Validating the Measurement of Social Capital in Bangladesh: A Cognitive Approach

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Abstract

Despite the growing evidence linking social capital to improvements in health and health behaviors, reliable measures of social capital are lacking in low-income countries. To accurately measure social capital in new contexts, there is a need to validate social capital survey questions in each new cultural setting. In this article, we examine the content validity of the measurement of social capital in Bangladesh using qualitative methods. In December 2012, we conducted four focus group discussions and 32 cognitive interviews in one rural subdistrict (Durgapur) and one urban slum (Mirpur). We used the findings from the focus groups and cognitive interviews to create a new social capital survey instrument that can be used by health and development organizations in Bangladesh. Furthermore, in this article, we provide insight into social capital survey research in general, including suggestions for the measurement of group membership, social support, collective action, and social trust.

Keywords

Asia, South / Southeast; community and public health; focus groups; instrument development; interviews, semistructured; participation, social; trust; validity; qualitative

Over the last decade, the concept of social capital has become increasingly prominent in the field of public health (Kawachi, Subramanian, & Kim, 2008). Research on social capital has shown associations with physical health (Kim, Subramanian, & Kawachi, 2008), mental health (De Silva, McKenzie, Harpham, & Huttly, 2005), health behaviors (Lindström, 2008), and health care access (Derose & Varda, 2009; Story, 2014). In addition to improvements in health and health behaviors, social capital has provided a theoretical basis for assessing the impact of community-based health promotion programs (Campbell & Jovchelovitch, 2000). In Bangladesh, the commitment to community-based approaches to health and development has, in part, accounted for the recent improvements in maternal and child health despite an inadequate health system, restricted resources, and poor governance (El Arifeen et al., 2013). The unique social environment in Bangladesh provides an excellent opportunity to examine how community-based health strategies can build social capital as a way of enabling the practice of healthy behaviors (Campbell & Gillies, 2001). However, to generate this evidence, there is a need for more reliable operational measures of social capital in this cultural context (Blaxter & Poland, 2002; De Silva et al., 2006; Narayan & Cassidy, 2001). In this study, our overall goal is to contribute to the understanding of social capital and health in a low-income country by developing a more accurate and valid measurement of social capital. Specifically, we aim to validate the measurement of social capital in an urban and rural setting in Bangladesh, and propose a newly adapted social capital survey instrument that can be used by future health and development organizations.

Social Capital in Context

Social capital is generally defined as the social networks, norms, and values that facilitate collective action for mutual benefit (Woolcock, 1998). Most researchers dichotomize social capital into two complementary forms: structural and cognitive (Harpham, Grant, & Thomas, 2002; Krishna & Shrader, 2000). Structural social capital primarily focuses on what people do to gain

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access to resources and is measured by assessing individuals' actions and behaviors. Cognitive social capital focuses on how people feel about their community and is commonly measured by assessing individuals' attitudes and perceptions.

The most common components of structural social capital are associational membership/involvement; informal connections with family, friends, and neighbors; and collective action (Harpham et al., 2002; Narayan & Cassidy, 2001). The first two components of structural social capital reflect Bourdieu's (1986) emphasis on access to actual or potential resources embedded in organizations and informal relationships. First, membership in a community organization provides the opportunity for individuals to socialize and interact with others, which helps foster a sense of community from which all residents can benefit (Carpiano, 2006). Associational membership in various nongovernmental organizations (NGOs) has been a key component of socioeconomic development in Bangladesh (Islam & Morgan, 2012). Second, informal relationships with people who are close to an individual (relationally and geographically) serve as an additional source of support to reduce the impact of negative life events or to help in times of need. In Bangladesh, informal connections with family, friends, and neighbors have been shown to be important sources of social support, especially for women during pregnancy and childbirth (Edmonds, Paul, & Sibley, 2011). The third component, collective action, refers to the willingness of individuals to be proactive and intervene for the common good (Kawachi et al., 2008). Collective action in Bangladesh has been demonstrated through the mobilization of community resources to respond to community threats (e.g., corruption) and improve living conditions (i.e., safe drinking water and paved roads; Afsar, 2010).

Differing from but connected to the measures of structural social capital, the most common components of cognitive social capital are generalized trust, interpersonal trust, and social cohesion (Harpham et al., 2002; Narayan & Cassidy, 2001). Generalized trust is a central dimension of Putnam's (1993) conception of social capital and emphasizes the sense of trust one has in his or her community, including trust in people who are unknown to them. A community with a generalized sense of trust is thought to be more capable of developing and enforcing positive behaviors and attitudes that benefit society (Putnam, 1993). However, it has been argued that generalized social trust is difficult to measure (Blaxter & Poland, 2002) and is not a good indicator of relational trust (Cook, 2005). However, interpersonal trust is more specific and can be conceptualized in relational terms, where one individual trusts another to perform a particular task (Cook, 2005). This form of trust relates to Coleman's (1988) and Bourdieu's (1986) concept of social capital in which

networks of trustworthy relationships were the dominant mode of social exchange. Social cohesion also reflects Putnam's theory of social capital, where shared values and norms evoke a sense of social harmony and solidarity among neighbors (Carpiano, 2006). Building trust and social cohesion are important aspects of economic and social development, especially in communities that have experienced corruption or exploitation (Woolcock & Narayan, 2000). This is especially true in Bangladesh where the population continues to grow amid poor infrastructure, limited economic opportunities, and increased violence, especially in urban slums (Afsana & Wahid, 2013). Furthermore, there is an abundance of microfinance institutions in Bangladesh, which depend on high levels of trust and solidarity (Islam & Morgan, 2012; van Bastelaer, 2000).

Social Capital Measurement and Validation

Although the conceptualization and measurement of each component of social capital is similar across surveys, the same questions about social capital can be interpreted differently in different cultural settings. Therefore, there is a need to validate the content of social capital survey questions in each cultural setting to better understand the unique behavioral norms, social networks, and community organizations that characterize a given setting (De Silva et al., 2006; van Deth, 2003). Content validity is an important aspect of ensuring that a theoretical construct is accurately translated into operational measures (Trochim & Donnelly, 2008). Although there is no specific method for evaluating content validity, there are two perspectives that need to be assessed to determine whether a survey question is yielding the right information (Groves et al., 2009).

First, it is important to ensure that each survey question provides the necessary information to address specific research objectives by asking subject matter experts to review each question. Second, it must be determined whether the respondents can provide the necessary information. The primary methods used to assess how well respondents answer survey questions are focus group discussions (FGDs) and cognitive interviews. FGDs are used to uncover what respondents know about the issues in the questionnaire and the words they use to talk about them. Cognitive interviews are used to determine whether respondents can understand and answer each question by systematically examining the question-and-answer process. Failure to examine questions from the respondent's point of view can lead to misinterpretations, falsified answers, missing responses, and offended respondents (Bowden, Fox-Rushby, Nyandieka, & Wanjau, 2002). Cognitive interviewing focuses on four cognitive tasks required to answer a survey question: interpretation,
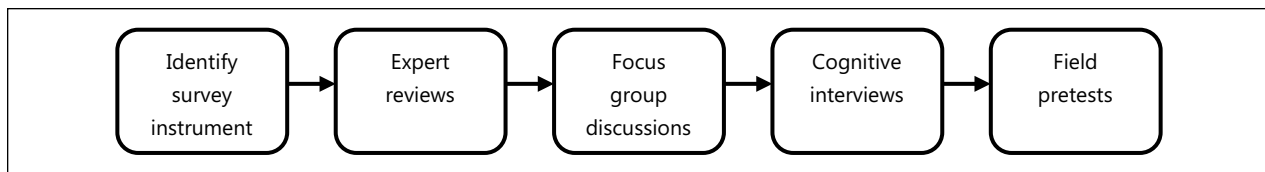
Figure 1. Survey question validation process (adapted from Groves et al., 2009).

retrieval/recall of information, judgment formation (sorting through information to formulate and identify a response), and response mapping (deciding which response to report; Beatty, 2004; Willis, 2005). Results from these validation methods are used to develop contextually relevant survey instruments in which the responses to each question represent "true" values of the concept being measured (Collins, 2003).

Cognitive testing methods are not common in social capital research. Only five previous studies have used cognitive interviewing techniques to validate social capital survey instruments (Blaxter & Poland, 2002; Boreham [as cited in De Silva et al., 2006]; De Silva et al., 2006; Earthy, Maltby, Arber, & Cooper, 2000; Tuan et al., 2005). Two of the studies were set in resource-poor areas of Vietnam and Peru and used a modified version of a social capital survey instrument that was developed by the World Bank, called the Social Capital Assessment Tool (SCAT; Krishna & Shrader, 2000). This shortened and adapted version of the SCAT (also known as the SASCAT) was used as a component of a larger survey in the Young Lives research project on childhood poverty in four countries (Ethiopia, Vietnam, Peru, and Andhra Pradesh in India). These two studies provided the basis on which to develop and validate a social capital survey instrument in Bangladesh.

To date, no social capital survey instrument has been cognitively tested in Bangladesh, one of the most vulnerable countries in the world. Characterized by high population density, limited resources, political instability, and a high incidence of natural disasters (Islam & Morgan, 2012), Bangladesh has attracted a large number of NGOs and other development organizations. Many of these organizations aspire to improve health and well-being through community-based strategies. Therefore, a better understanding of the measurement of social capital in Bangladesh will help elucidate the pathways through which these strategies affect health and health behaviors.

Method

Setting

This study took place in December 2012 in one rural subdistrict (Durgapur) and one urban slum (Mirpur) of Bangladesh. Durgapur is a rural, flood-prone area in

northern Bangladesh with a population of about 200,000 and Mirpur is a densely populated area in the capital city of Dhaka with a population of about 500,000. Poorer and more marginalized villages in Durgapur and slums in Mirpur were purposively selected by two local NGOs—Participatory Action for Rural Innovation (PARI) and the Sustainable Association for Taking Human Development Initiatives (SATHI)—that have been working in these two areas for over 10 years.

Survey Question Validation Process

We used the SASCAT as the foundation of the systematic evaluation of social capital survey questions in Bangladesh because it is relatively short in length and it has been cognitively validated in resource-poor settings (De Silva et al., 2006). To adapt the SASCAT for use in Bangladesh, we used three different methods of evaluation. Figure 1 displays the methods used in the survey question validation process for this study, with the exception of field pretests (Groves et al., 2009). First, we used expert reviews to assess whether or not the content of the SASCAT questions were appropriate for measuring social capital. The reviews were based on three different sources: (a) suggestions from the original adaptation of the SASCAT by De Silva and colleagues (2006), (b) an independent review by a social capital subject matter expert, and (c) a final review by our research team from the International Center for Diarrheal Disease Research, Bangladesh (ICDDR,B), an internationally recognized research center that offers expertise in maternal and child health, qualitative methods, and social determinants of heath. Following the expert review, the research team made changes and translated the survey questions into Bangla.

Second, we conducted a total of four FGDs separately for men and women in the two survey areas (Durgapur and Mirpur). Local NGO staff purposively selected 19 male and 23 female community leaders who were familiar with the social and cultural context of each community to participate in the FGDs. In collaboration with ICDDR,B, we recruited four Bangladeshi interviewers (three women and one man) who had experience in qualitative interviewing and were familiar with the study areas. We developed a FGD guide to explore what people know about topics covered in the survey—such as group

membership, social support, social trust, and collective action—and better understand the terms they use when they talk about these topics. The FGD questions were translated into Bangla and each interviewer practiced using the questions before going to the field. Each FGD lasted approximately 1 hour and was facilitated by one interviewer while the other took detailed notes. Following the FGDs, the interview team analyzed the notes and made changes to the survey instrument in preparation for the cognitive interviews. Table 1 displays the original social capital survey questions from the SASCAT, the adaptations to the questions based on expert reviews, and the final adaptations used in the cognitive interviews based on FGDs.

Finally, we used cognitive interviews to learn how the respondents understood the social capital questions and discover how they formulated their answers. The interview team participated in a 2-day training on social capital and cognitive interviewing. Following the training, the interview team went from door to door to recruit eight men and eight women from each study area to participate in the cognitive interviews. The team recruited respondents from two blocks in Mirpur and one village in Durgapur using a checklist that represented the age structure, marital status, education level, and religion of the population in the two areas. The final sample included 32 participants, and reflected the aforementioned demographic characteristics of the population in each area (Supplemental Table S1, available online at qhr.sagepub.com/supplemental).

The interview team conducted all cognitive interviews in the respondent's home away from family members and other distractions. The interviewers asked all 18 structured survey questions in Bangla and the interviews lasted between 30 and 60 minutes (41 minutes on average). Following each question, the interviewers used scripted verbal probes to better understand the four-stage process of responding to survey questions: comprehension of the question, retrieval of information from memory, decision about what to report, and response strategy (Willis, 2005). Table 2 provides examples of some of the probing questions used in the cognitive interviews.

Data Analysis

All FGDs and cognitive interviews were audio recorded. The notes from the FGDs were used solely to adapt the social capital questions for the cognitive interviews. The interview team transcribed the cognitive interviews and a third-party translation organization translated them into English. F.T. checked the accuracy of each transcript before sending the English transcripts to W.S. We examined the transcripts in NVivo 10.0 using a deductive approach to thematic analysis (Braun & Clarke, 2006).

We developed codes based on seven categories of problems embedded in survey questions (Presser & Blair, 1994): (a) interviewer has difficulty reading the question or recording the answer; (b) respondent has difficulty understanding what the question means; (c) respondent has difficulty remembering the question; (d) respondent has difficulty understanding the meaning of particular words or concepts; (e) different respondents have different understandings of the question; (f) respondent has difficulty recalling, formulating, or reporting an answer; and (g) respondent feels uncomfortable with the content of the question. W.S. and F.T. independently coded four transcripts and developed a codebook for this study. The remaining interviews were coded by W.S. using the codebook.

Protection of Human Participants

This project was approved by the University of Michigan institutional review board (ID# HUM00067182) and the ICDDR,B Ethics Review Committee. Interviewers requested written consent to interview and tape record each FGD and cognitive interview respondent. Each respondent was informed that participation was completely voluntary, and that they may discontinue participation at any time. To ensure confidentiality, we used a numerical code to de-identify each respondent on all electronic documents, including audio files from the interviews, transcripts, translations, and field notes. W.S. and F.T. were the only investigators who had access to these items on a password-protected laptop.

Results

This section is organized by each phase in the survey question validation process (Figure 1). First, we provide a brief overview of the original SASCAT survey instrument that was used in this study. Second, we present major changes to the survey questions based on expert review. Third, we discuss additional changes to the language used in each question based on the FGDs. A summary of the first three steps in the validation process is shown in Table 1. Fourth, we present the results of the cognitive interviews for each section of the social capital survey.

Social Capital Survey Instrument

The SASCAT was divided into two sections to measure different aspects of structural and cognitive social capital (Table 1, Column 1). The questions about structural social capital were further divided into four categories: group membership, support from groups, support from individuals, and collective action. The question about group

Table 1. SASCAT.

Original SASCAT Survey Instrument	Expert Reviews	Focus Group Discussions[a]
Structural Social Capital		
Group membership		
1. In the last 12 months, have you been an active member of any of the following types of groups in your community? Work-related/trade union Community association/co-operative Women's group Political group Religious group Credit/funeral group Sports group Other: specify	1. In the last 12 months, have you been an active member—such as by attending meetings or volunteering your time in other ways—of the following types of groups in your community? Work-related/trade union Community association/co-operative Women's group Political group Religious group Credit/funeral group Sports group Other: specify	1. In the last 12 months, have you been an active member—such as by attending meetings or volunteering your time in other ways—of the following types of groups in your *area*? *Vocational training group* Savings groups/community cooperative Political group Religious group Microcredit program Sports club Youth/student club Other: specify
Support from groups		
2. In the last 12 months, did you receive from the group any emotional help, economic help, or assistance in helping you know or do things? Work-related/trade union Community association/co-operative Women's group Political group Religious group Credit/funeral group Sports group Other: specify	2a. In the last 12 months, did you receive any emotional help from the following types of groups in your community[b]? 2b. In the last 12 months, did you receive any economic help from the following types of groups in your community[b]? 2c. In the last 12 months, did you receive any assistance in helping you know or do things from the following types of groups in your community[b]?	2a. In the last 12 months, did you receive any *sympathy or psychological support* from the following types of groups in your *area*[b]? 2b. In the last 12 months, did you receive any economic help from the following types of groups in your *area*[b]? 2c. In the last 12 months, did you receive any *training* from the following types of groups in your *area*[b]?
Support from individuals		
3. In the last 12 months, have you received any help or support from any of the following, this can be emotional help, economic help, or assistance in helping you know or do things? Family Neighbors Friends who are not neighbors Community leaders Religious leaders Politicians Government officials/civil service Charitable organizations/NGO Other: specify	3a. In the last 12 months, have you received any emotional help or support from any of the following types of people? Family Neighbors Friends who are not neighbors Community leaders Religious leaders Politicians Government officials/civil service Charitable organizations/NGO Other: specify 3b. In the last 12 months, have you received any economic help or support from any of the following types of people[c]? 3c. In the last 12 months, have you received any assistance in helping you know or do things from any of the following types of people[c]? 3d. Suppose someone in the community had something unfortunate happen to them, such as a father's sudden death. Who do you think they could turn to for help in this situation[c]? 3e. Suppose your neighbor suffered an economic loss, such as job loss (urban)/crop failure (rural). In that situation, who do you think would assist him or her financially[c]? 3f. Suppose a woman in your community is preparing to give birth to her first child. Who do you think she would turn to for advice or assistance in this situation[c]?	3a. In the last 12 months, have you received any *sympathy or psychological support* from any of the following types of people? *Immediate family* Relatives Neighbors Friends who are not neighbors Community leaders Religious leaders Politicians Government officials/civil service Person from NGO Other: specify 3b. In the last 12 months, have you received any economic help or support from any of the following types of people[c]? 3c. In the last 12 months, have you received any *training* from any of the following types of people[c]? 3d. Suppose someone in *your area* had something unfortunate happen to them, such as a father's sudden death. Who do you think they could turn to for help in this situation[c]? 3e. No change[c] 3f. Suppose a woman in your area is preparing to give birth to her first child. Who do you think she would turn to for advice or assistance in this situation[c]?
Collective action		
4. In the last 12 months, have you joined together with other community members to address a problem or common issue? 5. In the last 12 months, have you talked with a local authority or governmental organization about problems in this community?	4. No change 5. No change	4. In the last 12 months, have you joined together with *others in your area* to *identify or solve* a problem? 5. In the last 12 months, have you talked with a local authority or governmental organization about problems in this *area*?

Table 1. (continued)

Original SASCAT Survey Instrument	Expert Reviews	Focus Group Discussions[a]
Cognitive Social Capital		
Trust		
6. In general, can the majority of people in this community be trusted?	6a. Can your neighbors be trusted?	6a. No change
7. Do you think that the majority of people in this community would try to take advantage of you if they got the chance?	6b. Can leaders in this community be trusted?	6b. Can leaders in this *area* be trusted?
	6c. Can strangers in this community be trusted?	6c. *Do you trust someone you don't know in this area?*
	7. No change	7. Do you think that the majority of people in this *area* would try to take advantage of you if they got the chance?
Social cohesion		
8. Do the majority of people in this community generally get along with each other?	8. No change	8. Do the majority of people in this *area* generally *have good relationships* with each other?
9. Do you feel as though you are really a part of this community?	9. No change	9. Do you feel that this area is yours?

Note. SASCAT = shortened and adapted Social Capital Assessment Tool; NGO = nongovernmental organizations.
[a]New terms or phrases from the FGDs are italicized.
[b]Use the same list of response options as in Question 1.
[c]Use the same list of response options as in Question 3a.

Table 2. Example of Scripted Probing Questions Used in the Cognitive Interviews.

Collective Action

In the last 12 months, have you talked with a local authority or governmental organization about problems in this area?
Probing questions
 Can you tell me in your own words what the question is asking?
 Who do you include when you think of a "local authority or government organization?"

Trust

Do you think that the majority of people in this area would try to take advantage of you if they got the chance?
Probing questions
 Can you tell me in your own words what the question is asking?
 What does the phrase *take advantage of* mean to you as it's used in this question?
 In general, is it okay to talk about this in a survey, or is it uncomfortable?

membership asked, "In the last 12 months, have you been an active member of any of the following types of groups in your community?" The intended purpose of this question was to measure social interactions with other group members because individuals who are actively involved in groups are more likely to establish meaningful relationships compared with those who are relatively inactive. The question about support from groups asked, "In the last 12 months, did you receive from the group any emotional help, economic help, or assistance in helping you know or do things?" This question was designed to measure different types of social support (economic,

emotional, and instrumental) received from groups to which the respondent belonged. The question about support from individuals was the same as that about support from groups, but provided a list of types of individuals from whom the respondent received help (e.g., family, friends, and neighbors). There were two questions about collective action: "In the last 12 months, have you joined together with other community members to address a problem or common issue?" and "In the last 12 months, have you talked with a local authority or governmental organization about problems in this community?" These two questions were designed to assess respondents' ability to mobilize and undertake collectively desired actions to address community problems.

The questions about cognitive social capital were divided into two categories: trust and social cohesion. There were two questions about trust: "In general, can the majority of people in this community be trusted?" and "Do you think that the majority of people in this community would try to take advantage of you if they got the chance?" The intended purpose of the first question about trust was to evaluate respondents' general sense of trust of their community, whereas the second question assessed respondents' perception of fairness in their community. Finally, there were two questions about social cohesion: "Do the majority of people in this community generally get along with each other?" and "Do you feel as though you are really a part of this community?" These questions were designed to assess respondents' sense of social harmony and sense of belonging in their community.

Expert Reviews

The most significant changes to the survey instrument that we uncovered during the expert reviews were related to

the questions about structural social capital (Table 1, Column 2). First, to help respondents better understand the meaning of the term *active member* in the first question, the original World Bank survey was revisited and the phrase *such as by attending meetings or volunteering your time in other ways* was added. Second, the questions about support from groups and support from individuals were each separated into three questions asking about the three types of support received. This change was based on the finding by De Silva and colleagues (2006) that respondents primarily reported economic support, but rarely reported emotional and instrumental support, when asked about each type of support in the same question. Third, further review by a social capital subject matter expert led to the inclusion of three additional questions about potential sources of individual support. Each question described a hypothetical scenario that would lead the respondent to seek emotional, economic, or instrumental support. These questions were added to reflect Bourdieu's (1986) theory of social capital, which defined social capital as actual or potential resources embedded in one's social network. By conceptualizing social capital as a potential resource, it is possible to assess different forms of support that exist, but have not been recently accessed. Fourth, the only change to the cognitive social capital questions was related to the question about respondents' general sense of trust of their community. De Silva and colleagues (2006) found that respondents were unwilling to report their trust in people in general, so we divided this question into three separate questions about trust in neighbors, leaders, and strangers.

FGDs

The primary changes that we made based on the FGDs were related to simplifying the language and contextualizing the response categories (Table 1, Column 3). First, we wanted the respondents to understand the community as a geographic area, which is in line with Putnam's definition of community (Putnam, 1993). Therefore, we replaced the word *community* with the word *area* (urban) or *village* (rural) and we added a sentence to the beginning of the survey that stated, "Now I am going to ask you some questions about your area/village." Second, we changed the response options for questions about group membership and group support based on the types of groups most prevalent in Bangladesh. Third, for the questions about support from groups and individuals, we found that *sympathy or psychological support* was a better description of *emotional help*, and *training* was a more familiar term compared with the phrase *assistance in helping you know or do things*. Fourth, for the question about support from individuals, we divided the response option *family* into two categories: *immediate family* and *relatives*. Fifth, we revised the first question

about collective action to use more familiar language by changing the phrase *address a problem or common issue* to *identify or solve a problem*. Sixth, the question about trust in *strangers* (an unfamiliar term to most FGD participants) was further modified to ask about trust in *someone you don't know*. Finally, we changed one phrase in each question about social cohesion. In the first question, we replaced the phrase *get along* with *have good relationships* when respondents were asked how they felt about the majority of the people in their area. In the second question, respondents were asked if they felt as though they *are really a part of this community*, which was replaced with the phrase *this area is yours*.

Cognitive Interviews

After the expert reviews and FGDs, the survey instrument was revised and used for the cognitive interviews. This section describes the primary difficulties that were encountered by multiple respondents during each section of the survey instrument and provides recommendations for the SASCAT-Bangladesh (SASCAT-B), a newly adapted survey instrument for use in Bangladesh (Table 3).

Group membership. The majority of respondents understood the term *member*, but they had difficulty understanding the term *active member*. Some respondents understood "active" to mean "good" and refer to one's ability to pay back a loan to a microcredit organization. Other respondents thought an "active member" was a member who had decision-making authority in the organization.

> Interviewer (I):   What do you mean by the active member?
> Respondent (R):   . . . The member who receives money but does not return it, are they good, sister? The other members of this cooperative said she is good because she returned the money. Conversely, if I take the money and do not return it, do not give them the profit, also do not return the capital, then I am not a good member, sister. (40-year-old urban woman)

In the SASCAT-B, the group membership question was separated into two questions to minimize confusion around "active membership." As shown in Table 3, the first question remained the same, but the word *active* and the modifying phrase *such as by attending meetings or volunteering your time in other ways* were removed. The second question asks, "In the last 12 months, how would you describe your involvement in the groups in which you are a member?" Response options include a list of potential activities based on the cognitive interviews.

Support from groups. More than half of the respondents had difficulty distinguishing between *sympathy or psychological support* and *economic help*. Most respondents

Table 3. SASCAT-B.

Structural Social Capital

Group membership

1a. In the last 12 months, have you been a member of the following types of groups in your area?

Vocational training group	Microcredit program
Savings group/community cooperative	Sports club
Political group	Youth/student club
Religious group	Other: specify

1b. In the last 12 months, how would you describe your involvement in the groups in which you are a member?

Received a loan or other form of financial support	Participated in decision making
Attended meetings	Served as a leader of the group
Attended trainings	Other: specify

Social support

2a. Suppose you had something unfortunate happen to you, such as a father's sudden death. Who would help you in this situation?

Immediate family	Politicians
Relatives	Government officials/civil service
Neighbors	Person from NGO
Friends who are not neighbors	A group in which I am a member
Community leaders	A group in which I am not a member
Religious leaders	Other: specify

2b. Suppose you suffered an economic loss, such as job loss (urban)/crop failure (rural). In that situation, who do you think would assist you financially[a]?

2c. Suppose you are (female)/your wife is (male) preparing to give birth to your (female)/her (male) first child. Who do you think would provide you (female)/her (male) advice or assistance in this situation[a]?

Collective action

3. In the last 12 months, have you joined together with others in your area to address important issues?
   Yes
   No

4. In the last 12 months, have you talked with a local leader, chairman, or governmental organization about the development of your area?
   Yes
   No

Cognitive Social Capital

Trust

5a. Can your neighbors be trusted?
   Yes
   Sometimes
   No

5b. Can leaders in this area be trusted?
   Yes
   Sometimes
   No

6. Do you think that the majority of people in this area would try to take advantage of you if they got the chance?
   Yes
   Sometimes
   No

Social cohesion

7. Do the majority of people in this area generally have good relationships with each other?
   Yes
   Sometimes
   No

8. Do you feel that this area is yours?
   Yes
   Sometimes
   No

Note. NGO = nongovernmental organizations.
[a]Use the same list of response options as in Question 2a.

associated sympathy or psychological support with life events that would require financial help. Other respondents perceived economic help as a way of showing sympathy.

> R: I understand psychological help or support to mean that, if there is an accident, then if someone comes and gives me sympathy, I can call it psychological support. If I have some other problems, monetary problems, and someone gives me anything, that is also help.
> I: That means, if someone gives you money, that is psychological help?
> R: No, that's not psychological help. But, it can be, in many cases.
> I: How?
> R: If there is any kind of accident and if I do not have money . . . then, if someone gives me money; that is psychological help. . . . In that situation, this kind of help can reduce my load. It reduces psychological pressure. (40-year-old urban woman)

Some respondents reported that when they received a loan they did not always perceive this as "help" because they had to repay it, whereas other respondents classified loans as economic help. In addition to monetary help, many other types of economic help were mentioned by the respondents, including food, clothing, and materials to help rebuild a house.

Finally, the term *training* was too specific and did not describe the various forms of instrumental support that the question was originally designed to capture. *Training* was often understood as a form of institutional teaching related to a skill or trade, whereas an informal program that teaches about hygiene was called a "meeting." The recommended changes to the questions about group support are addressed at the end of the next section.

Support from individuals. The questions about support from individuals were divided into two groups of three questions each. One group of questions asked about support received from individuals in the last 12 months, and the other group of questions asked about potential support from individuals. The respondents had the same problems with the questions about the three types of individual support received as they had with the questions about group support received, namely distinguishing between sympathy or psychological support and economic help. The cognitive interviews also revealed that respondents who received individual support in the last 12 months had recently experienced an economic loss or some other unforeseen hardship, whereas those who did not receive support were not in need of help.

> I: Have you received any economic help from any of these people in the last 12 months?

> R: Economic help. I got it in the last 12 months [from] my elder brother. Suppose if I am in trouble, such as I do not have rice or money, then my elder brother gives that.
> I: Has your elder brother given you anything in the last few days?
> R: Yes, he always gives. (33-year-old rural man)

> I: Have you received any financial benefit from anyone on the list?
> R: No. It wasn't required for me to take money. If it was necessary, then I must have needed help.
> I: You didn't need [help], so you didn't get it.
> R: I wasn't in need. If I needed [help], I would have got some help. . . . If I need any small amount, then I get it from my father- and mother-in-law. (35-year-old rural woman)

Second, the questions about potential support presented three hypothetical situations in which each form of support was addressed (emotional, economic, and instrumental). Respondents had more difficulty with questions about received support compared with questions about potential support. This might be due, in part, to the hypothetical situations given in each of the questions about potential sources of support. The hypothetical scenario gave the respondent a way to relate to the question and avoided some of the misunderstandings of the terms and phrases used in the questions about received support.

The most significant changes to the SASCAT-B came from the questions about support from groups and support from individuals. Because of the aforementioned problems with questions about actual support received, all six questions about group and individual support received were removed from the SASCAT-B. Social support is now assessed with three questions about potential sources of support, which includes types of individuals and types of groups as response options (Table 3). These questions were also reframed to focus on the respondent (e.g., "Who would help you in this situation?"), instead of the community in general (e.g., "Who do you think they could turn to for help in this situation?"). This is consistent with the other questions in the survey instrument and is a better approximation of potential sources of support that exist in the community.

Collective action. Most respondents associated community "problems" with infrastructure issues—such as latrines, roads, and utilities (electricity, gas, water)—as well as crop failure, house fires, and quarrels between community members. Respondents typically talked with a local authority or government organization when they faced problems related to infrastructure. More than one third of the respondents had difficulty understanding the term *local authority* when asked about talking with someone about problems in their village or urban slum. When the

terms *chairman* or *local leader* were used, then most respondents were able to better understand the intended meaning of *local authority*.

As with the questions about received support, those about collective action appeared to be correlated with negative community attributes. That is, people who reported getting together to solve problems often lived in communities that had more social problems, whereas those who did not get together often lived in more peaceful communities.

I: In last twelve months, have you sat with local people to solve a problem together?
R: Of course we do.
I: What was the problem?
R: Different people come here with different problems. There is no limit of problems.
I: Can you tell me one or two problems? I have to know what sort of problems you usually face.
R: There is often quarrel among the people, one slaps another. . . . As you know this is a village, not town, so problems they face include, suppose, someone's goat has eaten the rice paddy of another person. Then they slap the owner of the goat and there is village court to resolve the matter and so on. (40-year-old rural man)

I: In the last 12 months, have you joined together with others to solve a problem?
R: No, we have not suffered such problems, sister. To my knowledge, sister, whether anyone suffered, I cannot tell. To my knowledge, in the last 12 months, I have not suffered from such problems. (40-year-old urban woman)

There were very few changes made to this section of the SASCAT-B because most respondents understood the questions about collective action. The only term that caused some confusion was *local authority*, which was replaced with the phrase *local leader or chairman*. In addition, the focus on *problems* in each question was removed to address the possibility that people who join together to solve problems might live in communities with more social problems. As shown in Table 3, the questions were rephrased to ask about (a) joining together to *address important issues* and (b) talking with a local leader, chairman, or government organization about *the development of your village or area*.

Trust. Most respondents understood the term *trust* to refer to someone in whom they *believe* or *have faith*. Although most respondents understood the phrase *people you don't know*, it was difficult for them to report their ability to trust this category of individuals.

I: The people you don't know in this locality, do you believe them?

R: No, how could I believe them and how could I disbelieve them? The people I don't know, I don't go to them and I don't mix with them. So how could we believe them? And how could we disbelieve them? We don't have an idea of whether he is good or bad. Then what should I call him? I can neither call him good nor bad. (22-year-old rural man)

Although the question about trust was divided into three separate questions to distinguish between different categories of people, the cognitive interviews revealed that asking whether people can be *trusted* was not a simple yes–no question. As Cook (2005) argued, a sense of trust often depends on the individual and the situation.

I: Is the local leader of this area is trustworthy?
R: For what? Any type of work? Leaders aren't trustworthy for any type of work. In case of some activities they are, but not in all cases. (21-year-old urban man)

For the last question about trust, most respondents understood the phrase *take advantage of* to mean *cheating* or *creating trouble*. This was usually discussed in reference to money or property and, at times, respondents mentioned that these things were taken by force.

Based on these findings, two changes were made to the questions about trust in the SASCAT-B. First, the question about *trusting people you don't know* was removed. This question did not provide an accurate depiction of social trust in the community because it was difficult for respondents to understand. Second, the response option *sometimes* was added to all questions about trust (Table 3).

Social cohesion. Most people understood the concept of *having good relationships* with one another. They described this concept as working together to overcome problems or disputes. As with the questions about trust, some respondents had difficulty identifying their response to this question because they could not respond *yes* or *no*.

I: Do the villagers here have good relationships with each other?
R: Some of them get along while others do not. . . . Suppose, someone is good today and another person is living badly. That means, people can be of two types. They don't get along. (35-year-old rural woman)

When respondents were asked why they felt like this was their *own area*, they talked about growing up in or being born in the area, going to school or working in the area, and owning a house in the area. In a few cases, women respondents mentioned that they were from a different area, but they moved to their husband's village or neighborhood to live with their in-laws. Most women

reported that their new area (i.e., their husband's home) belonged to them, which is a common belief in this context.

Because of respondents' ability to interpret these questions as intended, no changes were made to the questions about social cohesion in the SASCAT-B. The only change that was made was the addition of a response option to each question, so respondents can choose from *yes, sometimes*, and *no* (Table 3).

Discussion

This is the first known study to cognitively validate the measurement of social capital in Bangladesh. Using expert reviews, FGDs, and cognitive interviews, we were able to identify the primary challenges in assessing a complex social construct in a low-income setting. Based on our findings, we created the SASCAT-B, a new social capital survey instrument that can be used by health and development organizations in Bangladesh (Table 3). The questions in the SASCAT-B can be added to much larger survey instruments, which will allow social capital to be studied more widely across different development sectors.

The key changes that we included in the SASCAT-B were as follows: (a) further modifications to the terminology used in the questions; (b) separating the question about group membership into two questions; (c) removing all questions about actual support received from groups and individuals; (d) retaining the questions about potential support, which included types of individuals and types of groups in the response options; (e) reframing the collective action questions to focus on community development, instead of community problems; and (f) adding the response option *sometimes* to questions about trust and social cohesion. With this new survey instrument complete, our next step is to conduct a field pretest with a small, representative sample of individuals to evaluate the SASCAT-B as well as the data collection and sampling procedures (Groves et al., 2009).

The revisions that we made to the new social capital survey instrument did not alter or change the core components of structural social capital (i.e., group membership, social support, and collective action) or cognitive social capital (i.e., trust and social cohesion). As in prior studies that were set in different countries (Blaxter & Poland, 2002; De Silva et al., 2006; Earthy et al., 2000; Tuan et al., 2005), the distinct components of social capital were found to be relevant in the Bangladesh context as well. However, the terminology, response options, and structure of the questions needed to be contextualized for respondents to report accurate answers to each question.

In addition to the new survey instrument, our study provides insight into four remaining challenges in social capital survey research: (a) measuring group membership, (b) framing questions about social support and collective action, (c) assessing social trust, and (d) tailoring the survey instrument to fit the social and political context.

First, previous efforts to evaluate questions about group membership found these questions to be the most difficult for respondents to answer (De Silva et al., 2006; Earthy et al., 2000). The measures of group membership used in our study were similar to the measures used by the American Citizen Participation Study and World Values Survey, where membership was measured by asking whether the respondent belongs to or is a member of any of the list of group types. As in the World Values Survey, the second question about group membership that we used in the SASCAT-B asked about the level of involvement in groups (Narayan & Cassidy, 2001). Asking about one's level of involvement is important because questions that only ask about "participation" can confuse the number of groups one belongs to with the level of involvement (Blaxter & Poland, 2002). Level of involvement is an important aspect of social capital that should be carefully measured because it has the potential to expand the range of weak ties among individuals who otherwise would not interact and it promotes the creation of social trust and norms of reciprocity at the community level (de Ulzurrun, 2002).

The second challenge facing the measurement of social capital is related to reframing questions about social support and collective action to accurately represent higher levels of social capital. First, we framed questions about social support as potential sources of support using hypothetical scenarios in the SASCAT-B to avoid possible correlation between negative life events and individuals who report having received social support. Asking respondents to think about specific hypothetical situations is consistent with the original questions about solidarity and social support in the SCAT (Krishna & Shrader, 2000). Furthermore, questions about potential sources of support available within social networks are consistent with Bourdieu's theory of social capital (Carpiano, 2006) and have the ability to identify disparities in access to each potential source of social capital. Second, if questions about collective action are framed around community problems, then communities with high levels of collective action might be associated with social divisiveness, which is an indicator of low social capital (Grootaert & van Bastelaer, 2001). Questions about collective action were originally developed to assess social issues related to community development (Grootaert & van Bastelaer, 2001). Therefore, to avoid potential correlation with negative community attributes, we used questions about collective action that focused on community development in the SASCAT-B and

avoided terminology that focused on community problems (Krishna & Shrader, 2000).

The third major challenge is related to perceptions of trust. First, perceptions of generalized trust are difficult to measure and are often inaccurate approximations of relational trust. Blaxter and Poland (2002) found that individuals' perceptions of trust were not indicators of generalized trust in communities in the United Kingdom. They found that whereas certain individuals are trusted, groups of others are not. Furthermore, they reported that respondents found trust to be a difficult concept to talk about because they trusted people under specific circumstances (Blaxter & Poland, 2002). Earthy and colleagues (2000) also found that respondents had difficulty conceptualizing trust at the community level and preferred to talk only about people they knew personally. Cook (2005) took it a step further and suggested that generalized trust is not necessarily a component of social capital but rather a trait or personality characteristic. Therefore, we removed all questions about generalized trust from the SASCAT-B. However, if trust cannot be generalized, then why should it be measured in social capital surveys?

This leads to the second observation about the measurement of trust: Trust is conceptualized in relational terms and often relates to specific individuals and situations. In fact, there are few individuals who trust everyone or who trust one person completely with respect to all things (Cook, 2005). Sturgis and Smith (2010) found that many respondents think of people they know when responding to questions about generalized trust. This has implications for what the questions about generalized trust are actually measuring. Instead, questions about trust should focus on interpersonal trust, which is a better representation of social capital. The significance of trust related to interpersonal interactions within one's social networks is a critical part of social capital (Cook, 2005). This is why we created questions about interpersonal trust in the SASCAT-B, which focused on specific categories of people.

The fourth challenge facing future social capital surveys draws on the cultural context of Bangladesh, which highlights the importance of tailoring survey questions to the social and political environment in which they are administered. The relatively high frequency of respondents mentioning affiliation with microcredit or microfinance organizations when asked about group membership or social support reflects the unique culture created by microfinance institutions in Bangladesh. Group-based microfinance is based on self-selected groups of borrowers who are jointly liable for loans. Borrowers decrease lenders' risk of investment by using their knowledge about each other to find the "right" people to join the group and using peer pressure to ensure repayment of the loans (van Bastelaer, 2000). Being excluded from a microfinance group is a good sign that an individual does not have access to social capital through this mechanism. These individuals are also denied other types of resources that accompany membership in a microfinance group, such as educational opportunities for children and health care resources. The microfinance culture in Bangladesh is important to understanding group membership, social support, and trust; therefore, we included microfinance organizations in the list of response options for many of the questions about structural social capital in the SASCAT-B.

Limitations

Although our study provided important information for the validation of the measurement of social capital in Bangladesh, it was subject to a number of methodological limitations. First, the sample included only one village and one urban slum, which might not be representative of all rural and urban areas in Bangladesh. However, the demographic profile of our sample (Supplemental Table S1) was similar to the national demographic profile. Second, it is possible that cognitive interviewing found "problems" that would not exist under normal survey conditions. For example, in some instances, it was difficult to discern whether the respondent did not understand the question or the respondent understood the question, but changed his or her answer to please the interviewer. To limit interviewer bias, we encouraged interviewers to ask the probing questions as scripted. Third, cognitive methods can discriminate against less articulate respondents who find it difficult to verbalize their thought processes. Therefore, interviewers rephrased the probing questions among less articulate respondents without compromising the meaning of the question.

Conclusion

To facilitate the interpretation of the complex effects of social capital on health in different social and political environments, it is important to validate survey questions using qualitative methods (De Silva et al., 2006). This is the first known study to use a variety of qualitative methods, including cognitive interviews, to create a contextually appropriate social capital survey instrument for use in Bangladesh. Results emphasize the importance of using a systematic validation process to ensure that respondents are able to comprehend key terms, recall important information, and identify an appropriate response in a survey about social capital. These validation methods are essential to the development of social capital survey instruments in each new cultural context to ensure respondents report accurate answers to questions about the core components of social capital. As efforts to

accurately and reliably measure social capital continue to improve, evidence for the linkage between social capital and health will be strengthened.

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