

## Reactions Toward Mental, Physical, and Substance-Abuse Disorders

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In this study, participants read 3 separate vignettes describing a hypothetical sibling with each of the following disorders: substance abuse, schizophrenia, and a physical illness. As hypothesized, and consistent with attribution theory, the hypothetical patient with a substance-abuse disorder was perceived as having the most control over his or her illness and the associated symptoms, and the patient described as having a physical illness was perceived as having the least control over his or her illness. Also in support of attribution theory, the hypothetical patient described as having a substance-abuse disorder elicited the most negative emotional reactions from participants, and the patient described as having a physical illness elicited the least negative emotional reactions. Again in support of attribution theory and study hypotheses, participants reported the most willingness to help a physically ill hypothetical sibling.

This study applies an attribution–affect model to better understand individuals' emotional reactions to mental, physical, and substance-abuse disorders in a family member. Previous research has linked attributions to a construct called *expressed emotion* (EE), which has been found to predict the course and outcome of various disorders. Specifically, EE is a measure of the attitudes of criticism, hostility, and emotional overinvolvement expressed by one family member toward another (Jenkins & Karno, 1992).

Research in the area of EE has demonstrated consistently that patients returning to live in high-EE homes are at risk for a poorer illness course than those who do not return to such environments. In a review of 26 studies, Kavanagh (1992) reported that patients with schizophrenia who returned to live in hostile, critical, or emotionally overinvolved households (high EE) were twice as likely to relapse within a 9-month period as patients who returned to live with relatives who did not express as many of these critical and hostile attitudes.

Research in the area of EE has been found also to predict the course of other disorders, including bipolar disorder (Miklowitz, Goldstein, Nuechterlein, Snyder, & Mintz, 1988), insulin-dependent diabetes mellitus (Koenigsberg,

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Klausner, Chung, Pelino, & Campbell, 1995), and alcoholism (O'Farrell, Hooley, Fals-Stewart, & Cutter, 1998). O'Farrell et al. found that not only did alcoholic patients with high-EE spouses relapse more often and more quickly than did participants with low-EE spouses, they also drank more frequently in the 12 months following treatment.

An attribution-affect model has been applied as one theory for understanding the EE construct (e.g., Hooley, 1987; López, Nelson, Snyder, & Mintz, 1999; Weisman, López, Karno, & Jenkins, 1993; Weisman, Nuechterlein, Goldstein, & Snyder, 1998, 2000). Attribution theory refers to the search for explanations for the cause of an event or situation (Weiner, 1986). Weiner (1993, 1995) proposed an *attributional affect theory* that states that when presented with an unpleasant event or behavior of another individual, a person will assess that individual's ability to have controlled the event. According to the theory, when controllable factors are perceived, people are more likely to respond with negative emotions, leading to less altruistic responses.

Weiner (1993) proposed that people may be judged as either responsible or not responsible for their plight, thereby assigned to the status of either *sinner* or *sick*. If viewed as sinners, others are likely to respond with anger and related negative emotions toward the person. On the other hand, if viewed as sick, others are likely to respond with empathy and other positive emotions. This model is proposed to hold true for both physical and mental disorders and for other non-illness-related adversities as well.

In one study supporting his theory, Weiner (1980) found that participants were more likely to report greater perceived controllability and increased negative affect when provided with a scenario of a man who experienced a negative event (falling down) that was apparently a result of drunkenness (he was described as carrying a liquor bottle and smelling of alcohol) than when the negative event was described as a result of physical illness (being visually impaired). Furthermore, the man described as falling because of visual impairment was more likely to elicit reported willingness to help from participants than the man who was apparently drunk. This finding demonstrates that help may be more readily offered to people whose problems are perceived as caused by factors that are outside of their volitional control.

Research has demonstrated consistently that highly critical and hostile relatives (high EE) attribute symptomatic behaviors to factors that are controllable by patients with schizophrenia to a greater degree than relatives who do not express as many of these negative affective responses (Brewin, MacCarthy, Duda, & Vaughn, 1991; Weisman et al., 1993, 1998). López et al. (1999) found that attributions of control are related to outcome for patients. They found that the more family members perceived their ill relative's behavior as under his or her control and the more critical they were of the patient, the greater the chance the patient would suffer a relapse. Barrowclough, Johnston, and Tarrier (1994) also

found that critical and hostile relatives tended to believe that causes are within the control of the patient. Barrowclough et al. further found that attributional beliefs were more predictive of patient relapse than either the relatives' EE status or the individual dimensions of EE. It should be noted, however, that López et al did not replicate the attribution–outcome link.

Attribution theory has been applied also to understanding reactions of perceived responsibility to different types of behaviors and symptoms of illness. Brewin et al. (1991) found that certain types of behavior that they describe as *anti-social* (e.g., excessive smoking) were perceived as significantly more controllable than clear symptoms of illness (e.g., positive psychotic and neurotic symptoms). In a content analysis of symptoms displayed by patients, Weisman et al. (1998) found that symptoms reflecting behavioral deficits (e.g., poor hygiene) were found to be criticized to a greater degree than symptoms reflecting behavioral excesses (e.g., hallucinations). The authors interpreted their findings as supporting an attribution–affect model. In this sense, relatives may have been less tolerant of behavioral deficits because they are often viewed as a paucity of normal behavior and are therefore seen as intentional, whereas the behavioral excesses are clearly more unusual and may be viewed more easily as true symptoms of illness.

A study by Hooley (1987) applied a symptom-controllability model for patients with schizophrenia and affective disorders. Hooley found that spouses of patients predominantly characterized by positive symptoms reported significantly higher levels of marital satisfaction than did spouses of patients with predominantly negative symptoms and impulse-control deficits (e.g., alcohol abuse). Again, it is likely that positive symptoms are apt to be viewed in a more positive light because the florid nature of these symptoms may help them to be understood as part of a genuine illness. Symptoms that are likely to be attributable to volitional control (negative symptoms) are more likely to elicit feelings of blame from relatives toward the patient.

Weisman and López (1997) also considered attributional differences between positive and negative symptoms of schizophrenia in order to examine factors that are associated with emotional reactions toward patients with schizophrenia. They utilized a sample of Mexican and Anglo university students who were presented with two vignettes of a hypothetical patient meeting the DSM-IV (Diagnostic and Statistical Manual, fourth edition, American Psychiatric Association, 1994) criteria for schizophrenia. One vignette highlighted the behavioral excesses known as positive symptoms of the illness (e.g., delusions, hallucinations) while the other vignette highlighted the behavioral deficits known as negative symptoms of the disorder (e.g., apathy, social withdrawal).

Weisman and López (1997) found that increasing perceptions of both causal and behavioral controllability for both symptom types were related to decreasing intensity of favorable affect. In other words, the more the patient was thought to have control over his or her illness, the less likely participants were to express

positive emotions toward that individual. Thus, Weiner's (1993, 1995) attributional (controllability) affect theory was partially supported by Weisman and López. Furthermore, negative symptoms were associated with greater perceived control. Both cultural groups perceived the patient with positive symptoms as having less control over the cause and symptoms than the patient with negative symptoms. This finding is salient because it suggests that positive symptomatology may be more readily seen as reflecting illness across different cultures.

Attribution theory also has been utilized in order to understand reactions to homosexuality. Armesto and Weisman (2001) examined attributions toward homosexuality in a hypothetical child. Participants were asked to imagine that they are the parents of a son who has disclosed to them that he is gay. The authors found that study participants who perceived their hypothetical son as having more control over the cause of his homosexuality responded with more negative emotions (e.g., anger) than did participants who believed that homosexuality was outside of their hypothetical son's control. Consistent with an attribution-affect model, participants' unfavorable emotional reactions were greater when their hypothetical child's "stigmatized" behavior (i.e., being homosexual) was perceived as controllable.

Much of the literature on attributions and emotional reactions to illness has focused primarily on the impact of negative emotions. López et al. (1999), however, examined the positive affective response of warmth and found that family members were more likely to express warmth toward their relatives with schizophrenia the more the symptoms and behaviors were perceived as outside of the patients' control. Attributions were found to predict both warmth and outcome, but warmth was not related to clinical outcome. Although this study did not find that warmth was related to the course of schizophrenia, the authors did find that attributions predicted warmth. Despite not having found a connection between positive emotion and outcome in their study, López et al. suggested that positive affect has not been examined sufficiently to date. A more thorough evaluation of favorable affect would allow us to better examine attribution-affect theory, as this theory pertains to both positive and negative emotions.

Drawing from the research described earlier, the present study is designed to examine attributional responses and affective and help-giving responses toward a hypothetical relative across three disorders. In this study, five sets of hypotheses are tested. First, Weiner's (1993, 1995) attribution-affect model is expected to hold in the present study. Specifically, it is hypothesized that greater perceived control will be associated with more intense negative emotional reactions toward the patient and less intense positive emotional reactions. In other words, attributions of control regarding both the overall cause and the individual symptoms of the disorder are expected to be positively correlated with negative emotion and negatively correlated with positive emotion.

The second set of hypotheses concerns controllability attributions across the three disorders. Based on attribution theory, it is hypothesized that the hypothetical patient described as having a substance-abuse disorder will be viewed as having the most control over the disorder because substance abuse may be less easily identified as an illness, *per se*. Also stemming from attribution theory, the patient described as having schizophrenia is expected to be seen as having the next highest amount of control over the disorder. Finally, the patient described as having a physical illness (because physical disease is expected to be most readily associated with *illness*) is expected to be viewed as having the least control over the illness. This pattern is hypothesized to hold true concerning perceptions of both the original cause of illness and the cause of individual symptoms.

López and Wolkenstein (1990) suggested that a family member's perceptions regarding the original cause of a disorder might be less tied to the emotional reactions to the patient than are the perceptions of the day-to-day behaviors related to the disorder. This is because perceptions of the overall cause are more abstract, whereas the experience of living with the current symptoms on a daily basis is likely to be experienced as more salient and subsequently might elicit a greater deal of emotion. To assess this hypothesis, both types of controllability (perceptions of the overall cause of illness, as well as specific symptoms) are examined.

The third set of hypotheses concerns affective responses. Specifically, it is hypothesized that disorder type will be associated with affect in the direction predicted by attribution theory. Substance abuse (the disorder hypothesized to be viewed as most controllable by the patient) is expected to elicit the most intense negative affective reactions and the least intense positive affective reactions. On the other hand, physical illness (the disorder hypothesized to be perceived as the least controllable by the patient) is expected to elicit the least intense negative affective reactions and the most intense positive affective reactions. Schizophrenia is expected to elicit more negative affect than physical illness, but less negative affect than substance abuse. Similarly, schizophrenia is also expected to elicit more positive affect than substance abuse, but less positive affect than physical illness.

The fourth set of hypotheses concerns help-giving behavior. Based on attribution theory, the more participants hold the belief that patients can and should do more to control the illness, the less they are expected to report willingness to offer him or her help and assistance in getting better. Similarly, stemming from attribution theory, substance abuse (the disorder hypothesized to be viewed as the most controllable by the patient) is expected to elicit the least reported willingness to help; whereas physical illness (the disorder expected to be viewed as the least controllable by the patient) is expected to elicit the most reported willingness to help.

The fifth set of hypotheses concerns gender differences. The majority of locus-of-control research suggests that females are more external in their

attributions of control than are males (e.g., Ayers-Nachamkin, Cann, Reed, & Horne, 1982; Deaux & Farris, 1977; Feather, 1969; Fox & Ferri, 1992; Furnham, 1984; McClennan, Joseph, & Lewis, 1994). Based on this research and on Weisman and López's (1997) finding that Anglo males perceived both the cause and behavioral symptoms of some disorders (e.g., schizophrenia in this case) as more controllable by the patient than did females, it is hypothesized that males will perceive the cause and behavioral symptoms of each disorder as more controllable than will females. On an exploratory basis, we also examine whether gender of the hypothetical person in the scenario is related to differences in attributions.

## Method

### *Participants*

A total of 176 students (117 female, 59 male) enrolled in introductory psychology classes at a multi-ethnic university were asked to read three different vignettes describing a hypothetical relative with substance abuse, schizophrenia, or a physical illness. The age of participants ranged from 17 to 49 years, with a mean age of 22 years. Participants were from diverse ethnic backgrounds, including White (52.8%), Asian American (19.7%), African American (12.9%), Latino (6.7%), and other (6.7%), data on two participants are missing.

The instructions involve imagining that the person in the vignette is a sibling. The gender of the sibling and the order of presentation of type of illness in the scenarios were counterbalanced throughout. Half of the participants received scenarios describing a female sibling, and the other half received scenarios describing a male sibling. Participants then responded to a series of inquiries concerning the relative's personal control over the behavior and the likelihood of experiencing a series of 10 different emotions based on that person's behaviors.

This study used an analog design in which each participant served as his or her own control and all participants were exposed to the same three vignettes. This design controls for several possible confounds, such as frequency of exposure to symptoms, and differences in the type and level of turmoil in each household. For example, households with substance-abusing members are characterized frequently by a host of other difficulties, such as more frequent physical and verbal conflict within the family (Oltmanns & Emery, 1995).

In order to measure both causal and behavioral controllability attributions, a variation of the causal controllability subscale (Russell, 1982) was administered using the procedure utilized by Weisman and López (1997). Participants were asked to fill in a blank space, using their own words, indicating what they believe caused the patient to behave in the manner described in each scenario. They then rated causal perceptions toward their hypothetical sibling's behavior based on

controllability, intentionality, and responsibility on a 9-point Likert-style scale ranging from 1 (*the cause is perceived as uncontrollable/unintentional*) to 9 (*the cause is perceived as controllable/intended*).

A reliability analysis indicated an alpha of .87 for the scenario describing a sibling with schizophrenia, .61 for substance abuse, and .81 for physical illness. Perceptions of behavioral controllability were assessed similarly through a 9-point scale based on controllability and responsibility. A reliability analysis indicated an alpha of .88 for the scenario describing a sibling with schizophrenia, .57 for substance abuse, and .85 for physical illness. Participants were asked to write down the behavior(s) that “really stood out” and then to rate their perceptions. Mean causal controllability and behavioral controllability were obtained, with high scores indicating greater perceived controllability.

In order to assess affect, participants indicated the likelihood of expressing 10 different emotions in response to the patient’s behavior for each scenario. The emotions utilized were based on the findings of Weisman et al. (1993) to be the most frequently expressed emotions by relatives of schizophrenic patients (Weisman & López, 1997). The scale includes five favorable emotions (sympathy, affection, pity, worry, and sorrow) demonstrating positive sentiments toward the patient, and five unfavorable emotions (anger, frustration, hatred, shame, and fury) demonstrating negative sentiments toward the patient. This measure is also based on a 9-point scale ranging from 1 (*no reported experience of the emotion described*) to 9 (*experienced a great deal of the stated emotion*).

A reliability analysis of the positive emotion scale indicated an alpha of .64 for schizophrenia, .59 for substance abuse, and .64 for physical illness. A reliability analysis of the negative emotion scale indicated an alpha of .78 for schizophrenia, .74 for substance abuse, and .68 for physical illness. Mean scores were obtained for both positive and negative emotions for each scenario, with higher scores reflecting a greater intensity of the emotional response.

In order to assess help giving, participants were provided with seven items that reflected different possible types of help. These included both reactions (e.g., “talk to her/counsel her”) and behaviors (e.g., “enlist other family members to help”) that relatives might display in response to the illness of a loved one. This measure was based on a 9-point scale ranging from 1 (*not at all likely*) to 9 (*very likely*) for each behavior indicated. Mean scores were obtained for each scenario, with higher scores indicating greater reported willingness to offer help. A reliability analysis of the scale indicated an alpha of .70 for schizophrenia, .64 for substance abuse, and .72 for physical illness. It should be pointed out that the reliabilities for all scales in this study are adequate, though those for substance abuse are somewhat low.

In the present study, we also assessed whether attributions, emotions, and help giving toward a hypothetical sibling would relate to level of exposure to mental or physical illness in participants’ families. To assess this, participants

Table 1

*Pearson Correlations Between Attributions and Emotion*

	Negative emotions		Positive emotions	
	Causal control	Symptom control	Causal control	Symptom control
Schizophrenia	.40**	.24**	-.29**	.29**
Substance abuse	.24**	.28**	-.13*	-.05*
Physical illness	.47**	.46**	-.23**	.23**

\* $p < .05$ . \*\* $p < .01$ .

were asked three dichotomous questions: Has anyone in your family ever been diagnosed with: (a) a mental illness? (b) a serious physical illness? (c) a substance abuse problem? The percentage answering affirmatively for each was 20.2%, 38.8%, and 24.7%, respectively. However, exposure to mental or physical illness in participants' real-life families was not found to relate to any of our primary variables.

### Results

As hypothesized, Weiner's (1993, 1995) model was supported with respect to attributions and emotions. A series of Pearson correlations was conducted to test Weiner's attributional-affect theory. Results of these analyses are presented in Table 1.

In support of the theory, tests reveal that for schizophrenia, substance abuse, and physical illness, negative emotions were positively correlated with attributions of controllability regarding the overall cause of the disorder. The tests also reveal that for schizophrenia, substance abuse, and physical illness, negative emotions were positively correlated with attributions regarding the controllability of symptoms of the disorder. Furthermore, the tests reveal that for schizophrenia and physical illness, positive emotions were negatively correlated with attributions regarding the overall cause. Similarly, for schizophrenia and physical illness, positive emotions were negatively correlated with attributions for the symptoms of the illness. For substance abuse, positive emotions regarding the overall cause and the symptoms were not found to be related to attributions.

#### *Attributions of Controllability*

An ANOVA reveals group differences in attributions regarding the original cause of the disorder, depending on the presenting illness of the hypothetical

sibling,  $F(2, 348) = 86.38, p < .01$ . Bonferroni corrected  $t$  tests reveal that all groups were significantly different from each other ( $p < .01$  for all). Consistent with the hypotheses, participants expressed more internal and blameworthy attributions toward the hypothetical sibling with a substance-abuse disorder regarding the cause of his or her disorder as compared to a sibling described as having schizophrenia ( $t = -4.30, p < .01$ ). Also in line with study hypotheses, participants expressed more blameworthy attributions toward the sibling with schizophrenia as compared to the sibling with a physical illness with regard to the original cause of a disorder ( $t = 3.37, p < .01$ ), substance abuse,  $M = 16.08, SD = 5.66$ ; schizophrenia,  $M = 11.83, SD = 6.82$ ; physical illness,  $M = 8.46, SD = 5.55$ .

Paralleling the differences in attributions for the overall cause of the disorder, a similar pattern was found for perceptions of control over the individual day-to-day symptoms of the disorder. As hypothesized, an ANOVA reveals group differences in behavioral attributions toward symptoms depending on the type of illness of the hypothetical sibling,  $F(2, 336) = 139.91, p < .01$ . Bonferroni corrected  $t$  tests reveal that all groups were significantly different from each other ( $p < .01$  for all). Consistent with hypotheses, respondents expressed more internal and blameworthy attributions toward the hypothetical sibling with a substance-abuse disorder as compared to the sibling with schizophrenia regarding the individual symptoms of the disorder ( $t = -4.33, p < .01$ ). Also in line with study hypotheses, participants expressed more blameworthy attributions regarding symptoms toward the hypothetical sibling with schizophrenia, as compared to the sibling described as having a physical illness ( $t = 2.98, p < .01$ ), substance abuse,  $M = 13.47, SD = 4.03$ ; schizophrenia,  $M = 9.14, SD = 4.86$ ; physical illness,  $M = 6.16, SD = 4.15$ .

### *Affective Responses*

As hypothesized, an ANOVA reveals group differences in unfavorable emotional reactions, depending on the illness of the hypothetical sibling,  $F(2, 344) = 142.47, p < .0001$ . Bonferroni corrected  $t$  tests indicate that all groups were significantly different from each other ( $p < .01$  for all). In line with an attribution–affect model and consistent with hypotheses, participants reported that they would likely feel more intense unfavorable emotions toward the hypothetical sibling with substance abuse than toward the hypothetical sibling described as having schizophrenia ( $t = -6.71, p < .01$ ). Also consistent with hypotheses, participants reported that they would likely experience more intense unfavorable emotions toward the sibling with schizophrenia as compared to the sibling with a physical illness ( $t = 5.67, p < .01$ ), substance abuse,  $M = 25.85, SD = 8.60$ ; schizophrenia,  $M = 19.15, SD = 8.76$ ; physical illness,  $M = 13.47, SD = 7.99$ .

An ANOVA also reveals group differences in positive affective reactions depending on the illness of the hypothetical sibling,  $F(2, 342) = 24.13, p < .01$ .

Bonferroni corrected  $t$  tests reveal that all groups were significantly different from each other regarding the likelihood of expressing positive sentiments ( $p < .01$  for all). Consistent with hypotheses, participants were more likely to believe that they would feel positive emotion toward the sibling with a physical illness as compared to a sibling with schizophrenia ( $t = -2.48, p < .01$ ). Furthermore, participants were more likely to endorse positive emotional reactions toward a sibling with schizophrenia as compared to a sibling with a substance-abuse disorder ( $t = 1.41, p < .05$ ). Consistent with hypotheses, the analyses reveal that the sibling described as having a serious physical illness elicited the most intense favorable emotional reactions from participants ( $M = 6.96, SD = 1.37$ ), and the sibling described as having a substance-abuse disorder elicited the least intense favorable emotional reactions ( $M = 6.18, SD = 1.39$ ), schizophrenia,  $M = 32.32, SD = 7.09$ .

### *Gender Differences*

Contrary to expectations, independent-sample  $t$  tests reveal no participant gender differences regarding either attributions for the overall cause of the illness or attributions regarding the individual symptoms ( $p > .05$  for all). In other words, the gender of the participant did not relate to the intensity of attributions expressed. Similarly, independent-sample  $t$  tests reveal no participant gender differences regarding the likelihood of expressing either negative or positive emotions toward the person described in the vignette. Independent-sample  $t$  tests also reveal no participant gender differences regarding the likelihood of offering help-giving behavior.

With respect to the gender of the individual described in the vignette, independent-sample  $t$  tests reveal no differences regarding either attributions for the overall cause of the illness or attributions for the individual symptoms ( $p > .05$  for all), regardless of disorder type. Gender of the hypothetical patient was also unrelated to the likelihood of expressing positive emotions, negative emotions, or help-giving behavior ( $p > .05$  for all) for any disorder.

### *Willingness to Offer Help*

An ANOVA reveals group differences in willingness to offer help depending on the type of illness of the hypothetical sibling,  $F(2, 338) = 12.53, p < .001$ . In line with study hypotheses, the person described as having a physical illness elicited more reported willingness to help from participants as compared to either the sibling with schizophrenia ( $t = 0.49, p < .01$ ) or the sibling with a substance-abuse disorder ( $t = 0.46, p < .01$ ). Bonferroni corrected  $t$  tests indicate no differences in willingness to offer help to a hypothetical sibling described as having schizophrenia, as compared to a hypothetical sibling described as having a substance-abuse problem.

Table 2

*Predictors of Help Giving*

	<i>b</i>	<i>p</i>	
Schizophrenia			$R = .32, p < .01$
Positive emotions	.24	<.05	
Symptom control	-.17	>.05	
Causal control	-.14	.08	
Negative emotions	-.13	>.05	
Substance abuse			$R = .30, p < .01$
Causal control	-.33	<.05	
Symptom control	-.23	<.05	
Positive emotions	.09	>.05	
Negative emotions	.01	>.05	
Physical illness			$R = .36, p < .001$
Positive emotions	.27	<.05	
Symptom control	-.14	>.05	
Causal control	.00	>.05	
Negative emotions	-.07	>.05	

Three simultaneous regression analyses were run in order to test a comprehensive model of help-giving behavior. Results of these analyses are presented in Table 2. In the first analysis, willingness to offer help to the person described as having schizophrenia was entered as the dependent variable. Participants' responses regarding causal controllability, symptom controllability, likelihood of expressing negative emotions, and likelihood of expressing positive emotions toward the hypothetical sibling were entered as predictors. In this analysis, positive emotions were found to be a significant predictor of willingness to offer help to an individual described as having schizophrenia. This model accounted for 10.2% of the variance. Perception of controllability over the symptoms of schizophrenia approached significance. Perception of control for the overall cause of the disorder, and negative emotions toward the hypothetical sibling, did not predict willingness to offer help.

A similar regression analysis was conducted in order to assess willingness to offer help to the person described as having a substance-abuse disorder. This model accounted for 8.8% of the variance. In this analysis, perceptions of control over the cause of substance abuse as well as perceptions of control over the

symptoms of substance abuse were both found to be significant predictors of willingness to offer help. Neither positive emotions nor negative emotions were found to be significant predictors of willingness to offer help to the person described as having a substance-abuse disorder.

In the third analysis, predictors of willingness to offer help to the person described as having a physical illness were examined. This model accounted for 12.9% of the variance. This analysis reveals that the likelihood of expressing positive emotions is a significant predictor of willingness to offer help to the person described as having a physical illness. Perceptions of control over the symptoms of the physical illness, of control over the cause of the physical illness, perceptions, and likelihood of expressing negative emotions were not found to be significant predictors of willingness to offer help.

### Discussion

This study used an analog model to test an attributional model of understanding reactions to illness in a family member. Attributions, emotional reactions, and help-giving behavior toward hypothetical siblings with three distinct illnesses (i.e., substance abuse, schizophrenia, and physical illness) were examined. In line with Weiner's (1993, 1995) attributional-affect model, when illness was attributed to controllable factors, participants were more likely to respond with more intense negative emotions and less intense positive emotions toward their hypothetical relative.

The findings of this study support and extend the findings of Weiner, Perry, and Magnusson (1988). In both studies, mental-behavioral stigmas (e.g., drug abuse) elicited more negative emotions than did physically based stigmas (e.g., cancer). The mental-behavioral disorders also were associated with greater perceived responsibility, less positive affect, and less help giving by participants. The present study extends earlier findings by examining attributions and emotions in a hypothetical family context. This is important because it is generally family members who have the most contact with an ill relative and are most often responsible for their care. Therefore, their emotional reactions toward patients may be more tied to outcome than the reactions of other less involved individuals.

Data from the present study indicate that respondents' willingness to offer help to persons described as having schizophrenia or physical illness is predicted by the intensity of positive emotions that the individual reports they would be likely to have toward the ill relative. In line with Weiner's (1993, 1995) model, the more positive the emotion that participants endorsed toward the hypothetical patient, the more likely they reported they would be willing to help this person.

It should be noted that a recent study by Weisman, Gomes, and López (2003) found a similar link between family members' positive emotions and their reported willingness to help an actual family member with schizophrenia. This

pattern was not the case for substance abuse, however, in that positive emotions did not relate to help giving. On the other hand, willingness to offer help was predicted by participants' perception of the amount of control that the person described as having substance abuse has over both the cause and the symptomatology of the disorder.

When comparing reactions to the three disorders, support for attribution theory was found in the sense that the disorder perceived as the least controllable (physical illness) elicited the least intense negative responses, the most intense positive feelings, and the most reported willingness to help. The findings do not suggest differences in reported willingness to help between schizophrenia and substance abuse.

It is unclear why attributions did not translate into greater helping behavior for schizophrenia in this study. Interestingly, Weisman et al. (2003) also failed to find a link between relatives' attributions and their help-giving behavior toward actual family members with schizophrenia. It is possible that individuals perceive mental conditions as less amenable to change or improvement. In other words, while individuals may have empathic responses to persons with schizophrenia, they may believe that attempts to help will not be effective for serious mental conditions.

It is also possible that participants do not perceive a mental condition as a legitimate illness in the sense that a physical problem is an illness. Because the disorder may be less clearly understood as an illness, participants may have been less likely to want to help the hypothetical relative with schizophrenia.

Another explanation is that few of our study participants reported having had experience with patients with mental illness. Thus, they may feel that they have little idea of what would be helpful. In other words, it may be less that they do not want to help and more that they are uncertain about what kind of help might be warranted for schizophrenia, making them reticent about offering assistance.

For substance abuse, perceptions of controllability were found to be an important factor for reported willingness to offer help. In line with attribution theory, it is likely that substance abuse elicited the least willingness to help because the disorder was perceived as very much within the abuser's personal control. Family members may view relatives with substance abuse as able to change if they wanted to, or may be unwilling to help a relative who is understood as bringing about his or her own plight.

It is interesting that participants' prior experience with an actual family member with a mental, physical, or substance-abuse disorder had no bearing on their expected reactions to the hypothetical siblings described in this study. The base rates for participants who had exposure to a relative with one of the three disorders were somewhat low (ranging from 20.2% to 38.8%). We did not assess participants' intimacy or specific relationship with these individuals, and it is likely that in some cases these may have included distant relatives with whom

participants may have been in limited or no contact. Additional research assessing how prior exposure to illness influences future reactions is needed.

This study has several limitations. For example, it relies entirely on self-report. Thus, the thorny issue remains as to whether what people say they would do in a specified situation has any bearing on what they would actually do in that situation. Moreover, our sample relied on a very narrow group of college student participants.

Finally, we employed an analog design in which participants imagined the person described was their hypothetical sibling. Research participants may have difficulty imagining being a sibling of a person with a chronic illness. It is possible that in the day-to-day real-life situation of having a family member with an illness, unfavorable reactions would be more intense as a result of actually having to deal with the consequences of living with a person who exhibits dysfunctional and disruptive illness-related behaviors.

It is also possible that unfavorable reactions would be less intense in a real-life situation when dealing with an actual family member. In other words, because it is more removed, participants may be willing to make harsher judgments against a hypothetical relative. Similarly, helping behaviors in real life may be different than in a hypothetical situation when the ramifications of assistance might actually impact a loved one. Future research is needed that assesses the hypotheses in this study with actual relatives of patients suffering from mental, physical, and substance-abuse disorders. Furthermore, interview, naturalistic observation, or other non-self-report methods are necessary to better assess the proposed link between attitudes and actual behaviors.

Despite the shortcomings discussed earlier, there are many strengths of our analog design, especially in the preliminary stages of research into the area. This type of design allows for the collection of large and diverse samples. More importantly, an analog design gives greater experimental control over important personality, environmental, and demographic factors that may influence reactions to illness.

When actual families of persons with schizophrenia, substance abuse, and physical illness are utilized, it may be difficult to tease apart whether differences in reactions are actually a result of the illness of their family member or are a result of other factors. For example, there is now strong evidence of a genetic component to some psychiatric disorders, including schizophrenia and drug abuse. Findings from non-analog studies of relatives with severe illness may be impacted by their own genetic predisposition to the disorder.

Furthermore, family environment may vary depending on the type of illness in the home. As stated earlier, families with substance abuse are often characterized by a high degree of conflict, which may influence how relatives respond to the person identified with the problem. In other words, in studies of actual families with different disorders, it is less clear whether reactions observed are toward the illness or toward other characteristics of the home environment. In an analog

design, however, each participant serves as his or her own control. Thus, this design controls for several possible confounds, such as frequency of exposure to symptoms, familial genetic loading for disorders, and differences in the type and level of discord in households with different types of illness. Nonetheless, while useful, analog studies can only be used as a first step. Ultimately, research comparing actual family members of patients with substance abuse, schizophrenia, and physical illness are needed.

Support for the hypothesis that substance abuse and schizophrenia elicited more negative emotional responses and less willingness to help than physical illness highlights the need to educate family members, clinicians, and the public that these disorders are recognized in psychiatry as illnesses with specific symptomatology and validated approaches for treatment. It is imperative for caregivers and mental health professionals to understand that some of the associated symptoms are beyond patients' personal control. Weiner (1993) pointed out that medical doctors typically treat those who are perceived as not responsible for their problems and that mental health practitioners often treat those who are perceived as personally responsible for their plights. Psychoeducational treatment programs might be beneficial as a way to educate family members that schizophrenia and substance abuse appear to have a genetic component, even though many people do not view these disorders as illnesses, *per se*. It may help to educate family members about the acceptance within the psychiatric community of schizophrenia and substance abuse as legitimate disorders, indicating that the *Diagnostic and Statistical Manual of Mental Disorders* (American Psychiatric Association, 1994) outlines clear criteria for both. Perhaps presenting psychiatric illnesses within the disease model would limit the blameworthy attributions and subsequent negative emotions that are experienced and expressed by family members toward an individual's dependence.

Because of the connection that has been demonstrated between perceived controllability and expressed emotion (EE) levels and EE levels and relapse for a variety of disorders (e.g., diabetes, schizophrenia, alcoholism), this study highlights the need to reduce blameworthy attributions toward mental and physical disorders, particularly those that are less easily understood as genuine illnesses. In summary, findings from this study suggest that applying a psychoeducational component regarding appropriate attributions might be useful for treating families who are coping with a family member's illness. This may be an important first step in reducing blame by helping others understand that some symptoms of physical and psychiatric disorders are not completely within patients' control.

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