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Toward Reducing the Duration of Untreated Psychosis in a Latinx Community

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Objective: To carry out and evaluate a communications campaign (La CLAVE) to reduce the duration of untreated psychosis (DUP) in a U.S. Latinx community. **Method:** We employed evidence-based messaging in multiple media outlets. We recruited 132 Latinxs with first-episode psychosis (FEP) and caregivers seeking mental health care within a high-density Latinx community. We evaluated the campaign's dissemination, the extent to which the community received the campaign message, and the campaign outcome. We tested whether DUP (number of weeks) changed across three time periods (16-month baseline, 2-year campaign, and 16-month postcampaign) and whether participants' language background (primarily Spanish speaking or English speaking) moderated change in DUP. **Results:** The campaign was disseminated widely. During the height of the campaign over a 1-year period, our team distributed 22,039 brochures and performed 740 workshops. The campaign message was received by the community as noted for example by increases in the number of unduplicated weekly calls to the campaign's 1-800 number. Applying square root transformations to DUP, we found a significant main effect for language background but not for campaign period nor their interaction. The unadjusted mean DUP for Spanish-speaking persons with FEP was more than twice as high as the mean DUP for English-speaking persons with FEP. **Conclusion:** Spanish-speaking Latinxs with FEP are especially in need of early psychosis treatment. The campaign reached the community but additional steps are needed to reduce treatment delay. Greater attention is needed to increase access to early intervention services for communities of color.

What is the public health significance of this article?

This study finds that Spanish-speaking Latinxs are at high risk for prolonged duration of untreated psychosis. It also provides evidence that a large-scale campaign to promote help-seeking for serious mental illness can be successfully implemented in a U.S. Latinx community. Greater efforts to increase the campaign reach and integration of campaign activities and mental health services are needed to reduce treatment delay within the Latinx community.


Keywords: duration of untreated psychosis, U.S. Latinxs, community campaign, first-episode psychosis, Spanish-speaking

There is growing optimism in the treatment of psychotic disorders. Intervention services that integrate multimodal treatments for the early phase of schizophrenia spectrum disorders are effective in reducing clinical symptoms and enhancing social

functioning (Correll et al., 2018; Kane et al., 2016). In a related line of study, multiple reviews find that shorter treatment delay is associated with reduced symptomatology and higher quality of life (Penttilä et al., 2014; Perkins et al., 2005). Together the

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intervention trials and the duration of untreated psychosis (DUP) studies indicate that efforts to engage persons with schizophrenia and related psychotic disorders early on in their illness course have the potential to improve their functioning and reduce their risk of developing chronic disorders.

Duration of Untreated Psychosis Reduction Initiatives

One important challenge then is to help persons with first-episode psychosis (FEP) seek treatment as early as possible. To date, such efforts have resulted in mixed findings. On the positive side, the early Treatment and Intervention in Psychosis Study (TIPS) carried out in Norway and Denmark (Melle et al., 2004), and more recently Mindmap conducted in New Haven Connecticut (Srihari et al., 2022), successfully demonstrated that the DUP can be reduced. Both research teams applied rigorous quasi-experimental designs in which an intensive campaign along with early detection and intervention services were carried out in the experimental communities with the aim of increasing the recognition of the signs and symptoms of psychosis in the community. The control communities included the early intervention services but not the campaign. The median DUP decreased in both experimental sites relative to the control sites (TIPS: 5 vs. 16 weeks; Mindmap: 21 vs. 61 weeks).

In contrast to these two successful DUP reduction efforts, there is little other evidence to support the effectiveness of DUP reduction interventions. In an important meta-analysis of 16 controlled DUP reduction studies, Oliver et al. (2018) concluded that there is “a lack of robust evidence” to indicate that DUP reduction efforts are successful. To address the limited findings, Lloyd-Evans et al. (2011) argue that multilevel efforts to engage various sectors of a community (e.g., families and schools) may increase the likelihood of success in shortening treatment delay. The potential value of reducing treatment delay for those with FEP appears to be great; accomplishing that objective has proven to be quite difficult.

Neglect of Low- and Middle-Income Countries and Communities of Color

A significant limitation of published DUP reduction efforts is that none have been conducted in low- and middle-income countries. The 16 sites identified by Oliver and associates were all located in high-income countries. Moreover, there was little attention to diverse communities within those countries; most adhered to a one-size-fits-all communication campaign. The Melbourne (Krstev et al., 2004), Birmingham (Connor et al., 2016), and Singapore (Chong et al., 2005) programs refer to the diverse groups within their communities, but there was no report of whether the content of the campaign message was adapted for the different groups. The Singapore study, however, did translate their docudrama into four languages. The relevance of the program content may be limited for specific communities that do not share the linguistic and cultural background of the majority group. Specific efforts to reach out to linguistic and ethnic communities are especially important when those communities are at high risk for prolonged DUP (Yamada et al., 2009). In the U.S., for example, those Latinxs who are Spanish speaking or who are immigrants are less likely to use mental health services for a range of disorders than those who speak English and are U.S. born (Alegría et al., 2007).

United States Policy Initiatives and Importance of Community Campaigns

Given the important findings from the Recovery After Initial Schizophrenia Episode (RAISE; Kane et al., 2016) and earlier clinical trials in Europe (e.g., Bertelsen et al., 2008), U.S. policy initiatives have supported the implementation and investigation of coordinated specialty care (CSC) for the treatment of early psychosis. Since 2014, the Substance Abuse and Mental Health Services Administration has provided funds to states to initiate these services (Dixon, 2017), which are now available in 48 states (Dixon et al., 2018).

Despite the growing evidence base and policy support, considerable efforts are needed in the U.S. to increase access to CSC programs (Dixon, 2017). For the most part, the field has focused on the critical task of implementing and evaluating programs of treatment. It is important to remember that multifaceted campaigns made the critical difference in the TIPS and Mindmap studies (Joa et al., 2008; Srihari et al., 2022). More research is needed to refine and evaluate such campaigns.

The pathways to care model of Rogler and Cortes's (1993) sheds light on why campaigns are vital to early intervention programs. As illustrated in Figure 1, the first path begins at symptom onset and depends on the family to recognize the developing illness in their loved ones. The second path passes through the social networks that one contacts in seeking assistance. These include outside family members, friends, schools, health providers, and law enforcement. The third pathway is the mental health care system itself, from initial contact through treatment adherence. Although CSC programs have proven successful in addressing the barriers that those with FEP encounter in usual mental health care, such as treatment dropout and misdiagnosis (Birchwood et al., 2013; Cabassa et al., 2018), a multifaceted public campaign, as demonstrated by the TIPS and Mindmap studies (Melle et al., 2004; Srihari et al., 2022) and recommended by others (Lloyd-Evans et al., 2011; Oluwoye et al., 2020), is essential to reach out to families and the lay and professional networks identified in the first two paths. This is especially the case for communities that tend not to seek mental health services (see Moe et al., 2018, for a related model that contextualizes the multilevel factors influencing access to specialized care).

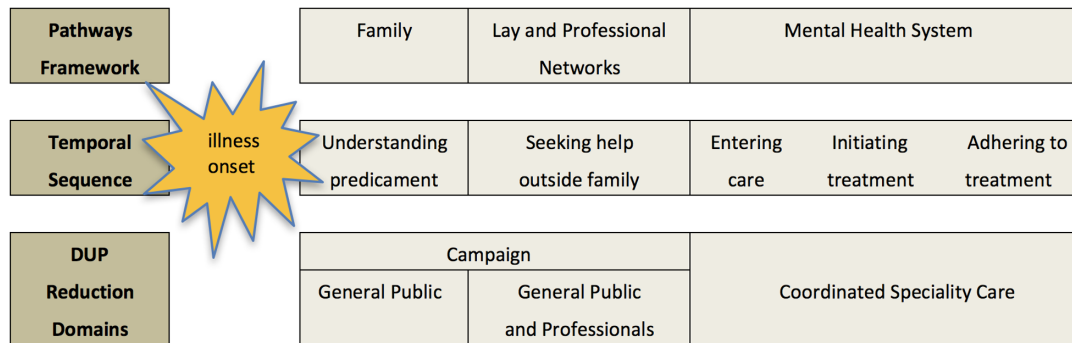
La CLAVE to Detect Serious Mental Illness

Although there is clear conceptual and empirical evidence to support the value of campaigns, the science in the development of campaigns for early psychosis is limited. For example, when campaigns or related efforts are conducted, investigators often indicate that they are addressing psychosis literacy. But there is little reported evidence that the campaign messages being implemented actually increase literacy (see Lester et al., 2009, for an exception).

Over the last 13 years, our team has developed a program of research to develop, refine, and evaluate campaign messaging to promote psychosis literacy in Latinxs residing on both sides of the U.S.–Mexico border. Our studies were guided in part by principles of effective campaign research that address *message development* (Noar, 2006). We applied *theory* linking health knowledge, illness attributions, and professional help-seeking to guide message development (Garro, 1998; Institute of Medicine, 2004; Yeh et al., 2005). We considered *segmentation* by focusing on Spanish-speaking Latinxs in Southern California given their documented low use

Figure 1

Rogler and Cortes' Pathways to Care Model and Alignment With Temporal Sequence of Help-Seeking and Domains to Reduce Duration of Untreated Psychosis (DUP)



Note. See the online article for the color version of this figure.

of mental health services, and, in particular, women as they are usually the primary caregivers (Aguilera et al., 2010). We developed novel and creative messages such as the acronym—*La CLAVE* to capture the heart of the message as it refers to clue, key, or guide. Our main message is “Use *la clave* to detect serious mental illness in others.” C stands for creencias falsas (false beliefs), L for lenguaje desorganizado (disorganized speech), A for alucinaciones (hallucinations), and v and e for the type of hallucination (ver [see] o escuchar [hear] things). The creative messaging included music, art, television, and cinema to illustrate key concepts. Last, we conducted formative research with the target audience in the U.S. and Mexico to test the messages’ effectiveness. In fact, with an eye toward an eventual campaign relying on outreach personnel, we developed and tested four ways to deliver the message: (a) *La CLAVE en vivo*—a live presentation facilitated with a Power Point presentation including audio and video clips of popular media (López et al., 2009); (b) *La CLAVE la clase*—a video of the lecture-like presentation recorded in a studio (Casas et al., 2014); (c) *La CLAVE la película*—a brief narrative film (Calderon et al., 2022; Hernandez et al., 2016); and *La CLAVE sin luz*—a story-based flip chart that requires no electricity (Calderon et al., 2015). Single-group designs (Calderon et al., 2015, 2022; López et al., 2009), randomized control groups (Casas et al., 2014; Nicasio et al., 2022), and a qualitative assessment (Hernandez et al., 2016) together indicate that each version of the *La CLAVE* tool kit increases psychosis literacy. The campaign messaging research positioned us to launch our own campaign.

The Present Study

The overall objective of the present study was to carry out and evaluate a campaign to reduce the DUP in a U.S. Latinx community guided by principles of *campaign dissemination and implementation* (Noar, 2006). In this report, we first document how we strategically positioned the messaging by noting the type and number of public (e.g., shopping centers) and professional (e.g., schools) sites. As part of the process evaluation of campaign implementation, we then assessed the degree to which the message was received by those seeking mental health care services (persons with FEP and caregivers) as well as Latinx community residents. An

additional process assessment applied a pre–post design of the campaign implementation (Brown et al., 2017) to examine whether there was an increase in awareness of the *La CLAVE* program. Last, to assess the outcome, we evaluated whether the DUP changed across three time periods (baseline, campaign, and postcampaign). We expected a significant reduction in DUP from baseline to the campaign period and explored whether the DUP level would maintain its campaign level or return to baseline. We also examined the role of community residents’ primary language (Spanish or English). Given prior research, we hypothesized that Spanish-speaking persons with FEP would have a longer DUP. We also explored whether their primary language moderated the effectiveness of the campaign. Last, to shed light on pathways to care, we examined two DUP outcomes, one to any treatment and the second to the first prescription of antipsychotic medication.

Method

Setting

The study was carried out in a largely suburban area in the northeast sector of the San Fernando Valley (SFV) within Los Angeles County. We selected six zip codes with the highest percentage of Latinx residents based on the 2010 U.S. Census: San Fernando (92%), Arleta/Pacoima (88%), Sylmar (75%), Sun Valley (74%), Panorama City (72%), and North Hills (59%). Overall, 311,999 Latinxs comprised 77% of the area’s population.

We also selected these communities because they are primarily served by the safety net public hospital and outpatient mental health center. The medical facility houses a psychiatric emergency unit and an inpatient unit. The outpatient clinic is located 8 miles from the medical center. One of the key investigators (AK) serves as the medical director of the outpatient unit and the chief of psychiatry overseeing both the emergency and inpatient units. He and his staff were in a position to identify potential participants for the study at the time of their initial evaluation and ask them and their family caregivers whether they would be interested in participating in a study. Of the 132 participants, most were identified through the inpatient/psychiatric emergency units (*n* = 70, 53%), then the outpatient clinic (*n* = 50, 38%), and other sources (*n* = 12, 9%).

The research protocol was approved by the University of Southern California's Institutional Review Board.

Once individuals agreed to participate in the study, our bilingual research team led by a postdoctoral researcher, a nurse, and project assistants consented and screened them. If they were eligible, we interviewed them at their preferred location, either the mental health facility or their home. Each participant was compensated for their participation at \$15 an hour. The interviews usually took between 2 and 3 hr. If the participant was symptomatic and unable to complete the interview, the research team checked back with them later to see if they were better able to complete the interview. In six cases, the individual with FEP chose not to be interviewed but agreed for their caregiver to serve as the main informant. Follow-up assessments were carried out (e.g., a 6–8-week follow-up with a subsample to assess the test–retest reliability of our DUP measure).

Campaign

Our campaign team consisted of two full-time campaign coordinators, a public relations firm, and the Principal Investigator and campaign designer (DM) who together supervised the team's combined efforts. The campaign coordinators were women with considerable experience and interest in working in the community. Considerations in selecting the coordinators included their Spanish language skills, their lived experience as Latinxs in their native Mexico and Puerto Rico as well as in the Latinx community in Southern California.

The campaign coordinators carried out four main activities. In the early part of the campaign, they first identified the relevant organizations (e.g., churches, schools, health and mental health facilities), businesses (e.g., beauty/nail salons, shopping malls, swap meets), and community leaders (e.g., political leaders and heads of community organizations). They then visited many of the organizations and individuals and distributed bilingual brochures. The brochures included a brief description of the three key psychotic symptoms, contact information, and the campaign website. Third, the team set up a booth at resource fairs (health, social services, gang prevention), events held at the local parks (e.g., 5 km run), and businesses (e.g., swap meets). Community coordinators would stand next to a 6-foot La CLAVE vertical poster and distribute brochures to those who passed by. If someone wished for a more private conversation, they would be invited to talk beneath a canopy, and on some occasions, they were shown the La CLAVE 15-min narrative film on a laptop computer. The fourth main set of activities included 60–90-min workshops conducted across a wide range of community organizations. Some meetings were comprised exclusively of professionals (e.g., health and mental health care staff). Most included primarily community residents and their organization's leaders. The campaign coordinators followed a workshop manual in presenting the La CLAVE film and initiating a discussion. An evaluation of the workshops carried out by the community coordinators during the campaign indicates that their workshops resulted in an increase in the participants' psychosis literacy (Calderon et al., 2022). The campaign coordinators were housed in the community, first in a church, then a health clinic, and finally a social service agency.

VPE public relations (www.vpepr.com) is a woman-owned traditional and digital communications agency specializing in the

Latinx market. They provided media relations (contact with print, radio, and television outlets), community outreach (setting up stakeholder meetings and advertising), and social media engagement strategies (e.g., website development, www.uselaclave.com). The campaign materials encouraged people to contact the outpatient mental health clinic to request an evaluation for someone who may be experiencing psychosis.

Design

For the pre-post implementation assessment, we evaluated whether there was a difference in the number of participants who had learned of La CLAVE across the campaign time periods. We carried out this assessment with three groups: persons with FEP, their caregivers, and respondents to an in-person household survey.

For the main analysis, we carried out a 16-month baseline assessment (May 1, 2014 to August 31, 2015), a 24-month campaign (September 1, 2015 to August 31, 2017), and a 16-month postcampaign assessment (September 1, 2017 to December 31, 2018). The baseline assessment serves as a historical control, similar to what was used in the early stages of the TIPS study (Larsen et al., 2007). The postcampaign assessment was carried out to assess the sustainability of the expected reduction in DUP. We examined the role of the help-seeker's language background (Spanish or English) to complete the 3 × 2 factorial design.

Participants

Inclusion and exclusion criteria were informed by the TIPS study. We included persons seeking care ages 15–64 who met criteria for a psychotic disorder (i.e., schizophrenia, schizoaffective, schizophreniform, psychotic depression, bipolar disorder with psychosis, brief psychotic disorder, or psychotic disorder not otherwise specified) based on the Structured Clinical Interview for DSM-IV. Additional inclusion criteria were (a) identified as Latinx, (b) received antipsychotic medication for less than 1 year, and (c) able to provide fully informed consent. In contrast to key studies that used a shorter time period (3 months, Melle et al., 2004; 6 months, Kane et al., 2016), extending the time period to 1 year increased the number of eligible participants without jeopardizing the study's internal validity. Those with psychotic disorders due to medical conditions or substance abuse were excluded.

For the pre–post assessment of the campaign implementation, we included those with FEP, their caregivers (18 years and older), and residents living in one of the designated communities who identified as Latinx and were 18–65 years of age.

Transparency and Openness

The raw data and measures are available from the first author upon request. The study was registered with [Clinicaltrials.gov](https://clinicaltrials.gov).

Measures

Campaign Dissemination

We counted the number of sites and the number of times specific sites were visited. We also counted the number of brochures that the campaign coordinators distributed. The number of brochures often

corresponded to the number of people contacted at given sites (e.g., health fairs, workshops, swap meets), but for other sites (e.g., schools and beauty salons) campaign staff met with a small number of people and left a number of brochures (usually 20).

Receiving the Campaign Message

We assessed the degree to which the campaign message was received in two ways. First, we purchased a 1-800 number and placed that number on all our media. The calls went directly to the clinic, and the time of the calls and the specific phone numbers were recorded. Each month the 1-800 company sent us an Excel file with that data. A project assistant reviewed the list and counted a given phone number only once. We were interested in the number of individuals who called, not the number of calls. The phone number prefixes were used to estimate whether the caller lived in the SFV, outside the SFV but within the state of California, or outside the state of California. As a second method of assessing the campaign reach, we asked participants whether they had heard of La CLAVE and if so where they learned of it. We coded the number of affirmative responses and documented the reported sources.

Campaign Outcome

We defined DUP in two ways, the number of weeks from the onset of FEP (a) to any treatment (DUP-any) and (b) to initiation of antipsychotic medication (DUP-med, Addington et al., 2015). We drew from the National Latino and Asian American epidemiology study's list of "any service sector" as any type of health practitioner given the specific psychotic predicament (e.g., primary care provider, mental health professional, and religious/spiritual healer, Alegría et al., 2007). We followed the operationalization of onset as reported by Melle et al. (2004): a score on the Positive and Negative Symptom Scale of four or more on positive subscale Items 1 (*delusions*), 3 (*hallucinatory behavior*), 5 (*grandiosity*), or 6 (*suspiciousness/persecution*), or on the general subscale Item 9 (*unusual thought content*). To assess offset of DUP, we asked a series of questions to identify the type and date of initial treatment. For example, we queried the person with FEP and their caregiver about the use of the specific type of medication for their mental health problems, with particular attention to antipsychotic medication and when it was initiated.

DUP assessment was carried out in four steps. In most cases, individuals with FEP and their caregivers were interviewed separately by two raters to identify timelines and specific dates for symptom onset and treatment. On some occasions, each rater was accompanied by a second rater to assess interrater reliability. Raters then met to report their identified DUP, to note discrepancies, and to achieve consensus on patient and caregiver reported dates of symptom onset and offset. A third step was carried out later when a team of three raters met to review not only the direct assessments of DUP onset and offset but also data from (a) an in-depth qualitative interview focusing on pathways to care and (b) medical records when available. For the final step, we applied the IBM-Statistical Package for Social Sciences Version 27 to subtract the date of onset from the date of first care or initiation of antipsychotic medication to generate the number of weeks of DUP.

Interrater reliability was calculated for DUP based on first antipsychotic medication. Cumulative intraclass correlation

coefficients (ICC) by rater pairs ranged from 0.87 to 1.00 for patient report ($n = 45$), 0.66 to 1.00 for caregiver report ($n = 50$), and 0.96 to 1.00 when raters reviewed all available data ($n = 27$). In addition, we assessed test-retest reliability of our DUP assessment at a 6–8-week follow-up with a subsample of ill relatives ($r = .86$, $n = 31$) and caregivers ($r = .61$, $n = 35$). Finally, we applied the symptom onset of schizophrenia (SOS) scale (Perkins et al., 2000) to a subsample of participants to assess the concurrent validity of our identification of age of onset. We found that the two methods to identify the age of onset were highly correlated (patient report: $r = .86$, $n = 23$; caregiver report: $r = .99$; $n = 27$).

To assess language background, two items were taken from the self-report language proficiency subscale of the Bidimensional Acculturation Scale (Marin & Gamba, 1996). Persons with FEP and caregivers were asked how well they speak English and Spanish, from very well (4, *muy bien*) to very poorly (1, *muy mal*). In addition, the interviewer rated the participants' language preferences. Those who reported speaking English very well or well and were judged to prefer English or to be bilingual were coded as primarily English speaking. Those who reported speaking English poorly or very poorly and were judged to prefer Spanish were coded as primarily Spanish speaking. In the few cases in which there was a discrepancy between the self-report and the interviewer judgment, we relied on the participants' self-report.

Results

Campaign Dissemination

We report data for a 1-year period (June 1, 2016 to May 30, 2017) during the heart of the campaign to describe and document the extent of the campaign dissemination. Table 1 organizes the wide range of contacts our team made that were directed solely at the public or the public and professional sectors. For example, attendance at beauty/nail salons, churches, resource fairs, and swap meets facilitated contact with the public. Visits to schools, community networks, and health care facilities helped us reach the Latinx community but also the professionals within those organizations. Overall, the campaign team distributed 22,039 brochures during this 1-year period averaging nearly 2,000 brochures a month with a focus on public versus public/professional settings. In addition, our coordinators averaged three workshops a month with 20 attendees for each session.

Our media consultants organized a range of activities including accounts published in print and online newspapers, as well as radio and television interviews (see Table 2). In addition, they facilitated a month-long display of ads on 50 billboards and 25 bus benches at key intersections in the communities. Our media firm also organized a number of community forums. For example, on March 3, 2017, they put together a community roundtable with a particular focus on the criminal justice system and serious mental illness. The main speaker was a police officer working in the Crisis Response Support Section within the Police Department's Mental Health Evaluation unit. A total of 30 individuals from a wide range of agencies attended. The firm also distributed two newsletters during this 1-year period to our mailing list of 181 individuals and organizations. To increase exposure, the campaign activities were chronicled in the campaign website www.uselaclave.com. This included placing the La CLAVE film used in community events on the website so it could be shared with others.

Table 1
Number of Campaign Outreach Sites Visited and of Brochures Distributed for 1-Year Period June 1, 2016 to May 30, 2017

Outreach sites	Number of places/times visited	Number of brochures distributed	Range of brochures distributed
Public			
Beauty/nail salons	138	2,660	20
Churches	69	1,895	20–250
Resource fairs	35	4,505	20–300
Swap meets	19	3,930	60–320
Other	10	1,133	
Social service agencies	10	707	50–100
Department of motor vehicles	9	1,432	72–200
Shopping market/malls	6	1,257	200–347
Subtotal	296	17,519	
Public and professionals			
Schools	79	2,099	20–200
Networking meetings	49	811	1–70
CLaVe workshops	36	740	5–65
Health care facilities	35	770	20–70
Mental health care facilities	5	100	20
Subtotal	204	4,520	
Total	500	22,039	

Receiving the Campaign Message

In Figure 2, we plot the number of unduplicated phone calls received each week during the last year of the campaign by one of three likely geographic origins: SFV, in California but outside SFV, and outside California. The largest number of calls were registered at the end of the campaign beginning in Week 40 and extending to the postcampaign period thru Week 48. The observed increase may have been an anomaly resulting from the Google search engine directing users to our campaign when users entered search terms linking mental health and the SFV. As a result, we focus on the increases noted before Week 40.

The largest number of calls occurred during Week 23 when we participated in a studio-recorded 30-min Spanish-language

Table 2
Multimedia Events for 1-Year Period June 1, 2016 to May 30, 2017

2016	Multimedia event
July 18	El Aviso, weekly local Spanish-language newspaper online
July 20	El Clasificado, weekly local Spanish-language newspaper online
August 14 and 16	La Opinion, daily Spanish-language newspaper. Print and online editions
December 4	102.7 KIISFM, iHeart Radio, English language radio, Los Angeles, California
2017	
February 1–28	25 bus benches (18 Spanish and 7 English)
February 1–28	50 junior posters (25 Spanish and 25 English)
March 13	La Opinion, daily Spanish-language newspaper. Print and online editions
May 19	KLTXAM 1930 Con Gozo en la Mañana with Vania Cosentino. Nonprofit Catholic National radio
April 9	KFI AM 640, Sunday morning with Elizabeth Espinosa, English language radio, Los Angeles, CA
April 18	Univision 34, Spanish-language television

television news show on Univision devoted to mental health issues. During that week the clinic received 13 unduplicated SFV calls and 74 calls outside the SFV but within California. The next largest increase occurred during weeks 18, 19, and 20 when we received 7, 5, and 6 SFV calls and 1, 5, and 3 California calls, respectively. This immediately followed a campaign celebration meeting in the community with various stakeholders and a news account published in the largest Spanish-language newspaper in Los Angeles. In addition, this increase corresponded with the implementation of ads on bus benches and billboards (junior posters).

A total of 123 individuals with FEP, 106 caregivers, and 999 community residents participated in the study. See Table 3 for the sociodemographic characteristics of the three samples. Persons with FEP were younger, primarily male, English speaking, and U.S. born. In contrast, the caregivers were older, primarily female, Spanish speaking, and foreign born. The community residents largely fell in between the two other groups in terms of mean age, and percentage who reported being Spanish speaking and immigrants.

Of the total sample, 107 individuals with FEP, 95 caregivers, and all 999 community residents were asked if they had heard of La CLaVe. As can be seen in Table 4, during the baseline period no person with FEP nor their caregivers reported hearing about La CLaVe. Eight community residents indicated that they had heard of the La CLaVe program. When asked where they learned of the program, six of the eight community residents noted the following: at Youth United toward Environmental Protection (UTEPA), in a TV commercial, in high school, at a mental health clinic, at Providence Hospital, and “somebody, a while back.”

During the campaign period, a total of seven (14% of 50) individuals with FEP acknowledged hearing of La CLaVe during the campaign. Four of them referred to receiving a flyer—from a health clinic, a mental health clinic, the police, and an unspecified source—whereas the other three mentioned a workshop. A total of nine caregivers (22% of 41) responded that they had heard of La CLaVe before. The specific sources of those nine were a mental health clinic ($n = 2$), a health care facility ($n = 2$), a priest, a workshop held at the church, a police officer, a social service agency, and an unknown source. When considering together the persons with FEP and their caregivers, 12 of 61 (19.6%) unique family units reported learning about La CLaVe during the campaign period. Of the 15 community residents (3% of 500) who reported learning of La CLaVe during the campaign period, five specified that their sources included National Alliance on Mental Illness (NAMI), Kaiser, the newspaper, their wife, and a relative.

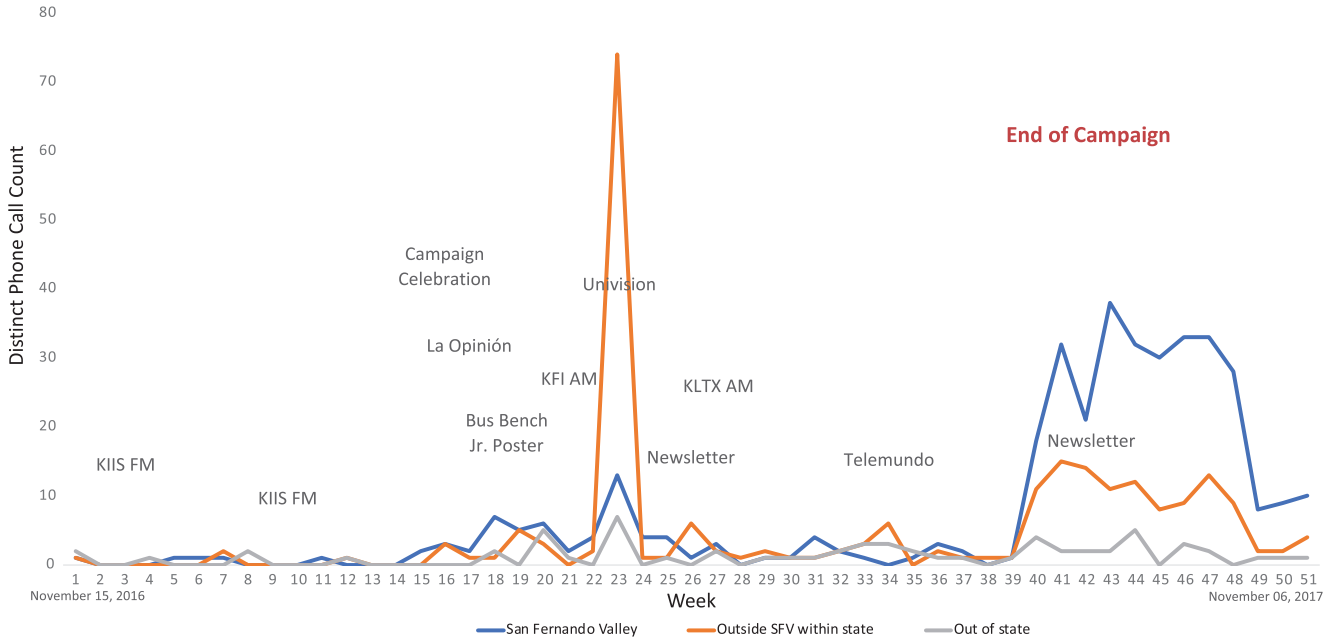
A look at the postcampaign period reveals that two individuals with FEP (13.3% of 15) and two caregivers (13.3% of 15) acknowledged having heard of La CLaVe. Both ill relatives and one caregiver recalled receiving brochures from their health clinic and the other caregiver reported that a family had mentioned La CLaVe to them. Compared to the campaign period, these postcampaign instances represent a similar degree of recognition of La CLaVe for those with the illness (14.0% and 13.3%) and for the unique family units (19.6% and 20.0%), but a drop in the caregivers' reference to La CLaVe (from 22.0% to 13.3%).

Campaign Outcome

We recruited and consented 132 participants with FEP. There are nine participants with missing data for DUP-any (treatment).

Figure 2

Weekly Distribution of Distinct Phone Calls to 1-800 Number and Time of Specific Multimedia Events Across Three Geographic Regions During Last Year of La CLAVE Program



Four dropped out immediately after the screening and three at different junctures—some moved, some changed their minds, and some failed to maintain contact. Two were never able to participate due to illness severity. We lost two additional participants for DUP-med because they did not start an antipsychotic medication regimen during the study period. Their DUP-med was ongoing.

We report on the 123 participants for whom we have data for DUP-any. The sample’s primary diagnosis was schizophrenia (63, 51%), with bipolar disorder (21, 17.1%), psychosis not otherwise specified (19, 15.4%), and schizophreniform (10, 8.1%) being the other more frequent diagnoses. The percentage of schizophrenia spectrum diagnoses (63.4%, schizophrenia, schizophreniform, and schizoaffective) aligns well with that same diagnostic group in the original TIPS study (63.9%, Melle et al., 2004).

For our primary analyses, we carried out a 3 (campaign period: baseline, campaign, postcampaign) × 2 (language background: Spanish speaking or English speaking) between-subjects analysis of variance (ANOVA) for two outcomes, delay to any treatment (DUP-any) and to initiation of antipsychotic medication (DUP-med). Given the positive skewness of the DUP, we applied square root transformations. For purposes of interpretation, we report the means of untransformed DUP.

Using the transformed data, we found a significant main effect for Language background, DUP-any: $F(1, 117) = 4.12, p = .04$, partial $\eta^2 = .03$; DUP-med: $F(1, 115) = 7.32, p = .01$, partial $\eta^2 = .06$, but not for campaign period (DUP-any: $p = .13$, partial $\eta^2 = .04$; DUP-med: $p = .43, \eta^2 = .02$) nor their interaction (DUP-any: $p = .26, \eta^2 = .02$; DUP-med: $p = .63, \eta^2 = .01$). An examination of the untransformed means indicates that Spanish-speaking persons with

Table 3

Demographics of Three Samples: Persons With First-Episode Psychosis, Caregivers, and Community Residents

Demographic characteristic	Persons with first Episode psychosis (N = 123)		Caregivers (N = 106)		Community residents baseline (N = 499)		Campaign (N = 500)	
	M (SD)	n (%)	M (SD)	n (%)	M (SD)	n (%)	M (SD)	n (%)
Age	25 (8.87)		44.18 (9.71)		39.35 (13.57)		38.83 (13.60)	13.60
Educational level	11.2 (2.29)		10.15 (4.10)		10.74 (3.98)		11.12 (3.78)	3.78
Male		89 (72%)		20 (19%)		209 (42%)		197 (39%)
Primarily Spanish speaking		27 (22%)		72 (68%)		219 (44%)		199 (40%)
Immigrant		43 (35%)		82 (80%) ^b		299 (60%)		286 (57%)
Mexican immigrant ^a		25 (58%)		56 (68%)		242 (81%)		237 (83%)

^a Percentage of immigrants. ^b Based on 103 caregivers.

Table 4

Number of Persons With FEP, Caregivers, and Community Residents Who Heard of La CLAVE Across Campaign Periods

Time period	Persons with FEP			Caregivers			Community		
	<i>n</i>	<i>N</i>	%	<i>n</i>	<i>N</i>	%	<i>n</i>	<i>N</i>	%
Baseline	0	40	0.0	0	37	0.0	8	499	1.6
Campaign	7	50	14.0	9	41	22.0	15	500	3.0
Postcampaign	2	15	13.3	2	15	13.3			

Note. FEP = first-episode psychosis.

FEP had longer delays to any treatment than English-speaking persons with FEP (Spanish speaking: $n = 30$, $M = 196.12$, $SD = 420.20$; English speaking: $n = 93$, $M = 91.74$, $SD = 174.75$) and longer delays to antipsychotic medication (Spanish speaking: $n = 29$, $M = 293.84$, $SD = 476.65$; English speaking: $n = 92$, $M = 111.10$, $SD = 179.57$). Figures 3 and 4 depict the findings based on untransformed data.

Discussion

Our DUP reduction campaign is unique in two important ways. First, it was guided by principles of successful campaigns used largely in the health field (Noar, 2006) not often applied in addressing early psychosis. Second, we focused on a high-risk underserved community, specifically the Latinx community in Los Angeles County, with particular attention to Spanish-speaking individuals. It is the first DUP reduction campaign that has focused specifically on a community of color.

Campaign Outcome

Consistent with most DUP reduction reports but contrary to our hypothesis, our campaign did not reduce treatment delay. Analyses of transformed data revealed no significant difference across campaign periods for both delay to any treatment or delay to first antipsychotic medication. However, consistent with our hypothesis, those individuals with FEP for whom the Spanish language is their dominant language have a significantly longer DUP than those who speak English well or very well. This is a robust finding as it was observed in data for both delay to any treatment and delay to the start of antipsychotic medication. This result extends past epidemiological research for nonpsychotic disorders that reports Spanish-speaking Latinxs are much less likely than English-speaking Latinxs to use specialty mental health services in the last year (Alegría et al., 2007). Moreover, the median DUP for Spanish-speaking persons with FEP is 167 weeks which is over twice the median of the DUP recorded in the RAISE study of 74 weeks (Kane et al., 2016).

Campaign Process

One of the strengths of our study is that we carried out key assessments of the campaign dissemination and implementation. These data can be used to consider how to improve future efforts. One indicator that the campaign message was received is the increase of 1-800 phone calls at the time of specific media

initiatives. The largest peak occurred when we participated in a 30-min news show on the Spanish-language television. The other increases took place when we launched our month-long billboard and bus stop ad initiative and organized a community event that was reported in the largest Spanish-language newspaper.

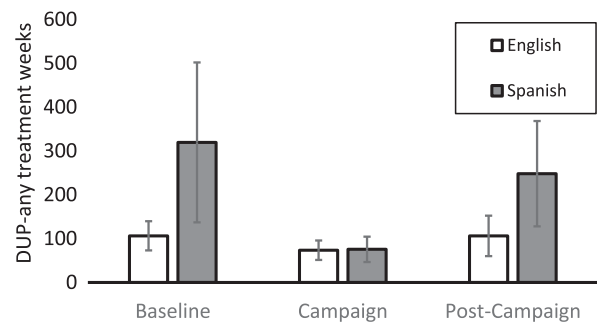
The community survey data also indicate an increase in the community's awareness of the La CLAVE program, from 8 of 499 (1.6%) during the baseline to 15 of 500 (3%) during the campaign. An examination of the specific sources of the residents' acknowledgment of the La CLAVE message raises questions about the veracity of some of the responses, particularly for the baseline period. Our team had not yet visited any school nor was the campaign on television at that time. The responses during the campaign period (NAMI, Kaiser, newspaper, and relatives) seem much more plausible. Obtaining responses at baseline are important because they raise the possibility that some of the responders during the campaign may not be valid.

The most compelling process-related finding is that 19.6% of the family units (either the person with FEP, their caregiver, or both) recruited during the campaign period had heard of La CLAVE or mentioned it as a factor in their referral. In contrast, not one person with FEP or their caregiver referred to La CLAVE during the baseline period. See Table 5 for two examples of how La CLAVE played a role, one taken from our outreach efforts and the other from a respondent in the household survey. Together these data suggest that the campaign reached people who eventually made their way to mental health services, at least for one-fifth of the family units. What stood out in those who elaborated on how they learned of La CLAVE was the reference to brochures and participation in workshops. The household survey, on the other hand, with at most 3% learning of the La CLAVE message, was disappointing. This is particularly the case given that up to eight of those 15 affirmative responses may not have heard of the campaign message at all and just thought they did, as suggested by the baseline community survey.

The phone call data and the number of recruited families who referred to the campaign indicate that the campaign reached the community. The limited recognition of La CLAVE in the community survey, however, indicates that efforts to increase the message's reach are needed.

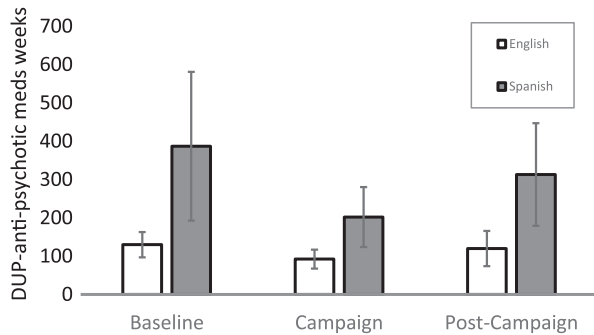
Figure 3

DUP to Any Treatment by Campaign Periods and Language Background of Person With FEP



Note. DUP = duration of untreated psychosis; FEP = first-episode psychosis.

Figure 4
DUP to First Prescribed Antipsychotic Medication by Campaign Periods and Language Background of Person With FEP



Note. DUP = duration of untreated psychosis; FEP = first-episode psychosis.

Future Directions

Our campaign focused on establishing relationships with community residents and professionals. In communities of color where mistrust of health care systems and allied agencies (e.g., law enforcement) is oftentimes present, developing trusting personal relationships is necessary (Hernandez et al., 2019). To augment those personal connections and reach wider audiences, our campaign included traditional media channels (television, radio, billboards, and newspapers). What was missing was the systematic use of the internet (see Spencer et al., 2019, for beginning efforts to apply internet-based interventions for caregivers of persons with mental health and related disorders). In a prior study, we used the internet platform to assess whether our videos increased psychosis literacy among health science students (Nicasio et al., 2022). That platform could be easily modified to inform the general public and encourage professional help-seeking. Digital ads could also be integrated as they have been shown to be a cost-effective method in reaching individuals seeking information regarding psychosis-related experiences (Birnbaum et al., 2017). In addition, the La CLAVE materials could be adapted for smartphone applications (Bush et al., 2019; Torous et al., 2017). Such applications could be developed to inform users about the symptoms of psychosis and where services could be obtained. Finally, efforts to train others in delivering the campaign message (e.g., *promotoras* and outreach workers) could increase the message penetration and also enhance the message’s sustainability in a given community (Calderon et al., 2015). We have recently adapted the training to be carried out remotely during the coronavirus disease pandemic (COVID; Calderon et al., 2021). Extending the reach of the campaign through the internet, technology, and further collaborative partnerships have the potential to increase the campaign’s reach (see Srihari et al., 2014, 2022 for the successful application of related resources).

It is also worth noting that the La CLAVE campaign team members were employees of the university, not the mental health services to which we were encouraging residents to seek care. At best we could urge residents to seek services but our team was not in the position to make appointments or follow-up with persons who missed appointments. We relied on the care provided by the facilities. The two successful DUP reduction initiatives, TIPS

and Mindmap, integrated both the campaign and the mental health services. The campaign helped bring persons in need to available services whereas the clinical team worked hard to enroll them in services for FEP and keep them in care. A close working relationship between the campaign and treatment teams is needed to successfully reduce treatment delay.

Limitations

Our design did not include a parallel control condition in which the DUP of incoming persons with FEP was assessed in a second community outside the reach of the campaign. In proposing the study, we opted to first examine whether we could observe DUP reduction comparing the campaign period with a historical control

Table 5
Two Cases in Which La CLAVE Led to Treatment Engagement

Exposure to La CLAVE prompts both father and police officers to facilitate care
<p>While at the swap meet, a Spanish-speaking immigrant father from El Salvador received the La CLAVE brochure from Rosalba, one of the two campaign coordinators. At this time, Rosalba tells us he interacted very little with our campaign team. Some weeks later, Rosalba was at a local pharmacy distributing brochures and this same father approached her. This time he was more talkative. He mentioned that he had a relative whose son has similar kinds of experiences as those noted on the brochure. Rosalba encouraged him to tell his relative to call the 1-800 number and gave him her cell number. At the end of the conversation, he discloses that it really is his son, prompting Rosalba to further encourage him to call the clinic. During the next few weeks the father texts her on three or four more occasions indicating that his son appears to be getting worse, withdrawing to his room and becoming aggressive. On each occasion, Rosalba tells the father that it is important to call the 1-800 number.</p> <p>We later learn from the father during the qualitative interview that the son became so violent that the father called the police. When the officers arrived, he told them that his son was taking drugs and needed drug rehabilitation. The police told the father that he had two choices. They could take his son to the psychiatric hospital or to jail; they were not in a position to take him to a drug rehabilitation program. The father insisted that they take him to a drug program. The police reiterated the two choices that were available. The police officer added that the hospital had a program called La CLAVE. [The officer had learned of La CLAVE through presentations given by our campaign team at the police department.] The father said he had heard of La CLAVE and agreed to have his son taken to the psychiatric inpatient unit.</p>
<p>Wife learns of La CLAVE at swap meet: From household survey interview</p> <p>Interviewer (I): If you had a relative with a serious mental illness, do you know of a clinic or a mental health professional where you may take your ill relative?</p> <p>Respondent (R): Yes . . . I am taking my husband to a clinic that is there by Balboa. I don’t remember what it’s called.</p> <p>I: I ask you to please think about the programs in this area, have you heard of a program called La CLAVE?</p> <p>R: That one exactly. That’s where I’m going with my husband, the CLAVE.</p> <p>I: Where did you hear of the program?</p> <p>R: One day I went to the swap meet. And it was like God sent it to me there, because my husband did not have this Medic-doctor yet, because his job insurance ran out, and they gave me information there, in the swap meet. I found some people there who told me about La CLAVE.</p> <p>I: Some women?</p> <p>R: Yes, some women who were there with a little table. And they sent me there. They told me to take him there, and I’m taking him there. Thank god, they are helping me a lot.</p>

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(baseline). This is consistent with the early phase of the TIPS study in Norway (Larsen et al., 2007). Carrying out DUP assessments at two independent sites plus a campaign at one of the sites would have reduced resources available for the campaign potentially reducing the campaign's strength.

A second limitation is that we recruited only a fraction of Latinxs residing in the designated community with psychotic illnesses. The annual incidence rate of psychotic disorders is estimated to be 31.7 new cases for a population of 100,000 people with increased rates among minoritized group members (Kirkbride et al., 2012). Our designated community had a population of over 300,000 and we carried out DUP assessment for 4.75 years. One would expect 95 new cases a year or 451 new cases over the study period. It is not clear how representative our sample is of the larger number of Latinxs with FEP.

Best Practices

Drawing from the literature and the experience of carrying out this large-scale campaign, we offer the following recommendations for best practices.

1. Based on the TIPS and Mindmap studies, campaigns should be an essential component of early intervention care services to increase help-seeking for first episodes of psychosis.
2. Scientific principles should be applied in the development, implementation, and evaluation of campaigns. Applying theory, creating and testing novel and innovative campaign messages, and carrying out process measures are critical to developing effective campaigns. Collaborations between mental health systems of care and researchers are needed to design and evaluate campaign messaging, dissemination, and implementation.
3. Invest in the strongest campaign possible. This includes taking sufficient time prior to the campaign launch for the team to get to know the community and establish relationships with key stakeholders. Also, campaigns should be ongoing and not limited to a particular number of years.
4. Integrate campaigns within CSCs. Community workers, clinical staff, and administrators should all be familiar with the campaign messaging and participate in outreach to facilitate seamless transition from identifying a potential individual with FEP to providing and maintaining treatment.
5. DUP should be collected routinely by all mental health facilities serving individuals with a psychotic illness. With additional effort during the intake, staff can identify the illness onset and the offset as reflected in first seeking any kind of professional help as well as the start of mental health treatment and medication. These data should then be part of the facility's database that could be monitored on a regular basis to gauge the performance of campaign efforts.
6. It is best to begin identifying persons with FEP in the psychiatric emergency unit and inpatient unit and not wait till they arrive in the outpatient unit. Some individuals may never make it to the outpatient unit. Beginning contact

early will help facilitate the development of trust between families and service providers.

Conclusion

Spanish-speaking Latinxs residing in Los Angeles County with psychotic disorders are especially in need of early treatment. The La CLAVE campaign applies science-based principles to campaign development and implementation with the goal of reducing treatment delay. Future initiatives can build on these steps as it is important that communities of color benefit from early interventions for psychotic disorders.

Data Transparency

Thus far, we have published two articles based on this project. The first article examined the psychosis literacy of an early sample of the caregivers and persons with first-episode psychosis (FEP). The second article is a qualitative study that assessed the relationship of DUP and family processes. Measures of psychosis literacy and family processes were not included in the present report.

We have three other papers either under review or close to being submitted for publication. One examines the relationship between immigrant status and age of onset of psychotic disorders. The second is a qualitative study of pathways to care and the obstacles families faced in seeking services. In the third paper, we identify the social and clinical correlates of DUP to initiation of antipsychotic medication. Language background is one of the many variables considered including immigrant status, age at migration, symptomatology, and social functioning. None of these three reports considers the role of the campaign period or any aspect of the campaign.

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