

## Patients' Attitudes Toward Hallucinations

Laura J. Miller, M.D., Eileen O'Connor, R.N., and Tony DiPasquale, B.A.

---

**Objective:** This study examined patients' attitudes toward their hallucinations by assessing their beliefs about the purposes served by hallucinations and the adverse effects of hallucinations. It also investigated whether these attitudes were related to characteristics of the hallucinations or of the patients, whether the attitudes changed after treatment, and whether attitudes before treatment predicted the presence or absence of hallucinations after treatment. **Method:** Fifty hallucinating psychiatric inpatients were given semistructured interviews shortly after admission to the hospital and again shortly before discharge. The interviews elicited detailed descriptions of 12 phenomenologic characteristics of hallucinations and 11 attitude variables. **Results:** The majority of subjects reported some positive effects of hallucinations. The presence of olfactory hallucinations and the ability to predict hallucinations were significantly related to valuing hallucinations. Attitudes usually did not change with treatment; when they did change they usually became more positive. Subjects who valued hallucinations more before treatment were significantly more likely to be hallucinating after treatment. **Conclusions:** The findings are consistent with the idea that psychological factors contribute to the expression of hallucinations. Assessing adaptive functions of hallucinations may predict whether hallucinations will respond to treatment and identify fruitful areas for psychosocial intervention.

(Am J Psychiatry 1993; 150:584-588)

---

It is not known whether hallucinations serve adaptive functions in patients with psychotic disorders. Most theories of the etiology of hallucinations posit that this symptom is more likely to occur if it serves a psychological purpose. Cognitive-behavioral theorists suggest that hallucinations may be self-reinforcing by reducing arousal (1, 2), limiting incoming stimuli (3), or alleviating unpleasant affect (4). According to this view, the "payoff value" of internal versus external stimuli helps determine which will prevail (5). Psychodynamic theorists have proposed that hallucinations serve to gratify infantile wishes (6), restore lost objects (7, 8), master traumatic experiences (6, 9), project unacceptable impulses (10), regulate anxiety (11), and enhance ego and superego functions (6). Biological theories include the idea that neurologically based hallucinations are modifiable by interest or attention (12). Nevertheless, other

workers emphasize the distressing qualities of hallucinations and find it implausible that alleviating the symptom would result in deteriorated functioning (13, 14).

There are few empirical data available to support or refute these theories. Published studies and clinical descriptions support the idea that hallucinations are sometimes valued by patients. Ever since Esquirol suggested a modern definition of hallucination (15), he and other psychiatrists have reported cases of patients who liked hallucinations because, for example, they made them feel privileged or protected (15), praised the patient (16), relieved boredom (15, 17), provided an outlet for hostility (18), or gave deserved punishment (19). More recently, Bick and Kinsbourne (20) taught schizophrenic subjects how to control hallucinated voices by opening their mouths to preclude subvocal speech. They noted that patients did not express relief at being able to control the voices and suggested that hallucinations might serve as coping mechanisms. Similarly, Romme and Escher (21) noted in their questionnaire study of people who heard voices that some experienced the voices as helpful—to integrate a trauma, to strengthen them, or to raise their self-esteem—while others considered the voices to have a negative effect. Falloon and Talbot (22) found that a number of chronically hallucinating patients had developed nonpharmacologic means of controlling their hallucinations but that many did not want to reject their hallucinatory ex-

---

Received April 8, 1992; revision received July 14, 1992; accepted Aug. 12, 1992. From the Department of Psychiatry, University of Illinois. Address reprint requests to Dr. Miller, Department of Psychiatry, University of Illinois, 912 South Wood St., M/C 913, Chicago, IL 60612.

The authors thank Martin Harrow, Boris Astrachan, John Davis, Miljana Simonovic, Mimi Van der Laden, Robert Gibbons, and the staffs of the University of Illinois Hospital inpatient psychiatry unit and the Illinois State Psychiatric Institute research units for their assistance.

Copyright © 1993 American Psychiatric Association.

**TABLE 1. Hallucination Variables for 50 Psychiatric Inpatients: Interrater Reliability (Kappa) and Relation to Positive Attitude<sup>a</sup>**

Hallucination Variable	Kappa	$\chi^2$ (df=1)	p
Sensory modality (present versus absent)			
Auditory	— <sup>b</sup>	0.27	0.60
Visual	0.78	0.33	0.56
Olfactory	— <sup>b</sup>	4.56	0.03
Tactile	0.53	0.02	0.88
Gustatory	0.64	2.61	0.11
Mixed	0.89	0.50	0.48
Frequency (less than daily versus once daily or more)	1.00	0.00	1.00
Duration (less than 30 minutes versus 30 minutes or more)	0.90	0.56	0.45
Intensity (less than or equal to ordinary perception versus greater than ordinary perception)	0.74	0.00	1.00
Reality (distinguishable from reality versus indistinguishable from reality)	0.56	0.00	0.95
Internal antecedents (no predictable internal states versus some predictability)	0.51	4.43	0.04
Associated affect (no affect accompanying hallucination versus some affect)	0.70	3.12	0.08
Associated behavior (no overt behavior in response to hallucinations versus some behavior)	0.56	0.01	0.93
Control (subject has no influence over hallucination versus some influence)	0.50	0.47	0.49
Time sense (altered during hallucination versus not altered)	0.70	1.40	0.24
Spatial sense (altered during hallucination versus not altered)	0.53	0.00	1.00
Experience shared (only subject experiences the hallucination versus others can)	0.77	0.04	0.84

<sup>a</sup>Positive attitude is defined as a stated wish to continue hallucinating. Positive attitude was rated either present or absent, and a 2x2 Yates-corrected chi-square compared that attitude variable with the two-level phenomenologic variables described in the first column of the table.

<sup>b</sup>Not computable; 100% interrater agreement.

periences. Benjamin (23) used a Structural Analysis of Social Behavior questionnaire to examine the relation between psychiatric inpatients and their auditory hallucinations and found that some hallucinations served important companionship and protective functions. Sociocultural studies have emphasized that the occurrence of hallucinations can be influenced by cultural attitudes toward them (24) and that in some cultural contexts hallucinations are valued and deliberately induced (2).

In this study we sought to answer the following questions about hospitalized psychiatric patients' attitudes toward hallucinations. 1) What are the purposes served by hallucinations, if any, according to patients who hallucinate? 2) What are the adverse effects of hallucinations, if any, according to patients who hallucinate? 3) Are attitudes toward hallucinations related to phenomenologic characteristics of the hallucinations and/or to characteristics of the patients? 4) What is the relation between pretreatment attitudes toward hallucinations and the presence or absence of hallucinations after inpatient treatment? 5) Do attitudes toward hallucinations change after treatment?

## METHOD

The subjects consisted of patients consecutively admitted to three adult inpatient psychiatry units who reported hallucinations (by DSM-III-R definition) as part of their current episode of illness. All gave informed consent. Since the theories positing psychological purposes for hallucinations do not limit themselves to auditory hallucinations, subjects hallucinating in any sensory modality were included. Two of the units were research units in a state psychiatric facility; the other was a general psychiatry unit in a university hospital. Institutional review board approval was obtained from both hospitals.

Of a total of 50 subjects, 24 (48%) were male and 26 (52%) were female. Their ages ranged from 18 to 69 years (mean=31 years). The subjects had received from 8 to 20 years of formal education (mean=13 years). Four (8%) were married, seven (14%) were divorced, and 39 (78%) had never been married. Twenty-nine patients (58%) were

white and non-Hispanic, 18 (36%) were black, two (4%) were Hispanic, and one (2%) was Oriental. Forty-three (86%) were unemployed, five (10%) were employed full-time, and two (4%) were employed part-time. DSM-III-R diagnoses were grouped into four categories: schizophrenia and schizophreniform disorder (N=23, 46%), mood disorders (bipolar and unipolar) (N=13, 26%), schizoaffective disorder (N=7, 14%), and other psychotic disorders (N=7, 14%). Duration of illness ranged from less than 1 year (N=3, 6%) to 25 years (N=2, 4%) (mean=8.6 years). Length of hospital stay ranged from 1.4 to 40.6 weeks (mean=8.6 weeks). The long stays of some subjects resulted from other research protocols on the two research units.

Each subject underwent a 45- to 60-minute semistructured interview shortly after admission and again shortly before discharge. The interview elicited a detailed description of 12 phenomenologic characteristics of the subject's hallucinations. These hallucination variables are listed in table 1. They were modified from those used by Lowe (25) on the basis of which seemed pertinent and had acceptable interrater reliability. In addition, 11 attitude variables were derived from the descriptive literature; these are listed in table 2. Each interviewer began by checking to ensure that the subject understood what constituted a hallucination and then asked open-ended questions encouraging spontaneous descriptions of hallucinatory phenomena and attitudes. If specific items were not addressed spontaneously, the interviewer asked about them directly, avoiding leading questions. Table 2 contains examples of direct questions about attitude variables.

The interviewers were clinical researchers trained both in the interview technique and on a rating scale for hallucination and attitude variables. The scale for hallucination variables is described by Lowe (25). The attitude variables were rated as 2 (positive only), 1 (both positive and negative), or 0 (not positive; e.g., neutral or negative only). As a rough measure of degree of positive attitude, a positivity score was calculated for each subject by adding total points for the 11 items to produce a score ranging from 0 to 22. Interrater reliability was measured by computing an overall kappa statistic for chance-corrected agreement (26) among all four trained raters, each of whom scored the same 10 transcribed interviews; the results are shown in tables 1 and 3.

To minimize interviewer bias, the demographic, diagnostic, and treatment information about each subject was unknown to the interviewer and was obtained from hospital charts. To promote full disclosure, subjects were informed that the interviewers were not a part of their treatment teams and that interview material was confidential. Interviewers explicitly asked about the subjects' understanding of the purpose of the study and corrected any distortions. Questions about pretreatment hallucinations were repeated during the posttreatment interview, in case treatment had influenced reporting ability.

The subjects were treated for the problems that had necessitated

**TABLE 2. Attitude Variables and Sample Questions Concerning Hallucinations for 50 Psychiatric Inpatients**

Attitude Variable	Sample Question
General	Would you rather keep on seeing that vision or have it go away?
Controlled	If you could control when the voice came and when it didn't, would you want to be able to hear it sometimes?
Self-soothing	Is there anything comforting about that smell? Anything distressing? threatening? soothing?
Self-concept	Does hearing voices affect the way you feel about yourself? how you compare yourself to others? Does it make you feel singled out? special?
Companionship	Does the voice keep you company when you're lonely? Does it make you more lonely?
Defensive	Does the hallucination protect you from uncomfortable situations or feelings? Does it warn you of danger? Does it create uncomfortable situations, feelings, danger?
Reactions of others	How do you feel about the way other people react toward your hallucinations?
Performance	When the sensation comes while you're working on something, does it affect your ability to work? Does it make the work harder or easier?
Relationships	Has hallucinating affected your relationships with other people? If so, how?
Financial	Do you think your financial situation would be different if you did not hallucinate? If so, how?
Sexual	Does the vision interfere with/enhance your sexual interest/activity?

**TABLE 3. Interrater Reliability (Kappa) and Distribution of Responses of 50 Psychiatric Inpatients to Attitude Variables Concerning Hallucinations**

Attitude Variable	Kappa	Response							
		Positive		Negative		Both <sup>a</sup>		Neutral	
		N	%	N	%	N	%	N	%
General	0.73	6	12	35	70	9	18	0	0
Controlled	1.00	10	20	34	68	6	12	0	0
Self-soothing	0.77	7	14	19	38	22	44	2	4
Self-concept	0.74	10	20	25	50	7	14	8	16
Companionship	0.52	14	28	17	34	7	14	12	24
Defensive	0.64	10	20	25	50	8	16	7	14
Reactions of others	0.55	6	12	29	58	4	8	11	22
Performance	0.70	6	12	32	64	2	4	10	20
Relationships	0.74	4	8	30	60	2	4	14	28
Financial	0.70	2	4	28	56	19	38	1	2
Sexual	0.67	5	10	16	32	1	2	28	56

<sup>a</sup>Subject was ambivalent or gave both positive and negative replies for the variable.

hospitalization. Optimal treatment was selected and adjusted on clinical grounds and was not altered for the study. Treatment included pharmacotherapy, individual and group psychotherapy, family therapy, and occupational therapy as indicated.

At the time of the first interview (shortly after admission), 12 subjects (24%) were taking antipsychotic medication, and 38 subjects (76%) were not. At the time of the second interview (shortly before discharge), 36 subjects (72%) were taking antipsychotic medication, and 12 (24%) were not; information was unavailable for two subjects (4%). Antipsychotic medication was defined as neuroleptic agents and clozapine and did not include antidepressants, lithium, and other mood-stabilizing agents.

## RESULTS

Fifty-two percent (N=26) of the subjects reported some positive effects of hallucinations; 12% (N=6) stated that they would like to continue hallucinating, and 20% (N=10) stated that they would like to continue hallucinating if they could control their hallucinations. Another 12% were ambivalent about whether they would like to continue hallucinating. The helpful qualities of their hallucinations that they identified, from most to least commonly cited, are listed below with illustrative quotations (see also table 3).

1. Relaxing, soothing (58% of the subjects): "In a

way, if I can keep it low, it's relaxing, like having a radio on."

2. Companionship (42%): "Recently, I'd ask all the time to hear it. I was lonely; I wanted some friends."

3. Financial (42%): "It made it easier, because my mother put me on SSI [Supplemental Security Income]."

4. Defensive, protective (36%): against internal dangers: "I hallucinated shooting my dad instead of actually shooting him. It helped vent my feelings toward dad; I'm not in prison"; against external dangers: "The voice was like a guardian angel; if my father was getting ready to do something to me, they'd wake me up."

5. Self-concept (34%): "I feel more positive than I did. I feel loved. It has led me to believe I'm more attractive. I have a poor self-image in regard to my looks; now I almost accept my looks."

6. Reactions of others (20%): "When I had the sound I thought people would be nicer to me because they thought I have a handicap; I'd be pampered."

7. Performance (16%): work: "When I do greeting cards, sometimes the voices make out the verses. They're helpful; they never interfere"; daily activities: "I need to hear the voices, to maintain well-being—by picking up my room, or getting something to eat, when they tell me to."

8. Relationships (12%): "The voices make it easier to be close to people."

9. Sexual (12%): "My sexual desire has increased recently, due to love of the man that I feel I know via hallucinations . . . I feel sexual stimulation from them."

Ninety-eight percent (N=49) of the subjects noted adverse effects of their hallucinations. Sixty-eight percent (N=34) wished their hallucinations would stop, even if they could control them. The adverse effects they identified are listed from most to least commonly cited, with illustrative quotations.

1. Financial (94% of the subjects): "I've never been able to have a job because of this."

2. Emotional distress, tension (not soothing) (82%): "There is no peace and quiet unless I'm in a deep sleep."

3. Performance (68%): "Sometimes the voices get in the way of work. They try to help, but they may say do it in a different way than the boss."

4. Reactions of others (66%): "I feel they think I'm crazy and I need help; it scares them to death."

5. Feeling endangered or threatened (not defended or protected) (66%): "Sometimes the voices say they're going to kill me or I'll die tonight; I feel threatened."

6. Relationships (64%): "I might have a friend I go visit. They'll tell me stories about what he does when I'm not there; it can impact on the friendship."

7. Self-concept (64%): "Every time I see the visions, they look so handsome; I feel worse about myself, since I'm uglier."

8. Loneliness (not companionship) (48%): "They can make you lonely; they don't keep you company."

9. Sexual (34%): "It got in the way of sex; I feel like I'm on TV."

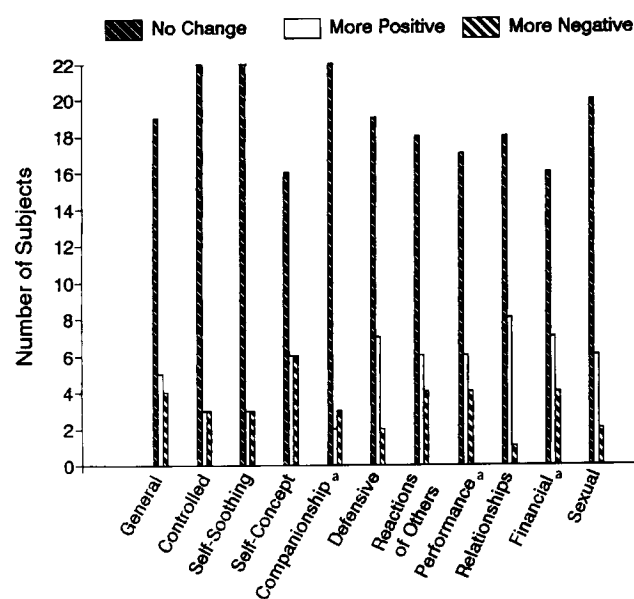
Subjects who stated they wanted to continue hallucinating were compared with subjects who did not to see whether the phenomenology of their hallucinations differed. Chi-square values (2x2, with Yates's correction) are shown in table 1. The significant findings were 1) that the subjects with olfactory hallucinations were more likely to value their hallucinations and 2) that the subjects who could predict the occurrence of hallucinations by internal antecedents (e.g., hallucinations typically occurred when they were in a certain mood or had a certain thought) were more likely to value their hallucinations.

Using Yates-corrected chi-square statistics, we found no significant relation between positive attitudes toward hallucinations and the subjects' age, sex, occupational status, marital status, or level of education. Further, there was no significant relation between positive attitudes and diagnostic category, duration of illness, length of hospital stay, or whether the subject was taking an antipsychotic medication.

Twenty-eight (56%) of the 50 subjects were still hallucinating after treatment. Subjects who saw few or no helpful aspects of hallucinations before treatment (positivity score of 0-2) were significantly less likely to hallucinate after treatment than those who valued hallucinations more (positivity score of 3-21) ( $\chi^2=7.65$ ,  $df=1$ ,  $p=0.01$ , with Yates's correction).

Of the 28 subjects who were still hallucinating after

FIGURE 1. Change in Attitudes of 50 Psychiatric Inpatients Toward Hallucinations After Treatment



<sup>a</sup>Missing data point.

treatment, most continued to have the same attitudes after treatment as they had before treatment. Most of those who changed had more positive attitudes. The frequencies are shown in figure 1.

## DISCUSSION

In medical practice, symptoms of an illness are usually assumed to be undesirable. It is notable, therefore, that more than one-half of the subjects in this study reported that their hallucinations served adaptive functions, and a sizable minority wished to continue experiencing the hallucinations. Since patients who are hospitalized, and especially those who agree to participate in research protocols, are likely to be more distressed by their illness, positive attitudes may have been underrepresented by this study group. Further, only functions that were apparent to the subjects are reported; there may be additional unconscious purposes of hallucinations that would be difficult to verify empirically.

The hallucination characteristics associated with valuing hallucinations are consistent with certain theories about these symptoms. Olfactory hallucinations may be closely associated with limbic areas related to the experience of pleasure (27). However, such hallucinations are at least as likely to be unpleasant, so this probably does not explain why patients with this kind of hallucination are more likely to find their hallucinations helpful. Alternatively, experiencing hallucinations in this rare sensory modality may represent a more severe form of illness, to which patients may adapt by learning to value their symptoms.

Patients whose hallucinations predictably followed certain internal states also valued the symptom more. Predictability may minimize the distress caused by symptoms. In addition, this lends support to the idea that some patients obtain relief from distressing internal states by hallucinating. Among subjects who continued to hallucinate after treatment, most either maintained the same attitudes toward hallucinations or reported more positive attitudes. This finding is consistent with the idea that treatment qualitatively alters hallucinations so that they are less distressing (28). Another possible explanation is that subjects unable to rid themselves of a symptom may find rationales to value that symptom, as part of an adaptation to the illness. This may be particularly true in patients who have been ill for a long time, as in this study; a group of subjects who has just begun to hallucinate might be expected to be considerably more frightened and to value the symptom less.

Finally, the patients who valued hallucinations more were significantly more likely to report continued hallucinations after inpatient treatment. This is consistent with, but does not prove, a causal connection (i.e., that valuing hallucinations contributes to their continued expression). An alternative explanation is that patients unable to stop hallucinating may secondarily find value in the symptom. In either case, pretreatment attitudes may help predict response to treatment.

It is important to note that nearly all subjects experienced adverse effects of hallucinations, and almost one-half found no value in them. While it is possible that in some instances hallucinations reflect unconscious needs, it remains likely that they do not always serve a psychological purpose.

## CONCLUSIONS

A sizable number of psychiatric patients believe that their hallucinations have adaptive as well as maladaptive functions and can identify purposes that they believe are served by their hallucinations. Patients who have olfactory hallucinations, or moods or thoughts which predictably precede hallucinations, are especially likely to value the symptom. Those who value hallucinations more are more likely to continue hallucinating after inpatient treatment. Attitudes toward hallucinating usually remain unchanged or become more positive after inpatient treatment.

Routinely asking patients whether their hallucinations are helpful in any of the ways reported in this study might identify fruitful areas for psychosocial intervention, so that the needs met by hallucinations could be met by other means. It may uncover a factor that contributes to noncompliance with medication regimens by some patients and help predict response to treatment. The findings also suggest, but do not prove, that psychological factors contribute toward the expression of hallucinations in patients with psychotic illnesses.

## REFERENCES

1. Slade PD: Towards a theory of auditory hallucinations: outline of an hypothetical four-factor model. *Br J Soc Clin Psychol* 1976; 15:415-423
2. Slade PD, Bentall RP: *Sensory Deception: A Scientific Analysis of Hallucination*. Baltimore, Johns Hopkins University Press, 1988
3. Heilbrun AB, Diller R, Fleming R, Slade L: Strategies of disattention and auditory hallucinations in schizophrenics. *J Nerv Ment Dis* 1986; 174:265-273
4. Horowitz MJ: A cognitive model of hallucinations. *Am J Psychiatry* 1975; 132:789-795
5. Slade PD: The external control of auditory hallucinations: an information theory analysis. *Br J Soc Clin Psychol* 1974; 13:73-79
6. Modell AH: The theoretical implications of hallucinatory experiences in schizophrenia. *J Am Psychoanal Assoc* 1958; 6:442-480
7. Havens LL: The placement and movement of hallucinations in space: phenomenology and theory. *Int J Psychoanal* 1962; 43: 426-435
8. Schneck JM: S Weir Mitchell's visual hallucinations as a grief reaction (letter). *Am J Psychiatry* 1989; 146:409
9. Mueser KT, Butler RW: Auditory hallucinations in combat-related chronic posttraumatic stress disorder. *Am J Psychiatry* 1987; 144:299-302
10. Pilowsky D: Hallucinations in children: a psychoanalytic perspective, in *Hallucinations in Children*. Edited by Pilowsky D, Chambers W. Washington, DC, American Psychiatric Press, 1986
11. Tolpin PH: On the regulation of anxiety: its relation to "the timelessness of the unconscious and its capacity for hallucination," in *The Annual of Psychoanalysis*, vol II. Edited by the Chicago Institute for Psychoanalysis. New York, International Universities Press, 1975
12. Weinberger LM, Grant FC: Visual hallucinations and their neuro-optical correlates. *Arch Ophthalmol* 1940; 23:166-199
13. Green P, Flor-Henry P: Origin and treatment of hallucinations (letter). *Am J Psychiatry* 1988; 145:274-275
14. Evenson RC: Auditory hallucinations and subvocal speech (letter). *Am J Psychiatry* 1987; 144:1364-1365
15. Esquirol JED: *Mental Maladies: A Treatise on Insanity* (1845). New York, Hafner, 1965
16. Kraepelin E: *Dementia Praecox and Paraphrenia: With Historical Introduction* (1919). Translated by Barclay RM. New York, Robert E Krieger, 1971
17. Jaspers K: *General Psychopathology*, 7th ed (1923). Manchester, Manchester University Press, 1962
18. Bleuler E: *Dementia Praecox or the Group of Schizophrenias* (1908). Translated by Zinkin J. New York, International Universities Press, 1950
19. Hamilton M (ed): *Fish's Clinical Psychopathology*, 2nd ed. Bristol, John Wright, 1985
20. Bick PA, Kinsbourne M: Auditory hallucinations and subvocal speech in schizophrenic patients. *Am J Psychiatry* 1987; 144: 222-225
21. Romme MAJ, Escher ADMAC: Hearing voices. *Schizophr Bull* 1989; 15:209-216
22. Falloon IRH, Talbot RE: Persistent auditory hallucinations: coping mechanisms and implications for management. *Psychol Med* 1981; 11:329-339
23. Benjamin LS: Is chronicity a function of the relationship between the person and the auditory hallucination? *Schizophr Bull* 1989; 15:291-310
24. Al-Issa I: Sociocultural factors in hallucinations. *Int J Social Psychiatry* 1978; 24:167-176
25. Lowe GR: The phenomenology of hallucinations as an aide to differential diagnosis. *Br J Psychiatry* 1973; 123:621-633
26. Fleiss JL: Measuring nominal scale agreement among many raters. *Psychol Bull* 1971; 76:378-383
27. MacLean PD: Culminating developments in the evolution of the limbic system: the thalamocingulate division, in *The Limbic System: Functional Organization and Clinical Disorders*. Edited by Doane BK, Livingston KE. New York, Raven Press, 1986
28. Harrow M, Silverstein ML: Psychotic symptoms in schizophrenia after the acute phase. *Schizophr Bull* 1977; 3:608-616