

Psychiatrists' View on the Risk Factors for Aggressive Behavior in Psychotic Patients

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Abstract

In meta-analytic studies it was found that patients diagnosed with a psychotic disorder are at increased risk for displaying violent behavior. However, it remains largely unclear which specific factors contribute to the heightened risk for aggression in this patient group, nor what the views of psychiatrists are on this issue. A cross-sectional survey study was carried out and a survey questionnaire was developed to investigate the view of 652 psychiatrists on the relative contributions of various factors (e.g., illness related, personality, social influences) that might explain aggression in psychosis. It was found that psychiatrists generally view illness-related features as the most important determinant of aggression in these patients, followed by impulsivity/lack of insight and social influences, whereas personality characteristics are considered as least relevant. Latent class cluster analysis revealed that there are several subgroups of psychiatrists who attach different levels of importance to various types of risk factors. In these subgroups, two cluster contrasts were found: one representing differences in response style, and one representing differences in the evaluation of personality characteristics. Overall, psychiatrists seem to adopt a medical model when interpreting aggression in psychotic patients, although several subgroups of psychiatrists can be identified who have different opinions of such behavior.

Key Words: Psychiatrists, Psychosis, Schizophrenia, Aggression, Risk Factors

Introduction

Meta-analytic studies have indicated that psychiatric patients, and in particular patients diagnosed with a psychotic disorder, more often engage in violent acts than healthy populations (1, 2). Various risk factors are hypothesized and assumed to be important when explaining this

phenomenon (3). When looking at patients' views concerning the causes of their aggression, social context factors are often mentioned, whereas clinicians tend to be merely focused on the patient himself (4). However, only a few studies have focused on the view of clinical staff, although it might be of great relevance to gain more insight into what clinicians consider to be the causes of the aggressive behavior in psychotic patients, as this could possibly lead to specific treatment and management strategies.

Patients with a psychotic disorder seem to be at increased risk for displaying violent behavior (5, 6). Various factors are thought to be involved in the aggressive behavior of patients with a psychotic disorder, including illness-related factors, personality characteristics, and environmental variables. Mullen (3), for example, primarily described the developmental difficulties encountered by psychotic

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Clinical Implications

The aim of the current study was to investigate psychiatrists' view on the causes of aggressive behavior in patients with a psychotic disorder. In addition, it was explored whether different groups of psychiatrists could be distinguished with regard to their opinion on the risk factors for aggression in psychosis. A survey was especially developed for investigating these issues. Factor analysis yielded four factors representing distinct types of risk factors, namely illness-related features, personality characteristics, environmental influences, and lack of insight and impulsive behavior.

Based on the answers to the open-ended question, almost half of the psychiatrists appeared to attribute the aggressive behavior of patients with a psychotic disorder to anxiety triggered by psychotic symptoms. This form of anxiety seems to be an obvious risk factor for provoking aggressive behavior in this patient group, but remains an understudied variable. More research needs to be conducted into this to further examine the role of anxiety in the relation between psychosis and aggression. Another frequently mentioned risk factor by these psychiatrists was delusional or paranoid thoughts. A similar pattern was found in the responses on the survey. That is, psychiatrists considered illness-related features as most relevant for explaining aggressive behavior in patients with a psychotic disorder, whereas personality characteristics were seen as the least relevant risk factor. These findings are well in line with the earlier described findings of Duxbury and Whittington (4), and lead to the conclusion that clinical staff, including psychiatrists, apparently adhere to a medical model when explaining the aggressive behavior of patients diagnosed with a psychotic disorder. However, other determinants, and in particular personality characteristics, are considered as less important. Nonetheless, these variables may account for a substantial proportion of the variance when explaining the aggressive behavior in this population. For instance, research suggests that patients with antisocial personality features are more likely to engage in violent behavior (17). Further, they tend to have an earlier first hospitalization and longer stays in hospitals (18), which underline the clinical relevance of such personality characteristics.

patients, which would lead to educational failure and eventually unemployment, and ultimately results in contacts with criminal peer groups that might promote violent behavior. However, most of the empirical research on the increased incidence of aggression in patients with a psychotic disorder has been focused on intra-individual and illness-related factors, such as the type and severity of psychotic symptoms, substance use, and psychopathy, while contextual factors have hardly been investigated (7-9).

Patients themselves mainly report environmental conditions and poor communication, thus the more social context factors, as direct triggers of their aggressive behavior. This view, however, is likely to reflect a fundamental attribution error, with patients displaying the tendency to ascribe their violent behavior to external causes (10). Clinicians display a tendency to consider the illness of the patients as the cause of aggression, thereby neglecting other relevant factors that may contribute to this type of behavior (11). For example, Duxbury and Whittington (4) found that nurses mainly attribute the aggressive behavior of patients to illness-related factors, and tend to ignore environmental or person variables. As it has been suggested that the attitudes and underlying cognitions of the clinical staff toward patient aggression might lead to specific management strategies in the treatment of such behavior (12), it seems important that such opinions should be accurate and nuanced. Of course, not only the opinion of the nurses is relevant, but the view

of other staff members, such as psychiatrists, should also be taken into account. So far, few studies have examined the psychiatrists' point of view on the aggressive behavior of psychotic patients. One exception is a study by Clarke and Rowe (13) in which it was shown that psychiatrists were more likely to diagnose patients with schizophrenia if they had a history of violence. This seems to suggest that violence was regarded as a main feature of schizophrenia, while other factors accounting for the aggression were largely neglected. Until now, however, it remains unclear what psychiatrists precisely think about the risk factors of aggressive behavior in psychotic patients.

The present study was set up in order to explore the opinions of psychiatrists with regard to the risk factors for aggressive behavior in psychotic patients. The main aim was to investigate whether psychiatrists distinguish various personal, social, and illness-related factors. It was also aimed to determine which risk factor or factors are considered as most important in causing aggressive behavior in psychotic patients. Furthermore, an attempt was made (by means of latent cluster analysis) to identify various groups of psychiatrists with regard to their views on the causes of aggression in psychotic patients. In addition, we were interested in to what extent such opinions of psychiatrists are determined by sociodemographic (i.e., gender, age) and work-related factors (i.e., current work situation, years of working experience, experiences with patient violence).

Method

Participants

A sample of registered psychiatrists was recruited. A total of 2,802 psychiatrists were approached via the Dutch Association for Psychiatry and received an invitation by email to participate in this study, with a web link to the online survey. In total 652 psychiatrists (23.7%) responded favorably to this request and fully completed the questionnaire. However, not all participants filled out the sociodemographic and work-related questions. If the survey questionnaire was not filled out within two weeks, a reminder email was sent.

Data Collection

First, participants were asked to answer an open-ended question about their ideas of the origins of aggressive behavior in psychotic patients, “*What do you consider to be the main reason(s) for psychotic patients to act aggressively?*” Participants were allowed to come up with more than one answer. Then, participants had to fill out a questionnaire, developed for the purpose of the present study, to investigate the view of psychiatrists on the relative contributions of various factors that might explain the aggressive behavior of psychotic patients, including personality characteristics, illness-related features, and social influences. A senior psychiatrist and a psychologist first conducted a literature search on possible causes for aggressive behavior in psychosis. Items covering these risk factors were formed in three domains: illness, personality, and environmental issues. Each statement started with “*Psychotic patients behave aggressively because ...*” followed by the possible risk factor. Then, experienced researchers and clinicians were asked to evaluate these items on the basis of their expertise. Following their suggestions and comments, a final version of the survey was constructed, which consisted of 38 items (see Table 1). Each item had to be rated on a 5-point scale with anchors of 1=absolutely not true and 5=absolutely true.

Before analyzing the results that were obtained with this survey, psychometric properties were checked. A principal component analysis was carried out to examine the factor structure of the survey and, thus, to identify various groups of causes for the aggressive behavior of psychotic patients. The scree plot clearly pointed in the direction of a four-factor solution, instead of the aforementioned assumed three factors. The first factor had an eigenvalue of 9.16 and explained 24.09% of the total variance, and clearly seemed to represent an “illness-related” factor. The second factor had an eigenvalue of 4.70 and explained 12.36% of the variance, and referred to patients’ “personality characteristics.” The third factor had an eigenvalue of 2.48 and explained 6.52% of the variance, and pertained to “environmental influences.”

The final and fourth factor had an eigenvalue of 1.52 and explained 4.0% of the variance, and seemed to be concerned with “lack of insight and impulsivity.” Factor loadings of all items are displayed in Table 1. These four factors will be employed in the further analyses of this study.

Data Analysis

Data were analyzed by means of the Statistical Package for Social Sciences, version 17.0 (14) and Latent Gold 4.5 (15). Latent class cluster analysis was used to identify various groups of psychiatrists who differ in their responses on the causes of aggression in psychotic patients. Further, it was investigated whether these differences in responses can be interpreted in terms of the factor structure of the survey. To compare the clusters of psychiatrists in terms of sociodemographic and work-related characteristics, a series of ANOVAs and Chi-square tests were carried out after the latent class cluster analysis, using cluster membership as a between-subjects factor.

Results

Demographics

Sociodemographic characteristics and work-related information of the psychiatrists are presented in Table 2. The sample consisted of 348 men and 295 women who had a mean age of 47.28 years (SD=10.90, range 25–82 years). About 67% of the participants were currently working in a mental health setting, of which 23.2% were working on an acute ward. Mean working experience was 17.52 years (SD=10.23, range 1–45 years). In the total sample, 55.8% indicated that they had regularly encountered patient aggression, whereas 61.7% had at least once been a victim of aggression on the ward.

Responses to the Open-Ended Question

Responses to the open-ended question “*What do you consider to be the main reason(s) for psychotic patients to act aggressively?*” were qualitatively analyzed. Of the respondents, 46.4% considered anxiety as one of the crucial factors involved in the aggressive behavior of psychotic patients. A second leading cause, mentioned by 43.2% of the psychiatrists, was the experience of delusional or paranoid thoughts. Other answers were imperative hallucinations (13.2%), comorbid substance use (8.4%), disturbed impulse control (7.1%), and environmental factors (4.6%). Only forty-two (6.1%) of the respondents called into question whether psychotic patients do act aggressively.

Survey Data

A comparison of weighted subscale scores (total subscale score divided by the number of items) of the four fac-

Table 1 Items of the Survey on Causes of Aggressive Behavior in Psychotic Patients and Their Factor Loadings as Obtained with a Principal Component Analysis. All Items are Prefixed by "Psychotic Patients Behave Aggressively Because ..."

Item	Description	M	SD	Factor			
				1	2	3	4
1.	They do not take their medication	2.53	.89	.21	.18	.03	.29
2.	They cannot count on anyone	2.16	.85	.11	.25	.65	-.13
3.	They are hallucinating	2.94	.96	.49	-.10	.04	.40
4.	They are angry	2.64	.95	.19	.32	.20	.30
5.	They got less social support	2.48	.94	.11	.09	.76	-.06
6.	They try to protect themselves	3.46	1.02	.67	-.10	.25	-.08
7.	They do not get their way	1.95	.84	.01	.36	.24	.31
8.	They feel like everyone is against them	3.27	.95	.70	.08	.11	.11
9.	Their delusions are bothering them	3.52	.97	.73	-.04	-.04	.29
10.	People do not listen to them	2.53	.96	.21	.06	.67	.08
11.	Voices bring them to this behavior	2.83	.94	.48	.10	-.12	.37
12.	They are anxious	3.97	.92	.75	-.05	.21	.01
13.	They are being stigmatized	2.10	.90	.08	.13	.70	.11
14.	They feel misunderstood by other people	3.03	1.00	.31	-.03	.55	.25
15.	They cannot control their impulses	2.79	1.07	.31	.17	.01	.51
16.	They feel threatened	3.82	.92	.81	.00	.15	.05
17.	They use drugs	3.20	1.02	.44	.45	.08	.04
18.	They learned to behave in that way	1.57	.80	-.04	.57	.30	.11
19.	They have a genetic vulnerability	1.62	.77	.04	.53	.08	.29
20.	They have a lack of insight in their illness	2.53	1.07	.29	.08	.12	.56
21.	They have an antisocial personality	1.40	.73	-.02	.75	.01	.04
22.	They cannot set limits	2.42	1.00	.15	.04	.41	.48
23.	They do not want to collaborate	1.78	.77	-.02	.30	.23	.53
24.	They feel depressed	1.95	.82	.04	.14	.52	.40
25.	They have had an insecure attachment style	1.61	.81	-.06	.48	.39	.22
26.	They are frustrated	2.45	.94	.21	.25	.38	.37
27.	They experience less love from other people	1.73	.79	-.07	.25	.57	.41
28.	Negative events have happened in their lives	2.10	.91	.08	.26	.57	.30
29.	They have a low IQ	1.30	.59	.02	.67	.06	-.03
30.	This fits with their cultural background	1.25	.53	-.04	.55	.10	.06
31.	They are suspicious	3.50	.95	.77	.03	.05	.25
32.	They interpret situation in a wrong way	3.67	.93	.72	-.06	.06	.29
33.	They were aggressive in childhood	1.38	.67	-.05	.74	.04	-.01
34.	They come from a broken family	1.27	.53	-.06	.69	.20	.10
35.	They feel lonely	1.89	.92	-.03	.11	.60	.44
36.	They do not understand other people	2.86	1.00	.33	.03	.27	.44
37.	They have been aggressive before	2.13	1.08	.10	.57	.04	.22
38.	They feel that they don't have the control	2.76	1.03	.37	.07	.14	.49

N=652

Table 2 Descriptive Statistics on Demographic and Work-Related Characteristics of the Psychiatrists Included in this Study (N=652)

	N	%
Gender		
Male	348	53.37
Female	295	45.25
Current work situation		
Clinical health setting	441	67.64
• Acute ward	151	23.16
• Non-acute ward	290	44.48
Forensic setting	27	4.14
Ambulant setting	72	11.04
Other (e.g., research, crisis)	89	12.73
Not applicable/no answer	29	4.45
Aggression at work		
Yes	364	55.83
No	280	42.94
Victim of aggression		
Yes	402	61.78
No	242	37.12

Due to missing values, not all variables sum up to 652.

tors indicated that participants rated illness-related features as most important (M=3.44, SD=0.68), whereas personality characteristics were considered as least relevant (M=1.78, SD=0.47). Lack of insight and impulsivity (M=2.52, SD=0.61) and environmental influences (M=2.24, SD=0.60) were scored in between (all between-factor comparisons were significant at p<.001).

Latent Class Cluster Analysis

According to the Bayesian Information Criterion (BIC) that weights the fit and parsimony of the latent class cluster models, the model with the lowest value is the one with the best fit (16). In our analyses, a 7-cluster model displayed the lowest BIC value (i.e., 55749.5 as compared to a BIC value of 55832.4 for the 6-cluster model) and the smallest increase in classification errors (note: detailed data can be obtained from the first author). Table 3 shows a summary of the characteristics of each of the seven clusters of psychiatrists and their interpretations with regard to the four factors. In general, all clusters rated the illness-related features as most important and the personality characteristics as least relevant. To analyze contrasts between clusters, the responses of each cluster are compared to the average response of the total sample (i.e., grand mean). Differences are tested with Wald tests, and the interpretation of the clusters, as displayed in the left panel of Table 3, is based on significant differences between the responses of the clusters and the responses of the total sample (-1.96<Z>1.96). Two remarkable cluster contrasts were found. First, clusters 1 and 2 seemed to represent two oppo-

Table 3 Summary of the Seven Estimated Clusters and Their Sociodemographic and Work-Related Characteristics of the Psychiatrists Sample (N=652)

Cluster	N	More important factor	Less important factor	Interpretation cluster concerning factors	Gender (% male)	Mean age (SD)	Work situation (% health setting)	Mean years of work experience (SD)	Aggression at work (% yes)	Victim of aggression (% yes)
1.	99	none	all	Undervaluation of all factors	51.5 _{a,b}	47 _{a,b,c} (11)	67.5	17 _{a,b} (10)	47.5 _a	67.7
2.	56	all	none	Overvaluation of all factors	60.7 _{b,c}	49 _c (11)	60.0	19 _b (11)	57.1 _{a,b}	53.6
3.	135	1	2	Undervaluation of personality, overvaluation of illness related	43.0 _a	46 _{a,b} (10)	70.4	16 _a (9)	62.2 _b	58.5
4.	98	2	1	Undervaluation of illness related, overvaluation of personality	72.4 _c	49 _c (11)	61.4	19 _b (11)	49.0 _a	63.5
5.	126	1, 3, and 4	2	Undervaluation of personality, overvaluation of remaining factors	51.2 _{a,b}	45 _b (12)	62.0	15 _a (10)	59.7 _{a,b}	64.8
6.	102	3	2	Undervaluation of personality, overvaluation of environment	53.6 _{a,b}	49 _c (11)	64.4	19 _b (10)	58.8 _{a,b}	63.3
7.	36	2	1, 3, and 4	Diverse valuation of personality	54.3 _b	49 _{a,b,c} (11)	53.3	20 _b (10)	62.9 _{a,b}	62.9

1=illness related, 2=personality, 3=environmental, 4=lack of insight and impulsivity. Subscripts: within each column, different letters indicate significant differences at p<.05.

site response patterns. When analyzing differences between cluster 1 and 2 on sociodemographic and work-related characteristics with ANOVAs and Chi-squared tests, the results show no significant differences (all p 's > .05). Therefore, it seems to be likely that the difference in valuation of the risk factors between these clusters can be mainly attributed to differences in response style (i.e., either extremely low or high responding to all items in the survey). Another contrast was found between clusters 3 and 4: the psychiatrists in cluster 3 overvalued items of the illness-related factor and considered items of the personality factors as less relevant, whereas the opposite was true for the psychiatrists in cluster 4. When analyzing differences on sociodemographic and work-related characteristics with ANOVAs and Chi-squared tests, the results show that these clusters differ with respect to gender [$\chi^2(1)=19.98$, $p < .001$], age [$F(1,230)=6.45$, $p = .01$], years of work experience [$F(1,232)=6.20$, $p = .01$], and aggression at work [$\chi^2(1)=4.06$, $p < .05$]. Specifically, cluster 4 (i.e., psychiatrists who undervalued the illness-related factor, while overvaluing the personality factor) contained more and older men with more years of work experience who encountered less aggression at work, compared to the participants in cluster 3 (i.e., psychiatrists who overvalued the illness-related factor, while undervaluing the personality factor). Therefore, the difference in valuation of the factors between these clusters may be due to characteristics of the psychiatrists.

Discussion

The aim of the current study was to investigate psychiatrists' view on the causes of aggressive behavior in patients with a psychotic disorder. In addition, it was explored whether different groups of psychiatrists could be distinguished with regard to their opinion on the risk factors for aggression in psychosis. A survey was especially developed for investigating these issues. Factor analysis yielded four factors representing distinct types of risk factors, namely illness-related features, personality characteristics, environmental influences, and lack of insight and impulsive behavior.

Based on the answers to the open-ended question, almost half of the psychiatrists appeared to attribute the aggressive behavior of patients with a psychotic disorder to anxiety triggered by psychotic symptoms. This form of anxiety seems to be an obvious risk factor for provoking aggressive behavior in this patient group, but remains an understudied variable. More research needs to be conducted into this to further examine the role of anxiety in the relation between psychosis and aggression. Another frequently mentioned risk factor by these psychiatrists was delusional or paranoid thoughts. A similar pattern was found in the responses on the survey. That is, psychiatrists considered

illness-related features as most relevant for explaining aggressive behavior in patients with a psychotic disorder, whereas personality characteristics were seen as the least relevant risk factor. These findings are well in line with the earlier described findings of Duxbury and Whittington (4), and lead to the conclusion that clinical staff, including psychiatrists, apparently adhere to a medical model when explaining the aggressive behavior of patients diagnosed with a psychotic disorder. However, other determinants, and in particular personality characteristics, are considered as less important. Nonetheless, these variables may account for a substantial proportion of the variance when explaining the aggressive behavior in this population. For instance, research suggests that patients with antisocial personality features are more likely to engage in violent behavior (17). Further, they tend to have an earlier first hospitalization and longer stays in hospitals (18), which underline the clinical relevance of such personality characteristics.

The latent class cluster analysis of the survey data yielded seven different groups of psychiatrists. Two remarkable contrasts between clusters emerged. The first contrast seemed to be concerned with two clusters of psychiatrists who displayed a different response style (i.e., respondents in these clusters responded either extremely low or high to all items in the survey). The second contrast was between two clusters of psychiatrists who showed differences in how important they rated items of the illness-related and personality factor. Interestingly, these clusters also differed in terms of sociodemographic and work-related characteristics. That is, the cluster of psychiatrists who rated the illness-related factor as less important and the personality factor as more important, contained more men, was on average older, had more years of work experience, and encountered less aggression at work. The other cluster of psychiatrists, who emphasized the illness-related factor and undervalued the personality factor, contained more women, was younger, had less years of work experience, and encountered more aggression at work. It is encouraging to note that psychiatrists in general do not consider aggression independent from the psychotic illness, and seem to adopt a medical model. At the same time, there are also subgroups of psychiatrists who have different opinions on this issue. The current data seem to suggest that these diverging views are at least in part dependent on age and working experience of actual occurrences of aggressive incidents. The psychiatrists who were older and who had encountered less violence in their workplaces believe more than others that personality also plays a role in aggression. It is tempting to speculate on these findings. Have older psychiatrists a more personality-oriented model of aggression compared to the younger group? Or did they show more understanding of the situation in which aggression might

have occurred and thus have prevented it? On the other hand, it might be that younger psychiatrists are taught to focus treatment primarily on the Axis I problem, rather than on assaultive personality characteristics. The rationale behind this strategy seems clear: reduction of the psychotic symptoms will ultimately also reduce the aggressive behavior; however, this obviously is not always the case (see the recent case report by Antonius et al. [11]).

Although the current findings give more insight into the view of psychiatrists concerning the main causes of aggression in psychosis, a number of limitations of this study need to be mentioned. First, it might be that participants who completed the survey found this topic more interesting than others, reflecting a selection bias, which of course questions the generalizability of the results. A second shortcoming concerns the use of a highly structured questionnaire that might lead the medical professional to highlight the illness-related aspects concerning aggression. Using vignettes with more naturalistic situations incorporating the different aspects of aggression might have been more appropriate to investigate the psychiatrists' view on this topic. However, none of our respondents characterized our survey as inappropriate and unrealistic. A third drawback has to do with the result of the principal components analysis that a number of questionnaire items displayed low or ambiguous loadings, but were nevertheless included in subsequent analysis. The main reason for this is that there are no clear-cut criteria for discarding items. Note also that most of these "problematic" items loaded on factors that did not significantly differ between the clusters, which means that this essentially had no influence on the further results of this study. A final shortcoming of the study is that we neglected the handling of aggression. The consideration that illness-related features are most important suggests a medical solution (e.g., medication). However, psychiatrists might be more nuanced in their treatment, using more creative environmental solutions, thereby showing that they also take other factors (e.g., environmental and social influences) into account.

The current study yields further evidence for illness-related explanations that clinical staff tend to adhere to when explaining aggressive behavior in patients with a psychotic disorder. Other factors, such as environmental aspects, are not fully neglected, but are in danger of being overlooked. Future research should focus on views, attitudes, and management strategies of all clinicians involved in the treatment

agement strategies of all clinicians involved in the treatment of psychiatric patients and, in particular, patients with a psychotic disorder, in order to provide patients with the most appropriate management strategies.

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