Childhood Health and Mother Empowerment in Rural Myanmar

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Abstract

Child health is often a weak link in developing countries, and Myanmar is a case in point. Broadly speaking, a mother's education has been shown in the literature to be an important factor in the determination of child health. But the empowerment of women over the allocation of intrahousehold resources has also been shown to be an important child health factor, and thus an accumulation of human capital. In the present study, we use survey data on an important anthropometric indicator of child health and its associated household characteristics to specify and estimate a child-health production function in rural Myanmar. We then use this production function to draw implications for the height-for-age growth curves. Importantly, our questionnaire-based indicator of empowerment shows the mother's influence over household decisions regarding income, expenditures, and education to be an important factor in the Z-score of the height-for-age indicative of a child's long-term nutritional status. Nearly 30% of girls and 48% of boys are found in a condition of being stunted nutritionally, and the growth curves come closer to the WHO standard as the empowerment of women improves. Although a number of women rights were achieved early in Myanmar, greater empowerment in the home remains a key to improve child welfare.

Introduction

One of the important UN Millennium Development Goals (MDGs) was to reduce the mortality rate of children under the age of five, specifically to one-third of the level in 1990 by 2015. Myanmar is one of the nations that has failed to meet this goal (Table 1). The under-five mortality rate in Myanmar was 5.1% in 2016, which at only half of its 1990 level, had declined less than in most other South East Asian countries. In the UN's Sustainable Development Goals (SDGs), an under-five mortality rate of 5.1% is recognized as a baseline indicator of child health and remains an important policy target (Central Statistical Organization of Myanmar and UNDP 2017). Since its political and economic reforms in 2011, Myanmar has enjoyed substantial economic development, and conditions in the city of Yangon have

significantly improved. In rural areas, however, child-related problems in health and education have drawn the attention of researchers and policy makers. In particular, the key findings of the Myanmar Demographic Health Survey (Ministry of Health and Sports 2017) found that the mortality rate in rural Myanmar remains near 8.0%, much higher than the urban rate of 4.2%.

Table 2 lists the selected child health and socio-economic indicators by state in Myanmar: the under-five mortality rate, vaccine coverage rate, share of children whose growth is judged as being stunted, and average household income. At 10.4%, the mortality rate in Chin State is the highest, followed by Shan State at 9.9%, and Ayeyarwady Region at 8.2%, all of which are much higher than the national rate of 5.1%. The implication is that child health conditions in rural Myanmar remain far behind those in cities, likely discouraging the accumulation of

human capital. Our survey was conducted in the rural region of Ayeyarwady with its particularly low vaccine coverage, where we investigated the relationships between child health conditions and household characteristics.

Table 1. Under-5 mortality rates in selected Asian countries (%)

	1990	2016
Brunei	1.3	1.0
Cambodia	11.6	3.1
Indonesia	8.4	2.6
Laos	16.2	6.4
Malaysia	1.7	0.8
Myanmar	11.6	5.1
Philippines	5.8	2.7
Singapore	0.8	0.3
Thailand	3.8	1.2
Vietnam	5.1	2.2

Source: UN Millennium Development Goals

Table 2. Child health and socio-economic indicators by state

	Under-5 mortality (%)	Vaccine covered (%)	Stunting (%)	Average household wealth
Kachin	6.1	59	36	0.59
Kayah	5.0	80	40	0.60
Kayin	8.4	65	25	0.49
Chin	10.4	53	41	0.42
Sagaing	6.8	66	27	0.65
Taninthayi	8.3	52	26	0.44
Bago	8.3	47	23	0.51
Magway	5.5	58	26	0.50
Mandalay	6.5	81	26	0.68
Mon	4.4	64	28	0.50
Rakhine	5.8	41	38	0.18
Yangon	4.6	67	20	0.75
Shan	9.9	46	37	0.55
Ayeyarwady	**8.2**	**34**	**37**	**0.28**
Naypyitaw	7.9	49	22	0.51

Source: 2015-2016 Myanmar Demographic and Health Survey
Note: Wealth is the cumulative living-standard index, calculated using the assets of ownership, and converted into zero to one.

Human capital as reflected in the human development indicators, for example, has long been an indicator of economic development. A child's own capital affects his or her educational attainment and performance (Alderman et al. 2001), contributing in turn to economic development. The mother's education is one of the most important factors influencing her child's health and, consequently, human capital.

The direct effect of a mother's education on child health is a matter of debate, however. Further investigation is thus needed into the factors that would provide significant links between education and a child's health. Research such as in Thomas et al. (1990) has suggested that a mother's education influences child health by way of income, availability of information, and such elements of the local environment as water facilities and medical services. Among these factors, the empowerment of women has apparently received the greatest research attention in recent years.

According to Duflo (2012), enhancing the empowerment of women in the home tends to direct household resources in ways more favorable to the children. For instance, significant improvements are seen in the anthropometric indicators of health such as height-for-age and weight-for-age, as illustrated in boy-specific and girl-specific growth curves. In short, the empowerment of women appears to improve child health and human capital, and thus presumably economic development. In the present research, we clarify the factors including a mother's education and other mother-related factors such as the empowerment of women that influence child health status in Myanmar.

Child health and nutritional status can be analyzed on the basis of height-for-age, representing a long-term nutritional condition, or of weight-for-age, indicating a short-term nutritional status. Kokudo et al. (2012) have estimated the growth curves of children in both Thailand and Myanmar based on a survey of child height. Given that until recently foreigners were denied access to rural Myanmar, and that these restrictions have now been eased, we could focus on the current child nutritional status in a rural area (surveyed in 2017), specifically regarding the household factors that influence that status.

This paper is organized as follows. Based on the available literature, we first discuss the empowerment of women and the bargaining power based on it. This is followed by our analytical framework and the results of our statistical tests on the factors influencing child health, particularly our comparisons of measured heights-for-age with World Health Organization (WHO) standards. Finally, we present our main conclusions and

the implications for policies likely to best improve child health in Myanmar.

Mother empowerment and child health

In this section, we examine the factors that likely account for child health problems. In previous research, it has been empirically well-established that a mother's education positively affects child health. Some authors have even argued that maternal education may simply be correlated with other household traits, such as the cultural and social environment of the region where a household resides, and which would influence health (Behrman & Wolfe 1987, Thomas et al. 1990, Strauss 1990). Handa (1999) and Glewwe (1999) argue that these other mother-related factors, such as household income, mother's health knowledge (Kovsted et al. 2003), mother's literacy (Thomas et al. 1990), and mother's social status and mobility (Frost et al. 2005) should be incorporated into the household's child-health production process.

In addition to these factors, the empowerment of women and bargaining power have also been attracting scholarly attention, and thus the decision-making over allocations of intrahousehold resources is being extensively analyzed (Doss 2013, Quisumbing & Maluccio 2003). The results appear to suggest that a woman's power relative to her husband's boosts the allocation of resources to herself and her children. If this is true, empowering women in the home would likely accelerate the accumulation of human capital and economic development (Duflo 2012).

Bargaining power over intrahousehold resources has been empirically shown to improve child health status (Strauss 1990, Handa 1999, and Allendorf 2007). But the proxy or indicator of bargaining power itself has been an issue. It can be represented by various indicators such as income, employment, property rights or assets, and education (Duflo 2012, Doss 2013). Handa (1999) has shown that if the mother is the household head, household resources such as income and expenditures tend to be allocated in a way preferential to the children. Allendorf (2007) shows that the children of mothers with property rights to the land are on average in better nutritional condition than those whose mothers have no such rights. Property rights are often employed as the indicator of a mother's intrahousehold bargaining power. Beegle et al. (2001) showed that the number of children desired by a couple may depend on the woman's control of household assets.

Each factor has its own policy implications. For example, Doss (2013) showed that bargaining power proxied by a person's income, property rights, and education has consistent empowerment effects. Bargaining power can also be measured directly, and a survey questionnaire is another possible means of showing how household decisions are affected by intrahousehold bargaining power. Patel et al. (2007) asked the specific question, "Who decides what to buy at the market or what food to cook?" Then they used the answers to predict the influence of bargaining power on child nutrition. And Imai et al. (2014) found that the parental decision arrangements governing the allocation of household resources indicated in survey questionnaires can effectively point to the empowerment of women as well as education in India, thereby positively affecting children's nutrition.

Based on the results above, we hypothesize that a mother's empowerment, her education, and other factors are influential regarding a child's health. We take the questionnaire approach to identify these empowerment effects, by way of her decision roles in (i) household expenditures, (ii) major household purchases, and (iii) child education. Property rights over land and other fixed assets, often used as a proxy for household bargaining power, however, are not sufficiently settled in Myanmar to permit the consideration of such rights as an influencing factor.

Health production function

Glewwe (1999) argued the mother's education cannot directly affect the child's health because nutrition and child-rearing skills are rarely formally taught in a school curriculum. It may be true that other important factors influencing child health are missing. And if so, we would be committing omitted variable bias by way of the missing variables that correlate with a mother's education. Glewwe (1999) used an instrumental (IV) variable to reduce this omission bias. Unfortunately, candidates for such instruments are often not available, and Monazza & Kingdon (2012) and Frost et. al. (2005) have instead used what they call pathway variables, including the mother's health knowledge or mobility, as possibilities.

In light of the above considerations, our child-health production function can be specified as follows (Monazza & Kingdon 2012):

$$\text{Health}_i = f(C_i, H_j, M_k) \tag{1}$$

where Health_i is the health status of child i as represented by his or her height-for-age Z score. Surveyed height here is converted to a Z score[1] on the basis of the WHO's

published indicators, by age and gender of the child, and how far a given child lies from the median height-for-age. Set C_i for child i consists in this study of two individual characteristics: age and sex. H_j denotes household characteristics, represented here by income, including remittances from any family members living away from home. M_k denotes the characteristics of the kth mother, including her education, height (proxying for the health she genetically endows to her children), health knowledge, empowerment or bargaining power in the household, and employment outside the home. The model to be estimated is then expressed as follows:

$$Z\ score_i = \alpha + \beta_1 C\_sex_i + \beta_2 C\_age_i + \beta_3 H\_income_j +$$
$$\beta_4 M\_height_k + \beta_5 M\_edu_k + \beta_6 M\_empwmt_k +$$
$$\beta_7 M\_healthK_k + \beta_8 M\_expose_k + \varepsilon_i \qquad (2)$$

where ε_i is a normally distributed error term with mean zero and standard error σ. Variables M_empwmt, $M\_healthK$, and M_expose are the mother-related factors (i.e., pathway variables) consisting of empowerment, health knowledge, and exposure to the outside world, respectively, which limit any omitted-variable bias.

Data

1. Survey sites

Our research sites are located close to Pathein City in the Ayeyarwady Region (Fig. 1). Household income in Ayeyarwady is the second lowest in Myanmar (Table 2). The population is 62,000, with 86% living in rural areas. Since this region is the main rice producer in Myanmar, 75% of cultivated land is covered by rice paddies. But only 9.5% of state GDP is earned through agricultural production, thus suggesting low productivity in the agricultural sector. In contrast, 12.6% of state GDP is earned in the trading sector because Myaungmya, one of the rice export terminals, is located in the region (Myanmar Investment Commission 2018).

One of the survey sites, village A (containing 300 households) is located a one-hour drive from that city. Village A has a primary, lower secondary, and higher secondary school. In contrast, village B (located 30 minutes from Pathein City) contains about 100 households. Our village survey conducted in December

2017 included recording the height, weight, household income, and years of education of both parents and children. Estimating the child health production function requires biomedical as well as social and economic data. For this purpose, we refer to the Social Demographic and Living Standards Surveys to depict our survey summaries, including the height-for-age and weight-for-age that serve as our anthropometric indicators of child health.

Fig. 1. Map of survey sites in Ayeyarwady region of Myanmar

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[1] The World Health Organization's WHO Z-score indicator of child growth standards is published by sex and age. The measure is $z_i = \dfrac{y_i - M(t)}{StDev(t)}$, where y is the observed height of child i, $M(t)$ is median at age t, and $StDev(t)$ is standard deviation at age t.

2. Mother-related factors

In light of the above literature and to reduce any omitted-variable bias, we specify our mother-related variables as: (1) her empowerment in the household, (2) her understanding of health practices (health knowledge), and (3) her exposure to opportunities outside the home.

We specify the mother's household empowerment (mother factor 1) as consisting of three possible bargaining power factors, particularly whether she is the principal decision-maker over (a) general household expenditures, (b) major household purchase items, and/or (c) the children's education (Table 3). We assign our empowerment variable a value of 3.0 if she replies yes to all three of these questions. If she replies no to any question, meaning that her husband or parents make the decisions instead, the empowerment variable is assigned a value of 2.0. If she replies no to two of these questions, it is assigned a value of 1.0; and if she replies no to all three questions, a value of 0.0 is assigned. Descriptive statistics in Table 4, showing the mean empowerment in our sample to be 2.2, indicate on average that the mother makes the decision on slightly more than two out of these three important household issues. This was a somewhat higher mean empowerment rating than we had expected.

Table 3. Mother's Empowerment and Health Knowledge

Mother's Empowerment

Who usually decides how your husband's earnings will be used?

Who usually makes decisions about making major household purchases?

Who usually makes decisions about the children's education?

Mother's Health knowledge

Do you have a Mother-and-Child Handbook?

Do you have a card that records your children's vaccinations?

Do you know of any way to delay or avoid pregnancy?

Did you see anyone for antenatal pregnancy care?

During your last pregnancy, were you given any injections in the arm to prevent your baby from getting tetanus, that is, convulsions after birth?

During your last pregnancy, were you given or did you buy any iron deficiency tablets or syrup?

During your last pregnancy, did anyone check on your health after you gave birth?

Table 4. Descriptive Statistics

Variable	Description	Mean	Std. Dev.	Min	Max
Child Characteristics (n = 40)					
Z score	(based on the WHO standard)	1.25	1.5	–3.9	2.5
sex	girl = 0, boy = 1	0.58	0.5	0	1
age	age	8.18	3.71	2	15
Household (n = 26)					
income	thousand MMK/month	137	105	38	600
Mother's Characteristics (n = 26)					
M_height	Mother's height	151.7	7.13	138	166
M_edu	Mother's education	1.55	0.88	0	4
M_empwmt	Mother's empowerment (0-3)	2.18	1.17	0	3
M_healthK	Mother's health knowledge (0-7)	4.63	1.53	0	7
M_expose	Doesn't work or self-employed = 0, Works outside = 1	0.43	0.5	0	1

Note: The exchange rate of Myanmar Kyat in December 2017 is 1,000 MMK = 82.2 JPY.

The mother's understanding of health practices (mother factor 2) may especially benefit the child's health status if her skills and knowledge bear directly on child bearing or baby delivery (Glewwe 1999). Our survey entailed asking seven questions about the mother's reproductive or early-childhood health practices, such as whether she has a mother-and-child handbook or vaccine certification card, whether she delays pregnancy, or whether she takes iron deficiency supplements (Table 3). Mothers answering yes to all seven of these questions are assigned a health-knowledge score of 7.0; otherwise, a score of zero. The descriptive statistics (Table 4) show that some mothers answered yes to every question, implying they are, for our purposes, fully skilled and knowledgeable about child bearing and early sustenance, while others answering no lack any important skill, thereby scoring a zero.

Exposure-to-the-outside-world (mother factor 3) in this study specifically addresses the mother's employment. Exposure is 1.0 if she is employed by someone outside the home, and 0.0 if employed in her household only or does not work at all. This factor can have a negative or positive influence on child health. Employment income brings resources useful for the children, but the mother's absence for employment implies that she gives less personal care to her children. As the descriptive statistics show, mean exposure is 0.4; that is, 40% of mothers work outside the home. Some were employed as wage laborers by neighboring farmers, while others provided laundry services in the village.

Besides these mother-related variables, we include in the regression, as discussed above, child characteristics, household income, and mother's education (Table 4). Forty children (2-15 years old) were included in the computations, having a mean age of 8.2. Although Z scores can be found by age, we directly include the age of a surveyed child (Imai et al. 2014) so that we can control it and determine the variation from the WHO standard at that age.

The mother's education is a categorical variable in which no education is indicated by a zero, the completion of primary school by 1.0, completion of lower secondary school by 2.0, and higher secondary school by 3.0. The mother's mean education was 1.55. Therefore, most of the mothers had only received a primary school education.

Estimation results

1. Parameter estimates

Equation (2) is estimated by OLS (Table 5), in which we add the mother-related variables to the base model in a one-by-one manner. C_sex is a dummy variable

equaling one if the child is a boy; otherwise, it is zero. Since each child's Z score is already age- and sex-specific, the effect of this dummy variable would not necessarily be positive. In fact, we find it to be negative and nonsignificant. Its significance would have meant that male children are more likely, all else being equal, to be stunted in our survey villages. The positive sign on the age variable does suggest that the child's nutrition status improves as they grow up. But this may well overestimate the influence of nutrition, given the high mortality rate of under-five children (Kovsted et al. (2003); see the following section for details). Household income has a positive but nonsignificant effect on a child's height-for-age. The mother's height, partly heritable and hence likely to partly affect her children's height-for-age, has a positive effect as expected. The mother's education has a positive and significant influence as well, similar to what we find in earlier literature.

We now turn to the mother-related variables in Models 1 to 3. Among the three candidate variables, empowerment in the household is the only one with a significant child health effect, holding the mother's education constant. Moreover, including mother empowerment reduces the causal effect of a mother's education; in particular, the education effects (M_edu) became smaller in Model 1 relative to those in the base. This suggests that omitting mother empowerment would lead to an overestimate of the influence of a mother's education.

Similar to the findings of Strauss (1990), Handa (1999), and Allendorf (2007), a mother's education is not the only factor affecting her children's health, as mother empowerment can also improve nutrition status. At least in the present survey, we can strongly emphasize that mother empowerment and education are the two most important factors in the health of rural Myanmar children. Because the empowerment variable represents the woman's influence over household expenditures and education, her participation in these decision processes appears to be a key factor in the child's vital growth rate.

Women were granted the right to vote in Myanmar in the 1930's, the earliest anywhere in Asia, and educational and wage opportunities since then have apparently not been any lower for women than for men in this country. However, men have occupied most prominent social positions, such as large-scale employers and members of congress. Consequently, women have also been thought to follow men's decisions in the household (Clair 2018). This does not appear to be the case in our survey villages. Nevertheless, our findings show that power improvements apparently contribute to child health, and thus to the human capital necessary for economic development.

Table 5. Factors Affecting Height-for-Age, Parameter Estimates

Variables	Base	MODEL1 (empwmt)	MODEL2 (healthK)	MODEL3 (expose)
C_sex	−0.572	−0.581	−0.569	−0.573
	(−1.24)	(−1.31)	(−1.25)	(−1.19)
C_age	0.122*	0.130*	0.136**	0.122*
	(1.83)	(2.01)	(2.05)	(1.78)
H_income	0.003	0.003	0.004*	0.003
	(1.41)	(1.16)	(1.79)	(1.32)
M_height	0.054	0.070**	0.063*	0.054
	(1.66)	(2.14)	(1.92)	(1.60)
M_edu	0.598**	0.495*	0.627**	0.598**
	(2.24)	(1.89)	(2.39)	(2.20)
M_empwmt		0.381*		
		(1.94)		
M_healthK			−0.225	
			(−1.50)	
M_expose				−0.004
				(−0.01)
cons	−11.532**	−14.470*	−12.059**	−11.524**
	(−2.20)	(−2.75)	(−2.34)	(−2.14)
R^2	0.25	0.327	0.298	0.25
Adjusted R^2	0.14	0.204	0.17	0.113

Note 1) Numbers inside parentheses are t values.
Note 2) * and ** indicate statistical significance at 10% and 5%, respectively.

All else being constant, the mother's health knowledge and exposure to the world outside her home do not seem to have significant health effects at this time. As our survey includes children aged two to fifteen, with the older children in this group having substantial influence over what they eat, it is not surprising that the nutritional status of the over-five group would be weakly affected by the mother's health knowledge (Ralston & Smallwood 1999). We also do not find the mother's exposure to the outside world to be significant. Variations in income gained from wage labor may not be great enough to have a positive effect on child health; and especially if the job is part-time, the number of hours worked would tend to have little influence.

2. Z-score and height-for-age

Figure 2 shows graphs of the heights-for-age in both villages by gender relative to the standard set by the WHO of the UN. The "standard" line indicates the WHO standard, and sd1neg and sd2neg indicate height-for-age at one and two standard deviations from the median, respectively. In general, a height-for-age lower than sd2neg is regarded as stunted, and we will follow that standard in the present paper. On this basis, our survey shows that five among the 17 girls (29.4%) and 11 among the 23 boys (48%) are nutritionally stunted.

Fortunately, we have a nearby comparator. Prenkert & Ehnfors (2016) have estimated the weight and height growth curves of a sample of underprivileged children in the Chin State of Myanmar, finding that 44%-52% of the girls and 62%-68% of the boys were in a nutritionally stunted condition. Thus, similar to our findings in the Ayeyarwady Region, stunting in Chin State is also substantially more serious among boys than among girls, even the girls' situation is worse than the national average of 37%. Prenkert & Ehnfors (2016) argued that these very high rates, suggestive of a serious health situation, are likely exacerbated by political instability that has prevented foreigners from visiting the Chin area. These high rates are nevertheless additional evidence of the seriousness of nutrition and health difficulties among children in rural Myanmar.

We compare our Z scores and corresponding heights-for-age with other studies. Kokudo et al. (2010) compared children's growth curves in Thailand with those in Myanmar. Table 6 lists the heights-for-age in our own estimates with those in the WHO and Kokudo et al. (2010). Our calculated Z scores are drawn from the parameter estimates in Table 5, with all variables except
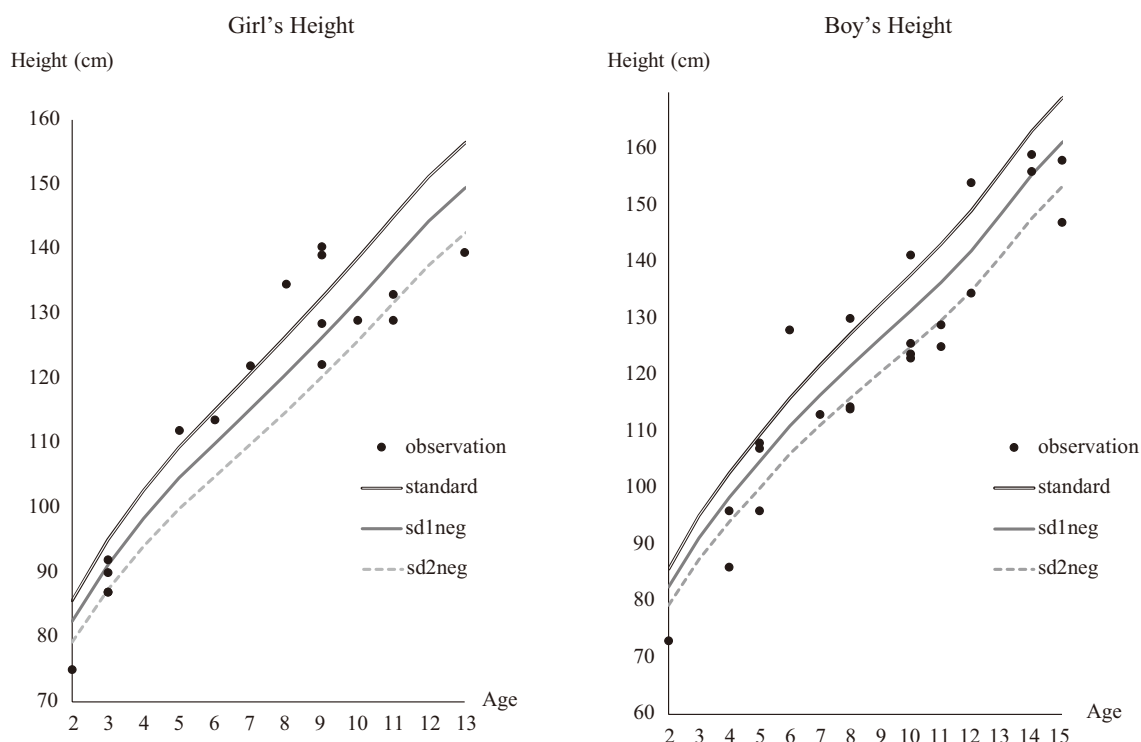
Girl's Height

Height (cm)

Boy's Height

Height (cm)

Fig. 2. Growth curves in surveyed sample

Table 6. Mean Height for Age (cm)

Age	Estimate	Standard		Stunting	
		WHO	Kokudo et al. (2010)	WHO	Kokudo et al. (2010)
			Boys		
7	113.7	121.7	112.9	111.2	102.7
12	142.8	149.1	138.9	134.9	124.3
17	173.3	175.2	161.8	159.9	148.1
			Girls		
7	115.7	120.8	111.6	109.9	101.2
12	149.2	151.2	142.2	137.6	128.9
17	165.2	162.9	153.8	149.5	143.7

Note: Kokudo et al. (2010) refers their results of Burmese children in Myanmar.

age being evaluated at their means and only age varying. Note that our estimated Z score is converted to height-for-age based on the WHO reference standards. The Kokudo et al. (2010) results differ from the WHO standard by about 8 to 13 cm, depending on age. This difference might partly be explained by genetic factors in ethnicity or nationality, but also probably by poor nutritional status.

Our own estimated mean height-for-age at age seven is close to that of Kokudo et al. (2010) rather than to the WTO standard. However, it begins to diverge from Kokudo et al.'s at higher ages, coming closer to the WHO standard at age 12 among girls and at age 17 among boys. When we estimate the expected height-for-age at age 8.2, the overall mean in our survey, we find it to be 127.5 cm among boys and 122.5 cm among girls, similar to that in Kokudo et al. (2010) and thus lending support to the representativeness of our survey. Some representativeness may be lost, however, as we follow heights-for-age away from the overall mean. The reader should also note that our sample is limited and the high under-five mortality rate in Myanmar may be inducing an overestimate of the nutritional recovery rate among the survivors. Kokudo et al. (2010) also noted that growth curves can vary widely as a child approaches the teen years.

Impact of enhancing mother empowerment

With our Model 1 estimates (Table 5), we now investigate the effect of any expansion of mother empowerment on the height-for-age growth curve (Fig. 3). In doing so, we evaluate the heights-for-age in Table 6 at their means, and empowerment at its sample mean of 2.2 (Original in Fig. 3). We then examine how the growth curve shifts as the empowerment indicator approaches 3.0 (Emp = 3 in Fig. 3), which we interpret to be the fully empowered mother position. Figure 3 shows
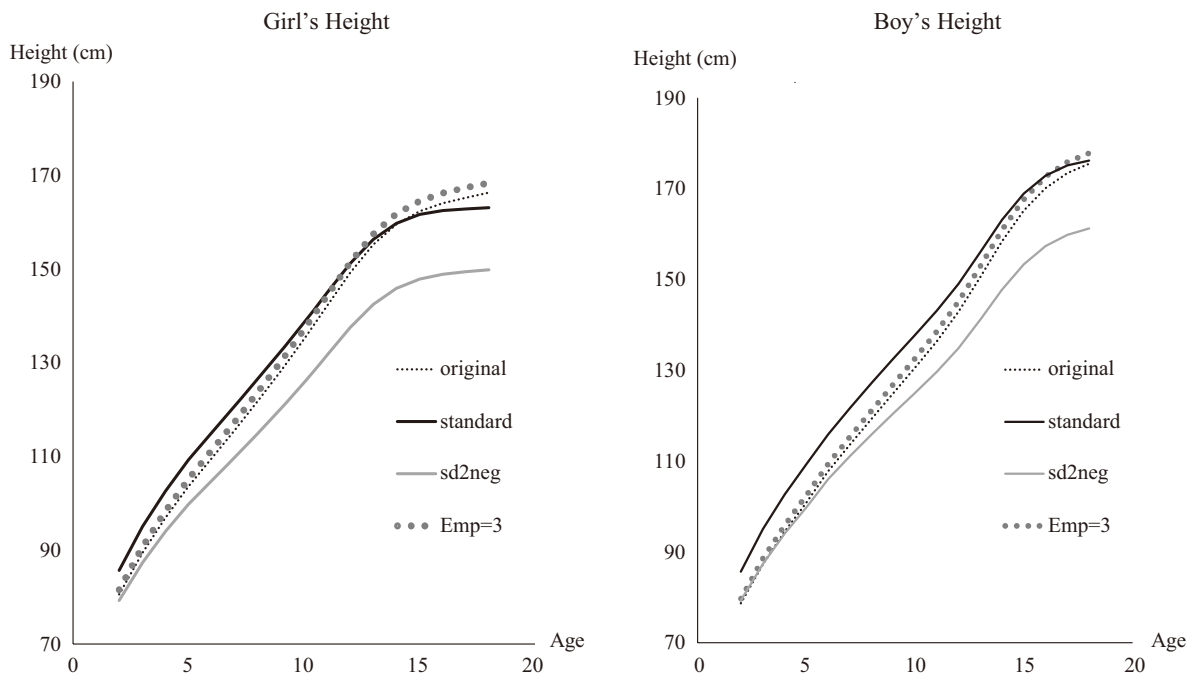
Girl's Height

Boy's Height

Fig. 3. Estimated growth curves in case of higher empowerment

the results. 'Original' in this figure refers to the growth curve as evaluated at the means, while sd2neg refers to the stunting borderline in the WHO standards.

Because mother empowerment improves child nutrition in our health production function, it shifts the growth curve upward and closer to the WHO standard. Specifically, the fully empowered girl-child growth curve approaches the WHO standard by the time she reaches age 11, while the fully empowered boy-child growth curve approaches it when he reaches age 15.

Conclusions

Child health in rural Myanmar remains substandard, with high mortality rates and poor access to healthcare services. Using our recent survey results in rural Myanmar, we estimate the factors influencing a child's long-term nutritional status as represented by his or her height-for-age growth curves. The mother's education has been well-established in the literature as a principal factor in a child's health. But other mother-related variables are usually missing. In particular, intrahousehold resource allocations have begun to be modeled as an outcome of the relative bargaining power of husband and wife, and empowered women are often found to allocate resources in a way favoring the mother and children. Our study supports this notion: children of more empowered mothers have better nutritional status, as indicated by the height-for-age, in our rural Myanmar

survey. We would anticipate on this basis that further power enhancement would help push children's growth curves up toward to the WHO standard.

The empowerment of women has often been represented in the literature by official data on women's education, income, or assets. We instead have employed a survey questionnaire to specify and estimate empowerment in the woman's life at home, particularly in the scope of her decisions over household purchases and child education. Although a method can never be justified based solely on the reasonability of its results, the statistical significance of the empowerment of women, long thought to be of substantial importance in the home, points to at least the consistency of the survey questionnaire method. Nevertheless, survey responses can vary by situation, and our confidence in any method can only be improved through further empirical work.

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