Dimensions of Delusional Experience

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The authors describe a scale designed to measure five dimensions of delusional experience: conviction, extension, bizarreness, disorganization, and pressure. Reliability was adequate to excellent on four of the dimensions, but only fair on the dimension of bizarreness. In 52 delusional patients, no two dimensions correlated highly with each other, indicating that the dimensions were not redundant. Factor analysis identified two factors from the five dimensions—delusional involvement and delusional construct. On the basis of these results the authors suggest that delusions are a multidimensional phenomenon; the results have implications for the measurement of delusions in clinical research and for the understanding of the structure of psychotic experience. (Am J Psychiatry 140:466–469, 1983)

The ability to assess psychopathologic symptoms accurately is crucial for psychiatric research and practice. Few symptoms are as important to measure accurately as delusions, which are frequent target symptoms for treatment and often the basis for diagnosing severe psychiatric illness. Historically, the classification of delusions has been approached in several different ways. *DSM-III* emphasizes the dominant theme of the delusions, i.e., persecutory, grandiose. Others, however, have focused on the hypothesized etiology of the delusion, i.e, primary versus secondary (1); the diagnostic significance of specific forms of delusions, i.e., delusions of passivity (2); and the presumed unconscious conflicts that produced the delusion (3).

In this article, we view delusions as a multidimensional clinical phenomenon (4). To test the validity of this viewpoint, we developed a rating scale to measure five dimensions of delusional experience. This preliminary investigation was designed to answer three questions. First, could these postulated dimensions of delusional experience be measured reliably? Second, would these dimensions correlate highly with one another, which would suggest that they were measuring closely related phenomena? Third, could factor analysis extract from these five dimensions a small number of factors that could provide an empirical basis for understanding the structure of delusional experience?

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METHOD

This investigation began as a discussion between two of us (K.S.K. and W.M.G.) that attempted to derive from our clinical experience the important dimensions of delusions. From this discussion and a review of the literature, we selected five dimensions of delusional experience for inclusion in this preliminary investigation. Several of these dimensions have already been described in slightly different form by Strauss (4). The five dimensions we chose, their definitions, and brief clinical examples of low and high scores follow.

Dimensions of Delusional Experience and Examples

1. Conviction—the degree to which the patient is convinced of the reality of the delusional beliefs. Example of low conviction: A 48-year-old woman was concerned that she might be infecting those around her with a horrible disease. During an examination she stated that she thought that these ideas were probably her imagination. She said, however, that during the week before her examination she would occasionally become convinced of the reality of her fears and that she had to reassure herself that these were just "my sick thoughts coming back." Example of high conviction: A 38-year-old man stated that he had been in communication with aliens for the past 8 years. When he was asked if this could possibly be his imagination, he replied, "Absolutely not!"

2. Extension—the degree to which the delusional belief involves various areas of the patient's life. Specifically, are family, friends, coworkers, hospital personnel, other patients, and/or strangers involved in the delusion? Example of low extension: A 42-year-old woman believed that she was being poisoned at work by radioactive particles emitted from the lights above her desk. She believed that her boss was plotting to get rid of her. When she was not at work, she noticed nothing unusual, and no one tried to bother her. Example of high extension: A 22-year-old man was convinced that everyone, including his family, friends, doctors, and even strangers on the street, knew that he was a homosexual and that they would deride and

persecute him. After several job changes and moves from one town to another, he continued to be unsuccessful at evading his persecutors.

3. Bizarreness—the degree to which the delusional belief departs from culturally determined consensual reality. Example of low bizarreness: A 36-year-old man believed that ever since he had telephoned a radio talk show to express his support for Castro and Cuban communism, he had been harassed by the FBI. When he was asked how he knew this, he replied that his telephone had been tapped because when he picked it up he could hear a "special buzz." Example of high bizarreness: A 27-year-old woman believed that when the Pioneer space vehicle "penetrated the rings of Saturn, my picture was broadcast throughout intergalactic space, and I was universally declared to be queen of the galaxy."

4. Disorganization—the degree to which the delusional beliefs are internally consistent, logical, and systematized. Example of low disorganization: A 48-year-old man was able to describe in detail the work of the "committee" that had been persecuting him for more than 20 years. The committee was made up of individuals from his law school class who had wanted to keep him down "because they are jealous of my great legal mind." The persecution consisted of an extensive network of "actors" hired by the committee to jeer at him and insult him in public places. The committee had placed cameras and microphones in his apartment to monitor his daily activities and to alert the actors when he was about to leave. Example of high disorganization: A 24-year-old woman expressed the following series of beliefs during the course of one interview: Her parents had leukemia, she was being turned into a lesbian, people were being killed downstairs in a "torture chamber" and being put into the food, her face was being turned into a man's face by a special machine, and she was being poisoned by "secret injections" of experimental drugs. She made no attempt to relate these delusional beliefs to one another sponaneously or to do so when she was questioned.

5. Pressure—the degree to which the patient is preoccupied and concerned with the expressed delusional belief. Example of low pressure: A 28-year-old woman was convinced that for the past 6 years she had been the Virgin Mary. When she was asked how often she thought of herself as the Virgin, she replied, "Oh, it comes to me now and then." She denied being much concerned or excited about the fact that she was the Virgin Mary. Example of high pressure: A 56-year-old man was convinced that the CIA had been using him as a double agent to give the Russians false information about nuclear secrets. In the week before his interview, he had spent all of his waking hours trying to determine (by talking with friends and relatives and by reviewing his old scrapbooks) when and how the CIA had recruited him.

Extension and disorganization were measured on a 3-point ordinal scale, conviction on a 4-point ordinal scale, and bizarreness and pressure on a 5-point ordinal scale. The time period covered by the rating was the week before the interview. To test the reliability of the rating scale, 23 psychiatric patients were selected from inpatient and outpatient settings on the basis of the presence of delusions and the absence of organic impairment. A 45-minute semistructured psychiatric interview was conducted with these patients by one of us (either K.S.K. or W.M.G.) while the other watched. After the interview, both of us blindly rated the patient on the five dimensions of delusional experience. Patients with multiple delusions were noted on the most prominent delusion as mutually agreed on by the interviewer and the patient. Twenty-nine additional patients, similarly selected, were then interviewed and rated by one of us (either K.S.K. or W.M.G.) independently. All patients gave informed consent to participate in this study.

We calculated the reliability of the ratings by means of a weighted kappa (5), although results based on the unweighted kappa are also reported. To avoid assumptions regarding the normality of the distribution of scores on the dimensions, we calculated correlations using the nonparametric Kendall tau corrected for ties (6). Factor analysis was carried out to extract statistically independent (i.e., orthogonal) factors. The factors were not rotated.

The study sample consisted of 52 patients; 26 (50%) were men. The mean (±SD) age of all patients was 37.1±13.6 years. The diagnoses in this patient group according to the Research Diagnostic Criteria (RDC) (7) were as follows: 34 (65%) were schizophrenic, 8 (15%) had a schizoaffective disorder, 3 (6%) had a major depressive disorder, 5 (10%) had an unspecified functional psychosis, and for 2 (4%) of the patients a definitive diagnosis could not be established.

RESULTS

The interobserver reliability on the dimensions of delusional experience is displayed in table 1. A correlation matrix for the five dimensions of delusional experience (table 2) revealed that the correlations between the dimensions were low (the highest was +.36).

A factor analysis of the patients' scores produced two factors that accounted for significant proportions of the variance (table 3). The first factor, called "delusional involvement," had highest loadings on the dimensions of conviction and pressure. The second factor, termed "delusional construct," had highest loadings on the dimensions of bizarreness, extension, and disorganization. Of the five dimensions, only extension contributed substantially to both factors. Because bizarreness was rated with relatively low reliability, the factor analysis was also conducted with that dimension removed. The two factors that emerged were similar to the original factors (table 3).

TABLE 1. Interobserver Reliability on the Dimensions of Delusional Experience of 23 Patients

Dimension	Number of Categories	Proportion of Agreement	Kappa[a]	
			Unweighted	Weighted
Conviction	4	.83	.76	.80[b]
Extension	3	.74	.42	.49[c]
Bizarreness	5	.52	.27	.30[d]
Disorganization	3	.65	.43	.75[b]
Pressure	5	.74	.63	.50[b]

[a]Statistical significance is reported only for the weighted kappa, which was the more appropriate statistic for this analysis because "the relative seriousness of the different possible disagreements can be specified" (5). The weights for the cells of the cross-classification table used in the calculation of the weighted kappa and ranging from the main diagonal (perfect agreement) to the two opposite corners (perfect disagreement) are as follows: 1, .5, and 0 (for the 3-category scales); 1, .67, .33, and 0 (for the 4-category scale); and 1, .75, .50, .25, and 0 (for the 5-category scales).
[b]$p \leq .001$.
[c]$p \leq .01$.
[d]$p \leq .05$.

TABLE 2. Correlation Matrix[a] for Dimensions of Delusional Experience for 52 Patients

Dimension	Conviction	Extension	Bizarreness	Disorganization
Conviction				
Extension	+.36[b]			
Bizarreness	−.15	+.23		
Disorganization	−.05	+.09	+.17	
Pressure	+.36[b]	+.07	−.14	−.10

[a]By Kendall tau correlation coefficient.
[b]$p \leq .05$.

TABLE 3. Factor Analysis of the Dimensions of Delusional Experience With and Without the Dimension of Bizarreness

Dimension	Factor Loading Pattern			
	Factor 1		Factor 2	
	With Bizarreness	Without Bizarreness	With Bizarreness	Without Bizarreness
Conviction	+.85	+.85	+.11	+.12
Extension	+.50	+.63	+.67	+.52
Bizarreness	−.25		+.73	
Disorganization	−.19	−.09	+.57	+.83
Pressure	+.70	+.65	−.20	−.40
Proportion of variance accounted for by the factor	.31	.39	.27	.28

DISCUSSION

Of the five postulated dimensions of delusional experience, four were ratable with adequate to excellent interobserver reliability. The difficulty in reliably rating bizarreness of delusions is worrisome because of the diagnostic importance given to the distinction between bizarre and nonbizarre delusions in *DSM-III* and the RDC.

We had the most difficulty rating bizarreness in the following kind of delusion. A 23-year-old man believed that his mother was a virgin when he was born. Because of that, strangers regarded him as special and would bow down to him "in a secret way" as he walked past. This belief, though implausible, is nonetheless similar to commonly accepted religious beliefs about the birth of Christ. Further clarification of the meaning of bizarreness as applied to similar delusions could, in our opinion, result in reliable ratings for the bizarreness of delusions.

The intercorrelations between different dimensions of delusional experience were uniformly low. Of the two statistically significant correlations found, at least one would have been expected by chance. These results suggest that none of the five dimensions measures the same basic phenomenon to any substantial extent; thus, these results support the hypothesis that delusions are multidimensional.

If delusions are a multidimensional phenomenon, this hypothesis raises questions regarding the validity of single items in psychiatric rating scales designed to measure the severity of delusions (usually entitled unusual, odd, or bizarre thoughts) (8, 9). For example, if a patient's delusions become less bizarre while the patient's conviction and pressure regarding the delusions increases, has the patient become more or less delusional?

The multidimensionality of delusional experience also has implications for the conceptualization of the temporal course of psychotic decompensation and resolution. As suggested by Hole and associates (10) and by our preliminary observations, individual dimensions of delusional experience often change independently of one another during the course of a psychotic episode. An investigation of the pattern of change in dimensions of delusional experience during psychotic decompensation or resolution might provide insights into the nature of the psychotic process.

Factor analysis of the five dimensions of delusional experience isolated two factors. Clinical interpretation of statistically derived factors is fraught with hazards; however, the loading of the first factor, delusional involvement, suggests that this factor expresses the intensity of the patient's involvement with the delusional beliefs. This involvement is both cognitive (i.e., the degree of conviction) and emotional (i.e., the degree of pressure). The high loading of delusional extension on this factor indicates that patients who are very involved in their delusional beliefs often extend those beliefs into many areas of their lives. The loading pattern of the second factor, delusional construct, indicates that this factor expresses the manner in which the patient structures the delusional belief. This structuring involves the internal organization of the delusion (i.e., the degree of disorganization), the degree to which the delusional belief departs from consensual reality (i.e., the degree of bizarreness), and the extent to which the delusion is encapsulated or is involved in many areas of the patient's life (i.e., the degree of extension). The results of this factor analysis suggest that there are at least two fundamental processes that underlie the five dimensions of delusional

experience. Although it is premature to speculate further about the possible clinical significance of these two factors, we may gain insight into the internal structure of the psychotic delusional experience from them.

Several limitations of this preliminary investigation merit consideration. The number of patients examined was relatively small, and 80% of the patients suffered from schizophrenia or schizoaffective disorder. Although we attempted to obtain a representative sample of delusional psychiatric patients, it cannot be assumed that the results of this study are applicable to other psychiatric populations. Only future investigations can determine the generalizability of these results.

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