

## Coping with Positive and Negative Symptoms of Schizophrenia

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## Abstract

Objective: Although coping with positive symptoms of schizophrenia has been studied widely, few studies have examined coping with negative symptoms. This study compares the appraisal of stressfulness and coping patterns in response to positive and negative symptoms experienced by clients with schizophrenia attending a community mental health center. Methods: Clients were interviewed to assess symptom severity, appraisal of symptom stressfulness, and coping strategies used for selected symptoms rated as severe and reported as stressful. Open-ended responses from clients regarding coping strategies were coded according to an a priori coding scheme. Results: Clients reported negative symptoms as less stressful and used fewer coping strategies in response than they did for positive symptoms. Clients used some types of coping more than others: behavioral more than cognitive, nonsocial more than social, emotion-focused more than problem-focused, and avoidant more than nonavoidant. Conclusions: Clients more often report positive symptoms as stressful compared to negative symptoms, though negative symptoms are still reported as stressful to a certain degree, indicating a need to improve our ability to help clients cope with negative symptoms. Clients are less likely to use coping strategies to counteract negative symptoms compared to positive symptoms. Implications are discussed for developing interventions tailored to promoting awareness of and ways of coping with negative symptoms.

## Introduction

The distinction between positive and negative symptoms is now recognized as fundamental to understanding functional limitations among individuals with schizophrenia (Andreasen, 1982; Crow, 1980; Kirkpatrick, Fenton, Carpenter, & Marder, 2006). Positive symptoms are noted by an excess or distortion of normal behavior or cognition (e.g., hallucinations and delusions), and are usually a distressing experience for the client. Auditory hallucinations are the most common symptom in schizophrenia, reported by 74% of respondents (Sartorius, Shapiro, & Jablonsky, 1974). Negative symptoms, on the other hand, are distinguished by the absence of some normal capabilities (e.g., blunted affect, emotional withdrawal, or lack of spontaneity and flow of conversation) that may go unnoticed by the client but be apparent to others who are in contact with the client. Also, whereas positive symptoms are often episodic, with rapid onset and remission, negative symptoms typically are stable and enduring phenomena across the course of schizophrenia (Kay, Fiszbein, & Opler, 1987) and have a profound effect on everyday living, such as social functioning and quality of life (Hoffmann, Kupper, & Kunz, 2000; Lysaker & Davis, 2004).

Because of the sharp differences between positive and negative symptoms in terms of substance, course, and how they are discerned by the clients and others, it is crucial to understand differences in coping strategies used to deal with each symptom type. Coping is a way of dealing with a stressor to either minimize the stressor or minimize the stress that results from the stressor. Studies of coping have focused predominantly on coping with positive symptoms of schizophrenia (Boschi et al., 2000; Breier & Strauss, 1983; Carr, 1988; Carter, Mackinnon, & Copolov, 1996; Dittmann & Schuttler, 1990; Falloon & Talbot, 1981; Farhall, Greenwood, & Jackson, 2007; Frederick & Cotanch, 1995; Tarrier et al., 1993; Ventura, Nuechterlein, Subotnik, Green, & Gitlin, 2004), although a few have included negative symptoms (Boker et al., 1984; Cohen & Berk, 1985; Mueser, Valentiner, & Agresta, 1997; van den Bosch, van Asma, Rombouts, & Louwerens, 1992; Wiedl & Schottner, 1991). In an early study, Boker and colleagues (1984) studied clients with schizophrenia after an acute psychotic episode and found significant correlations between subjectively experienced “basic” disorders (similar to our current conceptualization of negative symptoms) and the number and kind of coping efforts. As the number of symptoms experienced increased, so did the number of coping strategies used. Although many clients reported using avoidant coping strategies, active

strategies also were used. Other studies have shown clients with schizophrenia to use more avoidance than problem-solving coping techniques (van den Bosch et al., 1992). A study that focused specifically on coping with negative symptoms showed that clients used more behavioral than cognitive strategies, slightly more social than nonsocial strategies, and similar rates of problem-focused and emotion-focused strategies (Mueser et al., 1997).

The current study aims to build upon previous research by assessing coping in response to both positive and negative symptoms within a well-defined model (Lazarus & Folkman, 1984), using *stressors*, *appraisals*, and *coping* as key elements. In applying this model to coping with symptoms of schizophrenia, we conceptualized positive and negative symptoms as possible stressors and appraisal of the stressfulness of symptoms as the primary appraisal (appraisal of threat). In most of the prior literature examining coping with the symptoms of schizophrenia, researchers have not included the assessment of the appraisal of stressfulness. The current study replicates the methodology of Mueser et al. (1997), but applies that methodology to the study of stressfulness and coping for both positive and negative symptoms. If we are better able to understand the stress appraisal of positive and negative symptoms, this may have important implications for improving illness self-management techniques to include not only suggestions on particular “natural” coping strategies that are helpful for particular symptoms, but building better ways to appraise symptoms and initiate coping from the outset. We hypothesized that positive symptoms would be rated as more stressful than negative symptoms and that clients would endorse more coping strategies for positive symptoms than for negative symptoms. We also hypothesized that type of coping strategies would be similar to previous findings: more behavioral than cognitive strategies and more social than nonsocial strategies.

## Method

### Design

The study used a cross-sectional correlational design in a clinician-identified sample of clients with schizophrenia attending a community mental health center. Based on face-to-face interviews, the research team rated clinical symptoms, recorded client responses to open-ended queries regarding perceptions of symptom stressfulness and coping strategies used. The study protocol and informed consent process were approved by Institutional Review Board at (OMITTED FOR BLIND REVIEW).

## Procedures

The sample consisted of 60 clients with schizophrenia or schizoaffective disorder receiving community mental health services. Because the focus of the study was how clients cope with the enduring qualities of their illness while living in the community, we excluded clients who had been hospitalized within the prior month. The period of one month in the community corresponded to the time frame for assessing symptoms and coping to ensure that the responses were based on community functioning. Clients were referred to the study by their case manager or therapist. Schizophrenia spectrum diagnoses were determined by a licensed clinical psychologist (P.L.) employed by the participating community mental health center, using chart review. A research assistant explained the study in detail and volunteers provided written informed consent.

Demographics, symptom ratings, and coping data were collected during a two-hour interview. Interviews were conducted by a licensed clinical psychologist (P.L.) with extensive experience in assessing and treating symptoms of schizophrenia and three clinical psychology doctoral students who were trained and supervised by the psychologist. Training consisted of observing interviews by the psychologist, mock interviews, and conducting interviews with supervision.

## Measures

The Positive and Negative Syndrome Scale (PANSS); is a widely used symptom rating scale. Following previous research, clients were asked about symptoms experienced in the past week so that an accurate severity rating could be made (Mueser, Sayers, Schooler, Mance, & Haas, 1996). We scored the PANSS using Bell's (1994) five factor-analytically derived clusters of PANSS symptoms: Positive, Negative, Cognitive, Hostility, and Emotional Discomfort. In the current study, the internal consistency coefficient (Cronbach's alpha) for the total PANSS scale was .83. Internal reliability coefficients for the Bell subscales were .75 (Positive), .82 (Negative), .76 (Cognitive), .72 (Hostility), and .69 (Emotional Discomfort).

Open-ended Coping Questionnaire. Following Mueser et al. (1997), a coping questionnaire was embedded in the PANSS interview to assess coping for problematic symptoms. After symptoms for the PANSS were discussed and rated by the interviewer, the clients were asked questions regarding their problematic symptoms. For the purposes of this study, clinical significance was designated as a PANSS rating of 3 (evidence of mild

disturbance) or higher. Because we were mainly interested in coping with negative symptoms as compared to key positive symptoms, we targeted coping questions for the full set of symptoms from Bell's Negative Symptoms factor (Bell et al., 1994): Passive Withdrawal, Emotional Withdrawal, Blunted Affect, Lack of Spontaneity, Poor Rapport, Disturbance of Volition, Preoccupation, and Motor Retardation. Hallucinations and Delusions from the Positive Symptoms factor (Bell et al., 1994) were used because they are common, hallmark symptoms of schizophrenia and were likely to be experienced by a large proportion of the sample. Therefore, coping from just these two symptoms would supply ample coping data with minimal lengthening of the coping interview. After determining that a symptom was clinically significant, clients were asked whether they were "bothered" by a particular symptom as an introductory probe and then asked to rate how stressful they found the symptom on a scale from 1 to 5, with 1 denoting the symptom as extremely pleasant, 3 denoting neutral feelings, and 5 denoting the symptom as extremely stressful. If the client rated the symptom as a 3, 4 or 5 level, the client was asked to name as many coping strategies as possible that they used to cope with that symptom. Because a 1 or 2 on the stressfulness scale denoted that the client found the symptom pleasant, no coping inquiries were made. Likewise, if the client denied the symptom altogether, no coping inquiries were made. Clients were encouraged to remember as many of their coping strategies as possible. Responses were recorded verbatim.

#### Rating Coping Characteristics

After data collection was completed, open-ended coping responses were coded. The coding scheme and method was adapted from Mueser et al. (1997). Two trained raters independently categorized each coping response according to four sets of indices (see Table 1). A "does not fit" category was allowed for each set of indices. A codebook with decision rules for coding coping strategies was created to increase reliability and is described in detail elsewhere (Rollins, 1997).

Rater consensus determined final coding of characteristics. When the two raters could not reach consensus, a third trained rater made the decision. This option was required in only 5 cases out of 293 during the course of the coding process. Kappa coefficients (Cohen, 1960) for the two raters were 0.73 (Problem-Focused/Emotion-Focused dimension), 0.79 (Cognitive/Behavioral), 0.83 (Avoidant/Nonavoidant), and 0.91 (Social/Nonsocial).

#### Statistical Analysis

For this study, we treated symptoms as the primary unit of analysis and compared positive and negative symptoms on stressfulness, coping quantity, and coping types. For categorical variables, the chi-square test or Fisher's exact test was used; t-tests were used for continuous variables.

## Results

### Sample Characteristics

Sample characteristics are provided in Table 2. All clients were prescribed antipsychotics, except 4 who were not prescribed any medications and 1 who was prescribed an antidepressant, an anxiolytic, and an anticonvulsant. The total symptom score mean across the sample for the PANSS (Kay et al., 1987) was 74.75 (SD = 17.73), which was comparable to the baseline PANSS scores for the CATIE trial (baseline total mean scores ranging from 74.2 to 77.2 across several experimental groups) (Rosenheck et al., 2006), indicating that participants were experiencing fairly typical symptom levels.

### Nonresponse Patterns

Nonresponses for coping data could occur at several levels and could vary across the 10 targeted symptoms: lack of clinically significant symptom (coded as missing data), clinically significant symptom appraised as pleasant (coded as zero coping for that symptom), could not think of coping for clinically significant symptom appraised as neutral/stressful (coded as zero coping for that symptom), or administrator error (coded as missing data). Eleven clients gave no coping responses during the course of the open-ended interview. The reasons were recorded at the time of interview: PANSS symptoms not rated as clinically significant ( $n = 2$ ), symptoms not stressful ( $n = 5$ ), denied the symptom or interviewer did not attempt coping inquiry ( $n = 2$ ), or the client responded that they simply "did nothing" to cope with any of their symptoms ( $n = 2$ ).

### Coping Patterns by Stressfulness and Symptoms

Our first hypothesis was that positive symptoms would be experienced as more stressful than negative symptoms. As seen in Table 3, a greater percentage of positive symptoms (60/75 = 80%) than negative symptoms (60/141 = 43%) were appraised as stressful ( $X^2 = 24.84$ ,  $p < .001$ ), as expected. We also hypothesized that clients would endorse more coping strategies for positive symptoms compared to negative symptoms. Focusing on symptoms perceived as stressful, clients used more coping strategies for positive symptoms (unweighted average = 2.59,  $n = 60$ ) than they did for negative symptoms (unweighted average = 1.23,  $n = 60$ ), where the

unweighted average gives equal weight to the number of coping strategies offered for moderately or extremely stressful symptoms. Coinciding with the increased number of coping strategies for symptoms appraised as stressful as stated above, Table 3 shows that when appraised as stressful, a greater percentage of clients gave coping responses for positive symptoms ( $60/60 = 100.0\%$ ) than for negative symptoms ( $46/60 = 76.7\%$ ;  $X^2 = 15.85$ ,  $p < .001$ ). When appraised as neutral, clients reported no coping strategies for negative symptoms ( $10/32 = 31.3\%$ ) at a similar rate to positive symptoms ( $0/6 = 0.0\%$ ), Fisher's exact test,  $p = .136$ . Regardless of appraisal, a greater percentage of clients experiencing negative symptoms reported no coping responses ( $73/141 = 51.8\%$ ) when compared to clients experiencing the positive symptoms ( $9/75 = 12.0\%$ ;  $X^2 = 32.88$ ,  $p < .001$ ).

As seen in Table 3, the most frequently experienced symptoms were hallucinations ( $n = 34$ ) and delusions ( $n = 41$ ). In terms of number of coping strategies, clients named more strategies for hallucinations and delusions, while naming many fewer coping strategies for negative symptoms. To more formally test the differences in coping strategies for clinically significant positive and negative symptoms, a t-test was conducted between the mean number of coping strategies per symptom across all positive symptoms and all negative symptoms. The results indicated that clients named significantly more coping strategies for positive symptoms ( $M = 2.19$ ,  $SD = 1.22$ ) than for negative symptoms ( $M = 0.86$ ,  $SD = 0.80$ ), ( $t = 6.14$ ,  $p = .00$ ,  $n = 34$ ).

#### Type of Coping Strategies

We were also interested in the types of coping strategies used for positive and negative symptoms (see Table 4), hypothesizing more use of behavioral over cognitive coping and social over nonsocial coping. Within the coding categories, as expected, behavioral strategies constituted a greater portion of the coping strategies than cognitive strategies. However, nonsocial strategies were used more than social strategies. Emotion-focused strategies were used in higher proportions relative to problem-focused strategies. Avoidant strategies were used more than non-avoidant strategies. Paired samples t-tests were conducted to test for differences between positive and negative symptoms in terms of the proportions of types of coping strategies for the 45 clients who reported at least one positive and one negative symptom (the actual number of positive and negative symptoms varied). Clients reported using significantly higher proportions of nonsocial, emotion-focused, and avoidant coping strategies in response to positive



symptoms, compared to negative symptoms. For the remainder of coping types, proportions were similar for positive and negative symptoms.

### Discussion

Consistent with prior research, most clients experienced substantial positive and negative symptom levels at the time of the interview, making the question of how they cope with symptoms a clinically relevant endeavor. Clients reported using more coping strategies for positive symptoms than for the negative symptoms. They were also more likely to report using no strategies at all for their negative symptoms than they were for positive symptoms. The study also suggested a couple of important findings regarding the interaction of appraisal of stressfulness or “threat” and the number of coping strategies for positive and negative symptoms. First, clients were more likely to rate positive symptoms as stressful compared to negative symptoms, though negative symptoms were still found to be stressful to a certain degree. Also, once the client deemed a symptom as stressful, they tended to offer more coping strategies for stressful positive symptoms than for stressful negative symptoms and also were more likely to give at least one coping strategy rather than none at all.

This study confirms that the appraisal of stressfulness heavily influences how vigorously clients develop coping strategies to manage the symptoms. For negative symptoms in particular, the less frequent reporting of stressfulness seems to be associated with fewer coping responses. Unfortunately, this study did not examine what specifically made a symptom stressful or nonstressful. Lazarus and Folkman (1984) emphasized the importance of cognitive appraisal and the subtle, complex, and abstract processes that are required to use cognitive appraisal successfully. Perhaps clients with negative symptoms did not have the abstraction capability to perform a successful and accurate cognitive appraisal of the threat to their well-being posed by their symptoms. This may have been due, in part, to the fact that hallucinations and delusions are more concrete phenomena, whereas negative symptoms involve an absence of normal functioning and are often difficult to describe or to appraise as requiring a coping response. One can easily imagine the difficulty in identifying a need to respond by the absence of something as opposed to keen stress often experienced with the intrusion of hallucinations and delusions. The abstract quality of negative symptoms was reflected during the interviews, in which negative symptoms were much harder to discuss in terms of coping strategies. Because negative symptoms were more difficult to discuss, it may have followed that insight into negative

symptoms was harder for clients to attain and, thus, impeded the coping process. Another possibility is that negative symptoms usually involve emotional withdrawal and affective blunting that diminish the client's motivation or capacity to cope with any symptom. Likewise, negative symptoms include disturbance of volition which may intrinsically limit the client's ability to actively implement coping strategies. Others have suggested that behaviors like withdrawal could be viewed as a coping reaction to traumatic events or other symptoms, thus negating the need to cope with withdrawal as a symptom that is stressful (Corin, 1998; Corin & Lauzon, 1992; Harrison & Fowler, 2004).

Preferences for coping type seemed to be consistent for both positive and negative symptoms. For instance, most clients favored behavioral over cognitive, affective or physical coping strategies for both positive and negative symptoms. Likewise, nonsocial coping strategies were favored over social coping strategies; emotion-focused strategies were favored over problem-solving strategies, and avoidant coping strategies were favored over nonavoidant strategies. However, the degree of "dedication" to one type of strategy within each coding scheme seemed to lessen for negative symptoms. As an example, clients endorsed a higher proportion of nonsocial coping strategies for both positive and negative symptoms, but the proportion favoring nonsocial was much less drastic for negative symptoms (about 50%) compared to positive symptoms (about 80%). Overall, the findings on coping preferences for negative symptoms are consistent with Mueser et al. (1997) in some respects but inconsistent with others. Like Mueser (1997), we found that clients favored behavioral over cognitive coping strategies and reported similar rates of emotion-focused and problem-focused coping for negative symptoms. However, we found that clients named more nonsocial than social coping strategies, an inconsistency with Mueser's (1997) findings. It should be noted that Mueser and colleagues used a different negative symptom measure that included a wider range of negative symptoms, notably anhedonia and asociality, neither of which is assessed on the PANSS. These two negative symptoms assessed in the Mueser (1997) study may have resulted in more appraised stressfulness, and coping strategies for them might have been more social, considering how one might actively address anhedonia and asociality. Though results were similar for both positive and negative symptoms, the use of emotion-focused and avoidant strategies could also be viewed as particularly consistent with the nature of negative symptoms, given that negative symptoms involve social and emotional withdrawal, disturbance of volition, and poverty of

speech. Other coping studies have pointed to lower use of approach or problem-focused coping among people with schizophrenia, compared to the general population (Ventura et al., 2004).

### Conclusions

Clients are more likely to report positive symptoms as stressful compared to negative symptoms, though negative symptoms are still indicated as stressful to a certain degree. Clients are also more likely to use coping strategies to counteract positive symptoms compared to negative symptoms. Appraisal of symptom stressfulness may be an important factor in the coping formulation process, addressing some of the gaps in the coping literature (Farhall et al., 2007). In line with coping theory (Lazarus & Folkman, 1984), having the ability to form an accurate and clear appraisal of the symptoms appears to be an important step in developing coping strategies. However, appraisal of stressfulness does not explain the differences in coping strategy use entirely because clients still endorsed more coping strategies for stressful positive symptoms compared to stressful negative symptoms. Appraisal of one's own ability and resources to cope with negative symptoms might be an important line of future research in developing effective coping mechanisms. Future work might also explore how the nature of negative symptoms themselves impact coping.

These results have important implications for designing psychosocial interventions that bolster coping skills in clients with schizophrenia, particularly in teaching clients how to cope more effectively with negative symptoms. First, ample attention must be paid to helping clients understand negative symptoms of schizophrenia and detect their presence and potential impact on their daily functioning. For instance, psychoeducational and cognitive-behavioral interventions should include components that specifically help clients understand the links between negative symptoms and social or other functioning, thus providing a rationale for coping. Interventions might even include obtaining feedback from significant others in assessing the need to cope with negative symptoms, similar to involving the client's significant others in assessing warning signs in a relapse prevention plan (Herz & Melville, 1980). Future studies in this area should not only include the amount and types of coping strategies but move to the more important matters of whether or not coping reduces symptoms or distress from symptoms. Additional efforts should focus on finding and systematically teaching coping strategies that are effective for negative symptoms, thus providing more opportunities for successful experiences with coping with negative symptoms. With greater effectiveness, clients may be more likely to

utilize coping for negative symptoms. Likewise, it might be helpful to know if certain types of strategies are more helpful than others. For instance, behavioral strategies may prove more successful as a compensatory strategy for negative symptoms because they may require fewer cognitive skills compared to cognitive coping strategies. As clients progress in their recovery and coping patterns become less reactive and more anticipatory or proactive (Roe, Yanos, & Lysaker, 2006), clinical focus may shift from more readily accessible natural coping mechanisms to teaching coping strategies seldom used by clients in this study (e.g., social coping, problem-focused coping). This proactive approach could be a way to intervene and expand a client's range of coping strategies, particularly for negative symptoms.

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Table 1

Coding scheme for open-ended coping strategies

<u>Cognitive/Behavioral:</u>	<u>Social Involvement:</u>	<u>Problem/Emotion Focus:</u>	<u>Avoidance:</u>
Cognitive	Social	Problem-focused	Avoidant
Behavioral			
Physical	Nonsocial	Emotion-focused	Nonavoidant
Affective			

Table 2  
Sample characteristics (N=60)

	<u>N (%)</u>
<b>Diagnosis</b>	
Schizophrenia	43 (71.7%)
Schizoaffective disorder	17 (28.3%)
<b>Race/Ethnicity</b>	
African American	4 (6.7%)
Caucasian	53 (88.3%)
Other minority	3 (5.0%)
<b>Gender</b>	
Female	14 (23.3%)
Male	46 (76.7%)
<b>Living arrangements</b>	
Independently/with family	46 (76.7%)
Professionally supervised setting	14 (23.3%)
<b>Employment</b>	
Employed at interview	12 (20.0%)
Unemployed at interview	48 (80.0%)
<b>Marital status</b>	
Single/never married	36 (60%)
Married	8 (13.3%)
Divorced	14 (23.3%)
Widowed	1 (1.7%)
<u>M (SD)</u>	
Age (in years)	42.7 (10.8) Range 18 to 75
Educational level (in years)	11.3 (2.2) Range 6 to 18
Global assessment of functioning	46.3 (11.7) Range 25 to 80
Age of first hospitalization (in years) <sup>1</sup>	21.2 (7.6) Range 13 - 40

M= Mean; SD=Standard deviation

<sup>1</sup> N=54: 3 were never hospitalized, 3 could not provide the information