

# The Impact of a Peer Navigator Program in Addressing the Health Needs of Latinos With Serious Mental Illness

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**Objective:** The impact of a peer navigator program (PNP) on efforts to address the health needs of Latinos with serious mental illness was examined in a randomized controlled trial.

**Methods:** Latinos with a serious mental illness (N=110) were randomly assigned to the PNP (integrated care with a peer navigator [PN]) or to a treatment-as-usual control group (integrated care without a PN) for one year. Data on service engagement (scheduled and received appointments) were assessed weekly, and self-reports of recovery, empowerment, and quality of life were collected at baseline and at four, eight, and 12 months.

**Results:** Findings from group  $\times$  trial analyses of covariance (ANCOVAs) found main and interaction effects for scheduled

and achieved appointments, showing better engagement for the PNP group compared with the control group over the course of the study. Significant interactions were found for recovery, empowerment, and quality of life, showing greater improvement for the PNP group compared with the control group over year 1 of the study (multivariate ANCOVA;  $F=3.27$ ,  $df=9$  and  $98$ ,  $p<.01$ ).

**Conclusions:** In-the-field navigation by peers seems to enhance service engagement, recovery, and quality of life. Whether these results occurred because navigators helped overcome barriers to treatment—regardless of whether they were peers per se—needs to be examined in future research.

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People with serious mental illnesses such as schizophrenia and bipolar disorder experience significantly higher rates of morbidity compared with individuals of similar ages without these conditions (1). As a result, they are hospitalized for general medical problems more often (2) and die, on average, 15 to 20 years younger than other members of the same age cohort (3). These problems are worsened for Latinos with serious mental illness, who show significantly worse health problems compared with their counterparts in the Anglo population (4,5). Making this situation worse are disparities in health care services for Latinos. Service systems often lack providers who are fluent in Spanish and who are familiar with Latino value systems (6). For example, because social collectivism is an especially important value in the Latino community, Latino patients may have a greater need for family involvement in decision making and service implementation compared with other patients (7). Furthermore, services frequently lack attention to concerns related to immigration (8), and Latino neighborhoods lack accessible services (9) or third-party payment mechanisms (10) to improve affordability of these services.

This article reports on findings from a yearlong randomized controlled trial (RCT) of a peer navigator program (PNP) that was adapted to meet the health needs of Latinos

with serious mental illness. The PNP was developed to address health disparities among African Americans with serious mental illness. Program development began with community-based participatory research (CBPR) (11). Participants in a qualitative study led by the CBPR team (N=47) believed that African Americans with serious mental illness develop poor health because general medical health has lower priority on a homeless person's list of needs, because there is a lack of available and accessible services in a fragmented system, and because recurring psychiatric symptoms contribute to a feeling of being disoriented (12). One solution articulated by the CBPR team was to provide assistance navigating the fragmented system. In particular, African-American focus group respondents reflected on the ideas of employing patient navigators to assist people to meet their individual needs while traversing a complex health system. Respondents said peers would be especially beneficial as navigators.

Patient navigators have a rich history in medical services; they provide instrumental assistance (such as offering practical and logistic guidance on doctor's orders) and interpersonal support (13). The African-American CBPR team integrated findings from its qualitative research (14) to develop a PNP that assists African Americans with serious

mental illness. Results of a randomized clinical trial showed those receiving PNP were significantly more engaged in services than research participants who were randomly assigned to integrated care (14). In addition, the PNP group showed significant improvements in health, recovery, and quality of life compared with the control group (15).

For this study, a CBPR team of Latinos with lived experience and members of service provider and research teams adapted the PNP program for the health needs of Latinos. The PNP adaptation was informed by the results of a qualitative study led by the CBPR team (16). Consistent with results from the previous RCT on African Americans (14,15), we expected the RCT to show that Latinos with serious mental illness receiving PNP demonstrated better service use than the comparison group. In addition, we hypothesized that participants would show improved quality of life, recovery, and personal empowerment compared with those in the control group.

## METHODS

Latinos with serious mental illness were recruited from the City of Chicago and randomly assigned to a one-year trial of integrated care as usual or PNP plus integrated care. Research participants were randomly assigned to a condition upon completion of baseline assessments. The CBPR team defined serious mental illness as inability to meet work or independent living goals because of a *DSM* diagnosis, the definition of psychiatric disability used by the Social Security Administration (17). Research participants were asked to report current significant concerns about general medical health. Participants were not required to report concerns about specific illnesses or any element of severity, only that general medical illness currently limited “their quality of life or life goals.” They also were asked to report the absence of health services or system supports that could help them address these illnesses.

To recruit the sample, flyers were posted and widely disseminated in clinics and community centers by CBPR team members. The flyers yielded 161 potential participants who were screened for essential inclusion criteria. Fifty-one were excluded because they did not report currently having a mental illness or were receiving case management services elsewhere that assisted in meeting their general health goals. All aspects of the protocol were approved by the Institutional Review Board at the Illinois Institute of Technology. Research participants completed service engagement measures weekly and other outcome measures at baseline, four months, eight months, and 12 months. They were paid \$25 plus \$10 for travel for each data collection session.

### Peer Navigator Program

During weekly meetings over the course of six months, the CBPR team used information from the qualitative study (16) to adapt the previous PNP manual and workbook for Latinos

with serious mental illness. Four bilingual Latinos who were in recovery from serious mental illness were hired as full-time peer navigators (PNs). None of the PNs were hired from the CBPR team. During employment interviews, they were asked about current beliefs and skills in areas believed by the CBPR team to be important to peer services, including recovery, self-determination, and listening and problem-solving skills.

Using information from the qualitative study, the CBPR team adapted the African-American version of the PNP for Latinos with serious mental illness (16). The adaptations addressed the disparity concerns listed above, namely by hiring Latino PNs who were bilingual and familiar with service recipient values. The adaptation included best practices for engaging family members in services (7). The PNP resource guide provided direction on accessible and culturally relevant health services in the varied neighborhoods of Chicago. The manual was governed by basic principles, including eight basic values (such as accepting, empowering, recovery focused, and available), seven qualities of being part of a team (such as networked, accessed, informed, resourced, and supervised), and six fundamental approaches (such as proactive, broad focused, active listener, shared decision making, and problem focused) (12). The PNP included strategies from cognitive-rehabilitation therapy and social skills and supports to assist navigators in addressing the cognitive and social disabilities of participants that might undermine service engagement (18).

PNs used these skills in face-to-face meetings in places and at times that were convenient to service recipients. Goals of the meetings were to review health concerns and actions to achieve these concerns. PNs contacted participants at least once weekly. Meetings occurred as often as five times a week depending on participants' needs.

Research assistants shadowed PNs one on one for four hours quarterly to collect fidelity data. Space does not permit summary of these analyses; briefly, PNs showed, on average, 82% of skills comprising the PNP.

### Comparison Condition

Integrated care alone, provided by the federally qualified health center (FQHC) where the study took place, was the comparison condition. It combines primary and mental health care in a design similar to other research on integrated care for Latinos with serious mental illness (19). Integrated care at the FQHC corresponds with a level-5 degree of integration: shared location; shared medical record; frequent interservice referrals; and regular, informal consultation (20). In practice, the frequency and nature of doctor visits varied with patient need. Research participants randomly assigned to PNP also received the integrated care provided by the FQHC.

### Measures

Measures were provided to research participants in Spanish or English depending on participants' preference.

**Service engagement.** Research participants were asked to maintain a weekly contact report (WCR) listing the dates of all health-related appointments, clinic and provider name, reason for appointment, and whether the appointment was missed or achieved. Each week of the study, a research assistant telephoned research participants to obtain the list of specific appointments entered in the WCR for the previous week. The research participant was paid \$5 for completing each weekly interview. The service engagement measures were translated into Spanish and back-translated into English by two independent bilingual research assistants. The WCR has been used in previous research and shown to be a sensitive measure of the effect of PNP on service engagement (14).

**Impact of PNP.** Research participants completed measures of recovery, personal empowerment, and quality of life. Both English and Spanish versions of the measure existed prior to the study. The PNP promoted health in ways that support self-determination. Hence, we expected two indicators to show significant improvement for PNP participants: empowerment and recovery. Personal empowerment was measured by using the Righteous Anger (RA) subscale of the 28-item Empowerment Scale. Agreement was reported on a 4-point agreement scale from 1, strongly agree, to 4, strongly disagree, on items such as "Getting angry about something is often the first step in changing it." The four items of the RA subscale were added together, with lower scores signifying greater empowerment. The RA subscale of the Empowerment Scale has good psychometric support (21,22). Recovery was assessed by using the 24-item Recovery Assessment Scale (RAS) (22). Each item (for example, "I'm hopeful about the future") is rated on a 5-point scale, from 1, strongly disagree, to 5, strongly agree. An overall recovery score was determined by adding scores for all items, with higher scores representing better recovery. A recent meta-analysis of 77 articles supports the overall RAS score as a measure of recovery (23).

Quality of life was assessed by using Lehman's (24) Quality of Life Scale (QLS). Research participants answered six items (for example, "How do you feel about: your life as a whole?") on a 7-point scale, from 1, terrible, to 7, delighted. Research has supported its internal consistency as well as its relationships with recovery and empowerment (25). An overall QLS score was determined by adding scores for all items, with higher scores indicating better quality of life. We expected that improved health, empowerment, and recovery would enhance self-reported quality of life.

### Data Analyses

Patterns in missing data were assessed with noted imputations where appropriate. Differences in demographic characteristics for the PNP and treatment-as-usual groups were determined, and they informed subsequent analyses of covariance (ANCOVAs); covariates are summarized in the Results section. Four weekly assessments of scheduled and achieved appointments per month were summed over the

course of 12 months. Frequency counts tend to be nonnormally distributed, which violates assumptions of ANCOVAs. Hence, we transformed scheduled appointment counts with a  $\log_{10}$  transformation. Achieved appointments for each individual were operationalized as a proportion of the number scheduled. A variance-stabilizing transformation was applied to these proportions (26). We separately completed  $2 \times 12$  ANCOVAs (group  $\times$  month  $\times$  covariates) for scheduled and achieved appointments to compare change in appointments between the PNP and control groups during the overall course of the study. We completed  $2 \times 4$  ANCOVAs (group  $\times$  trial  $\times$  covariates) comparing the scores on the three outcome measures for the PNP and control groups over time.

## RESULTS

We imputed missing information by averaging available items as long as at least 80% of the item responses were available (27). Table 1 summarizes demographic characteristics by group of research participants. Overall, research participants were 58% female ( $N=64$ ) and  $45.6 \pm 10.9$  years old on average. Most members of the group (84%,  $N=92$ ) identified as heterosexual, and their level of education varied somewhat, with 61% ( $N=67$ ) having a high school diploma or less; 32% ( $N=35$ ) reported some kind of employment. Self-reported diagnoses included major depression ( $N=75$ , 68%), bipolar disorder ( $N=8$ , 7%), anxiety disorder ( $N=23$ , 21%), posttraumatic stress disorder ( $N=2$ , 2%), schizophrenia ( $N=3$ , 3%), schizoaffective disorder ( $N=1$ , 1%), and attention-deficit hyperactivity disorder ( $N=1$ , 1%).

As summarized in Table 1, the two groups were shown to differ significantly by age (the PNP group was older) and place of birth (more participants in PNP were born outside the continental United States). Of those born outside the continental United States, 45 (57%) were born in Mexico, five (6%) in Cuba, two (3%) in the Dominican Republic, eight (9%) in Central America, and two (3%) in South America. Place of birth was dummy coded and was included as a covariate in our ANCOVAs (0, born in the United States; 1, born outside the United States). Cohen and colleagues (28) describe use of a dichotomous variable as a covariate in ANCOVAs. The two covariates accounted for 9% of the between-subject variance for scheduled appointments, 7% for achieved appointments, 5% for empowerment, and less than 1% for RAS and QLS.

### Service Engagement

In checking the impact of data transformation, we noted significant differences in variance for scheduled appointments (Box  $M=141.04$ ;  $F=1.35$ ,  $df=91$  and  $36,556$ ,  $p<.05$ ) and achieved appointments (Box  $M=173.01$ ;  $F=1.66$ ,  $df=91$  and  $36,556$ ,  $p<.01$ ). Mean numbers of scheduled and achieved appointments per month for PNP and control groups are summarized separately in Table 2. A  $2 \times 12$  ANCOVA (group  $\times$  month) that was controlled for age and place of birth found a significant group effect for scheduled

appointments ( $F=7.50$ ,  $df=1$  and  $106$ ,  $p<.01$ ). There was also an effect for time interval ( $F=1.98$ ,  $df=10$  and  $1,073$ ,  $p=.03$ ); the interaction effect was described by a nonsignificant trend ( $F=1.75$ ,  $df=10$  and  $1,072$ ,  $p=.07$ ). Together, these results suggest that scheduled appointments steadily increased more for the PNP group compared with the control group over the yearlong study.

Changes in achieved appointments were slightly different. The group effect for the  $2 \times 12$  ANCOVA was significant ( $F=4.85$ ,  $df=1$  and  $106$ ,  $p<.05$ ). Although the time effect was not significant, the interaction was significant ( $F=1.77$ ,  $df=11$  and  $1189$ ,  $p<.05$ ). This finding also implies that there was a relatively steady increase in achieved appointments for the PNP group compared with the control group but that monthly achievement rates did not seem to follow a wholly consistent pattern; the intervention group had significantly higher achieved appointments only in months 1, 2, 5, 9, and 12.

### Impact of PNP

Means of total scores for the RAS, ES, and QLS by group and follow-up are summarized in Table 3. The range of internal consistencies were good for the total scores across the four measurement periods: RAS (.87–.92), ES (.66–.78), and QLS (.80–.86). A  $2 \times 4$  (group  $\times$  time) multivariate ANCOVA of scores on the RAS, ES, and QLS (with age and place of birth as covariates) indicated a significant group  $\times$  time interaction ( $F=3.27$ ,  $df=9$  and  $98$ ,  $p<.01$ ). The results were fairly consistent with ANCOVA interactions being significant for all three outcomes. Recovery scores were found to improve more for those in the PNP group compared with the control group over the yearlong study ( $F=12.55$ ,  $df=3$  and  $286$ ,  $p<.001$ ). The main effect for group was nonsignificant, but the main effect for time was significant ( $F=2.95$ ,  $df=3$  and  $286$ ,  $p<.05$ ). Empowerment scores were found to also improve more for the PNP group compared with the control group over 12 months ( $F=2.93$ ,  $df=3$  and  $318$ ,  $p<.05$ ). In this case, neither main effects for group nor time were significant. Finally, quality of life improved more for the PNP group versus the control group over the 12 months ( $F=3.30$ ,  $df=3$  and  $311$ ,  $p<.05$ ). Once again, neither main effects for group nor time were significant.

**TABLE 1. Characteristics of participants in the peer navigator program (PNP) and a control group at baseline**

Characteristic	PNP (N=55)		Control (N=55)		Test statistic	df	p
	N	%	N	%			
Gender					$\chi^2=2.45$	2	.29
Male	26	48	18	33			
Female	28	51	36	66			
Transgender	1	2	1	2			
Sexual orientation					$\chi^2=2.34$	4	.80
Heterosexual	46	84	46	84			
Homosexual	2	4	2	4			
Bisexual	4	7	3	6			
Queer (identify as none of the above)	2	4	3	6			
Age (M $\pm$ SD)	48.6 $\pm$ 9.9		42.7 $\pm$ 11.9		$F=7.93$	1 and 2	.006
Place of birth					$\chi^2=10.11$	1	.001
United States	8	15	23	42			
Outside continental United States, including Puerto Rico	47	86	32	58			
Preferred language					$\chi^2=3.15$	1	.08
English	16	29	25	46			
Spanish	39	71	30	55			
Education					$\chi^2=3.60$	5	.61
Less than high school, no GED	23	42	16	29			
High school or GED	13	24	15	27			
Some college	9	16	15	27			
Associate degree	3	6	3	5.5			
Bachelor's degree	5	9	3	5.5			
More than a bachelor's degree	2	4	3	5.5			
Employment					$\chi^2=.377$	1	.54
Yes	16	29	19	35			
No	39	71	36	66			
Diagnosis					$\chi^2=57.47$	8	.38
Major depression	32	58	40	73			
Bipolar disorder	2	4	6	11			
Anxiety disorder	17	31	6	11			
Posttraumatic stress	1	2	1	2			
Schizophrenia	3	6					
Schizoaffective disorder			1	2			
ADHD			1	2			

### DISCUSSION AND CONCLUSIONS

This study examined the effects of a PNP to better engage Latinos with serious mental illness in health care services. Engagement was assessed by change in the number of monthly scheduled and achieved appointments. Results seemed to support hypotheses, with a rapid increase in appointments almost from the person's enrollment in PNP. Namely, significant differences were found in main effects for group over the 12 months of the study for both scheduled and achieved appointments. Interaction effects (a nonsignificant trend for scheduled appointments and a significant change for achieved appointments) suggested that there was a steady increase in appointments for the PNP group compared with the control group. This change was similar to



**TABLE 2. Scheduled and achieved appointments among participants in the peer navigator program (PNP) and a control group, by month**

Month	Scheduled appointments						Achieved appointments					
	PNP		Control		Total		PNP		Control		Total	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
1	6.3	4.2	3.4	4.3	4.9	4.5	4.5	3.1	2.1	3.0	3.3	3.3
2	8.6	5.6	4.7	5.6	6.6	5.9	4.3	3.4	2.3	2.7	3.3	3.2
3	8.1	6.3	4.7	5.3	6.4	6.0	4.1	4.2	2.0	2.4	3.0	3.6
4	7.7	5.7	5.6	6.1	6.6	6.0	3.9	2.7	2.3	2.7	3.1	2.8
5	6.3	6.4	4.3	5.6	5.3	6.0	4.1	4.3	2.4	3.2	3.3	3.9
6	8.0	7.4	5.1	6.9	6.6	7.2	5.2	5.4	2.9	4.7	4.1	5.1
7	7.8	7.4	5.9	7.3	6.8	7.4	4.7	5.4	3.0	4.8	3.8	5.2
8	8.6	7.1	5.8	7.8	7.2	7.5	5.1	5.4	3.1	5.5	4.1	5.5
9	7.7	7.0	4.7	7.4	6.2	7.4	4.8	5.1	2.9	5.6	3.9	5.4
10	8.1	7.4	5.1	7.1	6.6	7.4	4.5	4.7	2.8	5.5	3.7	5.2
11	7.1	7.5	5.2	7.0	6.1	7.3	3.8	4.6	2.8	4.7	3.3	4.6
12	6.9	7.4	5.6	7.4	6.3	7.4	3.5	4.2	3.1	5.6	3.3	4.9
13 <sup>a</sup>	7.5	7.2	5.4	8.1	6.5	7.7	4.1	4.5	2.9	6.0	3.5	5.3
Total	98.8	73.0	65.5	74.4	82.1	75.2	56.7	48.9	34.8	49.0	45.7	50.0

<sup>a</sup> Data collected after the end of the PNP

the findings of previous research on a PNP for African Americans with serious mental illness (15). Peer navigators seem to help people with serious mental illness better engage with varied health services. In this study, this may occur, in part, because peer navigators helped Latinose overcome cultural and language barriers to services (5,6,8). This included practical activities, such as traveling across the city for appointments (16).

PNP and service engagement were also believed to improve recovery, empowerment, and quality of life of Latinos with serious mental illness. Research participants in the PNP showed significant improvement in recovery, empowerment, and quality of life over the 12-month study. Improvements in empowerment were especially noticeable in the first four months of PNP involvement. This may have occurred because a similar increase in service engagement (scheduled and achieve appointments) was noticed at that time. This finding echoes the positive results of the earlier PNP study on African Americans with serious mental illness (15). Engaging Latinos with serious mental illness in existing health care services through peer navigators is an important aid

in addressing health and recovery needs. These findings also support the growing literature showing benefits of peer services for the health and wellness of people with serious mental illness (29,30).

There were several limitations to this study. Results represent a small group of participants, of which 10% were lost to follow-up, although this is fairly strong retention for research participants with serious mental illness. Diminished sample size also prevented us from determining how the impact of PNP services varied with individual differences. We were, for example, unable to determine whether differences varied by psychiatric diagnosis, including whether they interacted with a history of substance use disorders. Even more, we omitted asking about substance use disorders, an important moderator of integrated

care and peer services. Diagnoses were self-reported; future research might include a structured interview to assess this variable. Mediating effects of characteristics specific to being Latino—for example, primary language and place of birth—were not examined here and should be the focus of future work.

We hypothesized that navigator services provided by peers would enhance the quality of navigation in health care services. However, this study did not examine peer influences per se, a similar limitation in our previous study of PNPs (15). Future research will need to directly compare navigator interventions provided by peers with those offered by paraprofessionals without lived experience. Also, research needs to unpack qualities of peerness. For example, are the benefits of PNPs attributable to shared ethnicity or experiences with mental illness? In a similar manner, future studies should assess how aspects of the PNP lead to specific benefits. Finally, time in the program was one year, which is still somewhat short in the health history of Latinos with serious mental illness. Therefore, researchers need to investigate how health improvement can be maintained after the PNP ends.

**TABLE 3. Scores for the Recovery Assessment Scale (RAS), the Empowerment Scale, and the Quality of Life Scale among participants in a peer navigator program (PNP) and a control group, by time of assessment**

Time of assessment	RAS <sup>a</sup>						Empowerment Scale <sup>b</sup>						Quality of Life Scale <sup>c</sup>					
	PNP		Control		Total		PNP		Control		Total		PNP		Control		Total	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
Baseline	78.9	10.6	85.3	10.9	82.1	11.2	11.7	1.3	11.1	1.2	11.4	1.3	23.5	6.9	26.0	6.2	24.8	6.7
Follow-up																		
4 months	86.0	10.2	85.8	10.5	85.9	10.3	11.1	1.5	10.8	1.4	11.0	1.5	25.9	5.2	27.1	6.5	26.5	5.9
8 months	87.4	9.9	85.5	10.5	86.4	10.2	10.8	1.3	11.0	1.4	10.9	1.3	26.4	5.6	26.4	7.5	26.4	6.5
12 months	88.3	9.8	85.3	11.5	86.8	10.7	10.9	1.2	11.0	1.4	10.9	1.3	27.4	5.8	26.4	7.1	26.9	6.5
Average	85.1	8.7	85.5	9.3	85.3	9.0	11.1	1.0	11.0	1.1	11.0	1.1	25.8	5.0	26.5	6.0	26.1	5.5

<sup>a</sup> Possible scores range from 24 to 120, with higher scores representing better recovery. A 2×4 (group × time) analysis of covariance (ANCOVA) with age and place of birth as covariates found a significant difference between the PNP and control groups over time ( $F=12.5$ ,  $df=3$  and  $286$ ,  $p<.001$ ).<sup>b</sup> Possible scores range from 4 to 16, with lower scores representing greater empowerment. A 2×4 (group × time) analysis of covariance (ANCOVA) with age and place of birth as covariates found a significant difference between the PNP and control groups over time ( $F=2.9$ ,  $df=3$  and  $318$ ,  $p<.05$ ).<sup>c</sup> Possible scores range from 6 to 42, with higher scores representing better quality of life. A 2×4 (group × time) analysis of covariance (ANCOVA) with age and place of birth as covariates found a significant difference between the PNP and control groups over time ( $F=3.3$ ,  $df=3$  and  $311$ ,  $p<.05$ ).

These findings have implications for psychosocial practices meant to address the health and wellness of people with serious mental illness. Individuals in recovery can be trained in the discrete skills that comprise PNP to help peers identify and address their health goals. In addition, findings show how PNs can specifically address the needs of Latinos. Research shows that PN services should include strategies that address issues leading to disparities: language, values, immigration, accessibility, and insurance coverage. Navigation is a different approach than other peer-led services that have been developed and tested for use by people with mental illness, such as psychoeducation programs meant to teach medical self-management living skills (31,32). Peer navigation is meant to provide hands-on assistance grounded in the field and in the moment. It does so by echoing principles of recovery and self-determination.

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