

of a placebo can be reduced from 70 to 25 percent if the negative attitude toward placebo injections by a nurse are communicated to the patient (Volgyesi, 1954). In another study, patients treated with placebos improved more than those on tranquilizers, a result the authors attributed to the bias of the nurses against psychochemotherapy and for habit-training psychotherapy (Baker & Thorpe, 1957). Nurses were observed crushing, dissolving, and tasting the tablets in order to distinguish placebo from active agents. Such attempts to identify drugs in controlled research have been reported in other studies (Fischer & Dlin, 1956).

Staff attitudes and behavior, such as displaying interest and optimism can influence patient behavior—for example, the disturbed behavior of patients has been attributed to staff conflicts (Rathod, 1958; Linn, 1959; Shottstaedt, Pinsky, Mackler, & Wolf, 1959; Stanton & Schwartz, 1954).

Setting

The setting within which treatments are administered offers a multitude of potential therapeutic stimuli for patients (Gelfand, Ullmann, & Krasner, 1963; Nash, Frank, Imber, & Stone, 1964; Barber, 1960). Patients sometimes improve without therapy, simply because they are placed in a therapeutic milieu (Goldstein, 1960; Goldstein & Shipman, 1961). The importance of the milieu is demonstrated in a study by Park and Covi (1965) in which patients were given placebos and told that the administered drugs were sugar pills. Despite this disclosure, all of the 14 patients who took the placebos improved. Although some patients thought that the drug contained active medication, the majority believed that they were helped by the placebo, the doctor, or themselves.

Changes can occur in patients after institution of research, which are unrelated to the contents or type of research activity. This process is similar to the "Hawthorne Effect" observed in industrial psychology in which workers increased productivity because of the heightened interest, increased attention, and social stimulation of the research atmosphere rather than because of the variables manipulated by the researchers. In therapeutic situations this "milieu effect" can produce improvement in 80 percent of patients (Rashkis &

Smarr, 1957). The bias introduced by research can influence clinical and experimental results in any number of ways (Rosenthal & Rosnow, 1969; Grosz & Grossman, 1968; Rosnow & Aiken, 1973).

The setting, because of its inherent "therapeutic" stimulus value, is a potent placebo variable. Direct comparisons of placebo response in different settings leaves no doubt that the setting can induce placebo effects and affect treatment outcome in many ways (Rickels, Downing, & Downing, 1966; Rickels, Catell, Weiss, Gray, Yee, Mallin, & Aaronson, 1966).

Population

A change in study setting may also change the nature of the population being measured. Lipman (1966) reported that an identical research protocol yielded opposite results when medical clinic patients were compared to psychiatric clinic patients. Differences in placebo reaction between private patients and clinic patients have also been noted (Rickels & Macafee, 1966; Heshbacker, Rickels, Gordon, Gray, Mackelburg, Weise, & Vandervort, 1970; Downing & Rickels, 1973).

Clinical patients and experimental subjects display vastly different response to placebo analgesia. Beecher (1960) found that about 35 percent of patients reported substantial pain relief from placebos but that only about 3 percent of experimental subjects reported substantial relief. Evans (1969), in a review of 14 other experimental studies, found average placebo relief to be about 16 percent, still well below the figure reported by Beecher for clinic patients. It is likely that factors such as individual needs, motivations and anxiety levels (Davison & Valins, 1969; Buss & Portnoy, 1967), the role of the "patient" versus that of the "subject" (Rosnow & Aiken, 1973; Silverman, 1968), and the norms for each situation (Orme, 1970) contribute to these findings.

Subjects used for clinical or experimental studies of the placebo effect are often volunteers. The ability to generalize results to nonvolunteer subjects is questionable (Rosenthal & Rosnow, 1975).

Treatment Procedure

Although clinical folklore gives the impression that the best placebo treatments have an element of