

the growth and acceptance of controlled clinical studies. In psychotherapy research, the placebo has become synonymous with the search for the appropriate control group against which therapies are compared.¹

PROBLEMS OF RESEARCH

In reviewing placebo effect research, one is struck by the conflicting findings and failure to replicate. These inconsistent results occur partly because of the diversity of subject populations (ranging from college students to clinic patients to subhuman species), testing environments (from experimental laboratories to hospital clinics), degree and types of illnesses (from normals to organically ill to maladjusted), range of treatments (from surgery to biofeedback) and methods of measurement (from subjective self report measures to objective indices of physiological change).

However, replication is infrequent even when seemingly identical procedures are used on highly similar populations (Bootzin, Herman, & Nicassco, 1976; Storms & Nisbett, 1970; Kellogg & Baron, 1975; Lipman, 1966). When the same subjects are given identical placebo stimuli in different environments, the response is inconsistent (Wolf, Doering, Clark, & Hagans, 1957; Liberman, 1964; Frank, 1968). The inconsistency of reaction could lead to the conclusion that the placebo effect is a random factor. A more likely conclusion, however, is that the placebo effect is not caused by a unitary process. Placebo effects are probably the result of a complex combination of many different variables and modes of action.

Identification and integration of all the different variables and processes affecting placebo reaction will await many more years of investigation. However, as placebo processes become identified and explained, they also gain the potential to become nonplacebo therapies. For example, operant con-

ditioning, which may be a basis of the placebo effect, is now itself used as a specific therapeutic tool.

Unfortunately, explanations for the placebo effect are more often the result of ex post facto theorizing than empirical study. It is noteworthy that the recent motivation prompting interest in the placebo effect is the desire to improve research methodology (Honigfeld, 1964a, 1964b). The main methodological tenet from placebo effect research is that comparisons cannot be made in a vacuum. The only "facts" are derived on a relative basis and valid judgments about the effectiveness of any therapy can be made only by comparison to the appropriate control group (Boring, 1968).

Much of the theorizing about the placebo effect is based on the responses of control groups that were retrospectively interpreted but rarely tested prospectively. Explanations are more often based on the theories of the investigator than on study results. However, empirical study has suggested different variables and processes of placebo action. The contribution of any single element will likely depend on a multitude of factors. Variables that have not received full empirical confirmation cannot be dismissed at the present time, because if they were, there would be little left to report.

PATIENT VARIABLES

The Placebo Reactor

Although retrospective analyses indicate that the placebo effect was the cause of the success of many medical treatments, it is only since the middle 1950s that the placebo effect has become a research topic in its own right (Shapiro, 1960a). The observation that some subjects reacted to placebos while others did not fostered the hypothesis that reaction to placebos was an enduring patient characteristic.

There are two important features of the placebo reactor hypothesis. First, to validate this assumption, there must be a consistency of reaction across several placebo administrations. This is necessary to demonstrate that some enduring trait of the individual receiving treatment, rather than a transient factor, causes the placebo reaction. Second, if placebo reaction is an enduring characteristic of the individual receiving therapy, demographic and

¹Borkovec, 1973; Borkovec & Nau, 1972; Boudewyns & Borkovec, 1974; Cutela, Flannery, & Hanley, 1974; Foreyt & Hagen, 1973; Haynes, Woodward, Moran & Alexander, 1974; Marshall, Boutilier, & Minnes, 1974; McReynolds, Barnes, Brooks, & Rehagen, 1973; Nau, Caputo, & Borkovec, 1974; Tori & Worell, 1973; Young, Rimm, & Kennedy, 1973.