

type of "boomerang" in which the suggestion of improvement leads to worsening of an illness may be associated with factors such as "overselling" the efficacy of treatment (Valins, Adelson, Goldstein, & Weiner, 1971; Uhlenhuth et al., 1966) and patient inexperience with the treatment or the disease (Rickels, Baum, Raab, Taylor, & Moore, 1965; Rickels, Lipman, & Raab, 1966).

These considerations suggest that overall there are three types of placebo effects: a positive placebo effect defined as therapeutic improvement, a neutral placebo effect defined as the absence of change, and a negative placebo effect defined as a worsening of presenting symptomatology. Placebo-induced side effects are associated with both positive and negative placebo reactions (Shapiro et al., 1968). Therefore, placebo-induced side effects should not necessarily be labeled as negative placebo reactions. They should be considered as another aspect of placebo phenomenology and studied as a separate but related area (Stuenkel, Shapiro, & Shapiro, in preparation).

CONCEPTS OF PLACEBOGENESIS

The method(s) by which placebos cause placebo effects is unknown. However, many processes have been advanced to explain placebo effects. Although there is little empirical verification for these processes, it is important to hypothesize processes of placebo genesis to organize and integrate the various relationships and predisposing factors associated with the placebo effect.

Three general themes serve to group the various placeboogenic processes or mechanisms: social influence effects, expectancy effects, and evaluation effects.

Social Influence Effects

The role of the physician in society is unique. He or she performs and combines functions that have always been important to people—those of healer, priest, and scientist. These attributes facilitate the tendency of patients to view the physician as a socially powerful individual. Similarly, the experimenter's social power has been dramatically documented by Milgram's studies in which subjects

were pressured into delivering potentially dangerous electric shocks to unseen victims (Milgram, 1963). Thus, therapists and investigators may contribute placeboogenic influences by means of rewards and punishments or by their ability to deliver persuasive arguments. Placebo effects may also be attributable to normative role demands or the patients' and subjects' own suggestibility.

The patient-physician relationship gives rise to special transference and countertransference interactions. Several investigators have conceived of the placebo effect as due to this transference-countertransference relationship. Finally, the interest of the therapist in a patient may have a primary effect on reducing patient guilt thereby contributing to patients' improvement.

Suggestibility

Suggestibility is the most often cited mechanism of placebo action. Several investigators have assumed that the placebo effect is merely a variation of the suggestibility response (Beecher, 1968; Strupp, Levenson, Manuck, Snell, Hinrichsen, & Boyd, 1974; Trouton, 1957). Although the process of suggestibility has not been well defined, factor analytic studies have demonstrated two major components. Primary suggestibility involves bodily responses to direct suggestions while secondary suggestibility is heavily loaded on items stressing the gullibility of subjects (Eysenck & Furneaux, 1945; Evans, 1967). Both of these components are applicable to placebo effects. However, Trouton (1957) and Tibbetts and Hawkins (1956) considered secondary suggestibility more important in the genesis of placebo effects because both secondary suggestibility and the placebo effect involved "attitudes" whereas primary suggestibility involved "aptitudes."

Tests of suggestibility have been used as successful predictors of hypnosis. Unfortunately the hope that tests of suggestibility would predict response to placebo has not received empirical support.

Evans (1967) has suggested that a "therapeutic element" is necessary for suggestibility to correlate with the placebo effect. Shapiro (1964c) has hypothesized that differences in stimulus value of a test of suggestibility (which involves laboratory