MEN'S HONOR AND WOMEN'S HEALTH: CULTURAL CONTEXT, DIMENSIONS OF GENDER, AND WOMEN'S SELF-RATED HEALTH IN INDIA

ABSTRACT

In this study, I use Sewell's (1992) multilevel theoretical model of culture to develop and test hypotheses concerning how different dimensions of gender in communities in India relate to women's self-rated health. Particular attention is given to the importance of marriage and gender segregation dimensions of gender for women's health. National data on 23,474 ever-married women aged 25-49 are analyzed from the India Human Development Survey-2004-05. Results show that marriage and gender segregation dimensions of gender are both associated with poor health. The most variance in self-rated health is explained by male-first eating order in households, a measure of gender segregation. This finding suggests that cultural practices deeply embedded in intimate relationships within families and day-to-day life are the ones which most accurately reveal the degree to which culture is ingrained in community contexts. It also implies that such deep cultural practices of gender segregation are more important than other forms of gender segregation for women's health.

INTRODUCTION

The role of community contexts in population health has received considerable attention. Within this research, a growing literature examines how community contexts may uniquely shape women's health, often finding community contexts to play a greater role in women's health than men's health (Read and Gorman 2010). However, little attention has been paid to how community culture (i.e., norms, symbols, beliefs) affects the health of women. This lack of attention to culture is surprising given its importance for understanding the myriad ways gender influences human behavior and experience, including health and health inequality.

Female health disadvantages in patriarchal societies have been repeatedly documented (Caldwell 1986; Santow 1995). Contextual effects research in developing countries[1] has focused on reproductive health, child health, and mortality, with less research devoted to general health in adult populations (Bloom, Wypij, and Das Gupta 2001). Significant research has examined how the patrilineal family systems and associated cultural practices shape differential young female mortality, especially in India (Dyson and Moore 1983) and China (Lavely, Li, and Li 2001). Demographic research on culture and gender in India has drawn attention to the multidimensionality of gender (Desai and Andrist 2010; Mason 1986). The present study seeks build on this background and examine dimensions of gender in community contexts and their importance for adult women's health.

[1] For simplicity, categories such as "developing countries," "developing world," and "industrialized countries" are used. This usage is not meant to ignore the fact that countries and regions of the world exist on a continuum and a variety of "developing countries" are rapidly developing and are similar to many more highly industrialized countries across a variety of characteristics.

Prompted by these issues, this study uses a previously developed multilevel theoretical model of culture to develop and test hypotheses concerning different dimensions of gender in communities and their relation to women's self-rated health in India. National data on 23,474 ever-married women aged 25-49 are analyzed from the India Human Development Survey-2004-05. The present study adds to prior research on community context, gender, and self-rated health that often (a) focuses on wealthy countries, rather than emerging developing countries such as India, (b) in India, concentrates on children, older adults, and reproductive health rather than general health of young and midlife women, (c) does not use large national samples, and (d) does not focus on the role of culture in conjunction with multiple dimensions of gender in women's health.

BACKGROUND

Gender and Health in India

India is among the world's leaders in the size of the gender gap in health, ranked third out of 134 countries (Hausmann, Tyson, and Zahidi 2010). Women in India tend to report a higher prevalence of non-fatal diseases and conditions compared to men. The differences in health status between males and females stem not simply from individual-level factors, but—as this study argues—also from the cultural fabric of local communities and the consequences these cultural contexts hold for the life experiences of women and men. India provides a useful case for examining cultural context, gender, and health because of the geographic variation in gender stratification and gender-related cultural norms across India, including local contexts of relatively pronounced male dominance (Chakraborty and Kim 2010; Dyson and Moore 1983).

Cultural contexts in India shape the gender-based distribution of resources and psychosocial pressures and stress, all of which contribute to women's overall health status. The ways in which cultural context organizes women's lives has less to do with issues of work-life balance that feature prominently in many industrialized settings such as the U.S. (Bird and Rieker 2008). Cultural context effects in India have more to do with the various ways that men, family relations, and broader communities shape women's experiences (Desai and Andrist 2010).

Before moving on, it is worth providing background for the various elements of culture elements in view. Briefly, in many communities across India social honor and prestige are tethered to gender (Dube 2001; Srinivas 1977). For example, using dowry payments to facilitate the marriage of a daughter into the highest status family as possible is one of the best ways for bridal families to both solidify and increase social honor (Mandelbaum 1988:24, 68; Roulet 1996). Not only dowry giving, but a variety of gender-related cultural practices in India are at the same time tools of social status attainment. Women are the "custodians" of the status of households and their members (Srinivas 1977:229), especially men. In fact, some argue that "honor is the key good for these men, and their honor is balanced on the heads of the women" (Mandelbaum 1988:19). Because gender is a multidimensional phenomenon (Collins et al. 1993), the arguements below move along two dimensions of gender—gender segregation and marriage—especially as they are instantiated in the Indian context.

Gender Segregation

Gender segregation is one of the most visible ways that gender relations are ordered in communities across India. Gender segregation tends to reinforce a general

climate of female subordination. Patterns of gender segregation and subordination in the local community support and are supported by gender segregation and subordination in the home through repeated symbolical enactments. To illustrate the starkness of gender segregation in some contexts, in her field work in a North Indian village, anthropologist Ann Grodzins Gold recounts her astonishment at local women's description of men as if men were "an alien species" (Raheja and Gold 1994:xxix, xxvii). This deeply-embedded gender segregation takes a variety of public and private forms across India, including the restriction of public movement for women, women's seclusion, and the practice of women eating after men at mealtimes.

Immobility and Seclusion

Much of India's population lives in communities where streets, bazaars, and other public spaces are understood as the domain of men's free movement and recreation, not women's (Derné 1995:26). Women may not be allowed to go out, go out alone, and perhaps be allowed out in public spaces at all. If women do go out, it should be for the sake of the household, not for personal needs such as visiting friends or other forms of recreation (Derné 1995). Part of what underlies such a gendered view of public and private space is a construal of women as *not needing* regular recreation, pleasure, or freedom. Men are construed as meant to enjoy recreation and relaxation in public spaces (Derné 1995). Since women are thought to serve the household, there is less reason for women to go out into public places, places of recreation.

According to another argument, restrictions on women's mobility are associated with inhibiting women's opportunities to benefit from a variety of social institutions, which may include health institutions, organizations, and access to knowledge about

health (Youssef 1982). Relatedly, women's seclusion limits women's ability to communicate directly with institution representatives. As such, the voice of women is also less likely to be heard in public institutions when women are restricted from free public movement and social interaction (Ahmed-Ghosh 2004).

Placing mobility restrictions on women and the seclusion of women[2] are practices motivated in part by households' desire to acquire or maintain prestige or honor (Mandelbaum 1988). The stakes for families can be high. A family's honor and reputation can be damaged through the perception of a female household member's inappropriate contact with a male, even if the interaction is simply platonic (Caldwell, Reddy, and Caldwell 1983).

Male-First Eating Order

Women and girls habitually eat last in sixty-six percent of households in India.[3] Patterns of segregation and subordination support and are supported by symbolical enactments, of which male-first eating order is an especially important form. This is in part due to its regularity and early onset in life. Between the ages of five and ten, gendered "gastronomic deference" is enforced: girls are trained to eat as future "little wives" and boys to eat as future husbands (Appadurai 1981:498). In many cases, a wife eats her husband's leftover food, and other women in the household eat leftovers separately after male household members have eaten (Chakravarty 1972:37; Khare

[2] Some argue that practices such as seclusion are not necessarily linked to subordination. It is possible that women may exercise considerable power, especially within the family, while at the same time practicing acts of seclusion. Furthermore, female seclusion may provide considerable prestige and benefits in communities where seclusion translates into considerable symbolic value. Secluding women may receive prestige. But the family unit and its male elders may receive far greater prestige and benefit relative to cost.
[3]Author's calculation based on IHDS 2005.

1976b:8; Lamb 2000:33–34). Even in well-off peasant families, women are left to consume the food that adult male family members leave after men have had their fill (Chen, Huq, and D'Souza 1981).

Marriage

Marriage and its connection to the social status of extended families is an important backdrop to women's lives in India (Skinner 1997). Despite the liberalization of India's economy and availability of global media, patrilineal joint-families, arranged marriage, and dowry continue to play an important role in women's and men's lives in contemporary India (Derné 2008). According to the 2001 Indian census, over 95% of women are married by age 25 and about 95% of marriages are arranged (Desai, Dubey, et al. 2010). Individuals' marriage decisions are often tethered to family and caste networks. The social status of these groups is elevated or lowered by the characteristics of the person married and by the prestigious manner in which various aspects of the marriage and its ceremonies are conducted (Bloch, Rao, and Desai 2004). Two important elements in the Indian context are dowry and wedding expenditures.

Dowry

Dowry in India has been described as an institution concerned with exchange of goods and women between groups of male kinsmen (Skinner 1997). Providing dowry in the course of arranging the respectable marriage of a daughter may be the "conclusive seal and signet of success" for households in many parts of India (Mandelbaum 1988:121). Marriage in India tends to be hypergamous: brides join the families of grooms of higher status. Dowry is often an important component in this process. Dowry is given from the bridal household to the groom's household. Ethnographers report that

grooms' families often receive (at times demand) dowry payment for an incoming bride. This may be done to offset the perceived burden of adding a new household member (Mandelbaum 1988; Miller 1981). Although illegal since 1965, dowry has spread to new social groups in India (Caldwell et al. 1983) and dowry payments have seen significant inflation over time (Anderson 2003). The value of a dowry averages 68% of total assets before marriage and can run as high as six times a bridal family's annual income (Deolalikar and Rao 1998).

Wedding Expenditures

Like dowry, wedding expenses in India are often large and research indicates that they have increased over time (Bloch et al. 2004). Social status is conferred upon both bridal and grooms' families through conspicuous displays at weddings. Through such visible expenditures, families demonstrate high status tastes and assert their membership in higher-status groups and their distinction from lower-status groups (Bloch et al. 2004). The bride-giving family may also simply want to indirectly purchase the future welfare of their daughter in the groom's household through wedding expenditures (Roulet 1996).

Cultural Context and Women's Health

Accounts of women's lives often do not adequately take into account the extent to which gender is not simply an individual characteristic but also a contextual characteristic that is bound up in gender-related cultural beliefs and practices widely shared in a community context (Hirschman 1985). Women, especially in more patriarchal countries, are often situated within broad social networks and cultural contexts that can shape a variety of life experiences, including illness (Dodoo and Frost 2008). The cultural contexts in which individuals live their lives can directly as well as indirectly influence

health through mental and emotional pathways that vary for men and women (Macintyre and Ellaway 2003; Read and Gorman 2010).

Cultural contexts can condition the unfolding of women's health in multifaceted ways. Following the lead of others (Giddens 1984; Johnson-Hanks et al. 2011; Sewell 1992), this study views social structure as made up of a material-schema interplay. This interplay makes up what we think of as "culture" and the repeated patterns we refer to as "structure." The schematic side of social structure refers to mental frameworks such as beliefs, heuristics, or worldviews that individuals or groups of people use to construe reality and organize behavior. Schemas are always present in concrete objects or actions. For example, a schema that goes along with dowry practice is one that construes women as burdensome, since giving a daughter and her dowry is financially burdensome.

The *material* side of the material-schema duality of social structure refers to any *perceivable* things such as physical objects, outward practices, or spoken words. The perceivable materials of dowry include such things as dowry-related gossip, songs sung about dowry, verbal and non-verbal communication at the time of dowry negotiations, and the physical acts of giving and receiving dowry-related objects such as cash, jewelry, and electronics. Perceivable actions and objects are all examples of "materials," but it is important to keep in mind that materials always instantiate one or more schemas. Dowry-related materials may carry the schema that the burden of an additional female household member is being offset by receiving a dowry. Taken together, such material-schema interplays work to pattern the world's social structures (Giddens 1984; Johnson-Hanks et al. 2011; Sewell 2005).

Given this understanding, material-schema duality of social structures can constrain and support individuals' health in several ways. Material-schema structures shape the conditions of social interactions, stressors, and opportunities available to individuals as they experience the world around them. Shared local understandings, behaviors, and social interactions surrounding gender are sustained by the ongoing presence of material-schema structures. In these ways, health is best understood as a function not just of the material-schema characteristics of individuals and their interactions, but of the material-schema elements of broader community contexts in which health and health disparity unfold.

Since materials may directly influence health "without the mediation of schemas" (Johnson-Hanks et al. 2011:40), communities with high frequency of dowry could shape individuals' health *directly*. Dowry has a direct effect on the comparative costs of sons and daughters and hence on differential resources and opportunities available to males and females. As a brief illustration, if a parent in a community with high frequency of dowry wants to buy high-quality shoes for a daughter, such shoes may be unavailable or difficult to find. Merchants might explain: "We only have that kind of shoe for boys. Customers simply don't spend that much money on girls' shoes and so we don't carry those kinds of shoes for girls." Because there are no or few high-quality girls' shoes locally available, girls will be less likely to receive this resource regardless of whether a parent shopping for a daughter's shoes has internalized a schema that devalues females. Here, female access to an orthopedic health resource is constrained. Other health-related resources and opportunities may be constrained in a similarly direct way by cultural context, affecting the overall maintenance of health.

Community schemas may also shape health. For instance, high levels of women's immobility in a community reinforces local schemas holding that a woman's place is not in public spaces, and so when women go into male-dominated public spaces, they are subject to scrutiny, sustained gazes, sexual harassment, and a variety of stressors (Derné 2000:155–56, 2008:177). Experiencing such sustained threat and adversity is associated with consequences for health (Hawkley et al. 2005).

To take another example, male-first eating serves as a "reservoir of meaning," carrying and instantiating schemas in a community, including schemas of gender difference and male superiority. As schemas tied to male-first eating are *transposed* onto other spheres of life, these schemas influence community members' social interactions with women in a variety of domains and social settings (Appadurai 1981). That is, people carry schemas into a range of life situations as they interact with women, including women outside of their family (e.g., servants, laborers, women in the bazaar, clients, etc.). The transposition of schemas may be deliberate; it may also be taken-for-granted, unconscious, and automatic (Tinkler, Li, and Mollborn 2007). Women and girls living their lives in communities with such shared schemas will experience greater daily wear and tear—worse treatment at the hands of community members, greater hassles, and less cooperation in securing basic needs and accomplishing goals. Unabating insults, threats, and experiences increase the likelihood of chronic stress and lower thresholds for a variety of acute and chronic health conditions (Hawkley et al. 2005; Hertzman and Frank 2005).

One of the main psychosocial pathways through which social interactions and experiences lead to health problems is through physiological response to stress. While

the body's stress response is helpful in the short term (e.g., providing energy in order to flee danger), repeated and extended activations of the body's stress response (allostatic load) can increase the likelihood of a variety of health problems (McEwen 2002). Repeated activation of the stress response may take place due to an individual's anticipation of danger or threats, revisiting stressful memories, or even imagining stressful scenarios. The pernicious health effects of repeated and extended stress response activation exist in part because the body is not given adequate time to recover from its stress response before another response occurs. A number of the body's long-term maintenance tasks (e.g., digestion and growth) are repeatedly set aside for extended periods of time in favor of responding to stress. Regardless of whether women are members of households that engage in practices such as male-first eating, women residing in communities where a culture of gender discrimination holds sway will tend to experience greater subordination, less cooperation, and more chronic stress than women elsewhere, resulting in a greater likelihood of having poor health.

The above arguments regarding cultural context, gender segregation and marriage-related dimensions of gender, material/schema pathways, and the effects of stress on bodily functioning lead to the following hypotheses.

H1: *Increased community-level gender segregation in the forms of women's immobility, seclusion, and male-first eating will be associated with poor health for women.*

H2: *Increased community-level marriage practices in the forms of dowry-giving, and wedding expenditures will be associated with poor health for women.*

DATA AND METHODS

To test the above hypotheses, I use data from the India Human Development Survey, 2005 (IHDS). The 2005 IHDS was funded by grants provided by the National Institutes of Health. Coordinated by investigators from the University of Maryland and the National Council of Applied Economic Research, New Delhi, the IHDS is a national survey of 41,554 households across 33 states and union territories in India administered in 2004 and 2005 (Desai, Vanneman, and National Council of Applied Economic Research 2010). The study was conducted in local languages in all Indian states and union territories, excluding Lakshadweep and Andaman and Nicobar Islands.[4] (Desai, Dubey, et al. 2010). The IHDS has a response rate of 92% and compares favorably with the 2001 Census of India, the 2004-2005 National Sample Survey, and the 2005-2006 National Family Health Survey III. The present study uses data on questions answered by 23,474 ever-married women ages 25 to 49 in face-to-face interviews with a female IHDS interviewer.

To measure the characteristics of community contexts, this study focuses on districts as geographic units. The use of districts in research on India is useful in part because districts are important administrative units and in many cases indicate historically and culturally meaningful boundaries (Malhotra, Vanneman, and Kishor 1995). Because urban and rural contexts differ dramatically in India, I follow the approach of IHDS principal investigator and colleagues (Desai and Andrist 2010; Desai and Wu 2010) and partition urban and rural areas of districts. For simplicity, the resultant 486 units are referred to as "communities." Community-level measures are created by aggregating household and individual-level data.

[4] These excluded territories account for less than one percent of India's population.

Dependent Variable

Self-reported health is a powerful health indicator. It is among the strongest predictors of mortality, physical health, functional health status, mental health, healthcare utilization, and subjective well-being (Idler and Benyamini 1997). Utilized by the World Health Organization and others as a reliable and valid measure of overall health, self-rated health includes biological, social, and psychological dimensions of a person's view of his or her health (De Bruin, Picavet, and Nassikov 1996; Ferraro and Farmer 1999). Using data from India, researchers have found that self-assessed health is a valid indicator as assessed through its inverse association with socioeconomic status using national samples in the 1995-1996 and 2004 Indian National Sample Survey and the 1998-1999 Indian National Family Health Survey (Subramanian et al. 2009). To measure self-rated health, ever-married women were asked by IHDS interviewers to rate their health: "In general, would you say your own health is: (1) "very good," (2) "good," (3) "ok," (4) "poor," or (5) "very poor" (mean = 2.3; SD = 53.7; range =1-5).

Independent Variables

I use several indicators pertaining to marriage and gender segregation utilized in literature on gender in India (Desai and Andrist 2010). *Male-first eating order* equals 1 if women eat separately or eat after men have eaten when the family takes its main meal (mean = .32; range = 0-1). Community-level segregated commensality has a mean of .30 (range = 0-1). A measure of community-level *women's mobility restrictions* comes from questions that asked whether the woman must seek permission from a senior member of the family to visit a health clinic, bazaar/grocery store, or friends/relatives. The number of places is aggregated to the community level (mean = .80; range = 0-2.67).

Also aggregated to the community level, *women's seclusion* is coded as 1 if the respondent practices veiling or concealing herself around men (mean = 53; range = 0-1). Fifty-three percent of married women in communities practice seclusion (range 0-1). To gather information on *dowry practice*, IHDS interviewers asked respondents: "Generally in your community for a family like yours, is [item] given as a gift at the time of the daughter's marriage?" Dowry practice is a dichotomous variable coded as one if the respondent answered affirmatively to any of the following large durable goods given as dowry: TV, car, scooter, or refrigerator (mean = .24). Aggregated to the community level, community dowry is a measure of local perceptions regarding the frequency of dowry-giving (mean = .29; range = 0-1). The bridal family's wedding expenditures are included both at the individual level and the community level. This item is logged due to skewness (mean = 11.08; community-level mean = 11.16).

Control Variables

This study controls for a variety of known sociodemographic, health behavior, and health access correlates of health. Most women aged 25-49 belong to either Other Backwards Castes (36%) or Dalit castes (22%). Respondents in the analytic sample have a mean age of 35, and on average came to live with their husbands around age 17 and a half[5]. Ninety-one percent are married and have had on average 3.18 children. Eleven percent of ever-married women are in an endogamous marriage (i.e., married to a blood relative or man from their natal village). Four years is the average total amount of education for women. The highest educational attainment for any woman in the

[5] This measure is used because in parts of India girls are married years before cohabitating with the husband, thus age at cohabitation better reflects the timing of transfer to the environment of the husband and his family.

household is also controlled (mean = 4.43; community-level mean = 4.85). The average household asset index score is 11.62. Ten percent of households receive government housing aid, 4% employ a servant, and 72% have a vent in the kitchen.

In order to control for different sanitary practices, I include a series of binary variables indicating the manner of washing done after defecation: do not wash, 1%; use water only, 20%; use mud or ash only, 33%; or use soap, 45%. To measure the availability of health care, I include a dichotomous indicator of whether one of the following exists in the respondent's village (urban residents are assumed to have one of these facilities nearby): primary health center, health subcenter, private hospital, community health center, government health center, government maternity center, government disease facility, private midwife, other government medical facility, private trained doctor, or private untrained doctor. Eighty-five percent reported having at least one of these health facilities.

Twelve percent of households reside in a major metro area (Delhi, Mumbai, Kolkata, Chennai, Bangalore, or Hyderabad), 2% in an urban slum, 20% in another type of urban area, and over half of households reside in a rural context (66%). Rural residents are divided into those living in villages with low levels of infrastructural development (36% of all households) and high infrastructural development (30% of all households) (Desai and Wu 2010). High infrastructure villages are defined as those with at least one of the following facilities: electricity, paved road, grocery store, bazaar, bank, post office, police station, bus stop, or mobile access to telephone and landline.

Other community-level control variables include electricity usage, waiting time, and cash access. The community average of electricity usage is taken from the number of

hours of electricity per day reported by respondents. IHDS interviewers asked how many minutes the respondent must wait for medical treatment when visiting a clinic, hospital, or healer for a minor illness. This item is aggregated to the community level (mean = 21). I also include a binary variable coded as 1 if the woman had access to cash at the time of the interview (mean = .85; community-level mean = .84). The nature of the data allows not only the introduction of individual-level and community-level variables, but also a series of state binary variable controls (not displayed for the sake of brevity).

Table 1 presents descriptive statistics. Unless otherwise indicated, descriptive statistics are for ever-married female respondents ages 25-49 and the characteristics of their households. Statistics for other measures are indicated as for all women ages 25-49. Descriptive statistics use a sampling weight constructed by IHDS investigators.

Table 1

Analytic Method

Since gender is not limited to individual-level attributes, but is also comprised of broader social arrangements and cultural contexts, this study focuses on the community-level contextual effects of different dimensions of gender. To assess contextual effects, I use hierarchical linear modeling.

Unlike single-level regression, hierarchical linear modeling appropriately produces estimates of standard errors of contextual measures, uses the correct degrees of freedom for contextual units, and corrects for correlated errors among persons in the same contextual units. Specifically, the analysis estimates variation in health outcomes between and within communities, adjusting for nonindependence stemming from

clustering within communities (Raudenbush and Bryk 2002).[6] After taking into account individual-level effects, between-community analyses regress the community average health scores on the characteristics of communities, such as the prevalence of dowry practice in the community. In this way, not only are person-level effects on health estimated, but also the effects of differences in the aggregation of information between communities on health. In other words, contextual effects are estimated simultaneously with individual-level effects, which is necessary given this study's multilevel conceptual framework. The results presented are based on unweighted models since the stratified nature of the sample is taken into account in multilevel modeling.

RESULTS

Analyses of self-rated poor health among ever-married women were conducted using multilevel linear regression. Calculating an intra-class correlation coefficient (ICC) from a null model indicates that 30% of the variation in poor health is attributable to the community of residence (see table 3, M0). Table 2 presents individual and contextual effects on self-assessed poor health. Not surprisingly, as age increases, poor health also increases. Women who report having given birth to more children also report higher levels of poor health. Both increased years of educational attainment and greater household assets are negatively related to poor health. In comparison to washing oneself

[6] Although findings are similar whether hierarchical linear modeling or hierarchical ordered logistic modeling is used, I use linear modeling because (a) ordered logit modeling indicates that the proportional-odds assumption is violated for these data (b) Monte Carlo simulation indicates that beyond a 5-7-points outcome variable, linear modeling and ordered logit modeling are almost the same, (c) the distribution of omitted variable bias is better contained in linear modeling compared to ordered logit modeling (Allison and SAS Institute 1995:236; Allison 1987), and (d) betas in linear modeling are more readily interpretable for a broader audience compared to the need in ordered logit modeling to identify values at particular levels for predictor variables.

with mud or ash, the only category of washing with protective effects against poor health are washing with soap or not washing at all. Unsurprisingly, as proximity to a health care facility increases, poor health decreases. Living in an urban slum is the only place of residence associated with higher levels of poor health compared to metro area residence.

Table 2 about here

Hypothesis 1 expected that high prevalence of gender segregation at the community level, as seen by increased segregated commensality and mobility restrictions, would be associated with poor health outcomes for women. The results in table 2 support this hypothesis. As the community prevalence of segregated commensality rises, so too does poor health for women. Specifically, with a one standard deviation increase in community-level segregated commensality, the level of poor health increases .09. This is the fifth largest standardized effect in the model. Other support for hypothesis 1 is found in the effect of community-level women's mobility restrictions. A one standard deviation increase in community-level women's mobility restriction is associated with a .07 increase in poor self-rated health.

Hypothesis 2 predicted that community-level marriage indicators (dowry and wedding expenditures) would be related to poor health for women. In support of hypothesis 2, among community-level marriage indicators, there is a significant association between dowry practice and poor health. The magnitude of the effect of community-level dowry practice is substantial—a one standard deviation increase in community dowry is associated with a .12 increase in poor self-rated health. The standardized coefficient for community dowry is the third largest in the model compared to all other standardized coefficients. It is important to reiterate that these contextual

effects are net of important covariates such as socioeconomic status, a system of state of residence indicators, local infrastructure measures, and sanitation habits, among other factors. Other statistically significant community-level variables are the positive effects of average waiting time and women's cash access.

Table 3 serves to further evaluate the importance of different dimensions of gender in communities by comparing explained variance in models with and without different dimensions of gender. The values presented indicate variance at individual and contextual levels, the intra-class correlation, explained variance at individual and contextual levels, and total explained variance. After the variance in poor health explained by individual (R^2_{total} = .162) and contextual (R^2_{total} = .179) level control variables, Models 3 and 4 compare the explained variances of poor health when different blocks of theoretical variables are included. Gender segregation (R^2_{total} = .188) contributes only slightly more than marriage practices (R^2_{total} = .185) to the explanation of poor health. Gender segregation seems more important for self-rated health than marriage factors. However, the difference is not substantial and may be due in part to the fact that there are three gender segregation variables and two marriage practice variables. In the end, both elements contribute independently. Combined, they boost the total R^2 from .179 (model 2) to .195 in the full model (model 5).

Table 3 about here

DISCUSSION

In this study, I have tried to advance our understanding of the contextual and cultural sources of women's health status in India by applying hierarchical modeling techniques to new national multilevel data. I use a national sample of 23,474 ever-

married women in India who self-reported their overall health. Decades of research have documented ongoing gender-based inequities in India. In this vein, researchers have examined the variation in health status among girls and women in India. Considerable work finds that excess female infant mortality varies with regional gender norms in India (Dyson and Moore 1983). However, in India as elsewhere, limited attention has been devoted to how women's overall health is tied to community contexts (Read and Gorman 2010) and how culture operates on health in such contexts. Still less focus has also been given to how multiple additional dimensions of gender might differentially contribute to the overall health of women (Collins et al. 1993).

This study sheds new light on the gender and health literature by using a multidimensional conception of gender operationalized at the community level to examine whether an array of gendered cultural practices are linked to poor health for women. I find evidence for the hypotheses regarding both gender segregation and marriage dimensions of gender. Among specific variables male-first eating order and dowry-giving have especially strong effects.

In the case of gender segregation, women's seclusion does not appear to be linked to health. The other two gender segregation indicators, women's mobility restrictions and eating order, are positively associated with self-related health such that increases in these indicators are associated with worse health. The size of the eating order effect is the larger of the two gender segregation effects. These results suggest that mobility restrictions and especially eating order are elements of cultural contexts deleterious for women's health.

The greater effect size of eating order is somewhat surprising given that mobility restrictions and seclusion are arguably more public practices and household eating order a more private practice. Eating order may tap a "deep segregation" occurring in relative privacy between members of a household. One can imagine simply going along with gender segregation in public but a deeper measure of beliefs about gender distinctions and inequality may be found in practices within the household, when the doors are closed. In fact, public decorum surrounding gender may be more easily and consistently maintained when gender segregation is habitually practiced in private. This finding suggests that cultural practices deeply embedded in the intimate relationships within families and day-to-day life are the ones which most accurately reveal the degree to which culture is ingrained in the surrounding community. It also implies that such deep cultural practices of gender segregation are more important than other forms of gender segregation in relation to women's health.

What are the origins of male-first eating order and why might its prevalence in a community context harm women's health? One schema in South Asia holds that persons are continuously vulnerable to "moral and physiological transformation in transacting with other persons" (Appadurai 1981:507; Khare 1976a; Marriot 1976). Semen, blood, saliva, and food from a person of lower rank can pollute a person of higher rank, and so men fear exchanging fluids with women, including their wives. Because of women's lower ritual status, they are able to absorb the semen and saliva of men—as well, women may eat the leftover scraps of male household members (Chakravarty 1972:37; Khare 1976b:8; Lamb 2000:33–34; see also Michaels 2004:180–184). Between the ages of five to ten, gendered "gastronomic deference" is enforced and girls are trained to eat as future

"little wives" and boys to eat as future husbands (Appadurai 1981:498). Gender scholars reason that regular social interaction between men and women of unequal roles is an important way that schemas of inequality emerge and are also regularly refreshed (West and Zimmerman 1987; Ridgeway and Smith-Lovin 1999:204–205). The frequency and regularity of intra-household male-first eating order makes it "well suited to bear the load of everyday social discourse," including beliefs of gender distinction, inferiority, and superiority.

Further, in keeping with Sewell's notion of the transposability of schemas, "whenever food is exchanged in one domain, it carries some of the meanings of its roles into other domains" (Appadurai 1981:494, 509; Kakar 1981:119). A woman in a community where people's gender schemas are daily deepened in the household and then carried into other domains and institutions likely experiences greater challenges because almost everywhere she turns she faces perceptions of the superiority of men compared to her lower status. A lower perception of women may also lead community members to feel less obligated to cooperate with a woman seeking to accomplish everyday tasks, attain goals, or obtain needed services or information. To the degree that a woman internalizes beliefs about her lower status or worthiness, her capabilities for coping with difficult challenges may also be diminished (e.g., low self-esteem and resilience). The end result is that out of the combination of heightened challenges and reduced capabilities comes sustained wear and tear (e.g., stress, anxiety, anger, frustration, depression), increasing the vulnerability of her health.

Turning to the marriage dimension, although community wedding expenditures was not significantly associated with health in analyses, support was found for the

hypothesized relationship in the case of dowry. Community dowry performs as predicted in relation to self-rated health, with increases in community dowry associated with increasing levels of poor health. These results suggest that the marriage practice of dowry-giving cultivates environments where the well-being of girls and women is vulnerable. Through dowry, girls and women are tethered to crucial financial and symbolic costs and benefits for households. These dynamics inform the gender order of broader community contexts and, in turn, impact the unfolding of women's lives in these contexts. These findings indicate a need for ongoing attention by researchers, not least because dowry has seen inflation over time and diffusion across Indian social groups and geographic regions, even as more social groups and regions are concomitantly brought under modernizing influences (Anderson 2003; Andrist 2008; Rao 1993).

Both gender segregation and marriage dimensions of gender were seen to be important for health. The gender segregation dimension appeared to be somewhat more important than the marriage dimension. However, it is important to note that the difference was slight and should be treated cautiously. Since these differences in importance were never large and there were more indicators of gender segregation, any strong extrapolations from these differences would be speculative. Future research incorporating more indicators might allow more precise comparison. For example, measures of dowry-related experiences before and after marriage could add greater precision.

In the end, both gender segregation and marriage dimensions contributed, and together explained more of the variation in women's health status. Comparison of the ranking of standardized coefficients shed further light on the relative importance of

indicators within gender segregation and marriage dimensions of community culture. Judged by the ranking of effect sizes, dowry practice was the single most important of the theoretical indicators, which adds to a growing scholarship on the effects of dowry, here assessed as a contextual effect on women's health.

Although this analysis specified various inputs to health, the dimensions of gender in cultural contexts discussed here should not ultimately be understood as isolated factors, but rather as components of a larger underlying system of patriarchy with varying degrees of integration and intensity across India (Dyson and Moore 1983). Furthermore, many of these factors are not unique to India. Dowry, wedding expenditure, male-first eating order, and mobility restrictions on women are all elements interwoven, albeit in many different ways and at different times, in patrilineal family systems (especially joint family systems) that have been prevalent in a belt of societies stretching across East and West Asia to Eastern Europe and North Africa (Skinner 1997:58–59). However, norms emanating from marriage exogamy and patrilocality customary in South and East Asia accentuate the isolation and lack of social support and protection experienced by women across these contexts (Skinner 1997:59, 81). Consistent with the findings of the present study, within societies with patrilineal joint family systems, the Indian subcontinent is noteworthy for its rigorous cultural practices pertaining to gender (Mandelbaum 1988).

In sum, this study supports the contention that women's health status is strongly tied to variations in cultural context across India, through both gender segregation and marriage dimensions of gender. The ideas developed here and the findings presented also set out puzzles for future research. It is possible that the effects of cultural contexts on health grow as girls and women make their journeys across the life course. Deprivations

and stressors in early life could make girls more vulnerable to illness and contribute to poorer health in childhood and set the stage for health vulnerabilities leading into adulthood (Hayward and Gorman 2004). Further research using panel data and contextual measures of gender in India is needed to isolate the influence of cultural context on girls' and women's health at different stages of life and assess the degree to which effects are path dependent. Future research could also usefully develop measures of various dimensions of gender relevant to the specific gendered practices of other societies, particularly societies in transition, where gender norms are adapting to globalizing forces.

With salient and widespread gender norms and one-sixth of humanity living inside its borders, India is a central case for the study of cultural context, gender, and health. For now, this study brings cultural context and gender more directly into our understanding of health.

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Table 1. Descriptive Statistics for Variables Included in Analyses

	Mean/Proportion	Standard Deviation
Individual-Level Variables		
Self-assessed poor health	2.30	0.80
Age	35.31	7.99
Age at cohabitation	17.68	3.20
Number of births	3.18	1.78
Endogamous marriage	0.11	0.31
Educational attainment	4.02	4.81
Highest female education in household	4.43	5.00
Assets of household	11.62	6.19
Housing aid	0.10	0.28
Servant	0.04	0.20
Vent	0.72	0.44
Manner of washing		
Do not wash	0.01	0.09
Water only	0.20	0.38
Mud/ash	0.33	0.46
Soap	0.45	0.50
Health facility	0.85	0.32
Residence		
Metro	0.12	0.30
Urban slum	0.02	0.13
Other urban	0.20	0.44
High infrastructure village	0.30	0.46
Low infrastructure village	0.36	0.47
Cash access	0.85	0.37
Women's seclusion	0.53	0.50
Male-first eating order	0.32	0.46
Wedding expenditure (logged)	11.08	0.98
Dowry	0.24	0.45
Community-Level Variables		
Highest female education in household	4.85	2.68
Electricity hours	13.01	6.76
Medical care waiting time	20.61	12.36
Cash access	0.84	0.17
Women's immobility	0.80	0.59
Seclusion of women	0.53	0.35
Male-first eating order	0.31	0.29
Wedding expenditure (logged)	11.16	0.64
Dowry	0.29	0.28

Note: For brevity, socioreligious group, marital status and state dummy variable statistics are suppressed. Data are weighted.

Table 2. Hierarchical Linear Model of Self-Rated Poor Health

	b	*SE*	
Intercept	1.937	0.457	***
Individual level			
Age	0.008	0.001	***
Age at cohabitation	-0.005	0.002	**
Number of children	0.018	0.003	***
Endogamous marriage	0.023	0.016	
Educational attainment	-0.005	0.002	*
Highest female education in household	0.002	0.002	
Assets of household	-0.004	0.001	**
Housing aid	-0.010	0.017	
Servant	-0.002	0.023	
Vent	-0.009	0.011	
Manner of washing after defecating (mud/ash = ref)			
Do not wash	-0.228	0.056	***
Water only	-0.036	0.019	
Soap	-0.093	0.014	***
Health facility	-0.051	0.017	**
Residence (metro = ref)			
Urban slum	0.267	0.088	**
Other urban	0.151	0.078	
High infrastructure village	0.161	0.086	
Low infrastructure village	0.106	0.086	
Cash access	-0.117	0.014	***
Women's seclusion	0.015	0.013	
Male-first eating order	-0.016	0.012	
Wedding expenditures (logged)	-0.032	0.007	***
Dowry	-0.089	0.014	***
Community level			
Highest female education in household	-0.009	0.011	
Electricity hours	0.003	0.004	
Medical care waiting time	0.010	0.001	***
Cash access	0.257	0.129	*
Women's seclusion	-0.111	0.072	
Women's immobility	0.133	0.037	***
Male-first eating order	0.307	0.080	***
Wedding expenditures (logged)	0.010	0.042	
Dowry	0.412	0.095	***

Note: Individual N = 23,474; District N = 486. All models control for caste and state dummies; results suppressed for brevity.

*p < .05; **p < .01; ***p < .001 (two-tailed).

Table 3. Comparisons of Hierarchical Linear Models of Self-Rated Poor Health

	M0	M1	M2	M3	M4	M5
Control variables (individual)		X	X	X	X	X
Control variables (contextual)			X	X	X	X
Gender segregation variables (contextual)				X		X
Marriage practice variables (contextual)					X	X
Individual variance	0.457	0.441	0.441	0.441	0.441	0.441
Contextual variance	0.194	0.104	0.093	0.087	0.089	0.083
Intra-class correlation coefficient	0.298					
R^2 (individual)		0.034	0.034	0.034	0.034	0.034
R^2 (contextual)		0.462	0.520	0.552	0.541	0.572
R^2 (total)		0.162	0.179	0.188	0.185	0.195
-2 Log Likelihood	49611.16	48548.27	48501.85	48476.09	48481.9	48453.26
Akaike information criterion	49617.2	48662.3	48623.9	48604.1	48607.9	48585.3
Bayesian information criterion	49629.7	48900.9	48879.2	48872	48871.6	48861.6