

A methodology for building culture into intervention: An example from Mumbai, India

Introduction

Adjusting and adapting interventions to a community's cultural and social context is now a well recognized part of behavioral change and developmental programs. In the post-WWII period, the rush to bring western-oriented development to less technologically developed countries and communities produced many notable failures for developmental programs that did not take into account cultural knowledge, beliefs and practices (B. Paul, Health, Culture and Community; Spicer E, Human Problems in Technological Change). Despite this recognition, there are many examples of development programs over the last five decades that proceeded to the implementation phase with little understanding of the cultural and social context and as a result, suffered negative consequences. Most intervention programs are developed in the West, and while in this day and age they are not simply imposed as whole cloth, they more often than not aim for rapid implementation at the risk of overlooking critical contextual factors. This rapid approach does not do justice to the complexities of cultural opportunities and barriers to externally-derived interventions. An understanding of the cultural and social dynamics plays a role not just in the successful implementation of Western-derived interventions, but also in the formative development of culturally-based and locally-derived interventions.

Anthropologists and other social scientists in the "culture" business have been critical of western-derived interventions for their oversimplification of the role of culture. Interventionists have failed for the most part to effectively include in their programs individuals with cultural expertise. The result is that social scientists are conducting basic research and critiquing development programs, while developers and interventionists cannot (or will not) put in the time and resources for a cultural assessment. Various efforts to institutionalize cultural assessments [e.g. Rapid Assessment Procedure (RAP; S. Scrimshaw) and Focused Ethnographic Survey (FES; GH Peltó,) have been shown to be effective tools for building culture into intervention research, including making interventions culturally-relevant from the ground up, adapting externally-derived interventions to a specific cultural context, and incorporating communities as larger-level targets for intervention. Building culture into interventions also highlights the need to diversify research methods so that qualitative information about normative behavior patterns and perspectives can help to inform intervention activities at multiple levels.

This paper seeks to operationalize a call for culturally-relevant intervention research and implementation, e.g. by the Centers for Disease Control (McKleroy, 2006) and by the Joint United Nations Programme on HIV/AIDS (2004) that can assist developers and interventionists to identify existing community norms and resources available to disseminate and sustain intervention activities. Results of a community norms analysis are presented from a research and intervention project in a low income community in Mumbai, India. The objectives of the paper are to: (1) examine modal beliefs and norms and their variations within a residential community; (2) and within subpopulations of the study community; (3) describe the normative anatomy of the community (including leaders, social workers, members of civil society and the religious sector) and locate segments of the community population in greater need of intervention or those who are on the forefront of innovation; (4) identify individuals (e.g. CBO members, key informants, religious leaders) best suited to help disseminate intervention messages, and (5) to assess the acceptability, feasibility, and sustainability of the intervention into the future and better understand the scope of resources and infrastructure available to adapt and translate the intervention into a self-sustaining community resource.

The role of culture in sustainable behavioral change

Interventions promoting behavioral change need to address relational and community-level factors (e.g., marital, social, economic, political) that contribute to risky behavior (Becker & Robinson, 1998; Hayes and Peterson, 1994; NIH Consensus Panel, 1997). The limited success of behavioral, individual skills-based and informational approaches to prevention and intervention (Gillies, 1998) highlights the need to understand the sociocultural context and to develop “health-enabling communities” (Tawil et al., 1995) that can help to support and sustain behavioral change over time. Scheirer (2005) suggests that the effectiveness of an intervention can be measured by its sustained benefits for participants after the intervention project has been completed. Indicators of sustainability include the absorption or institutionalization of intervention activities and principles by implementing organizations, in addition to the increased capacity of community members and organizations to mobilize resources, technical assistance, researcher involvement, and institutional and public support for existing or developing programs (Schensul, 2009; Jana et al., 2004). Sustainability depends not only on resource capacity, but also motivation for continued engagement at multiple levels (Jana et al., 2004). A crucial component of instituting long-term change, therefore, involves identifying existing cultural perspectives and preferences at many different levels in the community – and how they are institutionalized – in order to best strategize how to address multiple outlooks and promote positive change. Because behavior change is not only the product of individual motivation but also of social and cultural influence, behavioral intervention efforts are likely to be more sustainable when supported by community norms, peers and popular opinion leaders (Schensul, 2009; Jana et al., 2004; Kelly et al., 1997; Kegeles, 1990), and when they are adapted to and/or seek change within the social, cultural, and politico-economic context (Wegbreit, 2006).

For example, Dworkin and Ehrhardt (2007) and others (e.g. Gupta, 2001; Exner et al., 2003; Amaro, 1995) argue that many commonly-used strategies to reduce HIV-risk among women (e.g. abstinence, fidelity, condom use) are ineffective because they fail to address how “gendered contexts,” including sexual double standards and harmful cultural practices and institutions (e.g. “widow cleansing”) structure women’s sexual risk, motivate sexual violence and perpetuate disempowerment among women. Furthermore, there is increasing recognition that to effectively impact on the health of married women, it is necessary to address the power dynamics within the marital dyad and how these dynamics are supported by cultural beliefs and norms (Becker et al., in press; Becker & Robinson, 1998). For a large portion of married women living in societies characterized by patriarchal gender norms, control over sexual health is restricted because of culturally-based beliefs influencing women’s status in relation to their husbands (Maitra & Schensul, 2002). Promotion of safe sex within marriage requires not only improving women’s autonomy and capacity to address issues arising in marital and family life, but also positive change in cultural norms governing communication styles between husband and wife (Ali et al., 2004; Becker & Robinson, 1998; Bhattacharya, 2004; El-Bassel et al., 2003). For this reason, the most effective risk-reduction programs for married women have been those that include men in a couples-based format to address communication styles and marital roles that are sanctioned within a larger cultural context (El-Bassel et al., 2005). These types of couples-based programs have been shown to reduce HIV-risk through increased use of HIV testing services (Farquhar et al., 2004; Painter, 2001; Coates, 2000), greater adherence to HAART (El-Bassel et al., 2005; 2003; Remien et al., 2005), increased use of condoms and/or spermicides (Jones et al., 2005), increased knowledge of risk factors (Koniak-Griffin, 2008), and decreased HIV/STI transmission within the couple (Misovitch et al., 1997; Musaba et al., 1998; Painter, 2001). Culturally-relevant couples-based approaches allow the dyad to jointly address sensitive issues (Burton et al., 2008), serving to protect women against the risk of violence, stigmatization and separation that is often caused by behavior change introduced by

women unilaterally (d'Cruz-Orote, 1996; Kalichman et al., 1998; Misovitch et al., 1997; O'Leary, 2000; Wingood & DiClemente, 2000; Sumartojo, 2000).

Translating Knowledge about Cultural Norms

Culturally-informed interventions which strive to address larger social and cultural norms promise greater impact, sustainability and cost-effectiveness (Sweat et al., 2000; Herbst et al., 2007). However, few studies illustrate how to characterize contextual norms without resorting to stereotypes and how to apply information about cultural norms in practice (Grassly, 2001; MacPhail & Campbell, 1999). For the purposes of this paper, norms are defined here as any expectations and prescriptions for behavior that are associated with cultural values and beliefs and have motivational influence (D'Andrade, 1992). Because norms are likely to differ among individuals and across segments of a population (Peltó & Peltó, 1975; Whiting & Whiting, 1975), a challenge for interventionists is to identify not only the dominant cultural pattern(s) but also the degree and sources of intra-community variation in order to most effectively target messages and activities. Identifying key individuals and segments of the population whose views are congruent with planned intervention messages in addition to those whose views are dissimilar helps interventionists to better understand the composition of the community and to engage with these subgroups both as sources of potential support and opposition.

This kind of analysis of existing variation in a community can best be thought of as one of a wide range of mixed-methods that fall under the realm of "ethnography." Including ethnography as a way to explore community characteristics (e.g. Tripathi et al., in press) constitutes an important first step in getting to know a community (Schengul et al., 1999), a means for describing and tracking change both qualitatively and quantitatively (Schengul, 2009) and for understanding cultural knowledge from an "emic" perspective (LeCompte and Schensul, 1999). Ethnographic interviewing and immersion can provide insight into links between individuals and groups, including social network and media-based links (e.g. television, radio, and/or internet communications) that can be constructive for dissemination of preventive messages (Buraway et al., 2000; Schengul & Trickett, 2009). Participant observation and interviews with key informants also help to assess potentials for collaboration (Averill, 2003), particularly useful in formative stages of intervention research.

An analysis of prevalent cultural beliefs and values within the community is essential for ensuring cultural relevancy and appropriateness, and for translating and implementing intervention/prevention programs within realistic settings. Cultural analysis contributes to one of the fundamental goals of translational research, which is the need for a better understanding of the factors affecting uptake and continuity within the community (Green, 2007; Solomon et al., 2006; Green & Glasgow, 2006; Glasgow et al., 2003; 2006; 1998; Mendel et al., 2008; Clark, 1995; Mercer et al., 2007; Steckler et al., 2008; Dziewaltowski et al., 2004). Successfully translating data about cultural norms into an intervention requires a clear sense of how intra-cultural or community variation will be interpreted and acted upon by interventionists in order to match the needs, capacities, interests, cultural perspectives and values of both implementers and recipients of the program (Castro et al., 2004; Solomon et al., 2006). Cultural analysis may form part of a larger pre-implementation or community "readiness" assessment (e.g. Miller 2003) in order to predict challenges in the implementation process and to anticipate outcomes. Tracking community norms and resources at all stages of intervention testing and research (e.g. formative/exploratory research, RCT, evaluation and translation) contributes to a greater potential for sustainability and scaling up of interventions (Brown, 1991; Oetting et al., 1995; Plested et al., 1998; Weisheit, 1984; Bukoski et al., 1994; Fuller et al., 2007; Panzano et al., 2006).

Methods

The data on which this paper is based is drawn from an Indo-US, NIMH funded project (2007-2012) involving the collaboration of the University of Connecticut School of Medicine (US) and the International Center for Research on Women, Asia Regional Office and the Tata Institute for Social Sciences and Topiwala Nair Medical College. The project is based in RISHTA (Research and Intervention in Sexual Health: Theory to Action and meaning “relationshipship” in Hindi and Urdu) and focuses on the reduction of HIV/STI transmission risk and gender-based inequities among married women in a low income community in Mumbai, India. Including a community-level analysis of cultural norms offered us a way to identify individuals and subpopulations of the community in greater or lesser need of intervention and to evaluate change (or lack thereof) in the community and among individuals at over time (at baseline and follow-ups at 6-months and a year). Additionally, this analysis allowed our intervention team to better plan how and where to disseminate intervention messages for maximum effectiveness using existing resources and important sources of community influence. Could be include here CNS sampling procedure?

The project involves a multi-level intervention (community, health care system, marital dyad and individual women) that includes a randomized controlled trial (RCT) at a urban health center in the study community. Participants in the RCT are randomly assigned receive individual counseling, group couples’ (wives and husbands) on topics related to risky sexual behavior, sexual relationships and intimacy, and problem-solving skills to improve negotiation, communication and trust. Both individual and couples’ sessions introduce alternative culturally-rooted views and risk-reduction narratives through negotiation and dialogue. The individual and couples’ intervention is facilitated by the development of a women’s health clinic within the urban health center, which provides services exclusively for women with their own gynecological problems.

The RCT and the WHC are situated within a larger community-level intervention to help reduce sexual risk through the dissemination of educational messages and activities aimed at increasing marital communication, raising the priority of women’s health, reducing intimate partner violence, and creating positive changes in gender norms and decreasing sexual risk behavior. Community education is conducted in collaboration with five community-based NGOs and over 40 mosques and *madrasas* (male and female Islamic schools) in the Islamic religious sector of the community, and includes dissemination of intervention messages on every Friday during *namaz* in religious and community meetings. Other forms of dissemination include street dramas, banner and poster presentations, handbills and video presentations implemented systematically to maximize coverage in the community. A conducive atmosphere was created in the community by organizing several events such as rally on 8 March (if appropriate put a rally picture here) Ganpati utsav, Ramajan, and Navrati. A significant part of this community-level intervention is to promote positive gender norms to help reduce gender inequities and sexual risk among married couples in particular.

Measurement of Community Norms

Measurement and mapping of community norms and resources was conducted according to a conceptual process in which a quantitative instrument is gradually derived from information learned through successive analyses of qualitative ethnographic research with community

members. In the first step of this process, in-depth interviews were conducted with married women over 18 (n=40), married men (n=50), married couples together (n=50 dyads), key informants (17), CBO members (n=18), Imams (n=16), private health service providers (n=30), and staff members at the UHC in which the intervention is situated (n=10). All qualitative interviews were one-on-one, open-ended and centered on individual and community norms and beliefs about women's gender roles, sexual health issues, life situations, and marital/ family dynamics affecting sexual and reproductive health and women's empowerment. The interview protocols for women included questions such as, "Please tell me about the quality of your marriage," and "Can you tell me about your existing and past health problems?" Women were interviewed by female interviewers in their homes when husband and children were not present over three to four visits lasting about 1-1.5 hours for each visit. When privacy could not be maintained, a subsequent visit was scheduled. Interviews with men were conducted by male interviewers in either private or public settings (with privacy) in the community in one or two visits lasting from 1-1.5 hours each, with the more focused aim of identifying knowledge of and involvement in women's health issues. Questions included "Could you tell me about the quality of your relationship with your wife," and "Please describe any health problems your wife has experienced and how she has sought treatment." Interviews with healthcare providers took place within their own private clinics in the community, over one visit lasting about 1-1.5 hours in between or over the course of meeting clients. These interviews were designed to elicit providers' diagnostic and treatment practices, as well as their explanatory models of common illnesses faced by women in the community. Informed consent was obtained, and interviewees were debriefed about the purpose of the research.

In the second step, information from these in-depth interviews was then used to generate proscriptive statements about gender norms in the domains of marital communication, sex, women's mobility, decision-making, food distribution, health, work, and spousal violence resulting in 81 items. These items were administered to 101 respondents in the community who reported their agreement with each statement on a Likert scale (1-4). Results were used to reduce the questionnaire to a 29-item Community Norms Survey (CNS), including statements like "A woman should obtain permission for treatment from the husband for any kind of health problems," and "If a husband beats his wife, she should not share it with anyone," and "A woman cannot talk to men other than her husband." All in-depth interviews and the CNS were conducted in Mumbaiia Hindi by RISHTA field staff.

The CNS which was then administered to in the study communities to a stratified community sample including 1) individual women participants in the RCT (n=345); 2) members of CBOs/NGOs in the study communities (n=35); 3) community health volunteers (CHVs; n=24); Aganwadi workers assisting women in the community with reproductive health concerns and childcare (n=42); 4) *Imams* (n=48) and *Aalimas* (n=19) (male and female leaders in the Muslim religious sector, respectively); and 5) a random sample of married men and women (18-60) from the general population of the study communities (n=601, with 450 from the study community and 151 from a nearby control community). The geographical sub-area of residence (n=15) for all respondents was coded numerically.

Analyses

In-depth interviews from both phases of the project were analyzed inductively, using a grounded approach, involving the progressive abstraction of themes from raw data (Strauss & Corbin, 1990). Interviews notes were transcribed by interviewers into English from notes written in Hindi during the interview sessions. These translated notes were then entered into the ATLAS.ti qualitative data analysis software program

(Muhir, 2004). The data were coded independently and cross-checked by the authors and other collaborators. The quantitative surveys were analyzed using SPSS v. 18.0 (SPSS, Inc., 2007).

A consensus analysis (Romney, Weller, and Batchelder, 1986) of the CNS data was carried out to assess the extent to which respondents have similar views regarding gender norms, roles and responsibilities. The correlation of individuals in the community (between and across delineated subgroups) are correlated with other individuals based on their responses to a set of questions, resulting in a respondent-by-respondent correlation matrix. Similar to factor analysis in seeking patterns of correlation between question items during scale construction, consensus analysis performs a varimax (rotated) factor analysis of this matrix to look for patterns of agreement, or shared knowledge, among the respondent sample. The resulting eigenvalues show whether one or more cultural model(s) exist between and/or across subgroups, with the strength of agreement measured in the ratio between eigenvalues assigned to each factor. Though levels of “agreement” are best represented along a continuum, significant cultural sharing is traditionally represented by a first-to-second eigenvalue ratio of at least 3:1, and all positive, high factor loadings on the first factor. Two or more cultural models may be present if the second-to-third or third-to-fourth eigenvalue ratios are at least 3:1. Agreement was assessed and respondents were ordered both within and between groups on the basis of CNS scores, representing community members holding beliefs along a continuum from “equitable” to “patriarchal” with regard to gender norms. Individual respondents were also ordered on the basis of their “cultural representativeness,” based on their factor loadings on factors derived from factor analyses within and across community subgroups.

A binary logistic regression analysis of geographic and standard demographic predictors was run with average CNS score and “cultural representativeness” as dependent variables. Finally within group individual variation was examined using mean scores and distribution.

The Study Community

Population

The study community consists of approximately 500,000 people living in “slum” dwellings varying in type, with the majority being *pucca* (permanent or organized structures fully constructed of concrete, including floor, walls, and roofs) or semi-*pucca* (partly concrete, but supplemented with “found materials” such as corrugated metal sheets or wood, sometimes with a dirt floor). Almost 90% of the dwellings consist of one room with a small portion of the space for cooking and bathing. The properties may be owned or rented, and are typically organized in “plots,” or rows of dwellings assigned to a sub-area of the larger community. The poorest residents in the community live in houses of found materials (*katchcha*) close to dumps and bogs. A majority of the population (66%) are migrants to Mumbai, particularly from impoverished northern Indian states, residing in Mumbai for an average of 10-15 years. Average duration could be more. Most men are daily wage workers, small shopkeepers, vegetable/fruit vendors, tailors, hawkers, auto rickshaw (3-wheel taxi) drivers, truck drivers and low-level civil servants. Average income has remained stable over the past five years at Rs. 3500 (US\$80) per month. Income should be high. A increasing number of women (28% as opposed to a previous survey in 2006 of 4%) are involved in generating cash income both from work at home and outside the home. They receive minimal wages for tasks such as embroidering, sewing, cooking or selling vegetables and fruit.

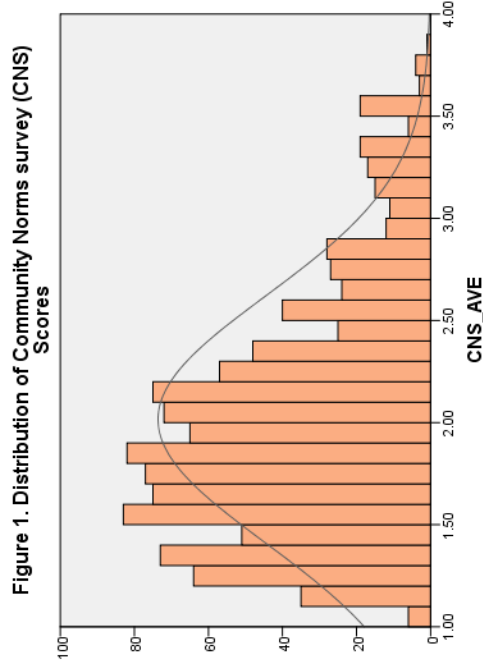
The population is primarily Muslim (80%), most of the rest being Hindus and a small percentage of Christians and Buddhists. It is estimated that there are close to 40 mosques (*masjid*) with large congregations ranging from 1000-2500. A number of mosques have *madrasas* where students are taught the Koran as well as secular subjects, and some have schools for *Alimas*, or female religious scholars who provide

religious instruction to groups of approximately 200 women and girls throughout the community. Five NGOs work in the community to address issues related to health care, awareness and prevention of HIV/AIDS/STIs, family counseling, primary health care, prevention of tuberculosis, women's empowerment, and adolescent sexual health.

Results

Overall Distribution and Variation of Community Norms

The distribution of CNS scores across all respondent groups (Figure 1) reflects a skew (.88) toward more patriarchal views about gender, with a mean score of 2.01 (n=1114; sd=.49) on a 4-point Likert scale (greater scores indicate more egalitarian views). The majority of the general community demonstrated having more conservative and less egalitarian views about gender roles. To assess the degree to which this view is shared, and more specifically, to identify any existing intracultural variation among community members, a Cultural Consensus Analysis (Romney, Weller and Batchelder, 1986) of the total respondent (n=1114) correlation matrix was performed. To ensure a more conservative analysis of the data, we adapted this method by performing a rotated (rather than ordinary least squares) factor analysis in a search for patterns of agreement among respondents. The results of the factor analysis reveal significant intracultural variation within the community. The ratio of the first-to-second factor eigenvalues was found to be 2.8 and does not meet the 3:1 ratio criteria for a single, highly-shared cultural model among community members. This finding suggests a lack of overall agreement about gender norms within the community, and hence a substantial amount of intra-cultural variation.



Distribution of CNS Scores among Demographic Subgroups

In a multiple linear regression analysis, certain demographic variables were found to be significant predictors of CNS score (see Table 1), with individuals holding more patriarchal views about gender (i.e. lower CNS scores) nearly four times more likely to be less educated, two and a half times more likely to be men, almost two times more likely to be Muslim, and slightly more likely to have more children and to be born outside of Mumbai.

Table 1. Predictors of Average CNS Score (More Conservative)

Model	Unstandardized Coefficients		Standardized Coefficients		t	Sig.
	B	Std. Error	Beta			
1 (Constant)	1.333	.110			12.112	.000

Less Education	.038	.005	.329	8.044	.000
Male Gender	.201	.036	.208	5.616	.000
Muslim Religion	.196	.043	.177	4.554	.000
Fewer Children	.025	.010	.095	2.373	.018
Born Outside of Mumbai	.083	.039	.082	2.116	.035

R = .52; Adj. R² = .26; S.E. = .42, p<.001

Distribution of CNS Scores among Special Subgroups

We further explored variation in community norms among subgroups delineated on the basis of religious and community-service affiliation. The aim of this analysis was to see whether ideological subgroups exist in the community and to identify the content of their beliefs about gender. An analysis of variance (ANOVA) in average CNS scores revealed significant similarities and differences across community subgroups (see Table 2). A Student-Newman-Keuls analysis was performed in order to explore whether any groups in particular account for significant differences among groups. A general distinction among subgroups was found on the basis of egalitarian versus conservative views about gender, with CBO members (n=35; $\bar{x}$ =3.03, sd=.28), CHVs (n=24; $\bar{x}$ =3.42, sd=.34), and Aiganwadi workers (n=42; $\bar{x}$ =3.24, sd=.34) forming a set of subgroups with more equitable views, and Imams (n=48; $\bar{x}$ =1.92, sd=.28), Alimas (n=19; $\bar{x}$ =2.0, sd=.23), general community members (n=601; $\bar{x}$ =1.86, sd=.49) and women participants in the RCT (n=345; $\bar{x}$ =1.95, sd=.50) forming another set of subgroups with more patriarchal views about gender. These results indicate that the majority of members from the general community, including participants in the RCT, hold views similar to leaders in the religious sector; and members of the community-service sector form another distinct subset with more egalitarian views.

Table 2. Group Similarities and Differences in CNS Scores

Student-Newman-Keuls^{a,b}

subgroup	N	Subset for alpha = 0.05	95% Confidence Interval for Mean
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		MEANS			Std. Deviation	Skewness	Lower Bound	Upper Bound
		1	2	3				
Community	601	1.8770			.486	.642	1.8380	1.9160
Imams	48	1.9472			.284	.510	1.8645	2.0298
RCT Women	345	1.9549			.505	.284	1.9014	2.0084
Alimas	19	1.9964			.253	.072	1.8743	2.1185
CBO	35		3.0325		.284	-.680	1.8645	2.0298
Aiganwadi	42			3.2545	.339	-.475	3.1485	3.3604
CHV	24			3.4389	.256	-3.280	3.3304	3.5474
Sig.		.663	1.000	.078				
TOTAL	1114			2.0281	.485	.768	1.9794	2.0503

a. Uses Harmonic Mean Sample Size = 40.680.

b. sum of squares between: 162.143; sum of squares within: 245.882; $F=121.66$; $df=6$; $p<.001$

This analysis revealed higher levels of agreement within rather than among groups (see Figure 2 and Table 3). Members of the religious sector (i.e. *Imams* and *Alimas*) demonstrate highest levels of agreement, reaching twice the criteria for a shared belief model that accounts for over half of the variance. Lower levels of agreement were found among members of the general community and among women participants in the intervention.. Lowest levels of agreement were found among members of the community service sector (i.e. CBO/NGOs, Aiganwadi workers, and Community Health Volunteers). Greater average loadings on the first factor and smaller standard deviations indicate greater internal agreement within groups. As seen in Table 3, levels of agreement are higher within subgroups than across the total community sample. While a majority of

individuals in the community align with leaders within the Islamic religious sector, a substantial number of community members hold alternative and more egalitarian views about gender. While members of the community-service sector constitute the majority of this subgroup holding alternative cultural views about gender, some individuals within other subgroups – including the most conservative – also express more egalitarian views, contributing to a significant degree of heterogeneity both within and across all community subgroups.

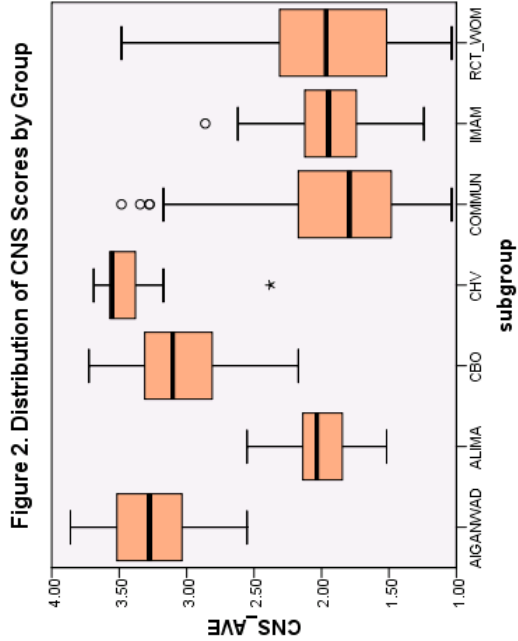


Table 3. Agreement Within Groups

GROUP	Ratio		% of Variance (Factor 1)	Factor 1 Loading	
	1:2	2:3		Average	St Dev
Alima	6.8	1.1	57.7	0.50	0.25
Imam	6.6	1.5	50.4	0.43	0.24

Community	4.1	1.7	36.1	0.37	0.32
CBO	4.1	1.5	38.0	0.36	0.31
RCT Women	3.7	2.2	36.6	0.42	0.32
Aiganwadi	3.4	1.2	33.7	0.34	0.32
CHV	3.3	2.6	57.9	0.58	0.38
Total	2.8	1.1	0.2	0.04	0.43

How Culturally Representative are Certain Subgroups and Individuals?

Drawing from basic principles of factor analysis, individuals with the highest loadings on factor 1 across the entire sample are most representative of prevalent beliefs within the community. Those with the lowest factor loadings can be said to be in the minority with regard to their beliefs in the measured domain. Factor 1 loadings are referred to here as “Cultural Representativeness” scores, ranging from -1 to 1, with scores representing the degree of each respondent’s correlation with the most prevalent cultural belief model (represented by the first factor accounting for the greatest variance).

Using linear regression, the most significant predictor of Cultural Representativeness (see Table 4) was found to be Lower Education, followed by being male and being of Muslim faith (see Table 2). Other demographic factors, such as age, income and marital status were not significant predictors of Cultural Representativeness.

Table 4. Predictors of Cultural Representativeness

Model	Unstandardized Coefficients		Standardized Coefficients		t	Sig.
	B	Std. Error	Beta			

1	(Constant)	.696	.063		11.097	.000
	Less Education	.027	.004	.302	7.559	.000
	Male Gender	.124	.029	.162	4.245	.000
	Muslim Religion	.192	.035	.218	5.515	.000

R = .44; Adj. R² = .19; S.E. = .34, p<.001

We now turn to an examination of individual-level variation *within* subgroups by looking at each individual’s average CNS score and first-factor loadings. These two coefficients constitute an individual’s cultural profile in the domain of gender norms and values,. Individuals within particular groups of interest (e.g. *Imams*) may be ordered according to average CNS score, represented alongside their first-factor loadings in relation to other Imams and to the total number of individuals sampled across subgroups (see Table 5 for a sub-sample of ten Imams with the highest versus lowest CNS scores). This analysis can be done with any number of subgroups, identifying individuals at various ends of the spectrum (egalitarian versus conservative).

Table 5. Individual Variation among *Imams*

	Average CNS	FACTOR	1	FACTOR	1
		TOTAL SAMPLE	IMAMS ONLY		
TOP 5	2.69	-0.22	.02		
	2.45	-0.37	-.09		
	2.31	-0.01	.22		
	2.24	0.25	.48		
	2.14	-0.25	.06		
BOTTOM 5	1.66	0.30	.65		
	1.59	0.41	.55		
	1.59	0.30	.66		
	1.52	0.26	.76		

Can't end "Results" with a table.

Discussion

The purpose of this paper was to illustrate a means to characterize community norms relevant to the implementation and sustainability of health interventions. Specifically we sought to demonstrate how examining variation in community norms can help to identify community subgroups in greater need of intervention and to locate community resources, leaders and institutions with the capacity to help mobilize the dissemination of intervention messages. Using a multi-method approach that included the progressive translation of qualitative interviews into a quantitative survey, we were able to measure variation in community norms relevant to our intervention. The results provide us with a more detailed and organic (versus *a priori* and/or stereotypical) picture of cultural characteristics and the anatomy of community resources and vulnerabilities.

Applying Findings from Community Norms Analysis

We found that the mean (or stereotypical) member of the study community holds conservative views about gender. Males, Muslims and lower educated individuals are most highly represented among those with conservative values. However, we also found that there is significant intracultural variation, and that subgroups of the community differ with respect to beliefs about gender. Further, an additional level of variation exists within groups, with some subgroups having more or less internal consensus than others. *Imams* and *Alimas*, in particular, were found to be the highest levels of internal agreement, and appear to "set the bar" for others' beliefs about gender. Religious leaders are highly influential in the community and contribute to greater endorsement of patriarchal gender roles. On the other end of the spectrum, we found that members working within community-service organizations (many of which promote women's well-being) have much more egalitarian views, but within these groups there is a significant range of variation in their beliefs about gender norms. While the central tendency of CBO/NGOs is to have significantly more egalitarian views about gender than do members of the religious sector, they do not demonstrate high levels of internal agreement as a group, and thus the content of their messages and activities within the community are likely to be highly variable and less consistent in relation to their stated goals of women's development. Members of the general community and also women participants in the RCT intervention were found to align more closely with members of the religious sector than with those of the community-service sector, indicating an overall skew towards more patriarchal views about gender that are consistent with the functionaries in the religious sector.

Equipped with these findings, we were better able to focus intervention activities and capacity-building by utilizing strengths in the community (in this case, existing segments of the community with more egalitarian views about gender) and expanding capacities where needed, particularly among CBO/NGOs and among key leaders in the religious community. We initially approached CBO/NGOs to assess their interest and capacity to collaborate with the RISHTA program and invited them to volunteer to participate in a number of RISHTA intervention activities and other community celebrations and events. Our survey of community norms and beliefs allowed us to examine which CBO/NGOs in particular

are in greater need of collaborative training and capacity-building and which key individuals should be selected for to lead (or benefit from) training activities. By identifying the range of variation among individuals within each group (e.g. *Imams*, *Aalimas*, CBO workers) we were able to select, on an empirical basis, those individuals with more egalitarian views who might be able to help disseminate intervention messages and influence others on a peer-to-peer basis, and more conservative members of each group as targets for additional intervention input.

With the collaboration of organizations in both the religious and community-service sectors, in collaboration with RISHTA, educational messages were developed, pre-tested and then conveyed through posters, street-performances, and other activities organized in the community, including assisted lectures, speeches and other public and religious events. Handbills describing RISHTA aims and services are provided during many of these events to members of the general community and to key leaders for further dissemination. Banners containing positive norms messages and information about RCT services are also put at the entry of mosques, inside of NGO offices and in pre-school classes where women drop off and pick up their children. Additionally, RISHTA has held a number of educational workshops (7-8) with *Imams* and *Aalimas* focusing on issues of marital communication, health and sexuality, prevention of STIs, sexual risk and violence, using results of the CNS to guide the scope and targets of our efforts. Messages developed jointly by members of the religious sector and RISHTA staff have in turn been integrated into teachings (*taqreer*) delivered by *Imams* at religious assemblies, including the largest weekly assembly (*Jumma*) every Friday prayer and daily during Ramadan, and also among female-only religious gatherings led by *Aalimas*. The primary aim of these combined efforts has been to convey messages throughout the general population that the responsibilities associated with societal norm change need to be the result of cooperation and shared effort by husbands and wives. The CNS enhanced our understanding of existing perspectives within the different sectors of the community and enabled us to refine our approach to working with specific individuals to maximize the reach and reception of intervention efforts.

Evaluation of Community-Level Intervention

In addition to being a useful tool for orienting intervention activities, the CNS can also be an important means for monitoring the overall efficacy of the RISHTA intervention at multiple levels. With the CNS, we can document change over time among community subgroups and individuals. To monitor normative changes in the community over the course of the intervention and beyond, RISHTA is conducting an annual follow-up survey using the CNS. In addition to using the CNS to monitor community-level change, we are using it along with other evaluation tools to monitor change in participants of the RCT from baseline to follow-up at 6-months and a year. Thus the CNS becomes a monitoring tool for community, special subgroups and individual change

The success of multi-level intervention projects depends not only on change at the individual level but also more widespread cultural change. If individual behavioral change is expected to be acceptable and sustainable, it must be congruent with existing cultural norms. Analyzing community norms and beliefs in a systematic way can help to identify the content of community norms and areas of intra-cultural variation, as well as areas of strength in the community and those in greater need of intervention. This method helps to structure intervention activities in ways that maximize their reach, effectiveness, and overall sustainability. Further, an analysis of community norms provides a means to monitor changes

in community perspectives over time and to evaluate the acceptability, feasibility, and sustainability of interventions into the future. A better understanding of the scope of community beliefs, and available infrastructure provides a basis from which to adapt and translate interventions from short-term provisional solutions into self-sustaining and durable community innovations.

