by Michael J. Goldstein and A. Hussain Tuma

Abstract

High-risk studies represent a strategy for investigating behavioral and intrafamilial processes which antedate and may, therefore, play a considerable role in the development of schizophrenia. The studies reported in this issue, initiated from 15 to 25 years ago, focused on measures of information processing, psychophysiological reactions, and intrafamilial processes found promising in previously conducted studies of adult schizophrenic patients and their families. Despite wide variations in the composition of the samples and their ages at the time of initial study, recurrent findings across studies are noteworthy. Final comments discuss how future high-risk studies can use developments in biological psychiatry.

It has been 13 years since Norman Garmezy presented in the Schizophrenia Bulletin his two-part review of the rationale and status of high-risk studies on schizophrenia (Garmezy 1974a, 1974b). In that review, Garmezy indicated that these studies grew out of dissatisfaction with cross-sectional studies of schizophrenic patients designed to specify behavioral and psychophysiological attributes uniquely associated with that disorder. Originally, investigators hoped that the identification of key attributes would provide important clues to the etiology of schizophrenia. However, actual research experience revealed that many observed findings could not differentiate processes that antedated the onset of the psychiatric disorder from the consequences of disorder or associated treatments, particularly pharmacological agents. The identification of the behavioral antecedents of schizophrenia required a different approach, namely a longitudinal, prospective one in which cohorts, considered at higher than normal risk for schizophrenia, were systematically studied from the premorbid to the morbid state. It was hypothesized that such studies could not only provide clues to the processes underlying the development of this disorder but also reveal attributes of individuals or their home and social environment that could be used in subsequent studies to identify individuals at particularly high risk for the subsequent development of schizophrenia but whose illness might be prevented by intervention.

At the time that the initial spate of high-risk studies began (mostly in the 1960's), there were few guidelines as to when such studies should begin (e.g., infancy, early childhood, or adolescence) or what variables were the most likely targets for investigation. For various reasons, some investigators were concerned with behavioral processes observable in the earliest stages of life and began their high-risk studies with infants; others began with later cohorts based on their working hypothesis as to when, in the course of development, the earliest signs of precursors of the schizophrenic disorder might appear. In retrospect, it seems that this is both a strength and a weakness of the current high-risk research literature. The strength is that studies that began with older samples have cohorts that have passed well into the risk period for schizophrenia, so that we already have some clues to behavioral or intrafamilial measures predictive of pathological or healthy outcomes.

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Similarly, those studies that began in earlier life periods can already suggest important precursors that must be eventually considered in a comprehensive developmental model of this disorder.

The weakness arising from the heterogeneity of initial ages of the cohorts studied is that we do not yet possess a comprehensive view of the lifespan development of cohorts who do or do not develop schizophrenia covering the period from birth to the onset of the disorder. Despite this weakness, the reader will note certain consistencies across studies in deviant behavioral processes identified in the at-risk child or stresses in the rearing environment that transcend the developmental period at which they were observed. It is not appropriate to think of these findings as replications, as these studies vary too widely in samples, design, etc., to be thought of in this precise way. These studies are best viewed as revealing recurrent themes that are now worthy of serious replication efforts.

We indicated above that not only were there no guidelines for the age period at which to initiate such prospective-longitudinal studies, but few clues as well as to appropriate variables to examine. Most investigators whose work is reported here relied heavily on the literature available in the 1960’s regarding behavioral, electrophysiological, or intrafamilial measures that appeared to discriminate schizophrenic patients from normal persons. Thus, the reader will see a consistent emphasis on measures of information processing, cognitive processes, psychophysiological reactivity to stressful stimuli, and communicational and affective processes within the rearing environment.

Because it was recognized early by several figures in this movement, such as A. Hussain Tuma, Loren Mosher, and Norman Garmezy, that there was a hazard in each project working in isolation and selecting its unique measures, a consortium arrangement was established in 1973, funded by the National Institute of Mental Health (NIMH), that was designed to establish frequent communication among project investigators so that common procedures for diagnostic, behavioral, and intrafamilial measures would be used across the various projects. The wisdom of this action can be seen in the fact that such standardization of procedures permits the reader to make direct comparisons of sample attributes, measures, and recurrent themes in the findings from these quite different studies.

The articles that constitute this special issue of the Schizophrenia Bulletin were prepared for discussion at the Risk Studies in Schizophrenia Conference sponsored by the Clinical Research Branch, NIMH, and held on April 11–14, 1985, in San Francisco, California. These reports were then revised, updated, and condensed to fit the space and format requirements of the Bulletin. A common format of reporting was used to facilitate communication. This standard format is reflected in the headings used by most authors such as Characteristics of the Sample, Diagnostic Criteria Used, Dimensions of Assessment, Attrition, etc.

In aggregate, the articles provide the most recent data and findings on the vast majority of research investigating children at high risk for schizophrenia. Possibly, they also represent some of the best studies carried out in this field to date. The current reports go beyond the information that was presented at a similar conference in 1980 in San Juan, Puerto Rico (reported in Watt et al. 1984). In that study, children are now older and further into the risk period for schizophrenia than in the earlier reports, and the results, therefore, represent a closer approximation of the expected clinical outcomes of these children.

As a group, the high-risk studies attempt to identify specific psychological, behavioral, social, genetic, or electrophysiological characteristics of the children, their families, or their developmental social milieu that may predict subsequent psychopathology. However, these studies are heterogeneous with respect to a variety of features. These include characteristics of the index, control, and comparison samples studied, the hypotheses explored or tested, the nature of the variables chosen, the clinical and psychometric properties of their respective measures, the criteria of outcome used, the cultural setting in which the studies are carried out, and the stages of the study which are being reported. Clearly, therefore, arriving at a consensus on many issues may be an impossible task for certain issues, but within reach for others, specifically if one examines the results of subsets of projects that have similarities in their substantive and methodological components. It should be emphasized that the findings of some of the studies must remain tentative and preliminary since part of the observations were made before children entered the risk period. Therefore, we would like to emphasize that the outcomes of each study should be interpreted within the context of its own design, sample, and methods. It is up to the critical reader to determine possible agreements in results across closely related or similar studies.

Each investigator will point out, in addition, the major variables that have proved to be robust or useful,
along with their corresponding measures and also variables and measures that need to be redefined, revised, or discarded altogether. We asked the participants to identify major limitations of their studies to alert the reader and avoid unwarranted conclusions. Each author also identified future directions of research that seem fruitful, including conceptual, methodological, and procedural approaches that may be used or developed, as well as pitfalls and wasteful efforts to be avoided.

The research being reported in this issue represents a vast amount of experience of a number of seasoned investigators in a large number of clinical settings. The collective experience of this group with children at risk for mental disorder, their biological or adoptive families, and their home, school, and cultural environments is unique in the United States and abroad. Therefore, the observations, findings, interpretations, and even mistakes are offered and acknowledged as important for the development of a new and better generation of risk research in schizophrenia.

The planners of this conference felt that in addition to risk research investigators others in the areas of genetics, biology, and brain imaging in psychiatry should be invited to the conference to discuss the potential usefulness of their approaches and methods for this type of risk research. Their participation and discussions proved to be stimulating and useful. Two of those discussions are also included in this volume.

We are pleased to offer this collection of reports to the readers of the Bulletin.

References


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