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Expressed Emotion in Cross-Cultural Context: Familial Responses to Schizophrenic Illness Among Mexican Americans

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Evaluation of expressed emotion in schizophrenia: a comparison of Caucasians and Mexican-Americans

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Abstract

Social desirability, while a recognized source of respondent bias among Mexican-Americans, has not been evaluated as an explanation for the lower rate of high expressed emotion (EE) found in the family members of Mexican-Americans versus Caucasians with schizophrenia. In this study, we tested the hypothesis that the lower rate of high EE (hostility and criticism) among Mexican-Americans was the result of cultural factors impacting on how information was reported by the Mexican-American relative of a patient with schizophrenia. We compared the ratings of EE between Caucasian ($N = 17$) and Mexican-American ($N = 44$) patients with schizophrenia or schizoaffective disorder and their key relatives using the level of expressed emotion (LEE) scale (paper and pencil instrument rated by the patient and relative separately) and the Five Minute Speech Sample (observational experimenter rated). The ability of the various measures to predict relapse over two years was also examined. Contrary to our hypothesis, there were no differences between patient and family measures within ethnic group. Mexican-American patients and relatives reported lower rates of high EE than Caucasians across all measures. High EE predicted relapse across measures for Caucasian participants, but did not predict relapse for Mexican-Americans on any of the measurement instruments. We discuss the implications of these findings on cross-cultural research and family interventions for individuals with psychotic disorders. © 2002 Elsevier Science B.V. All rights reserved.

Keywords: Expressed emotion; Schizophrenia; Family; Mexican-American; Cross-cultural

1. Introduction

Over the past 40 years a significant body of literature has developed demonstrating that the emotional climate of the family environment to which a patient with schizophrenia returns after an acute psychiatric hospitalization influences the short-term prognosis of the disorder. Specifically, the degree to which

relatives express criticism, hostility or emotional over-involvement (EOI) towards the patient — known as level of expressed emotion (LEE) and measured by the Camberwell family interview (CFI) — is predictive of relapse and rehospitalization within the first year of discharge (Brown et al., 1972; Vaughn and Leff, 1976; Vaughn et al., 1984). This finding has provided the impetus for a variety of effective family intervention strategies in the treatment of schizophrenia (Mari and Streiner, 1994; Mueser and Glynn, 1995).

Despite the fact that the predictive validity of the EE construct has been demonstrated in numerous international studies (Bebbington and Kuipers, 1994),

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several limitations of the CFI have been highlighted. For example, the practical application of EE research in clinical settings has been limited by the time required for the administration of the CFI, as well as by the need for the presence of a key relative. Training the raters (100 hours), administering and coding the interview (2 h), and scoring the tapes (4 h) is arduous and cumbersome. An alternative approach that has been used is the five-minute speech sample (FMSS; Gottschalk and Gleser, 1969) which provides a brief method for estimating EE (Magaña et al., 1986). The FMSS has been found to have correspondence rates of 80–90% with CFI ratings of criticism and hostility (Miklowitz and Goldstein, 1993). However, the sensitivity of the FMSS for detecting EOI is low: up to 40% of relatives rated low in EOI by the FMSS are rated high using the CFI (Glynn et al., 1990). Moreover, unlike the CFI, the predictive validity of the FMSS has not been well established. And, of course, another limitation is that the FMSS also requires the participation of a key relative, albeit for much less time than the CFI.

A second shortcoming of the CFI is the rather indirect way in which it measures EE (Jenkins and Karno, 1992). The CFI relies on an assessor's ratings of the responses of family members during an unstructured interview. Few studies have examined directly how persons with schizophrenia themselves perceive their family's attitudes towards them and even fewer have compared the patient's perceptions with observer ratings of the family's responses. Two studies have suggested that patients' perceptions of their relatives' attitudes have good prognostic validity (Cole and Kazarian, 1993; Donat, 1996), and another found that patients' perceptions of the familial emotional climate could be a more accurate measure than if obtained through conventional research instruments that query family members (Lebell et al., 1993).

Still another question that has been raised about EE research is the cross-cultural validity of the rating instruments used to measure the familial emotional climate. Most studies that have used the CFI to measure EE in developing countries and in ethnic minority populations in the United States have found lower rates of high EE (i.e. 10–30%) than the rates (i.e. 40–60%) found in Caucasians in the United States and Western Europe (Jenkins et al., 1986; Jenkins and Karno, 1992; Wig et al., 1987). Combining this

finding with the widely held viewpoint that the outcome of schizophrenia is better in developing countries than in the industrialized world, many have proposed that the lower rates of high EE found in developing countries is a major factor in the more benign course and outcome observed in these patients (Jablensky et al., 1992). However, the empirical evidence shows that patients from ethnic minority populations, such as unacculturated Mexican-Americans, have relapse rates at the same level as those found in Caucasian patients (Jenkins et al., 1986). Moreover, several flaws have been noted in the World Health Organization study that fueled the notion that the course of schizophrenia is more benign in the developing world (Edgerton and Cohen, 1994).

One explanation for why lower rates of high EE among Mexican-Americans has not led to lower relapse rates may be that the familial environment is actually higher in EE than is reflected using conventional measurement techniques. The hypothesis considered in this study is that the Mexican-American patient's perceived EE (what the patient thinks about his or her relatives' attitudes toward him or her) reflects greater levels of high EE than those rated by observers using conventional EE instruments such as the CFI or FMSS. In turn, the patient's perception could be a more valid predictor of rehospitalization. Furthermore, what the observer rates in Mexican-American populations may not capture the actual familial emotional environment because of the lack of cross-cultural validity of the rating instruments, which rely on verbal content and verbal tone to assess level of EE.

One study has suggested that ratings of low EE among Mexican-Americans may reflect a cross-cultural response variation to the instrument used to measure EE (Tompson et al., 1995). In that study, the family environments of patients from Caucasian, African-American, and Mexican-American groups were examined. The authors found that the patient's perspective was a more potent predictor of outcome than traditional measures of EE in the two ethnic minority groups but not in the Caucasian population. In their discussion, they suggested that 'the meaning of EE may differ cross-culturally that which is labeled 'critical' by the dominant culture may not be so recognized by other groups who hold divergent definitions of critical behavior' (Tompson et al., 1995, p. 166).

However, that study was limited by the small subsample of Mexican-Americans studied ($N = 10$). In addition, the instrument used to measure patient perceptions of family environment was designed specifically for that study and had not been previously validated.

Each of the above-mentioned reasons, that is, ease of administration, potentially superior predictive validity, and greater cross-cultural sensitivity, point to the need for a clinically friendly, culturally sensitive instrument which directly assesses the patient's perception of the familial emotional climate. One candidate instrument, the LEE scale-patient's version, has sound psychometric properties of internal consistency, temporal stability, construct validity, and independence from effects due to sex or age (Cole and Kazarian, 1988). Moreover, the LEE Scale has good concurrent validity with the CFI (Kazarian et al., 1990) and good predictive validity for relapse (Cole and Kazarian, 1993) and rehospitalization (Donat, 1996) in Caucasian populations.

In the current study, EE was assessed in Mexican-Americans and Caucasians with schizophrenia using patients' and family members' ratings on the LEE as well as the more conventional method of rating EE, that is, the FMSS. The FMSS was used rather than the CFI because of its greater ease of administration and its high correspondence with the CFI (80–90%) for the variables of interest; namely, criticism and hostility (Miklowitz and Goldstein, 1993). Although it is not conventionally used with family members, the LEE Scale was administered to family members for two purposes. First, to examine potential differences between the perceptions of the patients and those of their relatives of the familial emotional climate. Second, to examine potential differences in reporting due to instrument type. The LEE is a very structured scale while the FMSS uses an open-ended format. Patients were followed for up to two years to examine the ability of the various ratings to predict relapse.

Thus, the ultimate objective of this study was to evaluate the predictive validity of three instruments (i.e. the FMSS, the LEE-patient version, and the LEE-relative version) in two populations (i.e. Mexican-American and Caucasian) of patients with schizophrenia and their family members. Our objective was driven by two paradoxical findings. First, our clinical experiences working in a community mental health center serving a large Mexican-American

population indicated that family members of Mexican-Americans with schizophrenia were no less likely than Caucasians to express critical or hostile comments about their ill relatives during regular medication or rehabilitation visits. However, our research experience with Mexican-Americans, particularly with less acculturated family members, suggested that these individuals were unlikely to comment negatively about their ill relative during a semi-structured research interview (Kopelowicz, 1997). Similar findings by other researchers have been attributed to the influence of social desirability, that is, the responses of Mexican-Americans may be tailored to their beliefs about the expectations of the researcher (Marin et al., 1983).

Because of the greater degree of social interaction, we hypothesized that the verbal responses of Mexican-American family members to an interviewer about their ill family member (i.e. FMSS) would be more susceptible to social desirability factors. This would result in lower levels of high EE than the levels based on their written responses on a paper-and-pencil questionnaire (i.e. LEE-relative version). In turn, we hypothesized that the Mexican-American patients' perceived experience of criticism or hostility (i.e. LEE-patient version) from family members would be less susceptible to social desirability than either relative-derived measure, therefore, they would report higher rates of EE than either relative-derived measure. We further hypothesized that Mexican-American patients' ratings of EE would show greater ability to predict relapse than either relative-derived EE ratings.

We also hypothesized that there would be no difference in rates of high EE between instruments (FMSS vs. LEE) and respondents (relatives vs. patients) within the Caucasian group. Finally, we hypothesized that the rates of high EE among Mexican-Americans, as determined by responses on the LEE-patient version, would be comparable to the rates of high EE derived from the reports of both Caucasian patients and family members.

2. Methods

2.1. Participants

Sixty-one randomly selected, clinically stable (no psychiatric hospitalizations or changes in psychiatric

medications for three months prior to study entry) individuals with a DSM-IV diagnosis of schizophrenia or schizoaffective disorder and their key relatives were included in the study. All patients were living with their families of which 44 were Mexican-American and 17 were Caucasian. The mean age for the patients was 35.7 years ($SD = 9.3$), 79% were male, and the mean age of onset was 23.1 years ($SD = 4.7$). The mean age of the relatives was 55.5 years ($SD = 12.9$), 77% of the Mexican-American relatives and 76% of the Caucasian relatives were female. Subjects were a representative sample of patients and families recruited from the San Fernando Mental Health Center, a community mental health center operated by the Los Angeles County Department of Mental Health located in Mission Hills, California. This center has an ongoing caseload of 1400 seriously mentally ill patients including 55% Hispanic-Americans, 40% Caucasian, 5% Asian-American and 5% African-American.

2.2. Measures and procedures

Using the management information system of the Los Angeles County Department of Mental Health, a list was generated of all open cases at the San Fernando Mental Health Center with a diagnosis of schizophrenia or schizoaffective disorder. From this list of 600 patients, every fifth name was selected for recruitment into the study. Patient and family members were asked by telephone to participate in a study designed to understand the family's role in the treatment of schizophrenia. The first 70 patient and key relative dyads in which both members expressed interested in participating were given an appointment to undergo the assessments at the mental health center within one week of the phone call. Seven dyads did not complete the assessments because either the patient ($N = 3$) or the key relative ($N = 4$) did not show up for the interview and refused to reschedule. Two other dyads were excluded because one or the other member refused to sign informed consent.

After signing informed consents, each patient and his/her key relative completed a series of instruments designed to elicit demographic data and level of acculturation using a scale validated by Cuellar et al. (Cuellar et al., 1980). The latter variable was assessed to determine its relationship to EE level.

This was a naturalistic study in that no attempt was made by the researchers to influence the pharmacological or psychosocial treatment received by the patients.

Patients and relatives were assessed with the patient and relative versions of the LEE scale (Kazarian et al., 1990), respectively. The LEE scale is a 60-item self-report instrument with yes–no answers to specific statements about emotional exchange. The LEE Scale items are organized into subscales that gauge different dimensions of the expressed emotion construct (i.e. criticism, hostility, EOI, and tolerance). The patients were requested to complete the LEE scale-patient version based on their interactions with the family member most responsible for their care (i.e. the key relative). The identification of the most influential caregiver was left to the patient. These key relatives were also requested to complete the LEE scale-relative version. For patients and relatives whose primary language was Spanish, the Spanish version of the LEE scale was used. The Spanish translation of the LEE was constructed, translated, back-translated and validated by Jose de Cangas (personal communication, S. Kazarian, 1995). Based on previous validation studies with the LEE (Cole and Kazarian, 1988; Kazarian et al., 1990), high EE was defined as the endorsement of nine or more (out of 30) critical or hostile statements.

Relatives' level of EE was also assessed using the FMSS (Magaña et al., 1986). Each key relative was asked to speak without interruption for five minutes about 'What kind of a person (the patient) is and how you two get along together' or the same phrase in Spanish if the relative indicated that Spanish was his or her preferred language. The interviewer then turned on an audiocassette recorder and remained in the room while the key relative responded for five minutes. The relative was not prompted for the entire five-minute period unless he or she would stop talking for more than 30 s, or ask any question. In such cases, the interviewer would repeat the original question. On the day the FMSS was conducted, the key relative completed the LEE scale. These instruments were administered in a counterbalanced fashion. Patients completed the LEE no more than one week before the family member's participation in the study.

All FMSS ratings were completed by a trained rater who was blind to the purposes of the study and to

ratings on the LEE Scale. These speech samples were coded according to a system developed and validated in English and Spanish by Magaña et al. (1986), and rated only on the basis of critical comments. The criteria for a rating of high EE based on criticism are any of the following: (1) a negative initial statement, (2) an overall negative rating for the patient-relative relationship, or (3) one or more critical comments about the patient. To assess reliability, an additional experimenter rated 10 randomly selected audiotapes. The kappa for interrater reliability was calculated as .90.

Relapse rates were monitored for two years. Relapse was defined as hospitalization or a significant increase in the level of mental health care relative to intake (i.e., imprisonment, utilization of crisis services, or a 25% increase in the dose of antipsychotic medication). Relapse was monitored through monthly communication with the treating psychiatrist and case manager, as well as through the county's management information system.

3. Results

There were no significant differences between Caucasians and Mexican-Americans in age of the patient or relative (patient: 35.0 ± 9.1 vs. 36.5 ± 10.9 , $t = 0.52$, $P = 0.61$; relative: 53.4 ± 12.6 vs. 60.1 ± 13.7 , $t = 1.82$, $P = 0.073$), age of patient at the time of illness onset (23.1 ± 6.8 vs. 22.6 ± 7.6 , $t = 0.41$, $P = 0.78$), or gender of the relative (76.4% female vs. 77.3% female, $\chi^2 = 0.82$, $P = 0.91$). There were also no differences between Caucasians and Mexican-Americans in the number of previous hospitalizations (3.1 ± 2.8 vs. 2.6 ± 2.9 , $t = 0.38$, $P = 0.83$) and the number of months since the last hospitalization (8.1 ± 6.8 vs. 8.6 ± 7.6 , $t = 0.56$, $P = 0.68$). Of the

44 Mexican-American patient participants, 24 (54%) were categorized as low acculturation (mean Cuellar score < 2.5) and 20 (46%) as high acculturation (mean Cuellar score > 2.5). The acculturation level of 41 of the 44 key relatives was the same as that of their ill relative. For the three pairs whose categorizations were divergent, the acculturation level of the patient was first used for subsequent analyses. No significant differences were found between high and low acculturated Mexican-Americans on rates of high EE using the FMSS (20% vs. 21%, $\chi^2 = 0.48$, $P = 0.97$) or on the number of critical items endorsed on either LEE scale (relative's version: 6.1 ± 3.5 vs. 6.3 ± 3.2 , $t = 0.21$, $P = 0.83$; patient's version: 7.6 ± 4.3 vs. 9.0 ± 5.0 , $t = 0.92$, $P = 0.36$). Moreover, acculturation level was not related to relapse. For the three divergent cases, the acculturation level of the relative was substituted for that of the patient and the results re-analyzed. No significant differences were noted. Consequently, for all subsequent analyses the data for Mexican-Americans was collapsed across acculturation level.

Table 1 presents the percentages of high EE across ethnic groups and across measures. To address the question of the relationship between ethnicity, assessment, and expressed emotion, SAS GENMOD procedure was performed. The GENMOD procedure is an extension of traditional linear models with binomial (high versus low EE) data and repeated measures (FMSS, LEE patient version, LEE relative version). The generalized linear model resulted in a main effect for ethnicity ($\chi^2 = 5.18$; $P = 0.023$), but not for measurement instrument ($\chi^2 = 2.93$; $P = 0.23$). Moreover, the group by measure interaction was not statistically significant ($\chi^2 = 1.26$; $P = 0.533$). An examination of the distribution of high EE key relatives by ethnicity and measure (see

Table 1

Percentages and frequencies of high EE levels across two populations and three separate measures. (Main effect for ethnicity ($\chi^2 = 5.18$; $P = 0.023$); No main effect for measurement instrument ($\chi^2 = 2.93$; $P = 0.23$); Group by measure interaction was not statistically significant ($\chi^2 = 1.26$; $P = 0.533$))

	Caucasian ($N = 17$)		Mexican-American ($N = 44$)	
	P (%)	f	P (%)	f
Patient LEE	53	9	45	20
Relative LEE	53	9	34	15
FMSS	47	8	20	9

Table 2

Relapse rates as predicted by rating instrument

		Caucasian (N = 17)		Mexican-American (N = 44)	
		High EE	Low EE	High EE	Low EE
<i>LEE scale (patient version)</i>					
Relapse	Y	6	2	10	3
	N	3	6	10	21
<i>LEE scale (relative version)</i>					
Relapse	Y	6	2	7	6
	N	3	6	8	23
<i>Five minute speech sample</i>					
Relapse	Y	5	3	4	9
	N	3	6	5	26

Table 1) points out that Caucasians were more often rated high EE than Mexican-Americans regardless of which method was used to measure EE. In addition, there were no significant differences between measures within either ethnic group.

To address the question of which is the better predictor of psychotic relapse — patients' perceptions or relative-derived measures of EE — the GENMOD procedure was used with the addition of relapse as the dependent variable. There was a main effect for ethnic group ($\chi^2 = 4.52$; $P = 0.034$), but not for EE (high versus low) or method of measuring EE. However, there was an interaction effect of ethnicity by EE ($\chi^2 = 8.55$; $P = 0.004$), but no ethnicity by measure interaction nor an ethnicity by measure and EE interaction. Table 2 presents the relapse rates by ethnicity, expressed emotion and measure. An examination of the findings indicates that across all measures, high EE predicted relapse for Caucasians but not for the Mexican-American sample. For example, among Caucasians, of the eight patients who relapsed, six (75%) lived with high EE relatives. In contrast, among Mexican-Americans, less than 50% of the patients living with high EE families relapsed. In other words, regardless of which measure of EE was used, high EE predicted relapse among Caucasians but not in the Mexican-American group.

4. Discussion

In line with one of our hypotheses, there were no significant differences among Caucasians on rates of

high EE across the three methods (FMSS, LEE patient-version, LEE relative-version) used to measure EE. This finding is consistent with previous research that found excellent concurrent validity between the CFI (for which the FMSS is a proxy) and LEE for Caucasians with schizophrenia (Kazarian et al., 1990). However, contrary to our prediction that Mexican-American patients would be more likely to rate their key relatives as high EE than the key relatives themselves would, there were no significant differences on rates of high EE among Mexican-Americans regardless of which measure of EE was used. In fact, across all measures, Mexican-Americans reported lower levels of criticism and hostility than Caucasians. This is consistent with previous research (Karno et al., 1987), but does not support our hypothesis that Mexican-American family members would be more susceptible to respondent bias than Mexican-American patients (Marin et al., 1983).

In terms of our proximal objective, this study did not provide any evidence of differences in perceptions of EE between Mexican-American patients and their family members. Although this finding appears to contradict our hypothesis of respondent bias among Mexican-American family members, an alternative explanation of our finding is that respondent bias may extend to Mexican-American patients with schizophrenia. Specifically, Mexican-American patients may be no less motivated than their relatives to have their family appear to be cohesive, loving and supportive. As suggested by Weisman and Lopez (1996), part of what might separate low EE from high EE households (and Mexican-American from

Caucasian households) might be that the former actually do suppress socially unacceptable or negative behaviors and attitudes. Less negativity in the environment may, in turn, contribute to the actual perception of more supportive family relationships for both Mexican-American patients with schizophrenia and their relatives.

In our sample, high EE predicted relapse for Caucasians but not for Mexican-Americans. This result supports the findings of a number of investigators regarding the predictive validity of high EE (as measured by the FMSS and either version of the LEE) for Caucasians (see Bebbington and Kuipers, 1994 for a review of the literature). In addition, although high EE was found to predict relapse in a previous study of Mexican-Americans (Karno et al., 1987), a secondary analysis and extension revealed that criticism did not predict relapse for Mexican-Americans (Lopez et al., 1999). Specifically, they found that for Caucasians criticism proved to be the key predictor of relapse, whereas for Mexican-Americans the lack of family warmth was the significant predictor of relapse. We were not able to examine the importance of warmth for predicting relapse among Mexican-Americans because the LEE and FMSS are not designed to assess that variable.

The results of this study suggest that the level of criticism and/or hostility experienced by Mexican-Americans with schizophrenia from their family members: (1) can be ascertained with similar responses by asking either the patient or the family, (2) is not artificially low because of respondent bias on the part of Mexican-American family members, (3) is lower than that experienced by Caucasians with schizophrenia, and (4) does not predict relapse. Taken together, these results have implications for cross-cultural research and clinical interventions. For example, the ability to assess EE through direct inquiry of patients greatly facilitates the logistics of conducting research in this area without compromising the quality of the data. Also, because criticism and hostility expressed by family members do not predict the course and outcome of Mexican-Americans with schizophrenia, and warmth does, other explanations for the predictive validity of the family's emotional exchange in this group should be sought. One possibility may be that for persons from cultural backgrounds that place high value on close family ties (such as Mexican-Americans), the importance of

criticism and hostility are dwarfed by the presence or absence of warmth (Lopez et al., 2001). In contrast, for persons from cultural backgrounds that rather value autonomy and independence, affronts to the self may be most significant. Studies carried out in Italy (Bertrando et al., 1992) and Yugoslavia (Ivanovic et al., 1994) have also found that warmth may serve as a protective factor in the course of the illness.

The lack of correlation between criticism and hostility with relapse also has implications for the design and adaptation of family interventions for Mexican-Americans with schizophrenia. For instance, behavioral family treatments for schizophrenia (which were originally designed for Anglo-American families) emphasize the importance of improving communication skills between the patient and the family by decreasing the levels of expressed criticism and hostility. Although such an approach seems like an appropriate target for intervention, some evidence suggests that it could be ineffective for unacculturated Mexican-Americans (Telles et al., 1995). On the other hand, potentiating the expression of warmth may have a strong protective effect against relapse.

One limitation of our study is the relatively small sample size, which may have contributed to the possibility of Type II error. A second limitation of our findings is that we did not assess on the basis of EOI or warmth, both factors that have been associated with relapse rates among Mexican-Americans with schizophrenia (Lopez et al., 1999). We did not extend the analysis to EOI or warmth because neither of the instruments used in this study, the LEE and the FMSS, has demonstrated adequate levels of concurrent validity with the CFI on these factors (Cole and Kazarian, 1993; Lenior et al., 1998). Third, we only assessed one key relative for each patient, selected by the patient. Selecting a different family member, or assessing more than one family member, may have altered our results. Nevertheless, these results urge researchers to examine the cross-cultural validity of instruments that assess the emotional climate of familial environments of individuals with psychotic disorders.

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