

Towards the sustainability of information campaigns: training *Promotores* to increase the psychosis literacy of Spanish-speaking communities

Vanessa Calderon · Yesenia Mejia ·
María del Carmen Lara-Muñoz · Joanna Segoviano ·
Quetzalli Castro · Ava Casados · Steven Regeser López

Received: 4 July 2014 / Accepted: 30 November 2014
© Springer-Verlag Berlin Heidelberg 2014

Abstract

Purpose To assess the acceptability and efficacy of training community health workers (*promotores*) in Mexico to both recognize psychosis and to teach others to recognize psychosis.

Methods Two studies were carried out utilizing a single-group design. In Study 1, *promotores* watched a DVD-based psychosis literacy training. In Study 2, *promotores* were trained to administer a flip-chart version of the program and they then administered it to community residents.

Results Significant increases in the post-training assessment of psychosis literacy were observed.

Conclusion *Promotores* can be an important resource in identifying psychosis early and enhancing the sustainability of psychosis literacy information campaigns.

Keywords Psychosis literacy · Spanish language · Community lay workers · *Promotores*

Introduction

Duration of untreated psychosis (DUP) is associated with negative clinical and social outcomes [1, 2]. Although the early Treatment and Intervention in Psychosis Study (TIPS) demonstrated that DUP of persons with first-episode psychosis can be reduced, and in turn their functioning improves [3], the overall success of informational campaigns (ICs) has been variable [4]. One limitation of many ICs is their reliance on temporary funding. When the funding and campaign ends, DUP rises to pre-campaign levels [5]. Drawing on existing community resources has the potential to sustain campaigns beyond the time-limited funding.

There is great need for DUP reduction programs in Spanish-speaking countries and immigrant communities. Spanish-speaking immigrants in the US, particularly those of Mexican origin [6, 7], tend not to use mental health services, placing them at high risk for prolonged DUP. In both Latin America and the US, community health workers or *promotores* may be particularly effective in delivering ICs to these communities and referring community residents for needed health care [8]. *Promotores* live in the same neighborhoods in which they work, making them credible and capable of influencing hard-to-reach communities [9].

In the current report, we build on prior efforts to develop a scientific base for ICs for Spanish-speaking individuals in the US and Mexico by employing *promotores* to educate difficult-to-reach communities. Consistent with Noar's principle of successful campaigns [10], we developed a conceptual framework for the educational message and have conducted formative research to evaluate the key

The contributions of Vanessa Calderon and Yesenia Mejia were equal and they share first authorship.

V. Calderon
Massachusetts General Hospital, Boston, USA

Y. Mejia · S. R. López (✉)
Department of Psychology, University of Southern California,
Los Angeles, CA 90089-1061, USA
e-mail: lopezs@usc.edu

M. del Carmen Lara-Muñoz
Benemérita Universidad Autónoma de Puebla, Puebla, Mexico

J. Segoviano
San Diego State University, San Diego, USA

Q. Castro
University of Illinois, Chicago, USA

A. Casados
Yale University, New Haven, USA

message's acceptability, feasibility, efficacy, and effectiveness [11, 12].

Study 1

We assessed whether we could train *promotores* to recognize psychosis. Eighty-two *promotores* from a health district in Puebla, Mexico, participated in a daylong training. Nearly all were female (97.5 %) with an average age of 44 years and 9 years of education. They were shown a brief video of Olga, a fictional character with various symptoms of psychosis. They were then shown the *La CLAVE*-DVD, a 35-min video paralleling a previous PowerPoint version [11, 12]. It reviews the mnemonic device "CLAVE" as a technique to recognize the major symptoms of psychosis and uses culturally relevant songs, video clips, and artwork as examples of each symptom. "C" stands for *creencias falsas* or false beliefs (delusions). "L" represents *lenguaje desorganizado* or disorganized speech. "A" stands for *alucinaciones* and "v" and "e" indicate the type of hallucination—*ver cosas que no existen* (visual) and *escuchar voces o sonidos que no existen* (auditory).

Identical questionnaires assessing psychosis literacy were administered before and after the DVD presentation. For responses to open-ended questions, two raters were trained to reliability (Kappas ≥ 0.80) using responses from a prior study [12]. They attained very good to excellent reliability (Ks = 0.84–1.0).

Psychosis literacy was defined by (a) knowledge of psychosis, (b) efficacy beliefs that one can identify psychosis in others, (c) mental illness attributions, and (d) recommendations to seek professional help or provide social support. *t* tests and McNemar tests revealed a significant increase in all four areas (see Table 1, Study 1). Additionally, participants liked the presentation and found it engaging.

Study 2

After increasing the psychosis literacy among *promotores*, we pursued our primary aim, to train *promotores* to teach their communities to recognize psychosis in others. Due to limited access to electronic equipment and limited reading/writing skills of some *promotores* and community members, we developed *La CLAVE sin luz* (without electricity). Drawing on prior research that emphasizes the value of illustrations over text in health promotion campaigns [13], the administration of *La CLAVE sin luz* uses a set of drawings to teach participants the symptoms of serious mental illness (see Fig. 1 for a sample drawing). We evaluated the acceptability and efficacy of this new version.

Methods

Participants

Ten female *promotoras* between the ages of 45–75 and with a wide range of educational backgrounds (from 3rd grade to some college) attended the training. The *promotoras* recruited 141 residents for the subsequent community-based training. Residents were mostly unemployed (71 %) women (94 %) with an average age of 42 years and 5 years of education.

Procedures

La CLAVE sin luz is comprised of a 15 (2 ft. \times 3 ft.) page flip-chart hung from a tripod. The first six pages present unique drawings depicting the story of Olga and her psychotic symptoms. Other pages include a chart of *La CLAVE* represented in cartoon form, labeled drawings of Olga's psychotic symptoms, and a chart reviewing barriers to Olga obtaining care (e.g., her parents attributing her behavior strictly to her divorce). The final pages include a drawing depicting Olga getting worse with time, charts guiding participants to distinguish between general life problems and symptoms of psychosis, and a drawing encouraging participants to use *La CLAVE* to identify symptoms of psychosis.

Training the *promotoras*

Three trainers delivered six 2-h sessions consisting of (a) readministering the *La CLAVE*-DVD and discussing the importance of early recognition and treatment of persons with psychosis, (b) modeling and teaching *La CLAVE sin luz*, and (c) observing *promotoras* practice the workshop and giving them feedback.

Administration and evaluation of *La CLAVE sin luz*

One to three trainers and a public health representative attended the workshops. Using the flip-chart as a guide, the *promotoras* narrated the story of Olga, administered the pre-training questionnaire, presented the core of *La CLAVE sin luz*, and narrated a second story paralleling Olga's but with a novel character, Javier. A different case was used to rule out the possibility that increases in psychosis literacy were due to familiarity with the same case used before and after the training. To evaluate the comparability of the two cases, twenty-four Mexican psychiatry residents unfamiliar with the research were randomly assigned to rate one of the cases. An independent-samples *t* test revealed similar illness severity ratings [$t(21) = 0.18, p = 0.86$], and Fisher's exact tests demonstrated no significant differences in residents' recognition of psychosis between the vignettes ($ps = 0.22$ – 0.67).

Table 1 Pre-training and post-training psychosis literacy and acceptability ratings of *La CLave*

	Study 1					Study 2				
	Pre-training	Post-training	<i>N</i>	<i>t</i>	<i>d</i>	Pre-training	Post-training	<i>N</i>	<i>t</i>	<i>d</i>
Knowledge of psychosis										
Symptoms of serious mental illness?										
Creencias falsas (false beliefs)	8.2 %	50.7 %**	73			8.7 %	19.4 %*	103		
Lenguaje desorganizado (disorganized speech)	2.7 %	38.4 %**	73			9.7 %	23.3 %*	103		
Alucinaciones (hallucinations)	42.5 %	84.9 %**	73			26.2 %	66.0 %**	103		
Recall meaning of <i>CLave</i>		<i>M</i> = 4.43 (<i>SD</i> = 1.13)	79				<i>M</i> = 2.59 (<i>SD</i> = 2.05)	102		
Total number of symptoms recognized	<i>M</i> = 0.53 (<i>SD</i> = 0.65)	<i>M</i> = 1.74** (<i>SD</i> = 1.05)	73	8.83	1.03	<i>M</i> = 0.45 (<i>SD</i> = 0.65)	<i>M</i> = 1.09** (<i>SD</i> = 0.88)	103	7.09	0.70
Efficacy beliefs										
How sure are you that you can identify someone with a serious mental illness?	<i>M</i> = 2.73 (<i>SD</i> = 1.26)	<i>M</i> = 3.58** (<i>SD</i> = 1.26)	77	4.87	0.55	<i>M</i> = 2.09 (<i>SD</i> = 1.23)	<i>M</i> = 2.63** (<i>SD</i> = 1.26)	81	3.75	0.42
Illness attribution										
What is happening to Olga/Javier?#										
Psychosis	10.0 %	31.2 %**	80			6.9 %	26.5 %**	102		
Mental health	21.2 %	36.2 %*	80			17.5 %	14.6 %	103		
Depression	58.8 %	32.5 %**	80			65.0 %	49.5 %*	103		
Social world	63.7 %	26.2 %**	80			79.6 %	49.5 %**	103		
Do you think Olga/Javier has a serious mental illness?	48.1 %	70.1 %**	77			58.2 %	74.5 %*	98		
Recommended help seeking										
What should Olga's/Javier's parents do to help her/him?#										
Professional help	78.8 %	90.0 %*	80			52.4 %	76.7 %**	103		
Social support	48.8 %	20.0 %**	80			63.1 %	33.0 %**	103		
Acceptability										
How much did you like the presentation?		<i>M</i> = 9.33 (<i>SD</i> = 1.12)	80				<i>M</i> = 8.50 (<i>SD</i> = 1.90)	102		
How engaging was the presentation?		<i>M</i> = 9.28 (<i>SD</i> = 0.97)	80				<i>M</i> = 8.01 (<i>SD</i> = 2.13)	101		
How clear was the presenter?							<i>M</i> = 8.34 (<i>SD</i> = 1.55)	100		
How well did the presenter ask/answer questions?							<i>M</i> = 8.61 (<i>SD</i> = 1.67)	99		

McNemar tests were conducted for proportions

Multiple codes were allowed when coding these responses

* $p < 0.05$, ** $p < 0.001$

After the story, *promotoras* administrated the post-training questionnaire. They then distributed pamphlets summarizing the workshop and providing information about local mental health resources.

Measures

The same measures used in study 1 were used in study 2 with two changes: (a) we added two questions to assess the *promotoras'* presentation, and (b) Javier was the subject of the post-workshop questions. Raters achieved good to

excellent ($K = 0.80$ – 1.0) reliability on all responses to the open-ended questions.

Results

We excluded data from participants under 15 years old and from those who did not participate in both the pre- and post-training evaluations reducing the sample size to 103. Like in study 1, paired-sample *t* tests and McNemar tests demonstrated significant increases after the presentation in all



Fig. 1 Drawing from *La CLave sin luz* illustrating disorganized speech

psychosis literacy domains. With regard to knowledge of psychosis, participants included significantly more symptoms of psychosis in their conceptions of serious mental illness, their reports of individual psychotic symptoms significantly increased, and 51 % of participants recalled at least three symptoms of psychosis using the mnemonic device *CLAVE*. With Bonferroni adjustments ($p < 0.0125$), the number of psychotic symptoms in participants' conception of serious mental illness and the inclusion of hallucinations remained statistically significant.

Participants reported significantly greater self-efficacy beliefs in their ability to detect serious mental illness after the workshop. Significant increases were also observed in participants' attributions to psychosis and in the endorsement of mental illness for the open-ended recognition question. All illness attribution differences remain significant with Bonferroni corrections ($p = 0.01$) except for attributions to depression. There was also a significant increase in participants' recommendations for professional help (see Table 1, Study 2).

Discussion

La CLAVE sin luz extends the reach of the Spanish language psychosis literacy program. We demonstrated that we can

train *promotores* not only to recognize psychosis but also to teach community residents to recognize psychosis in others. *Promotores* represent an existing community resource with the potential to strengthen the sustainability of ICs and reduce DUP by augmenting awareness and treatment seeking. However, it is worth noting that this is only one step in ensuring that individuals obtain treatment in a timely manner. Delays in obtaining mental health services have been found to constitute a significant percentage of DUP [14]. Ensuring that secondary services are equipped to detect and treat patients is critical.

One limitation of our research is the single-group design. Increases in psychosis literacy could be a function of factors other than the educational program, such as the increased familiarity with the evaluation procedures. Although this is a possibility, a prior experimental study in which we applied *La Clave*-DVD versus a control condition demonstrated increases in psychosis literacy only in the *La CLAVE* condition [11] suggesting that the increases can be attributed to the *La Clave* training. Another possible limitation is that differences in the pre- and post-test ratings could be a function of the different cases used before and after the training. The available evidence, however, does not support this explanation since both stories were matched on plot elements and symptom expression and were evaluated by third-party raters.

It is worth noting that despite significant increases in psychosis literacy after the *La CLAVE sin luz* training, recognition of false beliefs and disorganized language symptoms only reached 19.4 % and 23.3 % of the community residents, respectively. We propose that these concepts may be more abstract than hallucinations. Future implementations would benefit from giving the difficult symptoms additional attention.

La CLAVE sin luz is a “low-tech” psychosis literacy program that can be delivered by trained *promotores*. The program's effectiveness in increasing psychosis literacy highlights its viability as an interactive tool for hard-to-reach communities.

Acknowledgments The research was funded by the National Institute of Minority Health and Health Disparities, T37 MD003405, and the National Institute of Mental Health, R01 MH103830. We acknowledge the collaboration of the Department of Health, Puebla, Mexico. There is no conflict of interest and the studies were approved by the USC Institutional Review Board.

References

1. Marshall M, Lewis S, Lockwood A, Drake R, Jones P, Croudace T (2005) Association between duration of untreated psychosis and outcome in cohorts of first-episode patients: A systematic review. *Arch Gen Psychiatry* 62(9):975–983. doi:[10.1001/archpsyc.62.9.975](https://doi.org/10.1001/archpsyc.62.9.975)

2. Perkins DO, Gu H, Boteva K, Lieberman JA (2005) Relationship between duration of untreated psychosis and outcome in first-episode schizophrenia: a critical review and meta-analysis. *Am J Psychiatry* 162(10):1785–1804. doi:[10.1176/appi.ajp.162.10.1785](https://doi.org/10.1176/appi.ajp.162.10.1785)
3. Melle I, Larsen TK, Haahr U, Friis S, Johannessen JO, Opjordsmoen S, Simonsen E, Rund BR, Vaglum P, McGlashan T (2004) Reducing the duration of untreated first-episode psychosis: effects on clinical presentation. *Arch Gen Psychiatry* 61(2):143–150. doi:[10.1001/archpsyc.61.2.143](https://doi.org/10.1001/archpsyc.61.2.143)
4. Lloyd-Evans B, Crosby M, Stockton S, Pilling S, Hobbs L, Hinton M, Johnson S (2011) Initiatives to shorten duration of untreated psychosis: systematic review. *Br J Psychiatry* 198(4):256–263. doi:[10.1192/bjp.bp.109.075622](https://doi.org/10.1192/bjp.bp.109.075622)
5. Joa I, Johannessen JO, Auestad B, Friis S, McGlashan T, Melle I, Opjordsmoen S, Simonsen E, Vaglum P, Larsen TK (2008) The key to reducing duration of untreated first psychosis: information campaigns. *Schizophr Bull* 34(3):466–472. doi:[10.1093/schbul/sbm095](https://doi.org/10.1093/schbul/sbm095)
6. Alegria M, Mulvaney-Day N, Woo M, Torres M, Gao S, Ododo V (2007) Correlates of past-year mental health service use among Latinos: results from the National Latino and Asian American Study. *Am J Public Health* 97(1):76–83. doi:[10.2105/ajph.2006.087197](https://doi.org/10.2105/ajph.2006.087197)
7. Vega WA, Kolody B, Aguilar-Gaxiola S, Catalano R (1999) Gaps in service utilization by Mexican Americans with mental health problems. *Am J Psychiatry* 156(6):928–934
8. Carter-Pokras OD, Jaschek G, Martinez IL, Brown PB, Mora SE, Newton N, Luciani I (2011) Perspectives on Latino lay health promoter programs: Maryland, 2009. *Am J Public Health* 101(2):2281–2286
9. Brownstein JN, Cheal N, Ackermann SP, Bassford TL, Campos-Outcalt D (1992) Breast and cervical cancer screening in minority populations: a model for using lay health educators. *J Cancer Educ* 7(4):321–326
10. Noar SM (2006) A 10-year retrospective of research in health mass media campaigns: where do we go from here? *J Health Commun* 11(1):21–42. doi:[10.1080/10810730500461059](https://doi.org/10.1080/10810730500461059)
11. Casas RN, Gonzales E, Aldana-Aragon E, Lara-Muñoz C, Kopelowicz A, Andrews L, López SR (2014) Toward the early recognition of psychosis among Spanish-speaking adults on both sides of the US-Mexico border. *Psychol Serv* 11(4):460–469. doi:[10.1037/a0038017](https://doi.org/10.1037/a0038017)
12. Lopez SR, Lara-Muñoz MC, Kopelowicz A, Solano S, Foncerada H, Aguilera A (2009) La CLAVE to increase psychosis literacy of Spanish-speaking community residents and family caregivers. *J Consult Clin Psychol* 77(4):763–774. doi:[10.1037/a0016031](https://doi.org/10.1037/a0016031)
13. Doak CC, Doak LG, Houts PS, Loscalzo MJ (2006) The role of pictures in improving health communication: a review of research on attention, comprehension, recall, and adherence. *Patient Educ Couns* 61(2):173–190. doi:[10.1016/j.pec.2005.05.004](https://doi.org/10.1016/j.pec.2005.05.004)
14. Brunet K, Birchwood M, Lester H, Thornhill K (2007) Delays in mental health services and duration of untreated psychosis. *Psychiatr Bull R Coll Psychiatr* 31(11):408–410. doi:[10.1192/pb.bp.106.013995](https://doi.org/10.1192/pb.bp.106.013995)