sex differences in concordance rates for schizophrenia: finding or artifact?

In Schizophrenia Bulletin, Vol. 2, No. 3, both Gottesman and Shields (1976) and Lidz (1976) refer to sex differences in concordance rates for schizophrenia. For the last half century, the literature has reported a trend toward higher concordance rates for females in both monozygotic and dizygotic same-sexed twins. This brief review will focus upon the validity and implications of this often misinterpreted sex difference.

The earliest reports of higher female concordance led to the consideration of a sex-linked recessive gene in mental illness. This theory has long been abandoned, and more recent genetic theorists have tended to regard the finding as a sampling artifact. Rosenthal (1961 and 1962), for example, discusses the problems involved in using resident hospital populations. He found that these populations were used in three of the five studies reporting higher female concordance. Rosenthal points out that females are more likely to become inhabitants of the chronic wards than males. This raises a question about the validity of the reported sex difference.

In contrast, Gottesman and Shields (1972) found no sex difference in the Maudsley Hospital study. They note that in studies investigating both sexes and reporting the differences systematically, the sex difference disappeared when analysis was restricted to samples based upon consecutive admissions with systematic twin ascertainment.

The most prevalent psychodynamic hypothesis derives from Jackson’s (1960) article “A Critique of the Literature on the Genetics of Schizophrenia.” On the basis of the data available at that time, Jackson accepted the validity of higher female concordance and formulated a psychodynamic hypothesis: “If ego fusion in a particular family environment can be expected to lead to joint madness, then a plausible hypothesis—contrary to the genetic hypothesis—would be that according to the degree of likeness in siblings, we would find an increased concordance for schizophrenia, without concern for genetic similarity” (p. 67). Jackson’s concept of joint madness in a family system is now widely accepted (Lidz 1973 and Singer and Wynne 1965). Given the findings of more recent twin studies, it is possible that Jackson would not have extended his theory to include sex differences. It is noteworthy that the hypothesis of greater “closeness” and “identification” among female same-sexed pairs has little empirical validation.

Rosenthal (1982) cited several studies supporting the “sex role identification” hypothesis, which postulates that identification with same-sexed family members is stronger in females than males. Maccoby and Jacklin’s (1974) more recent review of sex differences, however, found little data to support this hypothesis.

The role of cultural factors in higher female concordance has also been emphasized. Jackson (1960) pointed out that girls are more restricted in activities outside the home than boys. This was especially true during the Victorian era, when the patients in the early studies were growing up, as well as in poorer families who constitute a disproportionate percentage of hospitalized schizophrenics (Hollingshead and Redlich 1958).

Kringlen (1967 and 1968) is the only investigator who has extended his analysis to include both psychodynamic and sociological factors. He speculates that the phenomena of sex differences in concordance might be explained solely as a function of time and culture. In former days, girls were more strictly brought up with less opportunity for social contact than boys were. With increasing emancipation, this sex difference in upbringing and attitudes has changed. This, he states, could offer an explanation of the fact that higher female concordance rates are disappearing in more recent studies. He hypothesizes that if the general impression that girls are brought up more liberally in Norway than in other countries is correct, his finding of no significant sex difference may become even more meaningful. While the similarity may be coincidental, it is interesting that Fischer (1973) found no sex difference in her study of Danish twins.

Lidz is correct in concluding that sex differences in concordance are difficult to explain without positing
extra-genetic factors. The objective of this brief review is to point out that these extra-genetic factors may be sociological rather than psychodynamic. Neither genetic nor psychodynamic theorists have fully acknowledged the psychological consequences of woman's inferior social role. The earlier studies drew heavily upon resident hospital populations, and subsequent evaluation has shown that women are more likely to become residents of chronic wards. The use of consecutive admissions is not solely a methodological improvement but a research strategy that minimizes the differential treatment of men and women in society. Sex differences have vanished in recent studies both as a result of changing research methods and the changing role of women in society.

Summary

The literature on schizophrenia has reported a trend toward higher concordance rates for females in both monozygotic and dizygotic same-sexed twins. The validity of this finding is open to question. Rosenthal (1961 and 1962) pointed out that females are more likely than males to become inhabitants of chronic wards. Most of the studies reporting a sex difference used resident hospital populations. Gottesman and Shields (1972) noted that the sex difference disappeared when samples were based upon consecutive admissions. Sex differences have vanished in recent studies both as a result of changing research methods and the changing role of women in society.

References


