

nonspecific factors in psychotherapy. A true understanding of the specific components of psychotherapy can only occur when the components of the placebo effect are also understood (Gliedman, Nash, Imber, Stone, & Frank, 1958).

These considerations led to the search for generalizations and hypotheses about all methods of therapy. Although various mechanisms and processes have been proposed as explanations of the placebo effect, empirical support for an adequate theory is absent. Hypotheses and conclusions about psychotherapy and the placebo effect will be derived from review of prescientific and modern treatment, and the placebogenic factors contributed by the patient, situation, physician, and their interrelationships. Selected theoretical concepts, drawn primarily from the social, clinical, and experimental psychological literature, will be utilized to explain placebo effects. Only those concepts that can be applied to psychotherapy and behavior change will be focused on in this review.

PRESCIENTIFIC MEDICINE

Psychological factors, always important in medicine, were recognized as early as the period of Hippocrates. Galen estimated that 60 percent of patients had symptoms of emotional rather than physical origin. This figure is close to the contemporary estimate of 50 to 80 percent. Despite Galen's and Hippocrates' acumen, few if any of the drugs used by the physicians of their day caused pharmacologically induced therapeutic change. Treatment was primitive, unscientific, largely ineffective, and often shocking and dangerous (Shapiro, 1959, 1960a).

Patients took almost every known organic and inorganic substance—crocodile dung, teeth of swine, hooves of asses, spermatic fluid of frogs, eunuch fat, fly specks, lozenges of dried vipers, powder of precious stones, bricks, furs, feathers, hair, human perspiration, oil of ants, earthworms, wolves, spiders, moss scraped from the skull of a victim of violent death, and so on. Blood from every animal was prepared and administered in every way, and was used to treat every conceivable

symptom and disease. Almost all human and animal excretions were used.

Some famous treatments used for centuries include the Royal Touch, Egyptian mummy, unicorn horn, bezoar stone, and mandrake. Theriac contained 37 to 63 ingredients; mattioli contained 230 ingredients and required several months to concoct. Galen's elaborate pharmacopoeia, all worthless, contained 820 substances. Medical reasoning was primitive: Lung of fox, a long-winded animal, was given to consumptives. Fat of bear, a hirsute animal, was prescribed for baldness. Mistletoe, a plant that grows on the oak that cannot fall, was specific for the falling sickness (Lehmann & Knight, 1961). A wound was treated by sympathetic powder that was applied to the inflicting implement. Throughout medical history patients were purged, puked, poisoned, punctured, cut, cupped, blistered, bled, leached, heated, frozen, sweated, and shocked (Garrison, 1921; Haggard, 1929, 1933, 1934; Major, 1955; Shapiro, 1959, 1960a).

Although medicine has held a place in the finest scientific, religious, cultural, and ethical traditions throughout history, one may wonder how physicians maintained their position of honor and respect. Useful drugs or procedures were applied infrequently and were usually forgotten by succeeding generations. For thousands of years physicians prescribed what we now know were useless and often dangerous medications. This would have been impossible were it not for the fact that physicians did help their patients.

Today we know that the effectiveness of these procedures and medications was due to psychological factors often referred to as the placebo effect. Since almost all medications until recently were placebos, the history of medical treatment can be characterized largely as the history of the placebo effect.

The first major contribution to the end of Galenism and to the beginning of scientific medical treatment is often attributed to Sydenham in the seventeenth century. He is erroneously credited with demonstrating that cinchona bark (which contains quinine) was specific only for fevers of malarial origin, and not for all febrile infections (Duran-Reynals, 1946; Forrer, 1964a). Cinchona bark often has been thought of as the first drug that