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Article

The development of a bridging social capital questionnaire for use in population health research

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ABSTRACT

Bridging social capital is defined as the connections between individuals who are dissimilar with respect to socioeconomic and other characteristics. There is an important gap in the literature related to its measurement. We describe the development and validation of a questionnaire to measure bridging social capital. We focused the development of the questionnaire to be suitable for use in Latino immigrant populations in the U.S. The structure of the questionnaire comprised the following: Socialization in the job place (5 items); Membership in community activities (16 items); Participation in community activities (5 items); Contact with similar/different people (7 items); Assistance (17 items); Trust of institutions, corporations and other people(14 items); and Trust of intimate people (3 items). First, we used focus groups ($N=17$ participants) to establish content validity with an inductive thematic analysis to identify themes and subthemes. Changes were made to the questionnaire based on difficulty, redundancy, length and semantic equivalence. Second, we analyzed the questionnaire's psychometric properties ($N=138$). We tested internal consistency with Cronbach alpha and construct validity with a Confirmatory Factor Analysis (CFA) for each sub-scale to test theoretical unity; discriminant validity to observe differences between participants from high and low SES backgrounds and different language; and content validity with an independent expert panel. Cronbach alphas ranged from 0.80 (Assistance) to 0.92 (Trust). CFA results indicated that CFI and TLI were higher than 0.90 in almost all the scales, with high factor loadings. The Wilcoxon tests indicated that there were statistically significant mean differences between SES and language groups ($p < 0.00$). The independent expert panel determined that the questionnaire had good content validity. This is the first demonstration of a psychometrically validated questionnaire to measure bridging social capital in an immigrant population in the United States. Our questionnaire may be suitable for further refinement and adaptation to other immigrant groups in different countries.

Introduction

Social capital is defined as the resources accessed through social connections. From an individual (egocentric) perspective, these resources include the exchange of social support, information channels and social credentials. From a collective perspective, social capital comprises at least three dimensions: a) group solidarity and social cohesion (e.g., perceptions of trust, norms of reciprocity); b) the ability of the group to undertake collective action (collective efficacy) and to enforce social norms (informal social control); and c) civic engagement and participation (Berkman, Kawachi & Glymour, 2014). Social capital has been linked to health outcomes in a variety of settings, including residential neighborhoods, workplaces and schools.

One important distinction is between bonding and bridging types of social capital. Bonding social capital refers to connections between members of a network who are similar to each other with respect to social class, race/ethnicity, or other attributes. By contrast, bridging social capital is defined as the connections between individuals who are dissimilar (or heterogeneous) with respect to socioeconomic and other characteristics. The distinction matters because reciprocal exchanges that can take place in groups with high bonding social capital are constrained by the totality of resources available within the network. For example, the social ties that exist within socioeconomically disadvantaged communities may be characterized by intense levels of mutual assistance. However, the overall availability of resources (e.g., cash loans, labor in-kind) is often constrained, such that bonding social capital in these circumstances can actually strain the psychosocial

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wellbeing of network members. The presence of bridging social capital helps to build trust and maintain channels of communication between disputing groups. Bridging social capital provides low SES individuals with the potential to access resources outside of their constrained environment. For low SES groups, it is akin to Nan Lin's concept of "upper reachability" in social networks, i.e. the ability of socioeconomically disadvantaged groups to access valued resources such as information and instrumental assistance (Lin, Cook & Burt, 2001; Lin, 1999). Indeed access to bridging capital can be conceptualized as one of the distinguishing hallmarks of socioeconomic privilege. High SES groups routinely draw on status, prestige, power, and authority via their powerful social connections – e.g. when a businessman calls upon a politician to expedite their dealings.

Linking social capital has been defined as the connections across individuals who occupy different positions of power within a social hierarchy. We consider this form of social capital as a specific sub-type of bridging social capital. Both forms refer to ties that cut across different groups. However, linking social capital refers to vertical ties, while bridging social capital refers to horizontal ones. In this manuscript, we treat linking social capital as a subset of the bridging variety.

In a previously published commentary (Villalonga-Olives & Kawachi, 2015), we noted that bridging social capital has been measured by two approaches: either by using a non-standardized set of questions, or by attempts to construct multi-item indices. Some studies have assessed bridging capital by inquiring about people's participation in various kinds of civic groups with membership drawn from diverse segments of society, or by asking about the individual's perception of the heterogeneity of the networks to which they belong. As for studies that have attempted to construct multi-item indices of bridging social capital, we noted considerable variation on the selection of items. In this approach, bridging social capital has been assessed with questions related to multiculturalism, or interactions with diverse groups outside one's own (Onyx & Bullen, 2000). The underlying gap in the literature is that the studies we identified have not used standard definitions of bridging social capital. We give examples of the measurement of bridging and bonding social capital in a previous manuscript (Villalonga-Olives & Kawachi, 2015). For example, Williams' questionnaire is focused on online/offline social capital and measures support of the bonding type and relationships that can be related to bridging social capital (Ellison, Steinfield, & Lampe, 2007). Nonetheless, we observe the questions related to contact with a broad range of people are not questions related to specific relationships with equals or non equals. Chen et al. developed the Personal Social Capital Scale that aims to measure bridging and bonding social capital (Chen, Stanton, & Gong, 2009). However, we observe it is difficult to find out if the type of groups and organizations referenced by the measure of bridging and bonding social capital include people with dissimilar or similar characteristics. The Adapted Social Capital Assessment Tool (A-SCAT) by Harpham et al. attempts to distinguish between bonding, bridging and linking social capital and it is a good starting point for a scale that contains items related to bridging social capital (Harpham et al., 2002). However, we are not aware of an instrument exclusively focused on the measurement of bridging social capital.

Immigrant communities confront the challenge of accessing resources beyond their own intimate circles. On the one hand, they can draw upon the dense social connections within their enclaves for information, instrumental support, and solidarity (bonding social capital). On the other hand, by staying within their communities, they remain disconnected from opportunities available to the mainstream of society. Bridging social capital is important for immigrants in order to become connected to opportunities that may facilitate upward social mobility (Lancee, 2010; Tselios, Noback, van Dijk, & McCann, 2015). In turn, the ability to access resources from outside one's own network is linked to better health outcomes. Consistent with this notion, in a small study of a disadvantaged minority community in Birmingham, Alabama, Mitchell and LaGory (2002) reported that high bonding social capital (measured by the strength of trust and associational ties with others of a similar racial and educational background as the respondent) was paradoxically associated with higher levels of mental distress. In the same study, however, individuals who reported social ties to others who were dissimilar to them with respect to race and class (i.e. who had access to bridging capital) were protected from mental distress (Mitchell & LaGory, 2002).

Hence, bridging social capital is an important resource for the immigrant community. In the United States, one of the largest groups of immigrants are Latinos. According to the U.S. Census Bureau's population estimates as of July 1, 2013, there were roughly 54 million Hispanics living in the US, making people of Hispanic origin the nation's largest ethnic or race minority groups (CDC's Office of Minority Health and Health Equity, 2016). The Migration Policy Institute states that in 2014 there were 55 million Hispanics in the US. Of the 55 million people who identified themselves as of Hispanic or Latino origin, 35% (19.4 million) were immigrants (Frequently Requested Statistics on Immigrants and Immigration in the United States, 2016).

Despite the importance of bridging social capital, there is an important gap in the literature related to its measurement. Only a few studies have measured this concept in the public health literature (Barman-Adhikari & Rice, 2014; Enfield & Nathaniel, 2013; Maselko, Hughes, & Cheney, 2011; Murayama, Fujiwara, & Kawachi, 2012). However, these studies have not used standard definitions of bridging social capital. In this paper, we sought to develop and psychometrically validate a new scale to assess bridging social capital with a particular focus on Latino immigrants.

Methods and results

We employed a sequential exploratory mixed methods design strategy to create a bridging social capital questionnaire for immigrant populations (Creswell, 2013). This is a method that begins with qualitative inquiry, the results of which inform the next, quantitative, phase of research. First, we conducted focus groups to establish the content validity of our social capital questionnaire. Social capital is a widely used concept in the social sciences; however, there is no gold standard for the concept of "bridging social capital" (Villalonga-Olives & Kawachi, 2015). The purpose of the focus groups was to gather an open-ended narrative on the language and appropriateness of existing and new items to be used in a "bridging social capital scale". Second, we conducted a psychometric validation of the scale with 138 individuals through the use of Qualtrics, an online survey tool (Qualtrics, 2016). In the first part, we describe the development of the qualitative component to establish the content validity of our social capital questionnaire. In the second part, we establish the psychometric validity of our questionnaire.

Theoretical framework

The questionnaire was designed based on a systematic review we performed to analyze the measurement of bridging social capital in public health (Villalonga-Olives & Kawachi, 2015). We observed that bridging social capital has been measured by two approaches: either by using a disparate and non-standardized set of questions (Gele & Harsløf, 2010; Irwin, Lagory, Ritchey, &

Fitzpatrick, 2008; Nogueira, 2009; Ueshima et al., 2010), or by attempts to construct multi-item indices (Boehm, Eisenberg, & Lampel, 2011; Harpham, Grant, & Thomas, 2002; Onyx & Bullen, 2000). The lack of conceptual unity in the literature is reflected by the fact that bridging and bonding social capital have often been measured without specifying the heterogeneity or the homogeneity of people involved in social network relationships.

Based on theory, bridging social capital should measure relations between individuals who are dissimilar with respect to social identity and power, and the measurement of the concept should be better operationalized considering these features. Accordingly, a questionnaire that measures bridging social capital should contain the following elements at a minimum: (1) questions that inquire about the ability of individuals to access valued resources outside of their own social milieu; (2) questions that inquire about participation in social groups (e.g., neighborhood associations, hobby groups) whose membership is comprised of people who are dissimilar to the ego with regard to socioeconomic, race/ethnic, immigrant status, or other characteristics; and (3) questions that are more precisely targeted to specific populations – for example, questions that probe the extent to which immigrants can trust others in their neighborhood, figures of authority (e.g. police, the courts, immigration authorities). Our review of the previous research served as our starting point for constructing our bridging social capital questionnaire (Table 1). In the table, we distinguish between the cognitive versus structural dimensions of social capital. Cognitive social capital refers to people's *perceptions* of their social network relations – e.g. the level of interpersonal trust as well as norms of reciprocity within the group. By contrast, structural social capital refers to the externally observable behaviors and actions of actors within the network, e.g. patterns of civic engagement.

Qualitative study

Study population and setting

We conducted three focus groups (total $n=17$). Participants were recruited in two locations in Boston, MA. The first location was the Harvard T.H. Chan School of Public Health. The second was a community center that serves a substantial Latino population in the Boston metropolitan area.

The first and the third focus groups were held at the Harvard T. H. Chan School of Public Health and the second one was held at the community center. The selection criteria and the number of participants were different in all focus groups since the aim of each focus group slightly differed. Those recruited in a Community Center were living in different neighborhoods in Boston where household incomes were lower than the city average. However, they were attending the same community center because it was close of their jobs or the community center offered services they needed. These services included English lessons as well as health care and tax information support. The community center serves people from all nationalities, but the Latino community comprises the largest group of clients. This characteristic helped us to identify participants coming from different locations. Table 2 gives information about participants and selection criteria.

Table 1
Structure of the bridging social capital questionnaire.

	Sub-scales covered by the bridging social capital questionnaire
Structural assessment	– Connection to bridging relationships – Group participation – Membership of organizations and community activities – Social support – Contacts with native people (for immigrants)
Cognitive assessment	– Trust within homogeneous and heterogeneous groups

Procedures and qualitative data collection

We created a pool of items informed by an extensive literature review previously performed (Villalonga-Olives & Kawachi, 2015). Two investigators (EVO and IK) selected the items to be included in the questionnaire following the guidelines we developed in a previous paper (Villalonga-Olives & Kawachi, 2015). The questionnaire was developed following our theoretical framework of including bridging-specific items, but also additional items about immigrants' access to sources of assistance as well as their trust of institutions in their adopted countries. The preliminary version of the questionnaire was sent to an expert panel for review. Our expert panel included individuals who had previously conducted research on social capital (Dario Novak, Zagreb University; Elena Carrillo, Ramon Llull University; Spencer Moore, Queen's University; Naomi Kondo, University Tokyo) or immigrant health (Enrico Marcelli, San Diego State University; Yusuf Ransome, Harvard University).

Upon receiving feedback from our expert panel, we employed focus group discussions to cognitively test our bridging social capital questionnaire. Focus group discussions facilitate the dynamic interaction between study participants. The discussions are advantageous when little background data are available about the topic of interest (Krueger & Casey, 2008). A semi-structured interview guide was designed to assess the clarity, understandability, semantic equivalence and appropriateness of wording of the questionnaire. For each subscale, participants were asked to discuss items that were difficult to understand and to offer alternate wording. In addition, for select questions, participants were asked to explain the question in their own words to determine if their understanding of the question matched the intent of the researchers. We also solicited input on the length and participant burden of the scale. The focus group leaders received human subjects training before performing the discussions (EVO and IA), and had previous training in performing qualitative studies. Participants received $30 compensation for a 2-h focus group discussion. The discussions were audio-recorded and transcribed. Data from the focus groups was recorded and transcribed by the PI of the study. The transcriptions of the focus groups, the questionnaires and consent forms were stored in a locked file cabinet in a locked office at the Harvard T.H. Chan School of Public Health. The IRB of the Harvard T.H. Chan School of Public Health approved the protocol of the study (IRB 15-0129).

Data analysis

A question-by-question analysis was performed on narrative data, as we specifically queried participants about the questionnaire items. Quotes supporting the themes and subthemes were identified. The data analysis guided the creation of a revised questionnaire, which was tested in the next focus group. Finally, EV and IK evaluated the results of the focus groups to create the final version of the questionnaire (Fig. 1).

Results

In the focus groups ($N=17$), 76% of the participants were females and the mean age was 29.6 years (SD 6.3). Eight out of 11 were Latinos, the other 3 were from Asia and Europe. Five out of 11 arrived in the US between 1 and 2 years ago, 3 between 3 and 5 years ago, while the others arrived in the US from 6 to 10 years

Table 2
Results of thematic analysis and corresponding quotes.

Participants	Objective	Inclusion criteria	Original quotes (selected items)	Main results
Focus Group 1 ($N=8$)	To test the English version of the questionnaire with postgraduate students who were immigrants and US natives.	– Adults (18 years olds or older), -Masters, PhD students and postdocs – From the US or from abroad who should be fluent in English	Examples of simplification/clarification of some questions: – What troubles me the most is to speak a different language, cause I'm an international student and I don't really know what it means by "speak a different language". Or to people who are bilingual. Like, do you mean that they speak a different language from their native language or do you mean that they speak a different language from what everyone else is speaking in the workplace or the environment that they live in. I just don't understand what "different" means. – Also economic status I think is a concept we're all very familiar with here but you know I think maybe income is something that is more tangible for other people, possibly. I know it's a little different concept. And then once again getting back to parallel structure you have "similar" and you have "different from you". I think you would want to say "similar to you", like you have in quotes up in the question, and then "different from you", or just "similar" or just "different". – Think about how to specify for different domains that you have here, the kind of trust that you're most interested in, so that you can get everybody at least sort of thinking around the same concepts when they're answering. Trust is really huge, and it, the word trust actually instantly puts me in a somewhat cynical mindset, and that might be very particular to me or to people who think like me, in like this one group of the population, but I'm instantly wary when I'm thinking about trust and then it's being linked to large institutions.	– Changes in temporality – Changes in response options – Specification of community activities – Less complex language – Less complex educational attainment category – Add neighbor as a person you can trust in – Difficulties with response categories – Simplification /clarification of some questions
Focus Group 2 ($N=5$)	– To test the Spanish version of the questionnaire with Latinos from different countries that migrated to the US	– Adults (18 years old or older) – Immigrants that had been in the US at least 2 years – To be native Spanish speakers	Examples of problems with words: – Nosotros en los grupos religiosos como en los Mejicanos decimos así como: nuestra Hermandad. También se refiere a grupo como de personas de un mismo país. Porque estamos muy unidos. No se entiende como Hermandad estudiantil. – En mi caso la unión libre (persona no casada pero que convive con alguien) obviamente soltero no sería, pero entonces cuál de las otras opciones sería. Viviendo/casado? Dónde está la opción de viviendo/pero no casado. Lo llamamos unión libre. – Drop of complex questions (e.g. Nan Lin's question): Aunque acá la pregunta es temas relacionados con la salud o cosas así, por acá hay otras preguntas que se refieren como a casos de quién lo puede dar ayuda. Van relacionadas con esta pregunta. Sería poner casi lo mismo. Más extenso, pero lo mismo. Se puede completar con las otras preguntas. Esta es muy larga y costosa.	– List of words that were not understandable for all the Spanish speakers. – The use of Not applicable options – Need of more response categories to cover different sorts of situations. – Drop a complex question taken from Nan Lin's name generator which is difficult to answer in those with lower literacy levels – Difficulties in the question based on cognitive social capital: problems with some response categories

Focus Group 3 ($N=4$)	– To test the Spanish and English versions together with immigrants that are Spanish native speakers from different countries and fluent in English.	– Adults (18 years olds or older), Masters, Ph.D students and postdocs – Migrants who had migrated to the US who were Spanish native speakers fluent in English	Examples of problems with words: – La parte tratar con autoridades para puertorriqueños equivale a intentar. Hay alguna gente que no lo va a entender. Qué tal dialogar aquí? – Actividades sindicales me dio problema a mí. No es una palabra que usamos en Puerto Rico. Habría que buscarlo. Quizás otras personas más mayores utilizan la palabra. – Response categories: Aunque tienen el mismo orden yo no equivaldría "bastante frecuencia" con "somewhat". Yo diría "often". "Somewhat" sería "a veces". Pero también podría ser "con poca frecuencia".	– List of words that were not understandable for all the Spanish speakers. Discussion of alternatives for more equivalent questions. – The use of Not applicable options – Difficulties with response categories – Suggestions on changes in formulation of some questions to make them more understandable in Spanish. The main point of view was that English can explain more in less words with fewer probabilities of having non understandable formulations.

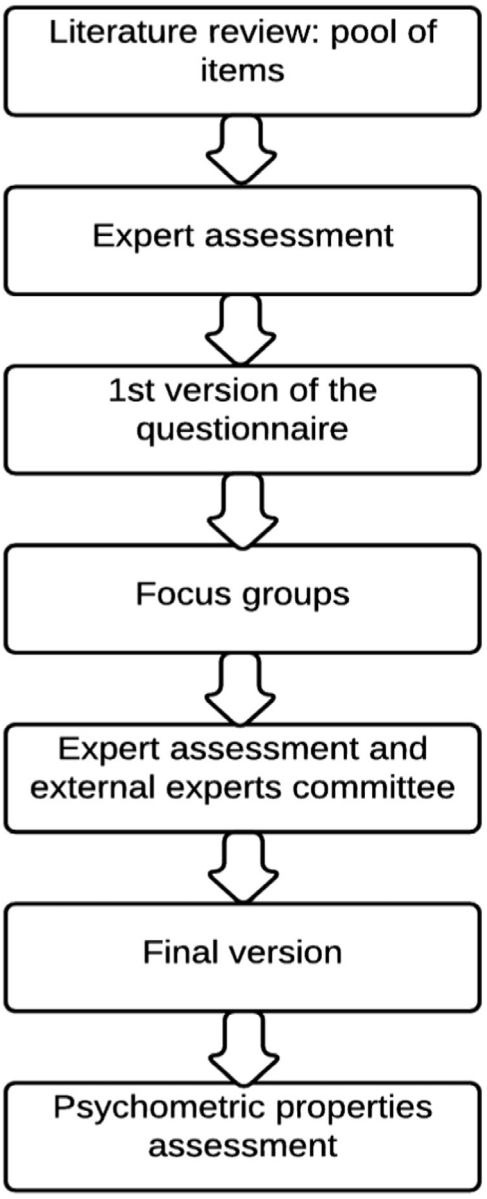

Fig. 1. Methodological process to develop a questionnaire to measure bridging social capital.

or more than 10 years ago. Changes were made to the questionnaire based on item difficulty and redundant content, length, semantic equivalence, difficulties of culturally adapting the questionnaire into Spanish, questionnaire structure and differences among participants from different socioeconomic backgrounds. The overall mean time the participants needed to answer the survey was 27 minutes (including sociodemographic information). There was variation in the time that participants needed to answer the questionnaire. We provide details about the study participants and the main results of this qualitative part in Table 2.

Final questionnaire

The structure of the questionnaire comprised the following: Socialization in the job place (5 items); Membership in community activities (16 items); Participation in the community activities (5 items); Contact with similar/different people (7 items); Assistance (17 items); and Trust of institutions, corporations and other people (14 items); and Trust of intimate people (3 items). In total, there

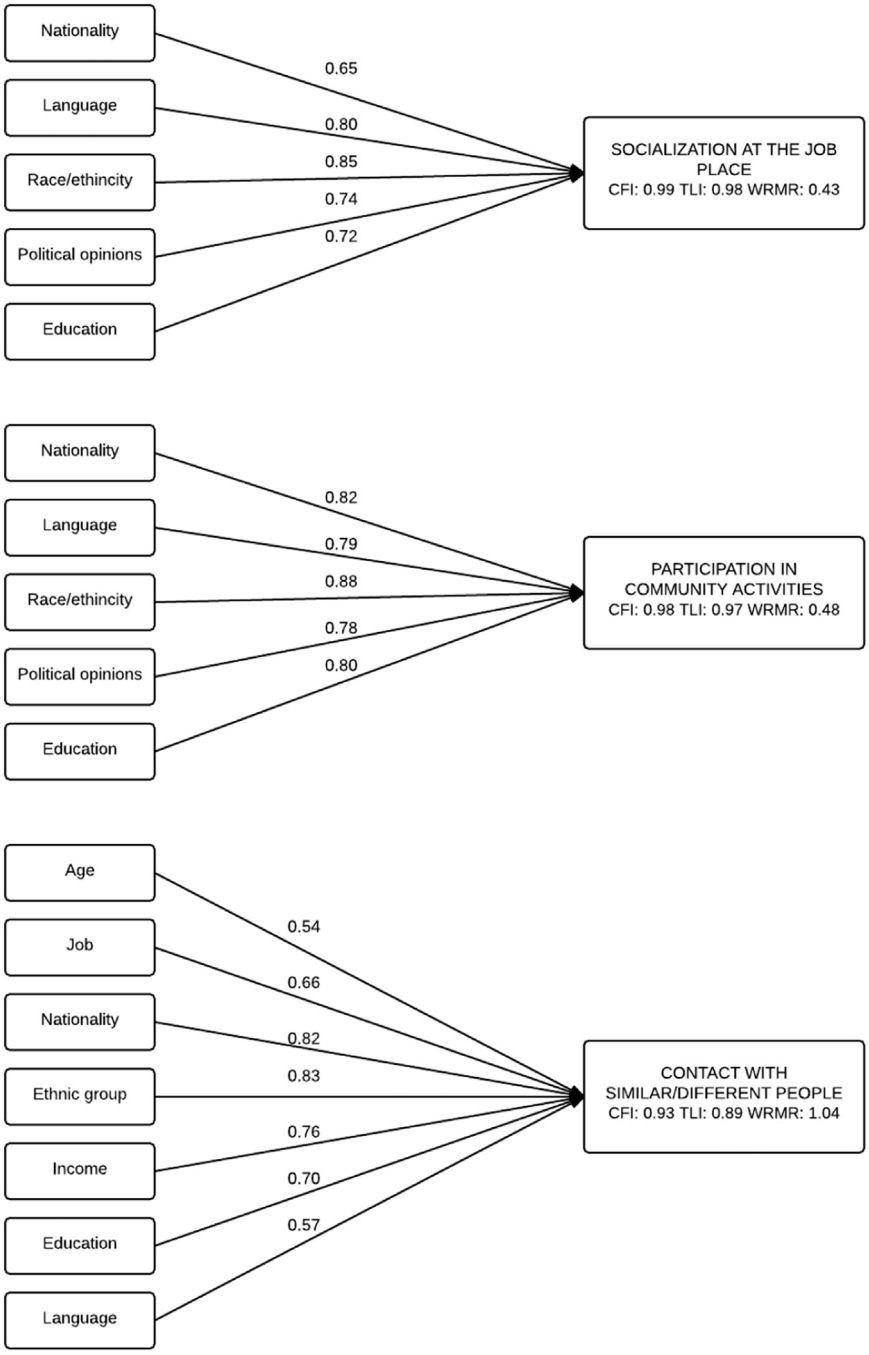

Fig. 2. Construct validity results: confirmatory factor analysis. Note: Standardized factor loadings are shown.

are 67 items. The final score in each sub-scale is the sum of the responses, where a higher score indicates higher social capital. Socialization in the job place and Membership in community activities; Participation in community activities; and Assistance are part of the structural component of our social capital measure. Contact with similar/different people and Trust are part of the cognitive dimension of the scale. Each sub-scale can be used independently, as suggested by the CFA results. Thus the first, third and fourth dimensions are specifically focused on bridging relations, while all the sub-scales add information about the bridging relations of the respondents. The total scores for each dimension were obtained by linear summation. The overall score was obtained by the summation of all the sub-dimension scores. The range of the scale was 19–108. The higher the score, the higher the bridging social capital. (see the Appendix for more information about the questionnaire and the scoring).

Psychometric validation

Study population and setting

Participants for the psychometric validation were recruited via Qualtrics, a tool to collect data online. Qualtrics uses actively managed market research panels and utilizes profiling attributes to guarantee accurate and detailed knowledge of every potential respondent. Qualtrics randomly selected respondents from a national database where respondents were highly like to qualify for the study criteria. The selection criteria of the study included: age 18 years old or older, born outside the US and arrived at least two

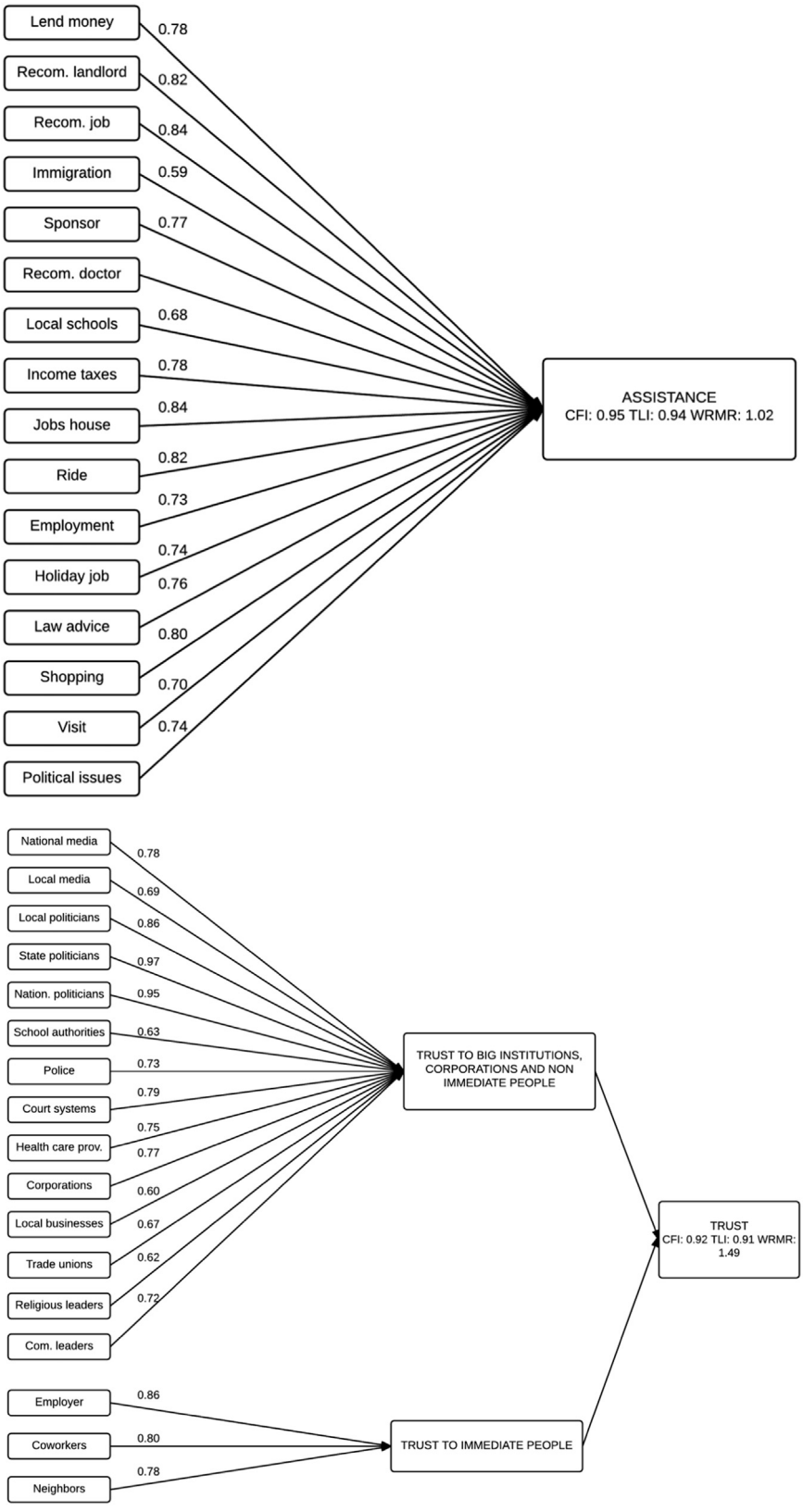

Fig. 2. (*continued*)

years ago, and fluent in English or Spanish. The sample from the panel base was representative of the general population, from which we randomly sampled survey participants. The final sample included 138 individuals.

Procedures and data collection

Online survey services such as Qualtrics have become a popular tool in the social sciences to gather information via surveys

(Couper, 2000; Qualtrics, 2016). The anonymity afforded by communicating via the Internet can help overcome concerns about direct interaction with interviewers or creating a paper trail, particularly among undocumented immigrants. Each participant received $7.50 for completing the survey.

Data analysis

The psychometric testing involved distributing the questionnaire to 138 Latinos currently living in the US. The questionnaire was answered in English or in Spanish depending on the respondent's choice. For reliability analysis, Cronbach alphas were calculated to assess the internal consistency of the full questionnaire and its subscales. To evaluate the validity of the questionnaire, we measured construct, discriminant and content validity. For construct validity, the theoretical structure previously determined by the questionnaire developers was tested using confirmatory factor analysis (CFA) (Bollen, 1989, 2011). We performed a confirmatory factor analysis for each subscale: Socialization in the job place, Participation in community activities, Contact with similar/different people, Assistance, and Trust. We did not test the Membership in community activities subscale owing to its different construction compared to the other subscales, i.e., the overall score was based on the sum of the number of community activities in which the respondent indicated he/she was participating. We eliminated the question about assistance in taking care of children of the psychometric properties test analysis, since it was not applicable for many respondents. We performed a confirmatory factor analysis (CFA) for each subscale. In the section about Trust we tested a CFA with two factors for theoretical reasons: Trust institutions / corporations / other people and Trust intimate people. Since the questionnaire is based on factors that are not necessarily related to each other (eg. Trust with Socialization), a CFA for the overall questionnaire was determined to be inappropriate. In spite of this, a final score can be obtained with the sum of all the scores.

Discriminant validity – a subcategory of construct validity- was tested using the answers to both versions of the questionnaires to observe if the questionnaire discriminates between people. We hypothesized that respondents with higher household income, educational attainment, and English language speakers (relative to those with Spanish as the first language preference) would score higher on the bridging social capital items. Total annual household income was dichotomized as $39,999 or less versus $40,000 or higher. Educational attainment was grouped into “high school education or less” vs. “beyond high school education”. We performed Wilcoxon tests to observe differences between the groups.

Results

Participants were recruited in several states within the US with 53% living in California and Florida. From them, 65.2% were females and the mean age was 38.2 years (12.69); 56.3% had arrived in the US more than 10 years ago; 41.4% of our sample reported an annual household income of lower than $30,000 (Table 3); 33.1% were college graduates; 51.4% of the participants responded to the questionnaire in English.

The distribution of the questionnaire sub-scales is given in Table 4. Internal consistency was good in all the sub-scales. Cronbach alphas ranged from 0.80 (Assistance) to 0.92 (Trust) (Table 5). Factor analysis results were good in almost all the scales, providing support for the sub-scale structure of the questionnaire. Results indicated that CFI and TLI were higher than 0.90 in almost all the scales, with high factor loadings. In the sub-scale about Assistance we dropped one item at the outset (being able to get a recommendation to find a good doctor) since we observed a very low correlation with the other items of the same factor and a negative and low factor loading in preliminary analyses. Contact with similar/different people had a lower goodness of fit with a TLI of 0.89. Trust had a lower goodness of fit too with a WRMR of 1.49 (Fig. 2). Respondents with lower income had a lower mean score (86.71, SD 13.57) for bridging social capital compared to those with high income (mean score 94.13, SD 10.55) ($z=-3.60$ $p<0.00$). Respondents with higher level of education also scored higher on bridging social capital (mean score 93.18, SD 11.83) compared to those with lower education level (mean score 84.33, SD 12.50) ($z=-3.36$ $p<0.00$). Finally, English speakers scored higher (mean 93.59, SD 13.56) compared to Spanish speakers (mean 87.02, SD 10.90) ($z=2.74$ $p<0.00$).

Table 3
Descriptive statistics of the psychometric properties test study sample.

	Mean (SD) percentage
Gender (females)	65.2%
Age	38.19 (12.69)
Arrival in the US	
2–3 years ago	8.1%
3–5 years ago	11.9%
5–10 years ago	23.7%
More than 10 years ago	56.3%
Combined annual income	
Less than 30,000	41.4%
30,000– 49,999	18.8%
50,000– 69,999	13.5%
70,000- 89,999	13.5%
90,000 or more	12.8%
Level of education	
Elementary school	2.3%
High school (no degree)	5.3%
High school graduate	24.8%
College (no degree)	34.6%
College graduate	33.1%
Perceived health	60.9%
Excellent-very good	
Good	28.6%
Fair-poor	10.6%

Discussion

In this study, we have described the development and validation of a bridging social capital questionnaire that has been developed for use among Latino immigrants living in the U.S. The CFA results indicated some problems with two items that should be considered before administering the questionnaire.

The focus groups were conducted to examine scale items and to obtain sufficient support to change the content of the questionnaire when necessary. We observed that the main problem with the Spanish version consisted in the cross-national variations in the usage of common words, i.e. there are cultural nuances in the use of Spanish among Latin American countries.

However, our main aim was to develop an English version that could be used by immigrant people living in the US. Hence, one of the main objectives was to test the understandability of the words among people coming from different countries.

Our questionnaire was demonstrated to have excellent reliability. The CFA results were also very good in the sub-scales tapping Socialization in the job place, Participation in community activities, and Assistance. However, the results indicated some problems with one item in the Contact with similar/different people sub-scale. Specifically, in that sub-scale, the respondent answers two items that are similar: socialization with similar/different people regarding nationality and socialization with

Table 4
Distribution of the questionnaire sub-scales.

Questionnaire sub-scales	Mean	SD
Socialization at the job place	12.90	3.90
Membership in community activities	6.64	3.27
Participation in Community Activities	14.54	3.84
Contact with similar/different people	18.21	4.36
Assistance	11.64	4.35
Trust	37.56	9.06

Table 5
Internal consistency results: cronbach alpha.

Questionnaire scores	Cronbach alpha
Socialization at the job place	0.83
Participation in community activities	0.87
Contact with similar/different people	0.83
Assistance	0.80
Trust	0.92

people with similar/different ethnicity. In our test, the item about nationality did not appear to add any information because the information was already tapped by the other item, with a correlation of 0.70 between the two items. CFA indicated that the exclusion of one of these items would improve our results. However, we believe this is an item that adds valuable information to the final questionnaire and should be further tested in other samples.

In the Trust section, the results showed this group of items was measuring two different factors of the same concept. We asked about trust in two different senses: trust of institutions, corporations and other people on the one hand, and trust of intimate people on the other hand. The item about trust of neighbors had a low correlation with most of the items of the same factor (0.16–0.40). We included this item after the first focus group discussion where participants pointed out the importance of trusting neighbors; however, the results suggest that trust of neighbors may be noticeably different compared to the other trust items. The low correlation between this item and the other items in the trust domain compared to the other items supports our initial idea of considering neighbors as an important part of social support. In addition, it is important to note that despite these results, the Weighted Root Mean Square Residual (WRMR) can be large with small sample sizes.

Finally, we suggest that a sum of all the subscale scores provides an overall assessment of bridging social capital, but caution is also warranted since each subscale is measuring a different concept and some items may not be related with each other. For example, some items about socialization would not be necessarily correlated with trust of big corporations. Furthermore, it is important to note that the questionnaire was initially developed for use in Latino immigrants to the United States. However, we believe that our instrument can be adapted for use with other immigrant communities or communities with low bridging connections, as most of our items are applicable to a variety of population profiles. That said, we caution that the degree of acculturation could affect the results of the questionnaire. Although our results did not detect differences in bridging social capital scores between those who arrived in the US more than 10 years ago versus more recent arrivals, our sample was small and limited our ability to detect differences. In theory, one would expect to find more bridging connections among those with longer duration of residence in their adopted countries.

Our study has some limitations. We were not able to provide results on test-retest reliability. Furthermore, the focus group sample was unbalanced in terms of gender and did not fully tap the demographic groups that the scale was meant to assess. However, the sample selected was useful for cognitively testing the items and refining the instrument. Further testing is needed in Latino samples to establish suitability for use in Latino populations. Nevertheless, ours is the first demonstration of a psychometrically validated questionnaire to measure bridging social capital in an immigrant population in the United States. Taking into account the lack of conceptual unity in other studies regarding bridging social capital and that there are not other measures with this specific purpose, we believe ours is a good starting point to better assess bridging social capital specifically. Furthermore, the questionnaire has been transculturally developed in two languages. Our questionnaire may be suitable for further refinement and adaptation to other immigrant groups in the US and immigrants in different countries.

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Appendix A. Supplementary material

Supplementary data associated with this article can be found in the online version at http://dx.doi.org/10.1016/j.ssmph.2016.08.008.

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