TWO CONCEPTS OF FEMALE EMPOWERMENT: SOME LEADS FROM DHS DATA ON WOMEN'S STATUS AND REPRODUCTIVE HEALTH

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1 INTRODUCTION

In a seminal paper in 1983, Dyson and Moore introduced the concept of female autonomy to explain regional differences in demographic behavior in India. That paper and that concept inspired such an excited response in the literature that a Popline search on autonomy today produces more than a thousand hits. A related followup word, empowerment, gets even more hits.[1] These are astounding numbers and attest to the ideological and empirical appeal of the idea that as women begin to have a greater say in affairs, that is, as they become more autonomous, their families prosper demographically because birth and death rates in their households fall.

Dyson and Moore's paper, and one that followed closely on its heels (Mason, 1986), triggered numerous attempts to define female autonomy in terms of freedoms to do various kinds of things. This led to attempts to empirically measure female autonomy, initially at more local levels (e.g., Basu, 1992, referring to data collection in 1985-86). The emphasis on measurement issues soon overwhelmed interest on what the word itself meant (for a rare exception, see Jeffery and Basu, 1996, and the papers within). Using a Third World (and especially South Asian) cultural context, much of the literature zeroed in on physical mobility and control of decisionmaking within and outside the home as meaningful indicators of female autonomy. These indicators were useful because a few simple questions on this in small and large surveys were able to get a measure of female autonomy. They were also self-justifying because they were shown in these empirical surveys to have an association with lower fertility and lower infant and child mortality. These associations were often at the community level (e.g., Basu, 1992; Mason and Smith, 2000) as well as at the individual level (e.g., the references in Jejeebhoy, 1995).

Once such measures had been devised, the jump from "ability to go to the market" and "ability to decide what to cook," to autonomy and freedom was rapid and the spirit of the academic findings soon entered the activist literature and into documents such as Cairo plan of action (Sen et al., 1994). It is true that this spirit was derived more from the conceptualized autonomy effects of factors such as female education rather than direct measures of autonomy and empowerment, but they did posit empowerment as the relevant determinant of demographic behavior.

All of this work has been useful for demographic and gender policy, but has tended to beg the question of semantics. Trying to unpack the findings in this literature in new ways might help us better understand what it means for a woman in the Third World today to be autonomous or empowered. In this paper, we try to examine some of the implications of autonomy for women themselves. We do not question the finding that these survey measures of autonomy are correlated with strong positive effects on family welfare, but we ask if these measures of autonomy might have different implications for families and for women themselves. We use these different field-survey measures of autonomy to explore the question of whether there can be two kinds of empowerment, with somewhat different underlying capacities and freedoms involved.

[1] A search on February 23, 2004 produced 1,304 hits for *autonomy* and 2,275 for *empowerment*.

Since this is not a philosophical treatise on the meaning of personal autonomy, we will concentrate on the ways in which we use these words in the demography literature. Of necessity, we use them in a very practical way, but we also make some value judgment when we use them. By definition, autonomy and empowerment are good things, to be sought for themselves in addition to their side effect of inducing desirable demographic outcomes. We do not question that empowerment is a good thing in itself. We are concerned here with the question of whether what we measure as empowerment really represents empowerment as we tend to think it does.

While words like "autonomy" and "empowerment" are often used interchangeably, there have also been some attempts in the literature to distinguish between the two. The most popular distinction (e.g., Dixon-Mueller, 1998) seems to be one between the freedom or liberty to do certain things (autonomy) and the ability to resist controls over one's life or resist the denial of one's rights (empowerment). To the extent that no freedom is really complete (not even the freedom of the patriarch), Dixon-Mueller qualifies her definition by defining empowerment as the capacity to resist arbitrary controls and the denial of just right.

The word "process" is frequently used to distinguish between the two concepts. Malhotra, Schuler, and Boender (2002), for example, assert that empowerment is a process, the process through which women (since we are speaking of female empowerment) become able to resist contrary pressures and take charge of their own lives. In other words, they treat empowerment as a verb, as something that is happening, not something that has happened. Dixon-Mueller, on the other hand, thinks of empowerment both as a process (that of becoming empowered) and as a condition (that of being empowered). Dixon-Mueller's definition is more compelling because it allows one to identify more easily the empowered woman—once she is empowered she is presumably capable of doing things with this power that are more readily measurable than the activities that go into her acquiring the power to make her own decisions.

Seen in these ways, the empowered woman is presumably the autonomous woman, and it is not surprising that for operational research purposes the words tend to be used interchangeably (e.g., Jejeebhoy, 2000). Indeed, as Malhotra, Schuler, and Boender (2002) chronicle, the demographic literature is rife with even more words and phrases to describe what may vary in its details but in essence encapsulates a woman's ability to take charge of things in general and their own lives in particular. They record the frequent use of such words and phrases as agency and status (Gage, 1995; Tzannatos, 1999); women's land rights (Quisumbing et al., 1999); domestic economic power (Mason, 1998); bargaining power (Beegle et al., 1998; Hoddinott and Haddad, 1995); power (Agarwal, 1997; Beegle et al., 1998; Pulerwitz et al., 2000); or gender equality or gender equity (the World Bank, various years).

While we understand Malhotra, Schuler, and Boender's (2002) philosophical frustration with the many ways of describing what is presumably the same thing, from a purely empirical point of view, we do not think that this is a grave problem. Our concern instead is with some words that are missing from their list. In particular, we find it significant that nowhere in the discussions of female autonomy does the word responsibility occur. The idea of responsibility is of course implicit in Dixon-Mueller's use of the word "arbitrary" to characterize the controls that the empowered woman should be capable of resisting. This is more explicit in the Cairo document itself, which talks of the rights of women and families to decide freely and responsibly on the number and timing of their children.

We are concerned with the word "responsibility" here in a different way, the finding that rarely is the possibility entertained that what one defines and measures as female autonomy (however named) might in fact sometimes be not the woman's freedom to make her own decisions as much as the ability to make certain kinds of decisions and the responsibility to make only these kinds decisions. In other words, if the woman who appears autonomous or empowered in answers to questions about her decisionmaking ability on what to cook, to go to the market, or to take a sick child to the hospital will appear as autonomous or empowered when the questions are phrased somewhat differently to ask if she can choose to neglect these decisionmaking duties.

This aspect of autonomy becomes even more salient when we define autonomy on a graded scale in which the completely autonomous woman is the one who has full rights to decisionmaking on a matter. When this happens, it is likely to be a case of her having full responsibilities rather than full rights, other members of the household (the spouse in particular) abdicating their share of responsibility.

To explain this problem, we need to reflect a little more on the idea of freedom and its relationship to empowerment. That is, one needs a working definition of autonomy. As used and promoted by the contemporary discourse, it implies things such as freedom in decisionmaking, a control over one's life. But, in fact, Dyson and Moore (1983) are much more careful in the way they define the word. By autonomy they mean, "the capacity to manipulate one's personal environment" and "the capacity—technical, social, and psychological—to obtain information and to use it as the basis for making decisions about one's private concerns and those of one's intimates."

The first part of this definition says nothing about agency or individual freedom. The capacity to manipulate one's environment can be treated as a largely technical asset—the kind that education, for example, confers because it teaches women to recognize the first signs of illness, provides them with information on the medical facilities in their area, or teaches them the discipline of following the instructions of medical practitioners. These are all abilities worth having and the limiting effect of their absence is easy to imagine. Of course this is a kind of empowerment if by empowerment we mean the ability not to be flummoxed by written (or even oral) instructions but it is not so if we use the term to refer to the freedom to make choices.

Just because a woman says that she can go to the market on her own, that she makes decisions about what to cook for dinner, or about taking a sick child to the doctor, can we assume that she is autonomous in more than the technical manner that a narrow interpretation of Dyson and Moore's definition allows? Technical in the sense that if you can read, go to the market, or take a child to the doctor you are more exposed to information and more likely to get a child medically treated.

Freedom and choice is increasingly the way we define autonomy in the literature and it is with this notion in mind that our survey questions are usually designed. However, even if survey instruments like the Demographic and Health Surveys (DHS) are explicit about the limitations of their survey questions, the analysis we do from the data generated from these questions too easily implies that we are measuring what freedom is supposed to mean in an ideal world—an expansion of choices and freely made choices.

Another way of looking at the relationship between autonomy/empowerment and freedom is to ask what the penalty is for making choices contrary to what is commonly believed to be a demonstration of freedom. If an educated woman does not take charge of family health or does not

decide on the evening dinner menu, can she claim the excuse of exercising her freedom and get away with it? She knows that there are certain expectations of her as an educated woman, not only from her family, but from society and, increasingly, the state. The state has been quick to embrace relatively non-political interventions, such as expanding women's education, while neglecting to take charge of other crucial public health measures that are determinants of health as well (Basu, 1997; Desai and Alva, 1998)

We use these concepts of conditioning and punishment or penalty when we talk of undesirable behavior, such as women eating last in a home, women not seeking economic independence, or women remaining in a bad marriage. Here we suggest that the same reasoning can be applied to women maintaining egalitarian relations in the home, or insisting on taking paid work, or walking out of a bad marriage. We might still prefer the second kind of conditioning and obedience of social expectations because we begin with some basic ideas about what constitutes the good or the just life—and surely a world of gender equality, low child mortality, and (with some argument) low fertility constitutes such a life. Therefore, we can seek these goals even if we know that they are attained by as many constraints on people's behaviors as are the currently unjust outcomes in many parts of the world.

Although there are too few studies of what happens when deviation from approved norms occurs, one contemporary example comes from a survey in France (Blayo and Blayo, 2003) in which high fertility women (women with three or more pregnancies) were asked about societal responses to their third and higher order pregnancies. The pressure these women faced from husbands, peers, and even doctors to be more responsible, to at least consider an abortion, were so enormous that many of these women did abort their pregnancies.

There are specific examples of conditioning and pressure leading to desirable behavior that can not automatically be labeled autonomy or exercise of free choice. DHS data sets provide us with some of the best empirical methods of addressing the issue. Our primary concern is pragmatic rather than philosophical; fortunately, DHS has collected a large body of detailed information on women's status as well as a range of demographic and health outcomes.

In the following sections, we use the India National Family Health Survey (NFHS-2) to try to separate out measures of female autonomy and decisionmaking ability, which may reflect women's ability to take what might be called selfish charge of things, from measures that might be more ambiguous. These more ambiguous measures can include looking at women's exercise of choice and freedom, but they can also be construed as being instrumental, as giving women the responsibility and the technical ability to become better wives and mothers and to thus improve family welfare.

Our outcome measures are all directly or indirectly health related, but we select them to conceptually reflect two different kinds of maternal abilities and freedoms, one of which might be more contested than the other. When women's education and autonomy result in better conditions of birth and childcare, this can be achieved because these maternal abilities are useful to the family as a whole and are therefore not resisted in intrahousehold relationships. That is, women's autonomy here is being used for relatively altruistic purposes. Women's "status" correlations between childbirth

and childcare are as likely to be "instrumental" characteristics of women as they are to be manifestations of a deeper level of freedom and control.[2]

When women's autonomy is put to the service of meeting their own health and other needs, it is quite possible that there is much greater resistance. The extent to which women control their own bodies and health may be a better indicator of empowerment. That is, the goal of women's autonomy is not just to make them better wives and mothers. It is (or should be) as important to aim for a level of autonomy that makes them more conscious of their duties to themselves and their own welfare, physical as well as mental/emotional.

The demographic literature that emphasizes female empowerment for developing countries tends to focus on the instrumental strengths of female empowerment, even as it adds that female empowerment is good and right. This is a strategically useful emphasis because policymakers are always interested in addressing as many issues at a time as possible. The female empowerment literature from developed countries tends to emphasize the value of this empowerment as a means of serving women's self-interest (e.g., England, 2000), wherever this self-interest might lie. In this paper, we adopt this perspective of separating out the self-interest value of empowerment from its instrumental properties.

The NFHS-2 is rich with information that allows us to explore some of these distinctions. This paper will use the data for the state of West Bengal to describe some of these altruistic (instrumental) versus selfish (self-interest) notions of female autonomy, their implications for health outcomes, and their larger socioeconomic and cultural contexts.

2 THE DATA

The 1998-1999 NFHS-2 data for India were collected across 26 states in two phases, starting in 1998 and ending in 1999, and covered a representative sample of about 90,000 ever-married women age 15-49. Aside from collecting data on population, health, and nutrition, NFHS-2 added to the original survey by including data on the quality of health and family planning services, domestic violence, reproductive health, anemia, the nutrition of women, and the status of women. Hemoglobin levels were also included in NFHS-2 to assess the nutritional status of women and children.

In this paper, we have tried to use this rich data set to empirically estimate the individual effects of household and respondent characteristics on two categories of health related outcomes—those referring to the woman herself and those referring to her children. The estimation, specified by logistic regression, was applied to data from West Bengal. Odds ratios were then used to interpret the effects of the explanatory variables for each of the different outcome variables.

Summary statistics are presented in Tables 1 through 7; unless otherwise specified, each dependent variable was run on the same list of explanatory variables.

[2] As Kishor (2000) illustrates, even within a single category of outcome such as child health and survival, different dimensions of female empowerment may affect different proximate determinants of this outcome. We suggest that empowerment is not just multidimensional; it is also possible that we are including in our measures of empowerment variables that are not really empowering.

Table 1 Respondents' food consumption, 1998-1999 NFHS-2, West Bengal, India				
Variable	Description	Sample breakdown[1]		Sample size
Milk and curd	1 = Weekly or daily, 0 = Less than weekly	70.8% 29.2%	Weekly/daily Less than weekly	4,408
Fruits		79.0% 20.9%	Weekly/daily Less than weekly	4,408
Eggs		51.9% 48.0%	Weekly/daily Less than weekly	4,408
Chicken, meat or fish		27.2% 72.8%	Weekly/daily Less than weekly	4,408
[1] Percentages may not add up to 100 due to missing data for some of the variables. The total number of respondents was 4,408.				

Table 2 Respondents' health, as related outcomes, 1998-1999 NFHS-2, West Bengal, India				
Variable	Description	Sample breakdown[1]		Sample size
Whether the respondent has severe or moderate anemia[2]	0 = Severe anemia (less than 7 g/dl) or moderate anemia (7-9.9 g/dl), 1 = Mild anemia (10-11.9 g/dl) or normal	14.3% 75.0%	Severe or moderate anemia No severe or moderate anemia	4,121
Respondent's Body Mass Index[2]	0 = Less than 18.5 (nutritional/chronic energy deficiency), 1 = 18.5 to 29.9	36.6% 55.0%	Deficiency No deficiency	4,121
Whether the respondent suffered health problems after the last birth[3]	0 = Yes, 1 = No	61.6% 36.6%	Yes No	1,147
Whether the respondent suffered from any reproductive health (RH) problems in the last three months[4]	0 = Yes, 1 = No	41.02% 54.74%	Yes No	4,408
Did respondent see anyone for advice or treatment to help her with the above-mentioned RH problems[4]	0 = No, 1 = Yes	70.5% 28.5%	No Yes	1,808
[1] Percentages may not add up to 100 due to missing data for some of the variables. The total number of respondents was 4,408. [2] Estimation was run on the sample of women who were not currently pregnant and who had not given birth in the last two months. [3] Night blindness; blurred vision; convulsions from fever; swelling of legs, body, or face; excessive fatigue; anemia; or any vaginal bleeding. NFHS recorded this variable only for women who had given birth in the last 5 years, for the last-born child 2 years of age and less. [4] Problems with vaginal discharge; pain or burning while urinating/frequent or difficult urination; pain during intercourse and/or blood after sex.				

Table 3 Respondents' overall health, as related to pregnancy, child health outcomes, and children's immunizations, 1998-1999 NFHS-2, West Bengal, India

Variable	Description	Sample breakdown[1]		Sample size
Whether the respondent received antenatal care in last pregnancy[2]	0 = No, 1 = Yes	9.5% 88.7%	No Yes	1,147
Did respondent deliver her last baby in a hospital or other medical facility[2, 3]	0 = No, 1 = Yes	48.4% 49.4%	No Yes	1,147
Whether the last-born child is alive[4]	0 = If the child died within the first five years of life, 1 = Yes	2.4% 97.5%	No Yes	1,870
Whether the last born child has moderate/severe anemia[5]	0 = Severe anemia (less than 7 g/dl) or moderate anemia (7-9.9 g/dl), 1 = Mild anemia (10-10.9 g/dl) or normal	42.3% 48.1%	Yes No	661
All vaccinations: Polio (1, 2, 3), DPT (1, 2, 3) and Measles[6]	0 = No, 1 = Yes	41.0% 50.8%	No Yes	712
No vaccinations[6]	0 = No, 1 = Yes	74.1% 14.0%	No Yes	712
At least one vaccine[6]	0 = No, 1 = Yes	13.1% 31.0%	No Yes	712

[1]Percentages may not add up to 100 due to missing data for some of the variables. The total number of respondents was 4,408.
[2]NFHS recorded these variables only for women who had given birth in the last 5 years, for the last-born child 2 years of age and less.
[3]This includes facilities in the public medical sector, NGO/trust hospital or clinic, or private medical sector (as opposed to at her own home, parent's home, or other home).
[4]We took women who had given birth in the last 5 years, to control for institutional and other time-related factors (quality of health care, etc.) that may affect the probability of the child's survival.
[5]NFHS recorded these variables only for women who had given birth in the last 5 years, for the last-born child 2 years of age and less. Children less than one year of age were excluded.
[6]Data for children's immunizations were collected in the survey only for children who were alive; as a result, for households where the last-born child had died, data on immunizations of the second-last born child (including the sex of the second-last-born child), if available, were used instead. Also, Polio 0 was excluded from the polio vaccination list, and BCG was also excluded in the analysis, since they are generally given at birth and we wanted to capture more of the respondent's and/or household's choices for their children rather than conditions at birth.

In our interpretation of results, we group the explanatory variables (Tables 4 through 7) into three categories. The first category includes the standard socioeconomic determinants of health outcomes. We treat the education of the respondent's husband as one more marker of socioeconomic status; this is why we have included it in the set of socioeconomic variables in our analytical tables. We treat the education of the respondent herself as both a socioeconomic marker as well as an empowerment one, but in our presentation we keep it in this first list because we wish to avoid giving it the status of a proxy for autonomy that is so automatically given to it in the contemporary literature. We then try to separate some of the remaining explanatory variables into a category that reflects what we call empowerment as self-indulgence. This category includes measures that stand for the woman's ability to do things for herself. The residual category consists of measures that might expand her freedom to think for herself but are more likely to reflect her enhanced capacities to act in the best interest as far as family health outcomes are concerned. That is, they might be a measure of technical ability and responsibility rather than freedom as defined by the ability to freely choose how to run her life.

Table 4 Demographic and socioeconomic characteristics, 1998-1999 NFHS-2, West Bengal, India				
Variable	Description	Sample breakdown[1]		Sample size
Urban/rural dummy	0 = Rural, 1 = Urban	55.8% 44.2%	Rural Urban	4,408
Scheduled caste, scheduled tribe, other backward caste	0 = Yes, 1 = No	31.2% 68.4%	Yes No	4,408
Household Standard of Living Index	0 = Low, 1 = Medium, 2 = High	34.9% 44.4% 18.9%	Low Medium High	4,408
Number of household members	_	5.99	Sample mean	4,408
Sex of household head	0 = Male, 1 = Female	88.9% 11.1%	Male Female	4,408
Respondent's partner's education attainment[2]	0 = No education (N), 1 = Incomplete primary (IP), 2 = Complete primary (CP), 3 = Incomplete secondary (IS), 4 = Complete secondary (CS), 5 = Higher (H)	24.3% 18.2% 5.5% 23.7% 8.4% 19.2%	N IP CP IS CS H	4,408
Respondent's educational attainment[2]	0 = No education (N), 1 = Incomplete primary (IP), 2 = Complete primary (CP), 3 = Incomplete secondary (IS), 4 = Complete secondary (CS), 5 = Higher (H)	38.7% 17.8% 5.3% 21.7% 5.9% 10.3%	N IP CP IS CS H	4,408
Currently pregnant	0 = No or unsure, 1 = Yes	94.8% 5.2%	No Yes	4,408

[1]Percentages may not add up to 100 due to missing data for some of the variables. The total number of respondents was 4,408.
[2]Note that the original variable was 8 categories, 1=no education, 2=less than primary, 3=primary, 4=middle, 5=high school, 6=higher secondary, 7=graduate and above, 8=professional degree. The variables were re-categorized to make the estimation more easily interpretable.

Table 5 Measures of self-indulgent empowerment, 1998-1999 NFHS-2, West Bengal, India				
Variable	Description	Sample breakdown[1]		Sample size
Respondent's age	0 = 29 and below, 1 = 30 and above	44.3% 55.7%	29 and below 30 and above	4,408
Gap in age between respondent's partner and respondent	0 = 0-2 years, 1 = 3-5 years, 2 = 6 to 9 years, 3 = 10 years and more	8.5% 26.9% 31.0% 26.9%	0-2 years 3-5 years 6-9 years ≥ 10 years	4,408
Usually reads newspaper or magazine at least once a week	0 = No, 1 = Yes	77.4% 22.6%	No Yes	4,408
Usually listens to the radio once a week	0 = No, 1 = Yes	56.9% 43.1%	No Yes	4,408
Permission required to visit family and friends[2]	0 = Not allowed to go at all for either, 1 = If permission required for either, 2 = No permission required	84.4% 15.6%	Permission required No permission required	4,408
Who decides on obtaining health care for respondent	0 = Husband or others in household, 1 = Jointly with husband or others in the household, 2 = Respondent makes the decision	51.4% 30.9% 17.7%	Husband/others Jointly Respondent	4,408
Allowed to have money set aside that respondent can use as she wishes	0 = No, 1 = Yes	43.0% 56.3%	No Yes	4,408
Does respondent think it is okay for a husband to beat his wife[3]	0 = Yes, 1 = No	19.2% 80.8%	Yes No	4,408

[1]Percentages may not add up to 100 due to missing data for some of the variables. The total number of respondents was 4,408.
[2]In West Bengal, no respondent said that she was not allowed to go visit family and friends.
[3]In at least one of the following scenarios: she is unfaithful, her family does not give money, she shows disrespect, she goes out without telling him, she neglects the house or children, and/or she doesn't cook properly.

Table 6 Measures of respondents' "responsibility" in the household, 1998-1999 NFHS-2, West Bengal, India				
Variable	Description	Sample breakdown[1]		Sample size
Contribution to total family earnings[2]	0 = None (not working), 1 = Almost none, 2 = Less than half, 3 = About half, 4 = More than half, 5 = All	73.6% 4.8% 7.0% 3.0% 2.9% 6.3%	None Almost none Less than half Half More than half All	4,408
Who decides what to cook	0 = Husband or others in household, 1 = Jointly with husband or others in the household, 2 = Respondent makes the decision	12.5% 18.1% 69.4%	Husband/others Jointly Respondent	4,408
Who decides on purchasing jewelry or other major household items	0 = Husband or others in household, 1 = Jointly with husband or others in the household, 2 = Respondent makes the decision	48.0% 34.2% 17.8%	Husband/others Jointly Respondent	4,408
Permission required to go to the market[3]	0 = Not allowed to go at all for either, 1 = If permission required for either, 2 = No permission required	1.1% 78.2% 20.7%	Not allowed to go Permission required No permission required	4,408

[1]Percentages may not add up to 100 due to missing data for some of the variables. The total number of respondents was 4,408.
[2]Initially, we had included an employment variable in addition to the share of earnings variable, which was categorized as 0 = Not working, 1 = Worked in the last 12 months, and 2 = Currently working. However, "worked in last 12 months" had very few observations, causing convergence problems. Hence, since "contribution to total family earnings" already captures the work (and extent of work) done by the respondent, we added a new category to this variable, 0 = None (not working), and dropped the employment variable.
[3]Because of the small number of observations for women who did not have permission to go to the market, we also created a two-category variable (0 = Needs permission/not allowed to go, 1 = No permission needed) and ran the different estimations on this variable as well. The results did not change; permission required to go to the market was not statistically significant in most cases.

Table 7 Additional explanatory variables, 1998-1999 NFHS-2, West Bengal, India				
Variable	Description	Sample breakdown[1]		Sample size
Current age of the last-born child[2, 3]	Years	7.7 years	Sample mean	3,776
Whether the mother does not have moderate or severe anemia (women who are not currently pregnant)[2]	0 = No, 1 = Yes	15.0% 74.2%	No Yes	4,121
Sex of the last-born child[2, 3]	1 = Male, 2 = Female	47.8% 41.3%	Male Female	3,927

[1]Percentages may not add up to 100 due to missing data for some of the variables. The total number of respondents was 4,408.
[2]These explanatory variables were included in the children's hemoglobin equation along with the household and respondent characteristics (with the exception of whether the respondent was pregnant or not). Criteria for moderate and severe anemia are given in Table 2.
[3]481 women in the sample had never given birth, and since age of the last-born child was used for children's hemoglobin levels (recorded only for children who were alive), the sample for this variable excluded children who had died (151 cases; age at death was a separate variable). Sex of the child was also included in the regression for whether the respondent had postpartum care, whether the last-born child was still alive, and children's immunizations.

2.1 Empowerment as Self-indulgence

An important way to capture the notion of a woman's autonomy that is likely to be an index of self consideration, rather than merely or largely a proxy for responsibility, is to look at the ways in which she can be unproductively free. If she is employed, she is contributing to family income; if she decides what to cook, she frees her mother-in-law or other potential cooks from the responsibility of the kitchen; if she shops for food, she leaves her husband free to gossip with his friends. When a woman does nothing productive or useful, she may be said to be pleasing herself, and it is informative to search the NFHS-2 data set for some proxies for such selfish uses of time.

Leisure may seem to be a strange thing to worry about for poor households given their intense preoccupation with day-to-day survival, but there is no doubt that some access to leisure enhances the quality of life, not only of the leisured individual but also of his or her associates. Women have traditionally not had great access to the type of leisure that allows one to pursue artistic or musical endeavors, but the gender difference in this indicator of welfare is also very sharp when one looks at very simple forms of leisure, such as a chance to relax. Poor women seem to be the worst affected in this regard, in both absolute terms and in terms of their difference from poor men. Empirically this is very difficult to demonstrate on any large scale. The conventional method would be to net out the time spent on economically productive activities and allocate the rest to leisure, but economically productive activities are difficult to measure, with so much of it being unpaid work.

Leisure is not a clearly defined activity; it can often be combined with work (e.g., gossiping with neighbors while peeling potatoes). The notion of leisure is alien to many poor women, as evidenced by many women in a survey in Kerala, India (Saradamoni, 1977), mentioning washing clothes and cleaning the house when asked what they did in their free time. To the extent that this is so, it is true that statistics may understate women's access to leisure. Nevertheless, the NFHS-2 data offer us a few variables that might serve as proxies for leisure and therefore proxies for self-indulgence. The first of these relates to the spending of time on the mass media. The data sets asked women if they had read a newspaper in the past week, listened to the radio in the past week, or watched television in the past week. In our analysis, we use the first two variables, but in our discussion we focus on the radio-listening variable as a marker of leisure because reading newspapers requires literacy and might exclude large numbers of our sample. Watching television requires a television, which are often prohibitively expensive. Listening to the radio is relatively easily done (it is probably rarely done without a simultaneous productive activity, but we can be generous and assume that the woman who listens to the radio is spending time on herself). Moreover, radios are relatively inexpensive and its absence in a home says less about a family's income than about its willingness or desire to spend money. Individual ownership of a radio is unnecessary due to the amount of shared exposure to media. It is just as likely that a radio belongs to a neighbor or the community as a whole.

Mass media does enter into demographic analyses in studies of various outcome measures, but generally through data on household goods. The assumption is that mass media exposes women to better ways of doing things and that this accounts for the greater efficiency or even autonomy of women. However, supporting this assumption requires a better content analysis of the programs that are popular among the women who watch/listen to them, and we do not have much evidence on this subject (for an exception to this statement, see Faria and Potter's 1999 work on the mini-serials on television in Brazil).

Absent a thorough content analysis of mass media, the little evidence we have suggests that it is not for these instrumental reasons that women watch television or listen to the radio. For example, in focus group discussions in Bangladesh and West Bengal (Basu and Amin, 2000), women overwhelmingly admitted that they listened to virtually nothing but music and religious programs on the radio.[3]

Another nonproductive freedom in the NFHS-2 data is the measure of the ability to visit friends and relatives without permission. We treat this measure separately from those related to abilities to do things for the family—make spending decisions, decide what to cook, take a child to the hospital, and to earn an income. This is because the traditional Indian family is characterized by an expected transfer of a woman's loyalty upon marriage from her natal to her marital home.

We also include in our possible measures of self-indulgence the ability that the woman has to put aside some money for her own use. Interestingly, this measure looks at this ability regardless of who has earned the money—it is therefore a potentially important source of information about empowerment if it includes women who can claim spousal earnings for their own use. Such self-interest is a marker of freedom in the best sense of the word, and we suggest that it is a more realistic measure of a woman's ability to be empowered than merely adding to family income. As discussed in the next section, we treat the income earning variable as a more ambiguous measure of female autonomy.

The decisionmaking that a woman exercises in the matter of her own health care is also a variable that we want to examine for its correlation with the power to invest in herself, and the NFHS-2 question on this issue helps us to test its value. In addition, we accept the anthropological suggestion that the greater the age gap between spouses, the larger the gender differences in domestic authority.

The NFHS-2 has data on a useful and specific kind of freedom measure that implies a special kind of self-indulgence—the freedom that a woman is willing to give a man to be domestically violent. The woman who sees no circumstances as justifying such violence is the woman with the greatest sense of self; she values her body and her being strong enough to value its right to be protected from assault. If she fails in her domestic duties, she sees no reason for that to justify a beating; even more boldly, she does not even acknowledge the right of a husband to get violent with an unfaithful wife. The NFHS-2 showed that more than 40 percent of women do not believe that failure in domestic duty or unfaithfulness by a wife justifies domestic violence. Consequently, rather than trying to establish a hierarchy of reasons under which a woman believes that domestic violence is justified, the self-empowerment measure is better captured by separating out the women with a zero-tolerance policy on spousal violence from those who think at least some circumstances call for such violence.

2.2 Empowerment as Responsibility

The remaining variables in our list of explanatory variables in Tables 4 through 7 represent autonomy as choice of course—it is more than likely that when women choose to look after their children, this altruism is a genuine exercise of freedom because child welfare is a proxy for maternal

[3] Our focus on unproductive time is analogous to Presser's (1986) emphasis on the leisure needs of women that are an important determinant of low fertility in developed societies. As she points out, the less children one has, the less tiring it is.

happiness. As Williams (2001) says in his criticism of John Stuart Mill's informal definition of liberty as consisting "of doing what one desires," this must actually mean "the *capacity to do* what one desires (you are not unfree if you simply choose not to do something you desire)" (italics ours).

It is conceivable that these variables represent an enhanced capacity to manipulate the external environment to certain ends, this capacity being engendered by rises in both technical abilities as well as a sense of responsibility. At the same time, these abilities and these responsibilities could represent a restriction of choice in that they do not as readily translate into better health outcomes for women themselves, as our analysis suggests.

Economic independence is an important marker of female autonomy in much of the demographic literature. The assumption is that it leads to a greater control by women over how resources are allocated and, hence, a greater control over their own lives. However, when women's income is used for family welfare, it might be an instrumental use of income for relatively altruistic purposes and may not imply greater freedom to self indulge as well.

Two of the freedom/decisionmaking measures in the analysis are particularly ambiguous and highlight the importance of not using this combination of questions to construct indices of overall autonomy, as is frequently done in the literature (e.g., Balk, 1994; Hashemi et al., 1996; Jejeebhoy, 2000; Morgan et al., 2002; Ghuman, 2003). The first of these measures is the freedom to go to the market to shop. While it is true that we prefer to treat this as a measure of doing things for the family, we are aware that it also represents a real physical freedom, which is usually enjoyable enough to be interpreted as a measure of self-indulgence. If this were not the case, it would not be so common for marketing to be the first activity that men allot to themselves when they get involved in household work (United Nations, 1991).

The second ambiguous measure is decisionmaking on what to cook. While the NFHS reports do not explicitly treat this variable as a measure of autonomy, the general tendency in numerous analyses of NFHS data is to do so. This variable tends to get added to studies of female autonomy, but it is not much more than a marker of domestic duty. Being given the freedom to decide what to cook is too close to being told to cook and being told to take charge of the kitchen.

The statistical analysis in the following pages finds that our measure of self-indulgence correlates with measures of women's own health-related outcomes more readily than with child outcomes. That is, they are not instrumental and therefore not causes of the health outcomes they correlate with. Instead, they are merely another way of measuring women's ability to pay attention to their own well-being. What is even more illuminating is that they are often poorly related to child outcomes, suggesting that women's self-indulgence might not be so good for child health and that what we want is responsible rather than truly autonomous women if child health is to improve.[4]

These concepts anticipate our empirical results. As mentioned already, we looked at two sets of outcomes, those related to women and those related to their children. In the case of the former, in addition to looking specifically at reproductive health problems, we are fortunate to be able to include measures from the NFHS-2 on some potential precursors of reproductive health problems—food consumption and hemoglobin levels. As previously mentioned, in the case of child outcomes, we try to exploit some of the rich information that NFHS-2 has on child survival, health care, and nutritional levels.

[4] On this issue, see the provocative paper by Hobcraft (2000).

The dependent variables used in this analysis are also laid out in Table 4. The tables with the results are given in the following section (Tables 8 to 15). Since there were many categorical explanatory variables used in the estimation, estimation was first run using the lowest category as the reference for each categorical variable, and then odds ratios for changes in between each category were calculated for each outcome.

3 WOMEN'S EMPOWERMENT AND WOMEN'S HEALTH-RELATED OUTCOMES

In this section, we look at the influences on women's investment in themselves, as defined by outcomes that are related to their health both directly as well as indirectly. Some of these outcomes have to do with food and nutrition, and others with health awareness, health problems, and action on health problems.

3.1 Food Consumption

The NFHS-2 asked questions about the frequency of consumption of milk and curd, pulses and beans, green leafy vegetables, other vegetables, fruits, eggs and chicken, and meat or fish. Before the pattern of consumption of these various foods can be interpreted, it is important to understand the cultural associations of these foods in our sample group.

Throughout the country, milk, curd, and fruits may be called high-status foods. That is, the greater ability to have them suggests either better economic resources or a greater importance being given to the person eating them. The latter, the household status of the consumer, is important—rarely, for example, would the domestic servants of even rich households be given a glass of milk or a piece of fruit to eat, precisely because these are the foods of the gods and thus of the elites.

Eggs and chicken, and meat or fish have strong regional associations. In West Bengal, meat and chicken have had a long history of being status foods, to be eaten when affordable and to be eaten by those who matter in the home. Even the Brahmins (who are traditionally strictly vegetarian in the rest of India) are fond of their fish and meat and expected to see them in a complete meal. Green leafy vegetables have an ambiguous position, being popular for price and taste reasons, but not thought of as having high or low status.

This ambiguity is even more marked for the residual categories of pulses and beans and other vegetables. Other vegetables in particular are what one eats when one cannot eat the high-status foods for reasons of money or rank. It is immaterial that from a nutritional point of view (and especially given the fact that the high-status foods are usually consumed/afforded in amounts that are too small to have much nutritional impact) these mundane status foods are what would go into a medically recommended healthy diet today.

In our analysis, we focus on the high-status or elite foods—milk and curd, fruit, chicken and eggs, and meat or fish. In addition, we restrict the consumption variable to consumption at least once a week, since daily consumption of these luxury foods is too rare to capture any relationships.

Tables 8 and 9 give estimation results for consumption of food (milk and curd, fruits, eggs, and meat). Figure 1 offers a more concise representation of these results by plotting odds ratios for explanatory variables (both empowerment and responsibility-related), which were significant at the

Table 8 Odds ratios for respondents' food consumption, 1998-1999 NFHS-2, West Bengal, India

Variable		Milk/curd (at least weekly)	Fruit (at least weekly)	Eggs (at least weekly)	Chicken, meat and fish (at least weekly)
SOCIOECONOMIC CIRCUMSTANCES					
1. Location (1=Urban, 0=Rural)		1.0298	1.7918**	1.2931**	1.4839**
2. Not in SC, ST, or OBC (1=Yes, 0=No)		1.3354**	1.3301**	1.5156**	1.3360**
3. Household Standard of Living Index (Ref: Low)	Medium	2.1574**	2.0894**	1.3324**	1.4696**
	High	3.6550**	3.6617**	1.4672**	1.8871**
4. Number of household members		0.9910	0.9537**	0.9987	0.9980
5. Sex of household head (1=Female, 0=Male)		0.7898	1.0574	0.9636	0.9660
6. Spouse's educational attainment (Ref: no education)	Incomplete primary (IP)	1.1645	1.1258	0.9134	1.2041
	Complete primary (CP)	1.4682*	1.5862	1.3220**	1.2167
	Incomplete secondary (IS)	1.4513**	1.3435	1.2520**	1.1339
	Complete secondary (CS)	1.6468**	1.9162**	1.3676**	1.2964
	Higher (H)	2.2598**	1.6574**	1.2780	1.0932
7. Respondent's educational attainment (Ref: no education)	Incomplete primary (IP)	1.0880	1.4706**	1.2461**	1.2289**
	Complete primary (CP)	1.2599	1.7883**	1.0106	1.3269
	Incomplete secondary (IS)	1.2707*	1.9464**	1.1701	1.2240
	Complete secondary (CS)	1.7682**	1.8996**	0.9221	0.7630
	Higher (H)	1.4437*	3.4449**	1.5179**	1.2327
8. Whether respondent is pregnant (1=Yes, 0=No)		1.2993	1.2125	1.1245	1.0089
EMPOWERMENT VARIABLES					
9. Respondent's age (0=29 and below, 1=30 and above)		1.1047	0.8319*	0.8912	0.9599
10. Age gap between respondent's partner and herself (Ref: 0-2 years)	3-5 years	0.7484**	0.9212	1.0168	1.2077
	6-9 years	0.8274	0.7087**	1.0511	1.4150**
	10 years and more	0.7506**	0.9245	1.0870	1.5179**
11. Whether respondent usually reads a newspaper/magazine at least once a week (1=Yes, 0=No)		1.3250**	1.7644**	1.2884**	1.4085**
12. Whether respondent usually listens to the radio once a week (1=Yes, 0=No)		1.2703**	1.3547**	1.3810**	1.5409**
13. Is respondent allowed to visit family and friends (Ref: permission needed)	Permission needed[1]	-	-	-	-
	No permission required	1.3702*	0.5790**	1.1341	0.9327
14. Decisionmaking: Respondent's health care (Ref: husband/others decide)	Jointly with husband/others	0.8375	0.8259	1.1592	0.8883
	Own decision	1.1291	1.0110	1.0543	0.8920
15. Whether respondent is allowed to have money set aside to use as she wishes		0.9497	1.2245*	1.2639**	1.4863**
16. Whether respondent does not think domestic violence is justified (1=Yes, 0=No)		1.1263	0.9253	1.5572**	1.2792**
RESPONSIBILITY VARIABLES					
17. Respondent's contribution to total family earnings (Ref: none)	Almost none	0.7074*	1.1026	1.2507	1.0096
	Less than half	0.6357**	0.6229**	0.9095	0.7510**
	About half	0.6604	0.9816	0.6243**	0.9194
	More than half	1.0249	1.0009	0.7043	1.1410
	All	0.8010	1.0331	0.9796	0.8194
18. Decisionmaking: What to cook (Ref: husband/others decide)	Jointly with husband/others	0.8533	0.8503	1.0445	0.6179**
	Own decision	1.0427	1.0097	1.2989**	0.8626
19. Decisionmaking: Purchasing jewelry/other household items (Ref: husband/others decide)	Jointly with husband/others	1.0417	1.2067	1.0120	1.0351
	Own decision	0.8356	0.8263	1.1377	1.1433
20. Is respondent allowed to go to market (Ref: not allowed to go)	Permission needed	0.9228	1.1014	0.9438	0.2816**
	No permission required	0.7148	0.6950	0.9438	0.2893**
Sample Size		3,863	3,861	3,863	3,865
Wald Chi-square		607.59	774.81	435.90	356.15

** = significant at α = 0.05, * = significant at α = 0.10

[1] In West Bengal, no respondent answered that she was not allowed to go visit family and friends, so the reference was changed to "permission needed."

0.05 level or lower. In Figure 1, there is a clear distinction between the effects of self-indulgent empowerment (positive) versus responsibility (negative). Leisure (as measured by reading the newspaper and/or listening to the radio regularly), being able to keep money for personal use, and having a negative attitude towards domestic violence had a strong positive effect on all categories of elite food consumption. In addition, looking at intracategory effects, being able to decide about her own health care as opposed to others playing a part in the decision, was also positively correlated with milk consumption (Table 9).

The effects of leisure, in particular, were not only the most consistent but also among the strongest for all empowerment variables. Being able to read the newspaper regularly had a larger effect than the radio variable for milk and fruits, whereas radio had a larger effect for eggs and meat. We do not say that increased leisure causes higher consumption of milk and fruit. Although it is possible that there is some causation if she learns of the nutritional value of these foods from the radio or newspaper, the cultural value attached to these foods is well known enough not to need reinforcing by the media. It is much more likely that both these variables—listening to the radio regularly and eating high-status foods—merely reflect the same thing, that is, a certain amount of self-indulgence and the financial wherewithal to afford it.

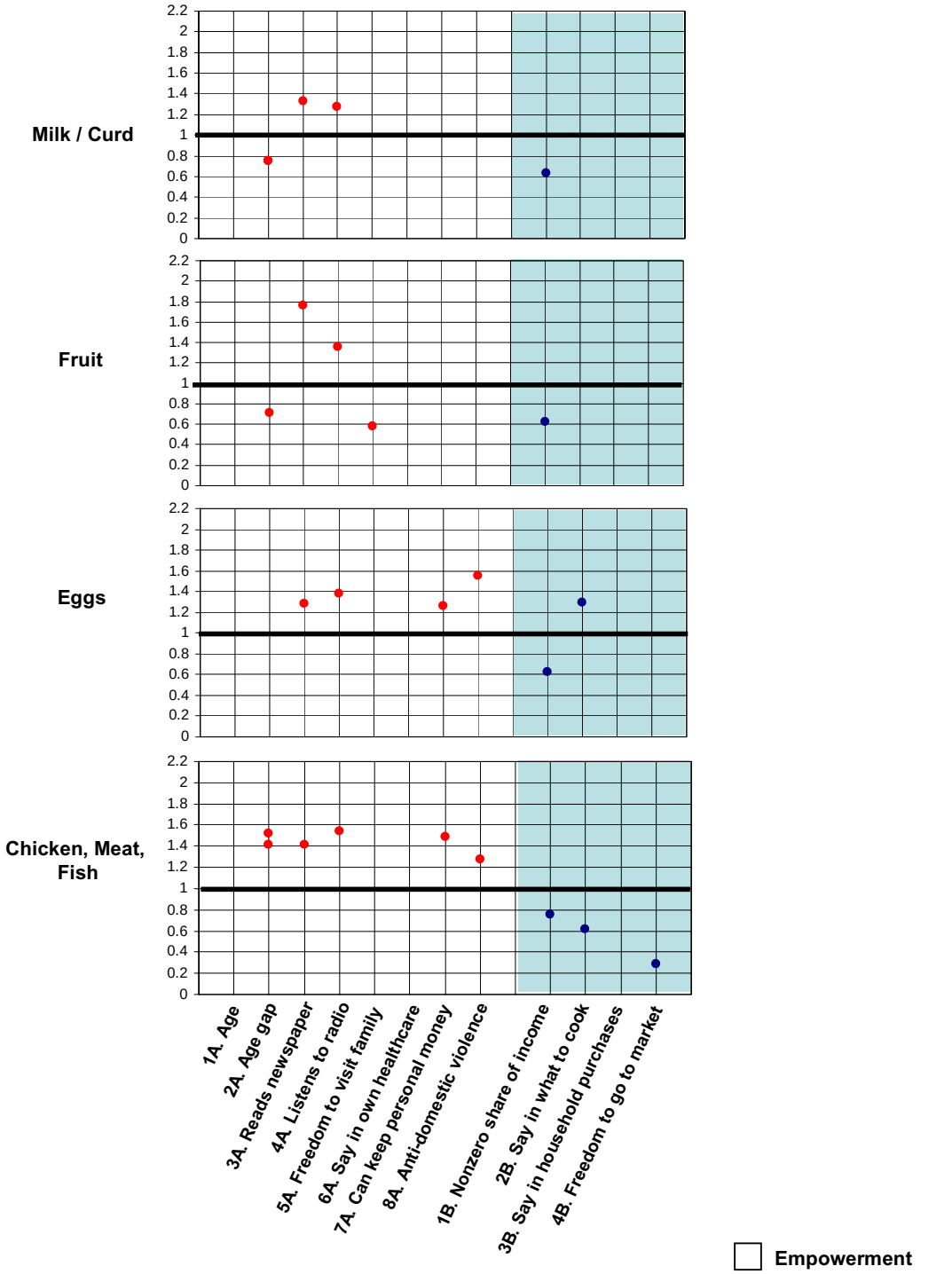
In some cases, there is a negative impact of age gap between spouses on milk and fruits consumption. Wherever this variable is evaluated, it tends to be measured in a negative direction; that is, the larger the age gap between wife and husband, the lower her consumption of these choice foods. This finding is consistent with the possibility that a larger age gap translates into a greater degree of hierarchy in spousal relations. However, the intracategory effects for fruit consumption (Table 9) were slightly more ambiguous. While increasing the age gap from 3-5 years to 6-9 years also decreased the odds of consuming fruit regularly in West Bengal by a factor of 0.77, an increase in age from 6-9 years to 10 years or more increased the odds of consuming fruit in West Bengal by 1.3. Gap in age also had a strong positive impact on meat consumption and no effect on consumption of eggs, possibly pointing to some more fundamental differences between consumption of vegetarian and nonvegetarian foods.

Table 9 Odds ratios for changes between categorical variables of respondents' food consumption, 1998-1999 NFHS-2, West Bengal, India

Variable		Milk/curd (at least weekly consumption)	Fruit (at least weekly consumption)	Eggs (at least weekly consumption)	Chicken, meat and fish (at least weekly consumption)
SOCIOECONOMIC CIRCUMSTANCES					
Household Standard of Living Index	(Medium→High)	1.6941**	1.7525**	1.1011	1.2840*
Respondent's partner's educational attainment	(CS→H)	1.3722**	.8649	.9345	.8432
	(IS→CS)	1.1347	1.4263**	1.0922	1.1433
	(CP→IS)	.9885	.8470	.9470	.9319
	(IP→CP)	1.2607	1.4089	1.4473**	1.0104
Respondent's educational attainment	(CS→H)	.8165	1.8134**	1.6460**	1.6156**
	(IS→CS)	1.3915*	.9759	.7880	.6233**
	(CP→IS)	1.0086	1.0884	1.1579	.9224
	(IP→CP)	1.1579	1.2161	.8109	1.0797
EMPOWERMENT VARIABLES					
Age gap	(6 to 9 years→ 10 years or more)	.9072	1.3045**	1.0341	1.0726
	(3 to 5 years→6 to 9 years)	1.1055	.7693**	1.0337	1.1716
Is respondent allowed to visit family and friends	(Permission needed → No permission required)	-	-	-	-
Decisionmaking: Respondent's health care	(Jointly with husband/others→ Respondent makes decision)	1.3483*	1.2241	.9095	1.0042
RESPONSIBILITY VARIABLES					
Respondent's contribution to total family earnings	(More than half → All)	.7815	1.0321	1.3909	.7181
	(Half→ More than half)	1.5518	1.0196	1.1281	1.2410
	(Less than half→ Half)	1.0389	1.5758	.6864*	1.2242
	(Almost none → Less than half)	.8986	.5649*	.7272	.7438
Decisionmaking: What to cook	(Jointly with husband/others →Respondent makes decision)	1.2219*	1.1874	1.2435**	1.3961**
Decisionmaking: Purchasing jewelry and other household items	(Jointly with husband/others →Respondent makes decision)	.8021	.6847**	1.1241	1.1045
Is respondent allowed to go to market	(Permission needed → No permission required)	.7746*	.6309**	1.0344	1.0271

** = significant at α = 0.05, * = significant at α = 0.10

Figure 1 Odds ratios for respondents' food consumption, 1998-1999 NFHS-2, West Bengal, India



Note: only effects with p-value of 0.05 included.

Among the responsibility variables, the respondent's contribution to household income had an equally strong negative impact on all four categories of consumption. It appears that women's income is not a good reflection of a woman's status in the home. It is good for family welfare (as our results below indicate) but does not seem to do much for the welfare of women.

The effects of the remaining decisionmaking variables are mixed and varied enough for us not to be able to make any convincing case for the equation of decisionmaking with greater self-indulgence. Being able to visit family and friends (empowerment), while having a small positive effect on consumption of milk, had a strong negative effect on fruits consumption. It is not surprising that a respondent's share in cooking decisions, which may reflect duty rather than autonomy, is a weak variable in relation to consumption practices.

However, these results lead us to reevaluate our classification of one of the empowerment measures. It appears that the freedom to go out to the market is not an important measure of self-indulgence in West Bengal. While most results were not significant, taking "not being allowed" as the reference, a change in "permission being needed" to go to the market to had very strong and negative impact on the consumption of eggs, meat and fish. (Figure 1 and Table 8).

Where women's own consumption is concerned, the most positive correlates are found with positive socioeconomic outcomes (income, upper-caste, partner's education) and with variables that describe their leisure and ability to indulge themselves (free to listen to the radio, read the newspaper, go to the market, and set aside some money for their own use). Respondents with higher outcomes for these variables are also more able to eat the kind of food that is traditionally reserved for the highest status individuals in a home. Respondents who do not share these characteristics are not as likely to consume these foods regularly, even if they have greater decisionmaking power over household affairs, and contribute an increased share of income to the household. Such respondents are more likely to end up eating the default nonstatus food items that everyone eats to live—foods such as other vegetables and pulses and beans, which might be good for their health, but do not suggest a high domestic status.

3.2 Anemia

For this analysis, women who were not pregnant and had not given birth in the last two months constituted the relevant population. We also defined anemia as a binary variable equal to 1 if the respondent had severe or moderate anemia at the time of the survey, and 0 if she had mild or no anemia (see Table 2).

This variable is important from the female empowerment perspective because we know that anemia is a major accomplice in poor reproductive health outcomes, and a woman's ability to prevent it depends more on her knowledge of anemia prevention and on how much of the iron-rich food she can consume than on her ability to consume what we have earlier called high-status foods. In other words, hemoglobin levels are not a good proxy for self-indulgent empowerment, so there need not be a strict correlation between this variable and the food consumption variables discussed above.[5]

[5] We are also not taking into account the impact on hemoglobin levels of factors such as altitude or smoking habits, the former because only 1 of the 158 PSUs in West Bengal is at an altitude above 1,000 meters, and the latter because smoking levels are uniformly low for the respondents in this sample. As a result, anemia rates that are not adjusted for smoking and altitude are almost identical to the corresponding adjusted rates.

The results shown in Tables 10 and 11 confirm our mixed expectations. Better socioeconomic outcomes, which were shown above to have a systematically positive effect on food consumption, seem to have a more varied impact on respondents' anemia. Household income and upper-caste status have a strong positive effect on reducing the chances the respondent will be anemic, but the respondent's education or her spouse's education had virtually no significant impact.

Also, looking at Figure 2, no empowerment or responsibility variables were significant at a p-value of 0.05, although a large age gap between spouses did have some negative relation with anemia.

Some unexpected results from the empowerment variables include the finding that women who controlled decisions over their own health care had increased odds of having moderate or severe anemia of about 1.3 (whether this was a jump from not having any input [Table 10] or having only some input [Table 11] is unclear). The leisure variables were not significant either, compared with the strong, positive effect they had on food consumption discussed earlier.

Any significant effects of the responsibility measures were weak or mixed. Respondents who contribute more than half of household income, as opposed to none, are 1.5 times more likely to have anemia, but this is qualified by the results in Table 10, where the odds of not having anemia are significantly positive or negative, depending on whether the respondent contributes "less than half" or "more than half" as compared with half.

3.3 Body Mass Index

Tables 10 and 11 and Figure 2 look at the probability of being well nourished (but not obese) compared with being undernourished (what we call thin, defined in Table 2). Again, only women who were not pregnant and had not given birth in the past two months were included in this analysis. Like respondents' anemia, body mass index (BMI) is an objective measure of women's health status and it is not clear how much it reflects female empowerment. It probably does capture the woman's ability to eat not just high-status foods, but to eat enough of whatever she eats. This ability certainly has diminishing returns, in that self-indulgence here can lead to obesity.

Socioeconomic resources are implicated the most strongly in women's BMI values, as seen in the strong positive relationship between BMI and income as well as urban residence. Women with a very high level of education are also 1.7 times more likely to be healthy versus very thin. As with consumption of food, the number of household members has a small negative impact on BMI.

Looking at the effect of self-indulgent empowerment, older women are more likely to be healthy than malnourished; leisure also has a positive impact on BMI. However, the remaining results for the empowerment as well as the responsibility variables are scattered and do not help us understand our central questions. Decisionmaking power over health care has a small negative effect, suggesting the need for further analysis, because one would expect that women who have control over their own health care decisions would have reduced chances of anemia and a healthy BMI.

3.4 Health Problems Suffered After the Last Birth

Once again, it is not clear what we are measuring in this variable—differences in delivery-related health problems, differences in the ability to recognize and acknowledge such health

Table 10 Odds ratios for respondents' health-related outcomes, 1998-1999 NFHS-2, West Bengal, India

Variable		No Anemia[1]	Body Mass Index (healthy versus very thin)[1]	No health problems after last birth (all women)	No reproductive health (RH) problems in last three months (all women)	Sought advice for RH problems in last three months (all women)
SOCIOECONOMIC CIRCUMSTANCES						
1. Location (1=Urban, 0=Rural)		0.9497	1.7994**	1.5030**	1.7643**	1.2274
2. Not in SC, ST, or OBC (1=Yes, 0=No)		1.4017**	1.1074	0.7051**	0.8607*	1.3024*
3. Household Standard of Living Index (Ref: Low)	Medium	1.2562*	1.7436**	1.1275	1.2160**	1.1326
	High	1.7263**	3.5168**	1.6504	1.4584**	1.5469*
4. Number of household members		1.0025	0.9779*	0.9944	0.9904	1.0023
5. Sex of household head (1=Female, 0=Male)		0.9666	1.0765	1.1054	0.9650	1.2472
6. Spouse's educational attainment (Ref: no education)	Incomplete primary (IP)	1.0071	0.8921	1.2693	0.9455	1.3095
	Complete primary (CP)	1.0266	1.1572	1.4632	1.0554	1.5683
	Incomplete secondary (IS)	1.0125	1.0055	0.8658	1.0265	1.4793*
	Complete secondary (CS)	1.0981	0.8893	1.1088	1.2034	1.5921*
	Higher (H)	1.0546	1.1063	0.7555	0.9984	1.5390
7. Respondent's educational attainment (Ref: no education)	Incomplete primary (IP)	1.1252	1.0652	1.0038	1.0793	1.5321**
	Complete primary (CP)	1.3636	1.1739	1.0218	1.2517	1.1624
	Incomplete secondary (IS)	1.3736*	1.0813	1.1104	0.8279	1.1799
	Complete secondary (CS)	1.1540	1.3936	1.2871	1.0867	0.8922
	Higher (H)	1.1190	1.7021**	1.1280	0.9539	1.2343
8. Whether respondent is pregnant (1=Yes, 0=No)		-	-	0.8460	1.0275	1.0515
EMPOWERMENT VARIABLES						
9. Respondent's age (0=29 & below, 1=30 & above)		0.9658	1.3691**	1.0770	1.0519	1.2372*
10. Age gap between respondent's partner and herself (Ref: 0-2 years)	3-5 years	0.8043	1.2002	1.1667	0.8897	0.9125
	6-9 years	0.6814*	1.0560	1.0957	1.1331	1.1079
	10 years and more	0.7387	1.1377	1.1811	0.9557	1.3002
11. Whether respondent usually reads a newspaper/ magazine at least once a week (1=Yes, 0=No)		1.1447	1.5805**	1.1679	1.1915	1.0328
12. Whether respondent usually listens to the radio once a week (1=Yes, 0=No)		0.9214	1.1162	0.9085	0.9031	1.0020
13. Is respondent allowed to visit family and friends (Ref: permission needed)	Permission needed[2]	-	-	-	-	-
	No permission required	0.9297	1.0271	0.7464	1.1862	1.3003
14. Decisionmaking: Respondent's health care (Ref: husband/others decide)	Jointly with husband/others	1.0285	0.7950*	0.8597	1.1964*	0.8346
	Own decision	0.7467*	0.8747	1.1453	1.1728	0.6759*
15. Whether respondent is allowed to have money set aside to use as she wishes		0.9363	1.1098	1.5127**	1.0450	1.2669*
16. Whether respondent does not think domestic violence is justified (1=Yes, 0=No)		1.0242	0.9247	1.1117	1.6500**	0.9825
RESPONSIBILITY VARIABLES						
17. Respondent's contribution to total family earnings (Ref: none)	Almost none	1.1542	0.8715	0.9652	1.0347	0.8390
	Less than half	0.9039	1.1731	1.1544	0.9888	0.7689
	About half	1.6415	0.8206	0.4710	0.6792*	0.8324
	More than half	0.6630*	0.7035	1.4643	1.0392	0.9347
	All	0.9478	0.8632	0.7717	1.1917	0.9551
18. Decisionmaking: What to cook (Ref: husband/others decide)	Jointly with husband/others	0.8956	0.9681	1.5195*	1.0111	1.0385
	Own decision	0.9465	1.0704	1.5809**	1.0927	1.0102
19. Decisionmaking: Purchasing jewelry/other household items (Ref: husband/others decide)	Jointly with husband/others	1.0978	1.2085	0.8948	0.8248*	1.2693
	Own decision	1.3590	1.0649	1.5328	0.5865**	0.9501
20. Is respondent allowed to go to market (Ref: not allowed to go)	Permission needed	0.5921	0.6658	0.4218	0.7032	0.7512
	No permission required	0.6843	0.7054	0.2877*	0.8765	0.7904
Sample Size		3,225	3,307	1,041	3,855	1,571
Wald Chi-square		74.62	430.20	52.95	233.63	89.99

** = significant at α = 0.05, * = significant at α = 0.10

[1] Only non-pregnant women were included; also, women who had given birth in the past two months were excluded.

[2] In West Bengal, no respondent answered that she was not allowed to go visit family and friends, so the reference was changed to "permission needed."

problems, or differences in the ability to see problems where none exist. Our suspicion, looking at the direction of most of the significant effects below, is that we are capturing better (or at least more) reporting rather than clinical health problems.

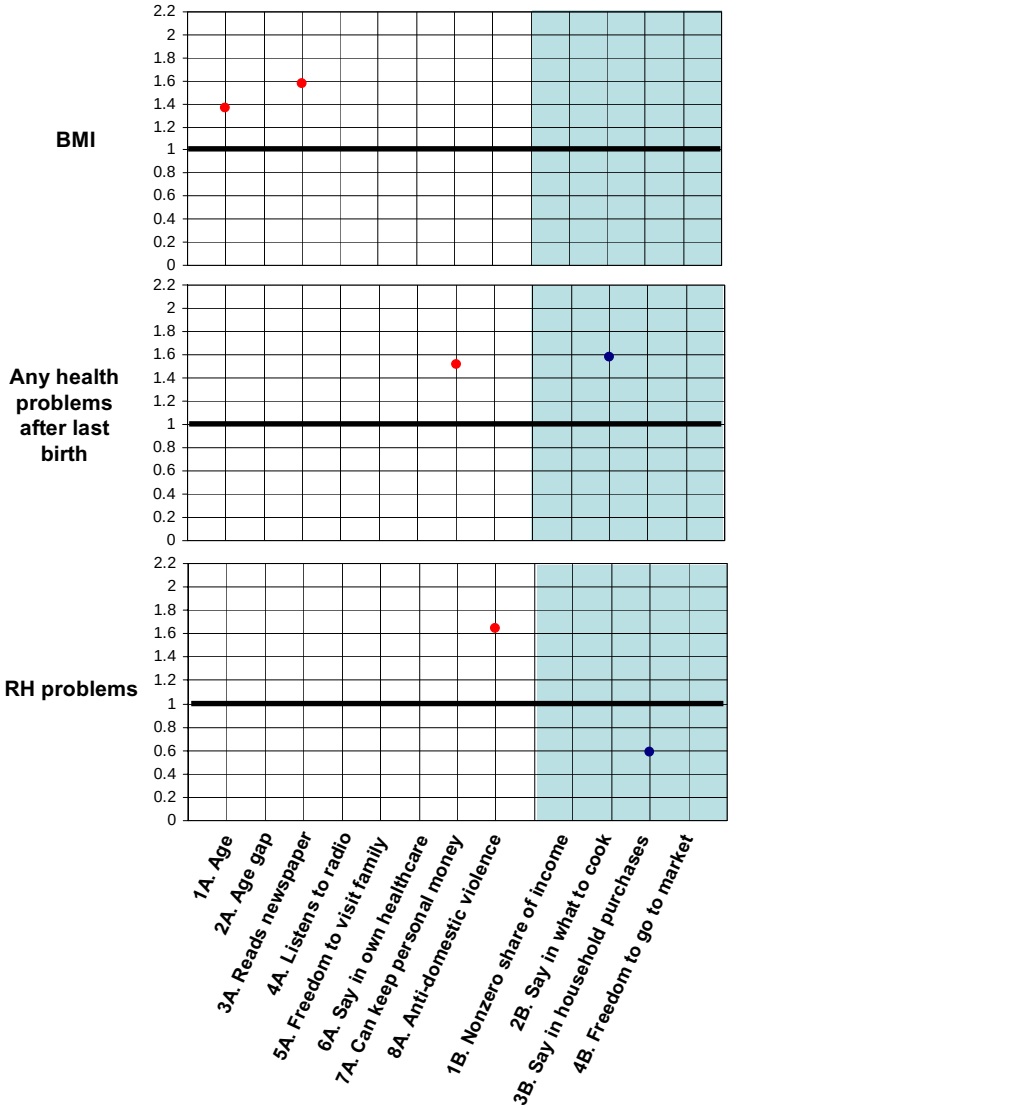
Given these ambiguities, it is not surprising that the significant variables here were few and varied. In Table 10, a woman residing in an urban residence and having her own money to spend has reduced chances of health problems after the last birth, but upper-caste status actually increases them. Looking at Figure 2, only being able to keep personal money and having greater input in cooking decisions were statistically significant at the 0.05 level.

Table 11 Odds ratios for changes between categorical variables of respondents' health-related outcomes, 1998-1999 NFHS-2, West Bengal, India

Variable		No anemia	Body Mass Index (healthy versus very thin)	No health problems after last birth (all women)	No reproductive health (RH) problems in last three months (all women)	Sought advice for RH problems in last three months (all women)
SOCIOECONOMIC CIRCUMSTANCES						
Household Standard of Living Index	(Medium→High)	1.3742*	2.0170**	1.4637	1.1994	1.3658*
Respondent's partner's educational attainment	(CS→H)	.9603	1.2440	.6813	.8297	.9666
	(IS→CS)	1.0845	.8844	1.2807	1.1723	1.0762
	(CP→IS)	.9862	.8688	.5917	.9726	.9432
	(IP→CP)	1.0193	1.2971	1.1527	1.1163	1.1976
Respondent's educational attainment	(CS→H)	.9696	1.2213	.8764	.8777	1.3834
	(IS→CS)	.8401	1.2887	1.1591	1.3126	.7561
	(CP→IS)	1.0073	.9211	1.0866	.6614**	1.0150
	(IP→CP)	1.2118	1.1020	1.0179	1.1597	.7586
EMPOWERMENT VARIABLES						
Age gap	(6 to 9 years→ 10 years or more)	1.0840	1.0773	1.0779	.8435*	1.1735
	(3 to 5 years→6 to 9 years)	.8472	.8799	.9391	1.2734**	1.2142
Is respondent allowed to visit family and friends	(Permission needed → No permission required)	-	-	-	-	-
Decisionmaking: Respondent's health care	(Jointly with husband/others→ Respondent makes decision)	.7260*	1.1001	1.3323	.9802	.8099
RESPONSIBILITY VARIABLES						
Respondent's contribution to total family earnings	(More than half → All)	1.4296	1.2270	.5270	1.1467	1.0218
	(Half→ More than half)	.4039**	.8572	3.1086	1.5301	1.1229
	(Less than half→ Half)	1.8159*	.6995	.4080*	.6869	1.0826
	(Almost none → Less than half)	.7831	1.3460	1.1960	.9557	.9164
Decisionmaking: What to cook	(Jointly with husband/others → Respondent makes decision)	1.0567	1.1056	1.0404	1.0807	.9727
Decisionmaking: Purchasing jewelry and other household items	(Jointly with husband/others → Respondent makes decision)	1.2379	.8811	1.7129*	.7110*	.7485
Is respondent allowed to go to market	(Permission needed → No permission required)	1.1557	1.0594	.6822	1.2465	1.0521

** = significant at α = 0.05, * = significant at α = 0.10

Figure 2 Odds ratios for respondents' overall health, 1998-1999 NFSH-2, West Bengal, India



Note: only effects with p-value of 0.05 included.

This outcome variable also reflects a lower tolerance for problems after delivery in cases where there is less time or resource to indulge them. The negative effect with caste is consistent with this interpretation, as is the finding that, compared with having no input, women who controlled decisions over cooking had significantly fewer reports of such problems (Table 11).

It is also possible that women with more responsibility in the household have greater ability to recognize such problems, and are more likely to report them as such. That may be why women who do not need permission to go to the market are much more likely to have experienced these problems (Table 10), as well as women who earn a greater share of household income (Table 11). These are all somewhat speculative interpretations, and need more qualitative fieldwork to be supported or rejected.

3.5 Reproductive Tract Problems

This variable presents the same problems of interpretation as the variable for delivery-related health problems. This variable includes what women see as a problem, what kinds of problems are treated as part of a normal reproductive system (e.g., Zurayk, 2001; Jain et al., 1996), and how willing women are to talk about these issues. We are afraid that any findings that we get here can be construed as lending support to our hypotheses, so we are interested in this variable for its effect on the analysis of the action taken on reported problems.

Socioeconomic conditions played a significant role in that (all else equal) respondents from urban households and more wealthy backgrounds were less likely to have suffered from reproductive tract problems (Tables 10 and 11). Women from lower-caste and larger households were also less likely to encounter these problems, which may corroborate somewhat with the interpretation in the previous section that women who are busier will report these problems less.

We find that women with greater responsibility in the household report more reproductive health problems, whereas women with more self-indulgent power report fewer. The finding that nontolerance for domestic violence is associated with a lower level of reported reproductive tract problems is consistent with our suspicion that the survey's question on tolerance of domestic violence was capturing some aspect of the women's personal experience with domestic violence.[6]

Women who do not tolerate domestic violence are nearly 1.7 times more likely to not have such problems (Figure 2), whereas women who had the sole decision over household purchases (relative to no input) are equally likely to have such problems. This empowerment/responsibility distinction also holds for variables that were less significant (p-value of 0.10). Women who decided their health care jointly with others (as opposed to having no input) were 1.2 times more likely not to have reproductive health (RH) problems, but women who had higher contributions to household income as well as any input in decisions over household purchases (Tables 10 and 11) were much more likely to report such problems. This last finding is also consistent with the idea that contribution to family income is not a good proxy for the woman's ability to look after herself.

3.6 Sought Advice for Reproductive Tract Problems

This variable can be taken as a measure of self-indulgent empowerment, though self-indulgence is probably too strong a word to describe what we mean here: the ability and willingness

[6] Given the positive relationship between domestic violence and poor reproductive health outcomes (e.g., Jejeebhoy, 1995), this positive relation between stated tolerance and reproductive health problems makes sense.

to take enough care of themselves and not to disregard what could be a potentially serious health problem.

These results so closely parallel the food consumption results above that the empowerment as self-indulgence variable seems to us to be strengthened as a valid measure of real control. Better resource and access characteristics, as measured by the standard of living index and husband's education, are strongly implicated in care-seeking for reproductive health problems. The impact of the respondent's education occurs only at lower levels of education.

With regard to the variables of self-indulgence, while there are no effects that are significant at a p-value of 0.05, the relationship with age and ability to set aside money for personal use was positive. However, sole decisionmaking on her own health care is negatively correlated with seeking reproductive health care, a finding suggestive of sole decisionmaking representing responsibility rather than empowerment. Indeed, this negative role of sole decisionmaking ability on personal health comes up repeatedly in this analysis and calls into question the autonomy it supposedly represents.

As for the responsibility variables in our list, none of these seem to increase the woman's seeking of care for reproductive health problems.

4 WOMEN'S EMPOWERMENT AND CHILD-RELATED HEALTH OUTCOMES

Female empowerment that accomplishes positive outcomes for children is sometimes different from the empowerment that achieves positive outcomes for women themselves. The former are in a sense more a function of women's ability and heightened sense of responsibility rather than simply an outcome of their ability to have their own way. That is, these abilities and responsibilities may be more easily ceded to women who are nevertheless not free agents in the way they conduct their own lives. The following analysis of the major influences on child-related health outcomes allows us to explore this distinction. We begin with a set of outcome measures that contribute to both maternal and child health and then consider measures that are more child-specific—survival status of the last child, hemoglobin level of the last child, and immunization status of the last child. The results are presented in Tables 12 through 15 and Figures 3 and 4.

4.1 Antenatal Care

Antenatal care for the woman is more a function of a household's resource constraints than a woman's freedom. When respondent characteristics are significant, they are of the kind that increase her instrumental ability, an ability which serves household interest as much as and perhaps more than it reflects a concern for the woman herself. In our analysis we find that antenatal care is related to a number of socioeconomic indicators such as urban residence, income, and caste. Particularly important is the effect of women's education, particularly at higher levels of education. This, together with the finding that education was scarcely important in women's own health-related outcomes discussed in the sections above, strongly suggests its instrumental role rather than its role in increasing the capacity to be self-interested.

There is a relatively sparse effect of the standard socioeconomic measures (urban residence, caste, standard of living, husband's education).[7] In fact, lower caste women were 2.33 times more

[7] Compared with similar analyses done by us for other parts of India.

likely to have had antenatal care (Table 12). This testifies to the more widespread availability of services in West Bengal as well as a more egalitarian ideology about their use. These results are also consistent with the summary statistics in Table 3, where 89 percent of women in West Bengal had antenatal care for their last pregnancy. While this paper is not about the political and policy issues that determine access to antenatal care, the West Bengal findings are significant enough to merit mention here.

The empowerment variables show that younger women, as well as respondents who are much younger than their husbands, are more likely to have received antenatal care in their last pregnancy (Tables 12 and 13). While the finding for younger women may reflect period effects, the age-gap measure needs further investigation.

In terms of decisionmaking power, it is significant that the results are mixed and perhaps context specific. For example, respondents that do not need permission to visit family and friends are much less likely to have received antenatal care in the last pregnancy, a puzzling result in line with the fruit-consumption results.

Contribution to total household income had a negative impact on antenatal care at higher levels of income, reflective perhaps of both time constraints as well as the fact that earned income does not necessarily lead to empowerment.

4.2 Place of Delivery of Last Birth

This variable is related to the welfare of the child, but we can see that it is also related to the welfare of the woman in a more direct way than the child measures. That is, while the child variables may reflect empowerment as self-indulgence, this variable has implications for women's physical health.

Respondents in urban areas were significantly more likely to have gone to a medical facility for their last birth. The household standard of living effect was strong and as well. The traditional marker of female autonomy, education, is also significant here and autonomy is particularly high for higher levels of education, as for the antenatal care outcome. The spouse's education was not significant.

The effects of the power and responsibility variables vary. As with the antenatal care measure, younger women were 1.5 times more likely to have their last-born child delivered in a medical facility, but indulgences such as listening to the radio regularly had a negative effect, as did decisionmaking power over what to cook.

Thus, it seems that the instrumental power of women is most important in determining positive outcomes in this estimation.

4.3 Survival Status of Last Child

All women, both pregnant and nonpregnant, whose last birth took place within the five years preceding the survey were included in this estimation. It is intriguing that income as well as maternal education, both variables so crucial in research in the 1970s and 1980s, had only weak effects on this variable (Table 12). We think this is partly a period effect now that health services and health knowledge are more pervasive, and partly a state effect, in that West Bengal has had a stronger

Table 12 Odds ratios for respondents' overall health as it relates to pregnancy and related child health outcomes, 1998-1999 NFHS-2, West Bengal, India

Variable		Antenatal care in last pregnancy	Last-born child was delivered in medical facility	Last-born child still alive[1]	No anemia (last-born child)[1]
SOCIOECONOMIC CIRCUMSTANCES					
1. Location (1=Urban, 0=Rural)		2.7111**	7.3777**	1.1140	1.1091
2. Not in SC, ST, or OBC (1=Yes, 0=No)		0.4290**	0.8399	1.1467	1.8017**
3. Household Standard of Living Index (Ref: Low)	Medium	1.6782	1.8318**	0.7706	1.8089**
	High	3.1757	3.3614**	1.5377	1.6427
4. Number of household members		1.0003	0.8850**	1.1534**	0.9511
5. Sex of household head (1=Female, 0=Male)		0.8988	0.7895	0.7748	1.0821
6. Spouse's educational attainment (Ref: no education)	Incomplete primary (IP)	1.1544	0.8778	1.0166	1.0950
	Complete primary (CP)	2.6285	1.0063	2.1446	0.6280
	Incomplete secondary (IS)	1.2576	1.0857	1.8928	0.9460
	Complete secondary (CS)	0.8088	0.9091	2.4684	0.5195
	Higher (H)	0.6499	1.0736	1.1996	1.2100
7. Respondent's educational attainment (Ref: no education)	Incomplete primary (IP)	0.9380	1.9167**	4.5588**	1.0469
	Complete primary (CP)	1.4879	2.2477**	1.2975	0.6611
	Incomplete secondary (IS)	3.1097**	3.4899**	1.7684	2.1117**
	Complete secondary (CS)[2]	-	8.7090**	1.9265	1.8082
	Higher (H)[2]	-	-	-	1.7703
8. Whether respondent is pregnant (1=Yes, 0=No)		1.2127	1.2642	0.2898**	-
EMPOWERMENT VARIABLES					
9. Respondent's age (0=29 and below, 1=30 and above)		0.4877**	0.6453*	0.8673	0.6515
10. Age gap between respondent's partner and herself (Ref: 0-2 years)	3-5 years	0.9948	0.8411	7.1089**	1.4786
	6-9 years	2.3694*	0.6899	1.2443	1.3441
	10 years and more	1.3850	0.7707	0.6949	1.5647
11. Whether respondent usually reads a newspaper/magazine at least once a week (1=Yes, 0=No)		2.4529	1.2324	2.4476	4.2934**
12. Whether respondent usually listens to the radio once a week (1=Yes, 0=No)		1.4480	0.7403*	0.9099	0.8277
13. Is respondent allowed to visit family and friends (Ref: permission needed)	Permission needed [3]	-	-	-	-
	No permission req.	0.2044**	1.6586	0.1539*	1.3965
14. Decisionmaking: Respondent's health care (Ref: husband/others decide)	Jointly with husband/others	0.6130	0.7901	3.2051**	0.7126
	Own decision	0.4899	0.8083	1.9884	1.4870
15. Whether respondent is allowed to have money set aside to use as she wishes		0.6684	0.7947	1.6559	0.8821
16. Whether respondent does not think domestic violence is justified (1=Yes, 0=No)		1.1407	0.8436	1.7219	1.6908**
RESPONSIBILITY VARIABLES					
17. Respondent's contribution to total family earnings (Ref: none)	Almost none	2.4006	1.2792	1.0463	2.5957
	Less than half	1.8638	0.9292	0.6514	0.5444
	About half	0.6289	1.9004	1.2058	1.1506
	More than half	0.8259	1.1990	0.6976	1.4805
	All	0.3966*	1.4286	0.5019	0.8560
18. Decisionmaking: What to cook (Ref: husband/others decide)	Jointly with husband/others	1.5118	1.1707	2.9489*	1.6802
	Own decision	1.5645	0.5939**	3.0462**	1.6067
19. Decisionmaking: Purchasing jewelry/other household items (Ref: husband/others decide)	Jointly with husband/others	1.5848	1.0977	0.3115**	1.1577
	Own decision	1.0692	1.1114	0.3141*	1.0306
20. Is respondent allowed to go to market (Ref: not allowed to go)	Permission needed [4]	0.5035	1.6524	-	0.8825
	No permission required	1.6374	1.6462	-	0.5991
ADDITIONAL VARIABLES					
21. Sex of the last-born child (1=female, 0=male)		-	-	1.0260	0.9047
22. Whether mother does not has moderate/severe anemia (non-pregnant mothers only)		-	-	-	2.6729**
23. Current age of the last-born child		-	-	-	2.0218**
Sample Size		888	1,038	1,560	554
Wald Chi-Square		109.08	289.62	136.56	113.05

** = significant at α = 0.05, * = significant at α = 0.10

[1]Child survival was estimated for women whose last birth took place within 5 years preceding the survey; children's anemia was estimated for the last-born child who was at least one year old, but was no more than two years old.

[2]Note also that the respondent completing higher education (H≠0) or complete secondary schooling (CS≠0) predicted positive outcomes for antenatal care, last-born child's survival, and delivery in a medical facility perfectly, so those observations were dropped and those variables not used.

[3]In West Bengal, no respondent answered that she was not allowed to go visit family and friends, so the reference was changed to "permission needed."

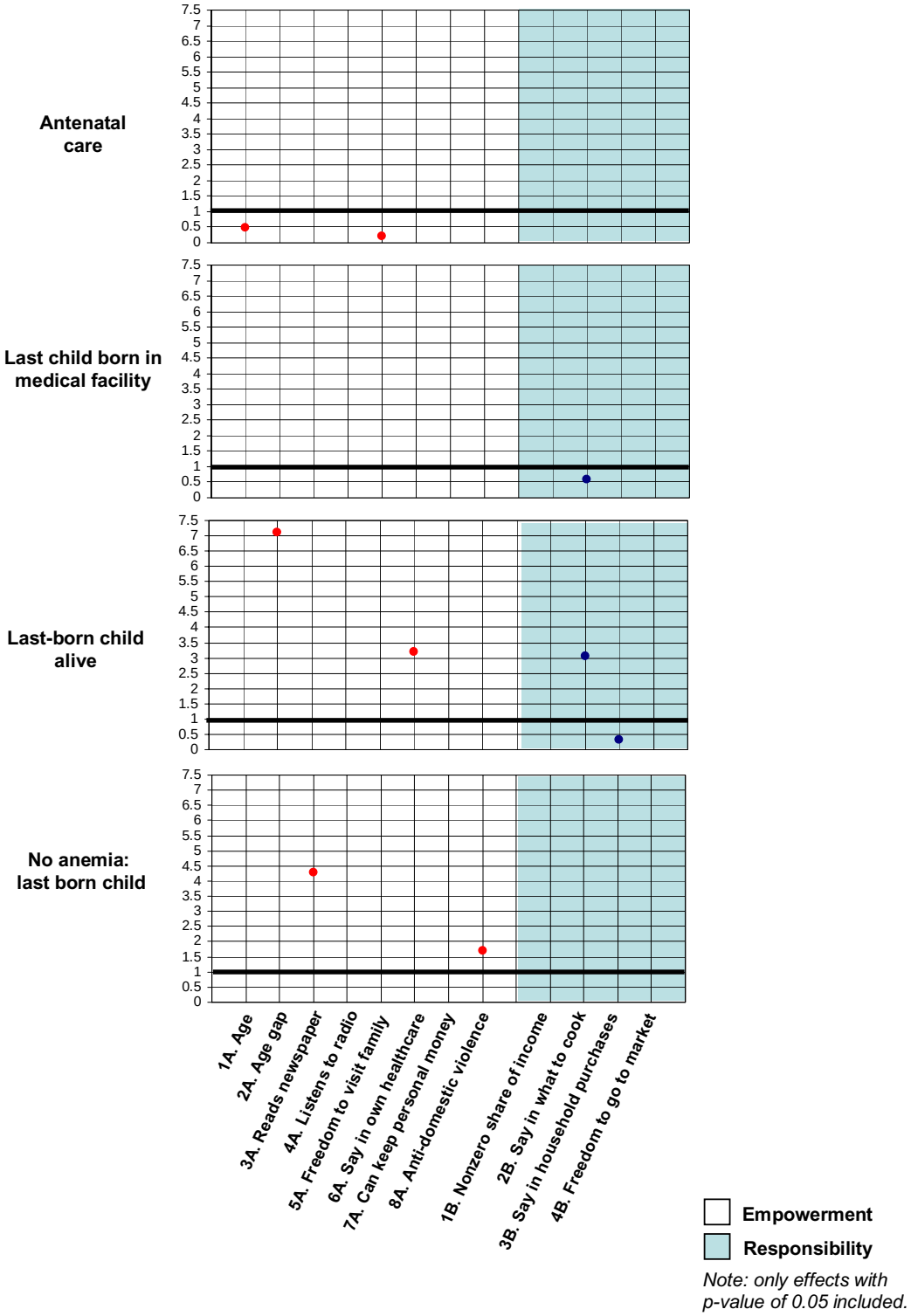
[4]Respondents' needing permission to go to the market was not included for child survival because it perfectly determined survival of the last-born child.

Table 13 Odds ratios for changes between categorical variables of respondents' overall health as it relates to pregnancy and related child health outcomes, 1998-1999 NFHS-2, West Bengal, India

Variable		Antenatal care in last pregnancy	Last-born child was delivered in medical facility	Last-born child still alive	No anemia (last-born child)
SOCIOECONOMIC CIRCUMSTANCES					
1. Household Standard of Living Index	(Medium→ High)	1.8924	1.8350	1.9955	.9080
2. Respondent's partner's educational attainment	(CS→H)	.8035	1.1810	.4859	2.3290*
	(IS→CS)	.6432	.8373	1.3041	.5491
	(CP→IS)	.4784	1.0788	.8825	1.5063
	(IP→CP)	2.2769	1.1464	2.1096	.5734
3. Respondent's educational attainment	(CS→H)	-	2.4832	-	.9790
	(IS→CS)	-	2.4954*	1.0893	.8563
	(CP→IS)	2.0900	1.5526	1.3629	3.1942**
	(IP→CP)	1.5861	-	.2846	.6314
EMPOWERMENT VARIABLES					
4. Age gap	(6 to 9 years→ 10 years or more)	.5845	1.1169	.5584	1.1641
	(3 to 5 years→6 to 9 years)	2.3818**	.8202	.1750**	.9090
5. Is respondent allowed to visit family and friends	(Permission needed → No permission required)	-	-	-	-
6. Decisionmaking: Respondent's health care	(Jointly with husband/others → Respondent makes decision)	.7993	1.0229	.6203	2.0866*
RESPONSIBILITY VARIABLES					
7. Respondent's contribution to total family earnings	(More than half → All)	.4801	1.1914	.7195	.5782
	(Half→ More than half)	1.3131	.6309	.5785	1.2866
	(Less than half→ Half)	.3375	2.0451	1.8509	2.1135
	(Almost none → Less than half)	.7764	.7264	.6226	.2097**
8. Decisionmaking: What to cook	(Jointly with husband/others →Respondent makes decision)	1.0348	.5073**	1.0329	.9562
9. Decisionmaking: Purchasing jewelry and other household items	(Jointly with husband/others →Respondent makes decision)	.6747	1.0125	1.0084	.8902
10. Is respondent allowed to go to market	(Permission needed → No permission required)	3.2517	.9962	-	.6789

** = significant at α = 0.05, * = significant at α = 0.10

Figure 3 Odds ratios for child health outcomes, 1998-1999 NFHS-2, West Bengal, India



Note: only effects with p-value of 0.05 included.

history of such public engagement. Indeed, of the few socioeconomic variables that are significant for this outcome, most relate to the demographics of the household, namely pregnancy (where women who were currently pregnant were 3.4 times more likely to have seen their last-born child die) and the number of household members (which also had a positive effect).

The age gap between the respondent and her spouse showed up as a very strong positive effect on child survival in the move from 0-2 to 3-5 years, but decreased in the shift from 3-5 to 6-9 years (Table 13 and Figure 3). We speculate that the dominant factors affecting this change are increased resources in the first case and decreased empowerment in the second.

Coming to the measures of self-indulgent empowerment, there are many variables that had a significant effect (although, as in previous estimations, these results are mixed). Control over own health care decisions had a strong positive effect, but not needing permission to visit family and friends actually had a negative impact on child survival in West Bengal, compared with the reference of needing permission.

The responsibility variables show that the respondent who is allowed to go to the market had a strong and positive effect on the odds of child survival in the state. Furthermore, decisionmaking power over what to cook had a strong and positive effect on child survival, probably reflecting a combination of maternal altruism and responsibility, but control over household purchasing had a large and negative effect on child survival.

These findings are in line with our proposition that child welfare is better served by the instrumental variables denoting responsibility than it is by straightforward female empowerment.

4.4 Hemoglobin Level of Youngest Living Child

As with all the other outcomes related to children, their relationship to women's empowerment in general could be interpreted to reflect both instrumental and self-indulgent capabilities. However, looking at the different components of women's empowerment that the NFHS-2 has information on, the role of instrumentality becomes more apparent. This is not to suggest that instrumentality does not imply some type of self-indulgence, but that power (or conditioning) also focuses on the woman's welfare, and may not necessarily benefit the child's welfare.

Maternal characteristics are much stronger than women's education in terms of children's anemia. A woman's hemoglobin level and how she takes care of herself are much more important than household resources or a woman's education.

This notion is supported by the empowerment/responsibility distinction. The responsibility variables have no statistically significant effect (except when there is a jump in contribution to family earnings from almost none to less than half, as shown in Table 13), whereas leisure, censuring domestic violence, and having control on her own health care are all positively associated.

4.5 Immunization Status of Child

We look in this paper at three measures of child related health outcomes as expressed through their immunization status—whether the last-born child has received all the necessary immunizations, any immunizations at all, and no immunizations. Our analysis shows that women's empowerment can work differently for women themselves and for family and child welfare.

Data for children's immunizations were collected in the survey only for children who were alive; as a result, for households where the last-born child had died, data on immunizations of the second-last-born child (including the sex of the second-last-born child), if available, were used instead.

Both household and environmental characteristics (captured in urban-rural residence and husband's education measures) were important for immunization (Tables 14 and 15). Urban households were much more likely to have their child vaccinated for any vaccine. Interestingly, lower caste households were also more likely to have their children vaccinated (similar to the result for antenatal care). Education (particularly of the respondent) also had a positive relationship. Income level had little effect here.

The effects of empowerment and responsibility are much less systematic than in the previous results (Figure 4). The negative relationship between the respondents' current age and the likelihood of her child getting any immunizations or getting the full regimen of immunizations can probably be explained by the fact that older mothers had their babies at a time when immunization coverage was more limited.

But the self-indulgent variables have interesting effects. Women who controlled their own health care decisions were also 5.5 times more likely to give the last child at least one immunization. However, keeping money for personal use, a variable that was associated with positive health outcomes for women, actually decreased the possibility of at least one immunization by a factor of two.

One of the most important deviations from previous results is the now positive impact of women's share of household income on child immunizations. While there is a negative effect on this variable for the lowest contribution income, women who contributed all of the household income were nearly 8 times more likely to have given their child at least one vaccine (Figure 4). This is qualified somewhat by the negative impact of decisionmaking power over cooking and household purchases (Tables 14 and 15), both of which could be related to time allocation problems.

Table 14 Odds ratios for children's immunizations, 1998-1999 NFHS-2, West Bengal, India

Variable		All vaccines	No vaccines	At least one vaccine
SOCIOECONOMIC CIRCUMSTANCES				
1. Location (1=Urban, 0=Rural)		2.3894**	0.2993**	2.9059**
2. Not in SC, ST, or OBC (1=Yes, 0=No)		0.7015	2.2943**	0.7955
3. Household Standard of Living Index (Ref: Low)	Medium	1.0211	0.9537	0.8968
	High	0.7240	-	-
4. Number of household members		0.9480**	1.0397	1.0083
5. Sex of household head (1=Female, 0=Male)		0.9303	1.2700	0.7575
6. Spouse's educational attainment (Ref: no education)	Incomplete primary (IP)	0.8770	1.0251	1.1493
	Complete primary (CP)	1.1904	0.3424*	2.2771
	Incomplete secondary (IS)	1.8362**	0.5484	1.8595
	Complete secondary (CS)	1.6099	0.5877	2.0205
	Higher (H)	1.5093	0.4712	2.7407
7. Respondent's educational attainment (Ref: no education)	Incomplete primary (IP)	1.4937	0.5079*	1.5449
	Complete primary (CP)	1.2851	0.7262	2.0180
	Incomplete secondary (IS)	3.5825**	0.2210**	2.1797
	Complete secondary (CS)[1]	3.2668**	0.7305	0.8961
	Higher (H)	6.0563**	-	-
8. Whether respondent is pregnant (1=Yes, 0=No)		0.8410	1.8862	0.2657**
EMPOWERMENT VARIABLES				
9. Respondent's age (0=29 and below, 1=30 and above)		0.4167**	1.9407**	0.5672
10. Age gap between respondent's partner and herself (Ref: 0-2 years)	3-5 years	0.8936	1.0025	0.8069
	6-9 years	0.6101	0.6832	1.2296
	10 years and more	0.8717	1.2186	0.5069
11. Whether respondent usually reads a newspaper/ magazine at least once a week (1=Yes, 0=No)		1.4339	0.2529	1.8221
12. Whether respondent usually listens to the radio once a week (1=Yes, 0=No)		0.9862	0.9827	1.1066
13. Is respondent allowed to visit family and friends (Ref: permission needed)	Permission needed[2]	-	-	-
	No permission required	1.2252	0.6605	2.3151
14. Decisionmaking: Respondent's health care (Ref: husband/ others decide)	Jointly with husband/others	0.7240	1.1673	0.7078
	Own decision	1.4189	0.4867	5.4520**
15. Whether respondent is allowed to have money set aside to use as she wishes		1.1484	1.3914	0.5008**
16. Whether respondent does not think domestic violence is justified (1=Yes, 0=No)		0.9934	0.9831	1.2658
RESPONSIBILITY VARIABLES				
17. Respondent's contribution to total family earnings (Ref: none)	Almost none	1.6702	0.8907	0.0911**
	Less than half	1.0691	0.5808	1.3264
	About half	1.1000	0.8585	0.4104
	More than half	0.9074	1.0374	1.6244
	All	4.1459**	0.1616**	7.9738**
18. Decisionmaking: What to cook (Ref: husband/others decide)	Jointly with husband/others	0.8568	1.4774	0.5023
	Own decision	0.4235**	1.6852	0.6188
19. Decisionmaking: Purchasing jewelry/other household items (Ref: husband/others decide)	Jointly with husband/others	1.2582	0.7108	2.3369
	Own decision	0.3557**	8.2146**	0.2285*
20. Is respondent allowed to go to market (Ref: not allowed to go)	Permission needed[3]	1.2138	-	-
	No permission required	1.7301	0.3119	1.2542
ADDITIONAL VARIABLES				
21. Sex of the last-born child (1=female, 0=male)		0.8807	0.9258	0.9190
Sample Size		605	487	258
Wald Chi-square		125.77	40.74	53.0

** = significant at α = 0.05, * = significant at α = 0.10

[1]Respondents having higher education led to a perfect positive outcome for all DPT vaccines, and hence perfect negative outcome for all vaccines/no vaccines, which included DPT as one of the vaccines.

[2]In West Bengal, no respondent said that she was not allowed to go visit family and friends, so the reference was changed to "permission needed."

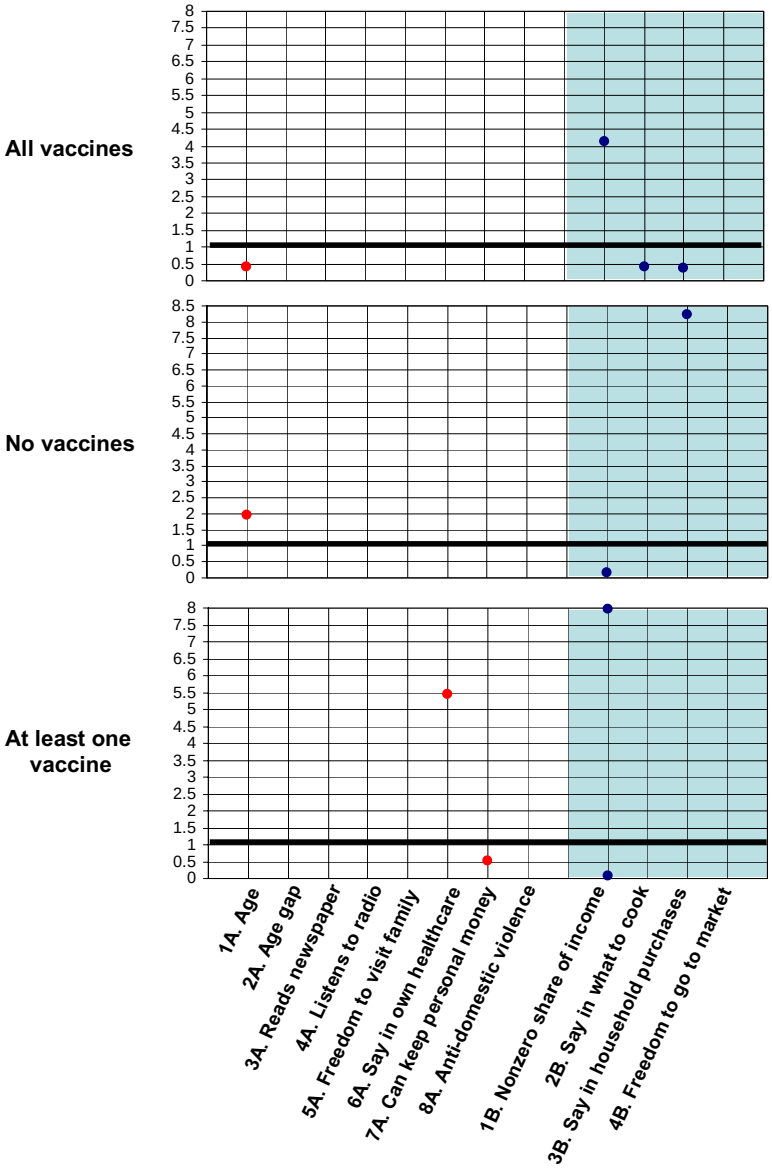
[3]Respondents' needing permission to go to the market was not included for polio (and hence all vaccines/no vaccines since polio was one of the vaccines included in the list) because, by including it with not needing permission, 5 successes (all polio vaccines = 1) were completely determined.

Table 15 Odds ratios for changes between categorical variables of children's immunizations, 1998-1999 NFHS-2, West Bengal, India

Variable		All vaccines	No vaccines	At least one vaccine
SOCIOECONOMIC CIRCUMSTANCES				
1. Household Standard of Living Index	(Medium→High)	.7090	-	-
2. Respondent's partner's educational attainment	(CS→H)	.9375	.8017	1.3564
	(IS→CS)	.8767	1.0717	1.0866
	(CP→IS)	1.5425	1.6013	.8165
	(IP→CP)	1.3573	.3340*	1.9813
3. Respondent's educational attainment	(CS→H)	1.8539	-	-
	(IS→CS)	.9118	1.7835	.4111
	(CP→IS)	2.7878**	.3043*	1.0801
	(IP→CP)	.8603	1.4298	1.3062
EMPOWERMENT VARIABLES				
4. Age gap	(6 to 9 years→ 10 years or more)	1.4288	1.7835	.4123**
	(3 to 5 years→6 to 9 years)	.6827	.6815	1.5239
5. Is respondent allowed to visit family and friends	(Permission needed → No permission required)	-6	-	-
6. Decisionmaking: Respondent's health care	(Jointly with husband/ others→ Respondent makes decision)	1.9596*	.4169	7.7022**
RESPONSIBILITY VARIABLES				
7. Respondent's contribution to total family earnings	(More than half → All)	4.5690*	.1557*	4.9088
	(Half→ More than half)	.8248	1.2084	3.9584
	(Less than half→ Half)	1.0289	1.4780	.3093
	(Almost none → Less than half)	.6401	.6520	14.5655**
8. Decisionmaking: What to cook	(Jointly with husband/others →Respondent makes decision)	.4942**	1.1406	1.2319
9. Decisionmaking: Purchasing jewelry and other household items	(Jointly with husband/others →Respondent makes decision)	.2826**	11.5562	.0977**
10. Is respondent allowed to go to market	(Permission needed → No permission required)	1.4253	-	-

** = significant at α = 0.05, * = significant at α = 0.10

Figure 4 Odds ratios for children's immunizations, 1998-1999 NFHS-2, West Bengal, India



Note: only effects with p-value of 0.05 included.

5 DISCUSSION

Much of the literature on maternal characteristics as a determinant of health outcomes focuses on female empowerment as an important intervening variable in the relationship. It is argued in this literature that when women are empowered they become better wives and mothers, at least as far as health outcomes are concerned. In recent years, this literature has focused on reproductive health as being particularly sensitive to women's status and autonomy and there is a growing amount of literature that infers that these variables are also crucial to improving reproductive health.

However, it is much less clear about what it is that we measure when we talk of women's autonomy and empowerment. Measures that have gained popularity in recent years include the ability to do things such as make child health care decisions, move freely outside the home, and have a say in household expenditures. At least some of the popularity of these measures rests on the fact that they are derived from questions that are easy to ask in a large-scale survey, but it is not completely obvious that they are proxies of a greater control by women over their own lives because they can be answered much more ambiguously than a standard survey is able to capture and because at least some of these freedoms can coexist with severe constraints.

The concept of female empowerment is worth disentangling into absolute and instrumental components. The India NFHS-2 data helped to empirically explore these distinctions, and we used these data to propose that when empowerment is defined as freedom it should reflect women's abilities to look after themselves as much as their enhanced abilities to contribute to household (especially child) welfare. If it involves only (or primarily) the latter, it might be more appropriate to say that the empowerment is instrumental or reflects a greater responsibility for the family rather than a greater freedom of choices. True freedom requires some measure of self-indulgence and the freedom to do relatively unproductive things. The freedom to listen to the radio, to visit friends and relatives, to be against domestic violence under any circumstances, and to set aside money for personal use are proxies for this kind of unproductive autonomy. We found that these unproductive freedoms correlated better with reproductive health outcomes (such as food consumption, anemia, and health care for reproductive tract problems) that were related to women themselves rather than to their reproductive capacities as defined by the ability to bear healthy and surviving children. We also found that women's decisionmaking abilities in the household might increase women's ability to improve household (and especially child) welfare but does not necessarily lead to women's ability to look after themselves.

In Figures 1 through 4, we tried to distinguish between health-related outcomes that reflect self-indulgence and those that reflect responsibility. We separated the independent variables in the same way. The figures support our hypothesis that for women's own health outcomes, empowerment variables have an overwhelmingly positive effect whereas the responsibility variables (with a few exceptions) have a negative effect; this is relaxed if not reversed in many cases for children's outcomes.

The paper also raises questions about the applicability of characterizing some commonly used variables as measuring female empowerment. In particular, the share of household income is a problematic variable. While it has a positive (or statistically insignificant) relationship with children's outcomes, it has a negative relationship with women's own consumption of elite foods and other personal health outcomes. Another unanticipated finding related to the measure of control over decisionmaking that a woman has over her own health care. This measure almost always had a negative or statistically insignificant negative impact on a woman's welfare (food consumption,

anemia, BMI, seeking advice for RH problems), but a positive impact on most of the child health outcomes. This is probably related to the fact that having sole responsibility for her own health care is indicative of too little support for her own needs, while giving women the instrumental capacities to look after their children.

We have presented two hypotheses for the conceptualization of the relationship between women's empowerment and maternal and child health in demographic analysis. The data presented from the India NFHS-2 generally support the hypotheses, but further analysis is needed using data from other countries to refine our arguments and present a more complete picture.

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