and disseminated.
- Develop an understanding for the personal and professional factors that hinder the adoption of evidence-based medical research into clinical practice