

active, specific components are known as pure placebos, whereas therapies that contain nonplacebo components are called impure placebos (Leslie, 1954). Treatments that have specific components but exert their effects primarily through nonspecific mechanisms are considered placebo therapies. The relative contribution of placebo components in any therapeutic process is likely to decrease as more becomes known about the cause and cure of the condition, and as therapies more directly and specifically affect the maladaptive or disease entity.

The key concept in defining placebo is that of "specific activity." In nonpsychological therapies, specific activity is often equated with nonpsychological mechanisms of action. When the specific activity of a treatment is psychological, this method of separating specific from nonspecific activity is no longer applicable. Therefore, a more general definition of specific activity is necessary. Specific activity is the therapeutic influence attributable solely to the contents or processes of the therapies rendered. The criterion for specific activity (and therefore the placebo effect) should be based on scientifically controlled studies. In behavior therapy, some investigators have utilized "active placebo" control groups whereby some aspects of the therapy affect behavior but those aspects differ from the theoretically relevant ingredients of concern to the investigator (Kazdin & Wilcoxon, 1976).

This definition does not mention the mechanism of placebo action, although it implies that psychological factors are important determinants. The placebo effect is a multidetermined phenomenon influenced by many different factors and processes. Some of these factors are considered in subsequent sections. However, the issue is left open in our current definition because placebo factors are not yet well understood or documented.

Although this definition may prove to be too inclusive, for heuristic reasons it would be premature to make specific exclusions at this time. It is likely that various placebo factors will be isolated in the future. When enough is known about the placebo effect so that its effects can be predicted, the definition will no longer be needed, except in lexicons of obsolete terms. This is something to consider for the future.

MODERN MEDICINE

Modern medicine no longer relies chiefly on placebo effects. Today, there are an increasing number of specific and predictable drugs, devices, and procedures. However, as long as individuals are aware that they are receiving treatment, psychological factors cannot be excluded. Of course, if the dosage of a drug is high enough all patients will react with toxicity and even death, regardless of psychological factors. However, the predictability of toxicity is of little consequence because toxic dosages are rarely prescribed. Normal dosages are within the range in which placebo effects are important.

Claims about the importance of placebo effect to modern medicine range from "... the most effective [drug] ... to be developed by the pharmaceutical laboratories ..." (Zimbardo, 1969) to "... they are small treatments for small illnesses ..." (Hamilton, 1968). Although, placebo effects are more prominent with certain conditions and treatments than others, the placebo effect remains an important element in modern medicine. Placebo effects have been demonstrated in dentistry (Shipman, Greene, & Laskin, 1974; Valins, Adelson, Weiner, & Goldstein, 1971), podiatry (Morris, Shangold, & Greenberg, 1975), optometry (Carter & Allen, 1973) and in every aspect of modern medical treatment including biofeedback (Miller, 1974; Stroebe & Glueck, 1973), acupuncture (Chaves & Barber, 1973; Gaw, Chang, & Shaw, 1975; Kroger, 1973), cancer treatment (Klopfer, 1957), surgery (Diamond, Kittle, & Crockett, 1960), and electroconvulsive therapy (ECT) (Guido & Jones, 1961; Marshall & Izard, 1974). Placebos have been demonstrated to be addictive (Vinar, 1960), to mimic the effects of active drugs (Lasagna, Laties, & Dohan, 1958), to reverse the action of potent drugs (Hagens, Doering, Ashley, Clarke, & Wolf, 1957; Wolf, 1959), and to have direct effects on bodily organs (Stembach, 1964; Wolf, 1950) and on organic illnesses (Shapiro, 1963).

Recent interest in the placebo effect of medical treatment has also fostered the development of clinical methodology to control placebo effects in therapeutic studies. General appreciation of the placebo influence is perhaps the main reason for