



Published in final edited form as:

Am J Psychiatr Rehabil. 2008 January 1; 11(1): 61–75. doi:10.1080/15487760701853102.

Evaluation of a Culturally Tailored Skills Intervention for Latinos with Persistent Psychotic Disorders

Brent T. Mausbach Ph.D.¹, Jesus Bucardo M.D.^{1,2}, Veronica Cardenas M.S.³, Christine L. McKibbin Ph.D.^{1,2}, Concepcion Barrio Ph.D.⁴, Sherrill R. Goldman M.A.^{1,2}, Dilip V. Jeste M.D.^{1,2}, and Thomas L. Patterson Ph.D.^{1,2}

¹Department of Psychiatry, University of California, San Diego

²VA San Diego Healthcare System

³Pacific Graduate School of Psychology, Palo Alto, CA

⁴San Diego State University

Abstract

Fifty-nine Latino participants diagnosed with persistent psychotic disorders were assigned to either a culturally tailored skills-training intervention (n = 21), an equivalent non-tailored intervention (n = 15), or a community-based support group (n = 23). Participants completed a number of skills-based performance assessments (e.g., UCSD performance-based skills assessment; UPSA) and a well-being measure prior to and immediately post-treatment. Compared to those in the non-tailored intervention, participants receiving the tailored intervention showed significant improvement in several outcomes. These results indicate that Latino individuals with persistent psychotic disorders benefit from interventions which consider cultural values and mores.

INTRODUCTION

In 2003, the United States Census Bureau estimated the Latino¹ population of the United States to be approximately 13.7% of all U.S. citizens. Moreover, between 2000 and 2003 Latinos accounted for approximately 50% of all U.S. population growth (U.S. Bureau of the Census, 2003). As the U.S. Latino population continues to grow, so will the number of Latinos suffering from persistent psychotic disorders (e.g., Schizophrenia, Schizoaffective disorder). This expected rapid growth in the number of individuals with psychotic disorders, combined with the enormous cost that schizophrenia places on society (Crown et al., 2001; Dixon, Whoheiter, & Thompson, 2001; Martin, Miller, & Kotzan, 2001) highlights the need to develop effective interventions to help improve their well-being and develop skills to function in their everyday lives.

Psychosocial interventions for individuals with Schizophrenia appear to be effective for a number of outcomes. For example, a recent meta-analysis indicated that Cognitive-Behavioral Therapy (CBT) is effective for reducing psychotic symptoms in patients with Schizophrenia (Gould, Mueser, Bolton, Mays, & Goff, 2001). Moreover, CBT appears effective for improving mental state and global functioning and for significantly reducing risk for relapse ("Royal

Corresponding Author: Thomas L. Patterson, Ph.D., University of California, San Diego, Department of Psychiatry (0680), 9500 Gilman Drive, La Jolla, CA 92093-0680, Tel: (858) 534-3354, Fax: (858) 534-7723, E-mail: tpatterson@ucsd.edu.

¹The term Latino is a broad generalization used to refer to a highly diverse population comprising subgroups of individuals of multiple national origins and distinct immigration histories. Despite its limitations, the term is used here to refer collectively to this population provided that its diverse ethnic and cultural origins are acknowledged.

Australian and New Zealand College of Psychiatrists clinical practice guidelines for the treatment of schizophrenia and related disorders," 2005). However, less is known about the effectiveness of CBT for functional outcomes, such as social skills and everyday functioning. In contrast, Social Skills Training (SST), which is built upon the premise that deficits in social skills can be overcome through experience and training, has been found to be effective for improving independent living skills, social interaction, and social functioning (Bellack, 2004). Other interventions that merge cognitive behavioral and social skills principles and are designed specifically to improve functional outcomes in individuals with Schizophrenia have demonstrated promising results (Granholm et al., 2005). For example, Patterson and colleagues (Patterson et al., 2003) found that, compared to those in a support group, participants receiving a manualized behavioral intervention demonstrated significant improvement in functional outcomes (e.g., general organization; management of finances; use of transportation; household chores, and social skills).

One limitation of previous research is the overwhelming use of Caucasian samples, making it unclear as to their effectiveness for improving outcomes in Latinos who suffer from psychosis. To be sure, it has been questioned whether interventions designed for Caucasians can be effective in treating Latinos (Kopelowicz, 1998), with some authors suggesting that applying individualistic values to persons from sociocentric cultures may have adverse effects on patients' clinical and functional outcomes (Barrio, 2000). Intervention research appears to confirm these doubts. One study, which examined the effectiveness of two psychosocial interventions for Schizophrenia, found that while Caucasians showed considerable gains in work and social functioning outcomes, Latinos had poorer functional outcomes and appeared to worsen over time (Phillips, Barrio, & Brekke, 2001). Similarly, in a study of 40 low-income Spanish-speaking people with a diagnosis of schizophrenia, Telles and colleagues (Telles et al., 1995) found that level of patient acculturation was significantly related to various measures of treatment outcome. In this latter study, the authors suggest that less acculturated individuals may perceive highly structured interventions as intrusive and that making interventions more culturally relevant appears to be an important factor in increasing their efficacy. A more recent study compared the effectiveness of a culturally tailored psychosocial intervention to a non-tailored, 'customary care' condition (Kopelowicz, 1997). Results of this pilot study indicated that Latinos in the tailored intervention were more likely to learn the material and apply the skills to their natural environments. Furthermore, compared to those receiving customary care, participants in the tailored intervention demonstrated significant reductions in positive and negative symptoms of psychosis.

Although preliminary, these studies raise the question of whether Latinos suffering from Schizophrenia can benefit from Caucasian-oriented psychosocial interventions. Similarly, it is unclear as to whether culturally tailored interventions maximize benefits. The current study seeks to take a first look at whether a culturally tailored psychosocial intervention significantly improves social and functional outcomes compared to: a) a non-tailored intervention, and b) a standard support group.

METHOD

Participants

Participants in this study were enrolled in one of two randomized trials assessing the impact of a psychosocial intervention for improving functional and adaptive skills in those diagnosed with persistent psychotic disorders. Our initial wave of participants was recruited to participate in a program known as Functional Adaptation Skills Training (FAST; (Patterson et al., 2003), whereas the second wave of participants was recruited to participate in a program known as Programa de Entrenamiento para el Desarrollo de Aptitudes para Latinos (PEDAL), which was designed to test a culturally tailored version of the FAST intervention. For both studies,

inclusion/exclusion criteria were identical except those in the PEDAL study were required to be monolingual Spanish speakers whereas those in the FAST study were required to speak English. Other Inclusion criteria were as follows: a) self-identification as Latino; b) a DSM-IV diagnosis of schizophrenia, schizoaffective disorder, or psychotic mood disorder, and c) over 40 years of age. Participants were excluded if they: a) had a dementia diagnosis, b) were at serious suicide risk, c) could not complete the assessment battery, or d) were participating in any other psychosocial intervention or drug research at the time of intake.

Participants in the FAST intervention were recruited from Board and Care (B&C) facilities in San Diego County. A total of 30 participants met our entry criteria. Participants were randomized in blocks of 4–8 to either the FAST intervention or support group (SG). Randomization was conducted by B&C facility; that is, once enough participants enrolled at a given site, all participants from that site were randomly assigned to one of the two interventions. Results of the randomization during this wave yielded 15 participants in the FAST intervention and 15 in the SG condition.

Participants in the PEDAL program were recruited from mental health clinics near the U.S.-Mexican border. As with the FAST program, participants were randomized in blocks of 4–8 to either the PEDAL intervention or SG condition. In order to maximize resources, randomization during this wave was conducted at a 2:1 ratio to either the PEDAL intervention (n = 21) or the SG condition (n = 8).

Potential participants in both studies were identified by staff at each agency and were approached about their interest in participating in a program to help them learn functional skills. Both studies were approved by the Institutional Review Board at the University of California, San Diego and all participants provided written, informed consent prior to enrollment.

Interventions

FAST Intervention—Based on Social Cognitive Theory (Bandura, 1989), the FAST intervention is a group-based, manualized behavioral intervention targeting several areas of everyday functioning. Specifically, the FAST intervention teaches participants skills for: a) managing their medications, b) improving both social and communication skills, c) organizing and planning their everyday lives, d) using transportation, and e) managing their finances. Groups consisted of approximately 4–8 participants and met once per week over the course of 24 weeks. Classes lasted approximately 120 minutes. Each of the classes was structured according to the following format: a) Establishing the class agenda; b) Review of the materials and skills learned in the previous session; c) Review of homework assignments (generalization); d) a psychoeducational lecture teaching a new concept and/or skills; e) group or self practice (e.g., behavioral modeling, role-playing, hands-on practice with props); f) developing individual homework assignments to apply skills to real-world environments. More information on the FAST intervention can be found elsewhere in the literature (Patterson et al., 2003).

PEDAL Intervention—The format of the PEDAL intervention was similar to that of the FAST intervention and focused on the same functional skills areas (e.g., medication management, managing finances, etc). This intervention also consisted of a group format (4–8 members) with groups occurring once per week for 24 weeks and lasting approximately 120 minutes each. The primary difference between the PEDAL and FAST interventions was that PEDAL was culturally tailored to suit the specific needs and interests of Latino individuals. Adaptations for the PEDAL intervention were based on feedback provided by focus groups with monolingual Spanish-speaking individuals with Schizophrenia, their families, and health-care providers. Notable changes from the FAST intervention included: a) translation of intervention and assessment materials from English to Spanish, b) inclusion of bi-cultural/bi-

lingual group facilitators, c) integrating culture-specific icons and idioms in the materials, and d) basing format, content, and treatment goals on Mexican cultural values such as *simpatía* (the use of polite social relations; (Diaz-Guerrero, 1994; Gloria & Peregoy, 1996) and *personalismo* (emphasizing warm relationships; (Gloria & Peregoy, 1996; Marin, 1989). A more detailed report on the development of PEDAL can be found elsewhere in the literature (Patterson et al., In Press).

Support Group—Our control condition utilized a support-group format in which participants were provided a supportive environment to discuss problems. Groups met on a weekly basis for 24 weeks, and lasted approximately 120 minutes. As with typical community support groups, SG facilitators helped group members generate discussion among themselves, but did not offer solutions to problems except in the event of a crisis.

Measures

All data were collected by trained research staff at baseline and again a 6-months post-baseline. Assessment staff were blind to group assignment. Primary and secondary outcomes included the following:

Functional Skills—Three separate measures were used to assess functional skills relevant to those diagnosed with persistent psychotic disorders. The first measure was the *UCSD Performance-based Skills Assessment* (UPSA; (Patterson, Goldman, McKibbin, Hughs, & Jeste, 2001), which assesses the participant's ability to role-play a variety of complex situations (e.g., management of finances, social/communications, transportation, household chores).

We also assessed social skills using the *Social Skills Performance Assessment* (SSPA; (Patterson, Moscona, McKibbin, Davidson, & Jeste, 2001). This measure consists of two 3-minute role-play tasks in which the individual acts out interactions with a new neighbor and a landlord, respectively. Each interaction is scored in a number of categories (e.g., Interest, Fluency, Clarity, Affect, Social Appropriateness) on a scale of 1 (low) to 5 (high).

Finally, we assessed each participant's ability to manage medications using the *Medication Management Ability Assessment* (MMAA; (Patterson et al., 2002). This assessment entails a role-play task in which the individual is given several mock medication bottles with directions for use on each bottle (e.g., "Parlenol: Take 2 tablets twice a day with food"). The individual is asked to give the interviewer pills from each bottle as he/she would take them throughout the day. The interviewer tracks responses on the following: a) pill type, b) number of times per day the prescription was taken, c) number of capsules taken each time, and d) whether they were taken with or without food as directed. Each deviation from the prescribed regimen was considered an error (total score = 0 – 25). Therefore, higher scores on this measure indicate worse functioning.

Psychotic Symptoms and Well-Being—We utilized the Positive and Negative Syndrome Scale (PANSS; (Kay, Fiszbein, & Opler, 1987) to assess symptoms common to individuals with psychotic disorders. Each participant's well-being was assessed using the Quality of Well-Being scale (QWB; (Kaplan et al., 1989).

Data Analysis

Our first analytic strategy was to determine possible differences between the three intervention conditions on background characteristics and outcome measures. We used chi-square analyses and ANOVAs to compare groups on dichotomous and continuous variables, respectively. Significant ($p < .05$) ANOVA results were followed by Tukey's b tests.

Second, we assessed treatment effects on the outcome measures using analyses of covariance (ANCOVAs). In these analyses, the dependent variable was the 6-month score and covariates included the baseline value of the outcome measure, years of formal education, acculturation score, and daily neuroleptic dose. All treatment effects were assessed using an intent-to-treat approach (i.e., last observation carried forward). Significant group effects for the omnibus tests were followed by post-hoc pairwise comparisons using Fischer's LSD. We calculated effect sizes for each of the pairwise comparisons using adjusted mean difference scores and standard errors.

RESULTS

Background Sample Characteristics

Baseline characteristics of participants in each condition are shown in Table 1. Results of our preliminary analyses indicated that, compared to participants in the PEDAL and SG conditions, FAST participants had a significantly higher mean education level and daily neuroleptic dose. Also, participants in the PEDAL intervention were significantly less acculturated than those in the FAST and SG conditions.

Effects of the Interventions

Of the 59 participants, 10 dropped out of the study and therefore did not provide 6-month follow-up data. The number of dropouts did not differ by treatment condition (SG = 5, FAST = 2, PEDAL = 3; $\chi^2 = 0.62$, $df = 1$, $p = .733$). As) above, we used an intent-to-treat approach (LOCF) in all analyses. Table 2 shows baseline and 6 month follow-up scores for each of the three treatment conditions. Baseline values in this table reflect actual scores, whereas 6-month scores are adjusted for the baseline value of the outcome measure, years of formal education, acculturation score, and daily neuroleptic dose. For the UPSA, there was a significant Group effect ($F(2, 52) = 6.62$, $p = .003$). Fischer's LSD tests indicated that participants in the PEDAL intervention demonstrated significant improvement on the UPSA compared to those in the FAST ($p = .017$) and SG ($p = .001$) conditions. In contrast, FAST and SG groups did not significantly differ ($p = .585$).

Results of the omnibus ANCOVA for SSPA demonstrated a significant effect for treatment group ($F(2, 52) = 3.31$; $p = .045$). Post-hoc tests indicated that participants in the PEDAL intervention had significantly higher 6-month SSPA scores compared to those in the FAST condition ($p = .016$), but not the SG condition ($p = .075$). There was no significant difference between the FAST and SG conditions ($p = .248$).

The effect of treatment group for the MMAA approached, but did not reach, statistical significance ($F(2, 51) = 2.59$, $p = .085$). However, post-hoc analyses indicated that participants in the PEDAL condition made significantly fewer medication errors at 6-month than the SG condition ($p = .040$) and trended toward fewer errors compared to those in the FAST intervention ($p = .066$). No significant difference was observed for participants in the FAST and SG conditions ($p = .838$).

The group effect for QWB also approached significance ($F(2, 52) = 2.53$; $p = .089$). Follow-up analyses indicated that participants in the PEDAL intervention reported higher QWB at 6-months than those in the FAST intervention ($p = .030$), but not those in the SG ($p = .161$). QWB scores for participants in the FAST and SG conditions did not significantly differ ($p = .223$).

Results of the omnibus ANOVA for PANSS total score were not significant ($F(2,52) = 1.94$; $p = .154$). Furthermore, 6-month PANSS scores for participants in the PEDAL condition did

not significantly differ from those in the FAST ($p = .077$) or SG ($p = .105$) conditions. Finally, the FAST and SG conditions did not differ from one another ($p = .593$).

DISCUSSION

Latinos suffering from persistent psychotic disorders not only must cope with the symptoms of their diseases but also struggle to find services that are socio-culturally relevant. Because of cultural differences in interactive styles, value-systems, and experience of the disease, it seems unlikely that psychosocial interventions designed for Caucasian-Americans would be as effective as tailored interventions in the treatment of Latinos with Schizophrenia. The purpose of this study was to determine whether a culturally adapted psychosocial intervention was more effective for improving functional outcomes and overall well-being than an attention control condition and a non-tailored intervention in a sample of 59 Latinos with Schizophrenia.

Our results provide initial evidence that our tailored intervention (PEDAL) is more effective than both a non-tailored and support group condition at improving functioning and well-being in Latinos with persistent psychotic disorders. Compared to participants in the SG condition, those in the PEDAL intervention showed significant improvements in functional skills (UPSA) and management of medications (MMAA), with large effect sizes (Cohen's d) of 1.07 and 0.84, respectively. Although PEDAL participants did not significantly differ from SG participants on our other three outcomes (SSPA, QWB, and PANSS Total score), effect sizes for each of these outcomes were above 0.4, indicating that those in the PEDAL intervention demonstrated meaningful improvements on all these outcomes compared to SG participants. In contrast, for all 5 outcomes assessed in this study, the non-tailored FAST intervention showed no significant improvement compared to the SG condition. Indeed, compared to those in the SG condition, participants in the FAST intervention performed slightly worse on all but the UPSA outcome (effect sizes ranged from -0.40 to 0.18).

Perhaps more important in determining the benefits of cultural adaptations are direct comparisons of the PEDAL and FAST interventions. Because both of these interventions focused on teaching the same core set of skills (e.g., improving social skills, management of medications, and daily functioning), we were able to isolate the cultural aspects of the class and make conclusions about the benefits of adapting the original, Caucasian-oriented FAST intervention for the Latino, Mexican-American culture. Results of these comparisons indicated that compared to those in the FAST intervention, PEDAL participants had significant improvement on three of our five outcome measures (UPSA, SSPA, and QWB). Also, effect sizes for all three outcomes were large (range: 0.76 – 0.86). While we did not find significant differences between the PEDAL and FAST conditions on our other outcomes (i.e., MMAA and PANSS Total), both showed medium effect sizes benefiting the PEDAL intervention.

We believe a number of adaptations to the FAST intervention contributed to the development of the therapeutic alliance, to the acquisition of new skills, and ultimately to the success of the PEDAL intervention. Perhaps the greatest adaptation was the translation of the English manual used for FAST into Spanish language. Also, whereas FAST interventions were conducted in English, PEDAL interventions were conducted in Spanish. Although all participants in the FAST intervention indicated they could adequately speak and read English and were interested in participating in the FAST intervention, it is likely that under certain circumstances the intervention materials would have been better understood if written or spoken in Spanish. Also, there may have been circumstances in which participants in the FAST intervention would have grasped the constructs being taught if able to ask questions or express themselves in Spanish.

In addition to translation of materials, we believe cultural adaptations to the treatment modules (e.g., managing finances, transportation) contributed to the success of the PEDAL intervention.

For example, rather than teach individuals to debit and credit cards, the PEDAL intervention taught participants to better manage cash, coins, and money orders. Also, because of the importance of *la familia* (the family) in Mexican American culture, the PEDAL intervention was adapted to help individuals work with family members for transportation needs rather than help them to utilize public transportation or to travel independently. We believe these adaptations made information learned in intervention groups match how the information would be applied in participants' real-world environments.

We believe our results have implications for health service providers. For example, treatments for individuals of non-Caucasian cultures, particularly Latinos, should be relevant to the real-world environments of those enrolled in the intervention. In our case, an excellent example was helping participants work with family members to meet their transportation needs rather than teaching them to utilize public transportation; a skill which was not appropriate given their environments. Another implication is that facilitators of these treatments should be educated and familiar with the relevant cultural values of the consumer. Being familiar with these values will likely help group facilitators establish rapport with participants and to work with them to develop appropriate homework assignments in which they may practice skills being taught in the class.

While we believe this study has several strengths, including use of a theory-based intervention, inclusion of focus groups and community members to adapt the intervention, and randomized design, this study is not without limitations. Due to great intra-cultural variation among Latinos, it is important to point out that our participants were individuals living close to the U.S.-Mexican border and whose predominant cultural affiliation was Mexican. Therefore, a significant amount of feedback in developing this intervention came from members of the Mexican-American community, and many of our adaptations may not be relevant to those of other Latino cultures. In developing interventions with other ethnic groups (e.g., Cuban-Americans), consideration should be given to the unique cultural values of the target population.

A second limitation was that FAST participants received the intervention in English, thereby making it less clear if differences in outcomes were attributable to language, cultural factors, or both. However, it should be noted that we did not provide an English-only class to Latinos who spoke Spanish only. Indeed, the FAST participants indicated a preference for speaking English and reported greater affiliation with the Caucasian culture (as evidenced by their higher ARSMA scores). Furthermore, our results remained when controlling for acculturation. Nonetheless, to provide additional support for our findings, more research is needed to compare the FAST and PEDAL interventions while controlling for language. This could be accomplished by translating the Caucasian-oriented FAST intervention into Spanish and comparing it to both an English FAST intervention and the PEDAL intervention.

In conclusion, we found initial evidence that a culturally tailored intervention may be effective at improving functional outcomes and overall well being while reducing overall psychotic symptoms in Latinos suffering from persistent psychotic disorders. These outcomes may further produce long-term benefits in terms of quality of life for these individuals and for those living in the communities in which they reside.

ACKNOWLEDGEMENTS

Support for this work was provided, in part, by the National Institute of Mental Health (NIMH) grants MH62554 (Dr. Patterson & Dr. Bucardo), MH43693, MH45131, and MH49671 (Dr. Jeste), NARSAD (Dr. Jeste) and in part by the VISN-22 Mental Illness Research Education and Clinical Center (MIRECC) of the Department of Veterans Affairs.

References

- Bandura, A. Perceived self-efficacy. In: Mays, V.; Albee, G.; Schneider, S., editors. *Prevention of AIDS: Psychological Approaches*. Newbury Park, CA: Sage; 1989.
- Barrio C. The cultural relevance of community support programs. *Psychiatric services* 2000;51(7):879–884. [PubMed: 10875951]
- Bellack AS. Skills training for people with severe mental illness. *Psychiatric rehabilitation journal* 2004;27(4):375–391. [PubMed: 15222149]
- Crown WH, Neslusan C, Russo PA, Holzer S, Ozminkowski R, Croghan T. Hospitalization and total medical costs for privately insured persons with schizophrenia. *Administration and policy in mental health* 2001;28(5):335–351. [PubMed: 11678067]
- Diaz-Guerrero, R. *Psicología del mexicano: Descubrimiento de la etnopsicología*. Mexico D.F.: Editorial Trillas; 1994.
- Dixon, L.; Whoheiter, K.; Thompson, D. Medical management of schizophrenia. In: Lieberman, JA.; Murray, RM., editors. *Comprehensive Care of Schizophrenia*. London: Martin Dunitz; 2001. p. 239–261.
- Gloria AM, Peregoy JJ. Counseling Latino alcohol and other substance users/abusers. Cultural considerations for counselors. *Journal of substance abuse treatment* 1996;13(2):119–126. [PubMed: 8880669]
- Gould RA, Mueser KT, Bolton E, Mays V, Goff D. Cognitive therapy for psychosis in schizophrenia: an effect size analysis. *Schizophrenia research* 2001;48(2–3):335–342. [PubMed: 11295385]
- Granhölm E, McQuaid JR, McClure FS, Auslander LA, Perivoliotis D, Pedrelli P, et al. A randomized, controlled trial of cognitive behavioral social skills training for middle-aged and older outpatients with chronic schizophrenia. *The American journal of psychiatry* 2005;162(3):520–529. [PubMed: 15741469]
- Kaplan RM, Anderson JP, Wu AW, Mathews WC, Kozin F, Orenstein D. The Quality of Well-being Scale. Applications in AIDS, cystic fibrosis, and arthritis. *Medical care* 1989;27(3):S27–S43. [PubMed: 2921885]
- Kay SR, Fiszbein A, Opler LA. The positive and negative syndrome scale (PANSS) for schizophrenia. *Schizophrenia bulletin* 1987;13(2):261–276. [PubMed: 3616518]
- Kopelowicz A. Social skills training: The moderating influence of culture in the treatment of Latinos with schizophrenia. *Journal of Psychopathology & Behavioral Assessment* 1997;19:101–108.
- Kopelowicz A. Adapting social skills training for Latinos with schizophrenia. *International Review of Psychiatry* 1998;10(1):47–50.
- Marin G. AIDS prevention among Hispanics: needs, risk behaviors, and cultural values. *Public health reports* 1989;104(5):411–415. [PubMed: 2508169]
- Martin BC, Miller LS, Kotzan JA. Antipsychotic prescription use and costs for persons with schizophrenia in the 1990s: current trends and five year time series forecasts. *Schizophrenia research* 2001;47(2–3):281–292. [PubMed: 11278146]
- Patterson TL, Bucardo J, McKibbin CL, Mausbach BT, Moore D, Barrio C, et al. Development and pilot testing of a new psychosocial intervention for older Latinos with chronic psychosis. *Schizophrenia Bulletin*. In Press
- Patterson TL, Goldman S, McKibbin CL, Hughs T, Jeste DV. UCSD Performance-Based Skills Assessment: development of a new measure of everyday functioning for severely mentally ill adults. *Schizophrenia bulletin* 2001;27(2):235–245. [PubMed: 11354591]
- Patterson TL, Lacro J, McKibbin CL, Moscona S, Hughs T, Jeste DV. Medication management ability assessment: results from a performance-based measure in older outpatients with schizophrenia. *Journal of clinical psychopharmacology* 2002;22(1):11–19. [PubMed: 11799337]
- Patterson TL, McKibbin C, Taylor M, Goldman S, Davila-Fraga W, Bucardo J, et al. Functional adaptation skills training (FAST): a pilot psychosocial intervention study in middle-aged and older patients with chronic psychotic disorders. *The American journal of geriatric psychiatry : official journal of the American Association for Geriatric Psychiatry* 2003;11(1):17–23. [PubMed: 12527536]

- Patterson TL, Moscona S, McKibbin CL, Davidson K, Jeste DV. Social skills performance assessment among older patients with schizophrenia. *Schizophrenia research* 2001;48(2-3):351-360. [PubMed: 11295387]
- Phillips ES, Barrio C, Brekke JS. The impact of ethnicity on prospective functional outcomes from community-based psychosocial rehabilitation for persons with schizophrenia. *Journal of Community Psychology* 2001;29:657-673.
- Royal Australian and New Zealand College of Psychiatrists clinical practice guidelines for the treatment of schizophrenia and related disorders. *The Australian and New Zealand journal of psychiatry* 2005;39(1-2):1-30. [PubMed: 15660702]
- Telles C, Karno M, Mintz J, Paz G, Arias M, Tucker D, et al. Immigrant families coping with schizophrenia. Behavioral family intervention v. case management with a low-income Spanish-speaking population. *The British journal of psychiatry : the journal of mental science* 1995;167(4):473-479. [PubMed: 8829715]
- U.S. Bureau of the Census. Race and Hispanic Origin: National Population Estimates by Age, Race and Hispanic Origin: 2003. 2003 [Retrieved September 28, 2004]. from <http://www.census.gov/Press-Release/www/releases/img/cb04-98-table1.pdf>

Table 1

Demographic Characteristics of the Sample

Characteristic	PEDAL (n = 21)	FAST (n=15)	SG (n=23)	F, χ^2	P
Age (Years), M (SD)	50.7 (9.4)	47.4 (5.3)	47.3 (6.5)	1.38	.260
Education (Years), M (SD)	8.4 (3.3) ^a	12.0 (1.7) ^b	9.9 (2.9) ^a	7.06	.002
Duration of Illness (Years), M (SD)	23.5 (11.5)	24.5 (9.9)	23.8 (10.4)	0.04	.965
ARSMA Score, M (SD)	32.1 (11.4) ^a	50.7 (14.3) ^b	47.06 (16.79) ^b	10.42	<.001
Gender, n (%)					
Female	10 (48)	5 (33)	9 (39)	0.78	.678
Male	11 (52)	10 (67)	14 (61)		
Marital Status, n (%)					
Single	11 (52)	7 (46)	13 (56)	5.54	.477
Married/Cohabiting	3 (14)	1 (7)	0 (0)		
Divorced/Separated	6 (29)	6 (40)	10 (44)		
Widowed	1 (5)	1 (7)	0 (0)		
Diagnosis, n (%)					
Schizophrenia	19 (91)	11 (73)	20 (87)	2.13	.344
Schizoaffective Disorder	2 (9)	4 (27)	3 (13)		
Daily neuroleptic dose (mg) * M (SD)	263.6 (274.9) ^a	625.7 (497.3) ^b	289.6 (332.7) ^a	5.16	.009

Note. Group means with different superscripts are significantly different (Tukey's b). PEDAL = Programa de Entrenamiento para el Desarrollo de Aptitudes para Latinos; FAST = Functional Adaptations and Skills Training; SG = Support Group; ARSMA = Acculturation Rating Scale for Mexican Americans.

* Neuroleptic dose is Chlorpromazine equivalent.

Table 2
Comparison of Three Treatment Conditions on Treatment Outcomes

Measure	A PEDAL (n = 21)			B FAST (n = 15)			C SG (n = 23)			F	p	Post-hoc comparisons ^c	ES
	M	(SE)		M	(SE)		M	(SE)					
UPSA													
Baseline	44.69	(4.28)		58.94	(5.07)		59.26	(4.09)	6.62 ^a	.003	A>B	0.84	
6 Months	73.84	(3.28)		60.28	(3.90)		57.59	(2.90)			A>C B=C	1.07 0.18	
SSPA													
Baseline	24.62	(1.49)		24.00	(1.76)		27.91	(1.42)	3.31 ^a	.045	A>B	0.85	
6 Months	31.34	(1.23)		26.04	(1.51)		28.27	(1.10)			A=C B=C	0.55 -0.38	
MMAA													
Baseline	21.29	(1.77)		14.00	(2.09)		16.55	(1.73)	2.59 ^b	.085	A=B	0.63	
6 Months	11.75	(1.86)		17.70	(2.21)		17.13	(1.65)			A>C B=C	0.64 -0.07	
QWB													
Baseline	0.54	(0.02)		0.54	(0.02)		0.57	(0.02)	2.53 ^a	.089	A>B	0.76	
6 Months	0.57	(0.02)		0.51	(0.02)		0.54	(0.01)			A=C B=C	0.43 -0.40	
PANSS Total													
Baseline	63.43	(3.09)		60.33	(3.66)		61.96	(2.96)	1.94 ^a	.154	A=B	0.61	
6 Months	54.17	(2.76)		62.60	(3.28)		60.41	(2.42)			A=C B=C	0.50 -0.18	

Note. Pre-intervention means are unadjusted; Post-intervention means are adjusted for the baseline value of the outcome measure, years of formal education, acculturation score, and daily neuroleptic dose

^a df = 2,52

^b df = 2,51

^c Fischer's LSD

PEDAL = Programa de Entrenamiento para el Desarrollo de Aptitudes para Latinos; FAST = Functional Adaptations and Skills Training; SG = Support Group; UPSA = UCSD Performance-Based Skills Assessment; SSPA = Social Skills Performance Assessment; MMAA = Medication Management Ability Assessment; QWB = Quality of Well-Being; PANSS = Positive and Negative Syndrome Scale; ES = Cohen's d (standardized mean differences).