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Does More Money Mean Better Health?

ASSESSING THE MATERNITY ALLOWANCE PROGRAM

by Qayam Jetha

CENTRE FOR POLICY RESEARCH
IUBAT

IUBAT—International University of Business Agriculture and Technology
Dhaka, Bangladesh

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Qayam graduated with a Bachelor's degree in economics from the University of British Columbia and a Masters degree in Public Policy from Simon Fraser University. He has completed internships in India with the United Nations Economic and Social Commission for Asia and the Pacific (UN-ESCAP) and in Thailand with the International Labour Organization (ILO). He is currently working for the Abdul Latif Jameel Poverty Action Lab (J-PAL) in Delhi as a Senior Policy and Training Associate.

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My heartfelt thanks to the Development Organization of the Rural Poor (DORP). I recall vividly the afternoon I stumbled into DORP's headquarters attempting to solicit support for this research undertaking. I arrived at DORP dejected and with the fear that the project would never get off the ground. The kindness, willingness, and eagerness the NGO showed to me and my proposal was something I will appreciate and cherish forever. Thank you Mr. Nouman and Mr. Zobair for your support. I wish you and DORP all the best.

John, thanks for the past two years and for your willingness to supervise my research. Your passion is contagious, your guidance invaluable, and your friendship is treasured. Rhys, I appreciate your support and constructive comments. Thanks also to Afifa Shahrin, Alimullah Miyan, Nazmul Huda, and to others at IUBAT—International University of Business Agriculture and Technology in Dhaka—especially to Alex, Karen, Shaheed, Emtiaz, Rabiul, and the rest of the nursing college.

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Foreword

In the summer of 2013, Qayam Jetha was a visiting faculty member at IUBAT from Simon Fraser University. While he was with us, he undertook an ambitious project, evaluating the impact of the Maternal Allowance Program via a random sample of 700 mothers in Lakshmipur district. The MAP is a government social program that provides a modest monthly cash transfer, for 24 months, to low-income mothers in rural Bangladesh.

The goal of the MAP is to improve the health and nutritional status of mother and child. Is the program actually improving outcomes, relative to mothers who do not receive the MAP benefit? The answer: in many aspects, such as better ante- and postnatal care, it does improve outcomes, but in other aspects, such as lowering the incidence of disease, it does not.

In this, the 11th monograph of the Centre for Policy Analysis, Qayam summarizes his research and his results. I thank Qayam for his interest in the social conditions of our country, and am delighted to make this monograph available to others who share this interest.

— Dr. M. Alimullah Miyan
Founder Vice-Chancellor, IUBAT

Acronyms

ANC	Antenatal Care
ATET	Average Treatment Effect on the Treated
BDHS	Bangladesh Demographic Health Survey
BMI	Body Mass Index
CSBA	Community Skilled Birth Attendant
DOWA	Department of Women Affairs
FAO	Food and Agriculture Organization
FGD	Focus Group Discussions
FWV	Female Welfare Visitor
KN	Komol Nagar
LS	Lakshmipur Sadar
MAP	Maternity Allowance Program
MDG	Millennium Development Goal
MOWCA	Ministry of Women and Child Affairs
PNC	Postnatal Care
PSM	Propensity Score Matching
R	Ramgati
UNDP	United Nations Development Program

Executive Summary

TO REDUCE ADVERSE PREGNANCY OUTCOMES AND ADDRESS VULNERABILITIES hindering capability expansion for rural mothers, the Bangladesh government legislated the Maternity Allowance Program (MAP) in 2007. This program provides a Tk.350 (~US$4.50) monthly stipend for 24 months to beneficiaries who are selected by union councils based on eligibility criteria and a proxy means test.

This study evaluates the MAP by using primary survey data collected in three upazillas in the Lakshmipur district during August 2013. The survey comprised 350 current MAP beneficiaries and a control group of 350 eligible non-recipients. The quantitative evaluation used propensity score matching (PSM) to create a counterfactual group with minimal selection bias. PSM matches non-participants with MAP beneficiaries on the basis of pre-treatment characteristics, and then determines the treatment effect by differencing outcome measures within the matched groups. The following outcomes were tested: the use of maternity services, breastfeeding practices, health and nutrition indicators, and anthropomorphic measurements.

Evaluating the Impact of the MAP

IMPACT ON MATERNITY SERVICES: The MAP has significant and substantial positive effects on whether a mother received antenatal care (ANC) and postnatal care (PNC). Beneficiary mothers were 16 percentage points more likely than control group mothers to have undertaken an ANC visit, 7 percentage points more likely to have received more than two ANC visits, and 9 percentage points more likely to have utilized PNC. However, the MAP does not impact whether delivery occurred at a medical facility and whether a medical practitioner was present at the time of birth. This is thought to be a result of non-cost factors such as culture,

stigma, and especially the poor quality care at public medical facilities.

IMPACT ON BREASTFEEDING: A hypothesis was that the MAP stipend would increase the amount of infant formula consumed; however, the MAP showed no statistically significant effect on exclusive breastfeeding rates and expenditure on infant formula. The MAP did modestly impact a knowledge question regarding optimal breastfeeding practice, indicating that the program improved maternal health education.

IMPACT ON HEALTH AND NUTRITION: The intervention increased the share of people with positive health perceptions by 15.2 percentage points compared to the control group. Presumably, this increase in overall health perception is driven by increases in food adequacy and diversity of food intake, both of which increased under the MAP. Reported food adequacy was 10.2 percentage points higher; diet diversity, measured by the FAO food diversity score, was 0.24 points higher for MAP participants. Despite these gains, the MAP did not impact the incidence of disease, nor the frequency of doctor visits. Compared to non-beneficiaries, monthly expenditure on health treatment for MAP recipients increased by almost Tk.100. As corroborated from qualitative data, a major reason for the increased expenditure was the shift from public care to private hospitals. PSM estimates for the consumption of iron, vitamin, and calcium micronutrient supplements also show a significant and substantial increase for beneficiaries.

IMPACT ON ANTHROPOMORPHIC MEASUREMENTS: The MAP has no real effect on respondents' body mass index. The transfer is simply too small to substantially alter body compositions.

Beyond the quantitative results, three other positive impacts of the MAP were uncovered during focus group discussions with program beneficiaries, and informant interviews with union, sub-district, and district level government officials:

- The MAP contributed to women's empowerment and improved beneficiaries' status within the household. Specifically, the program improved a number of gender-related indicators such as autonomy, participation in decision-making, access to and control over resources, and freedom from physical or verbal abuse.
- The MAP improved women's education by creating links to local government officials who transferred knowledge on health- and nutrition-related matters. Links to government officials varied in strength, but it was often reported that union councilwomen formed lasting mentor relationships with program beneficiaries.
- The MAP has a positive impact on family planning due to the aforementioned education gains and empowerment, but also due to the program conditionality requiring beneficiaries to have no more than two children. This conditionality potentially also has spillover effects, as non-beneficiary mothers reduce the number of children they conceive to remain eligible for future selection.

MAP BENEFICIARIES and children suffered as high an incidence of disease as the control group mothers and children. Over half in the survey experienced at least one case of diarrhea or fever in the previous month. An important reason may be lack of adequate sanitation and constant exposure to fecal bacteria in the surrounding environment. QAYAM JETHA PHOTO

Despite these positive findings the MAP is severely hampered by various implementation problems. In particular, the program is plagued by processing delays resulting from slow movement of information from national to local levels of government. The implication of bureaucratic delays is that many beneficiaries — almost half in the sample — received their first cash instalment *after* they gave birth. A second problem is that stipend disbursement occurs at the sub-district and not at the union office, meaning many beneficiaries must travel a long distance to obtain their benefit. Women often travel while pregnant or with their newborn child, over difficult terrain, and at significant cost, in terms of both money and time. Other problems relate to beneficiary selection: exclusion errors, inclusion errors, and instances of corruption.

Recommendations for Enhancing the MAP

Six reforms are proposed to correct the deficiencies in implementation and improve the overall effectiveness of the program.

ENHANCE COVERAGE RATES OF THE MAP: Inevitably fiscal constraints imply a trade-off between size of the benefit and coverage of the program. Data from the 2011-2012 fiscal year indicate that the MAP covers approximately 4% of rural births. Due to the low coverage rate, as well as the positive externalities associated with being a MAP beneficiary that are largely independent of the size of the stipend (empowerment, education, family planning), any attempt to scale up the program should be directed to increasing the number of beneficiaries.

FOCUS GROUP in Ramgati with beneficiaries. Most beneficiary mothers said the MAP stipends had enhanced their ability to participate in the making of family decisions. QAYAM JETHA PHOTO

SEND THE MAP FUNDS TO UNION COUNCILS: Mandate that the Ministry of Finance send MAP funds directly to union councils as opposed to the sub-district Department of Women Affairs Office. This would ease the burden associated with stipend collection.

LEGISLATE THAT THE THREE UNION COUNCILWOMEN SELECT BENEFICIARIES: To ensure transparency, expedite implementation, reduce corruption, and minimize targeting errors, the government should legislate that the three councilwomen members within each local council be the sole beneficiary selectors.

CONDUCT RANDOM SELECTION AUDITS: Mandate that the national Department of Women and Child Affairs carry out regular, random audits to verify that sub-union level selection occurs promptly and fairly.

ENSURE THAT THE FIRST MAP PAYMENT IS GIVEN PRIOR TO BIRTH: The MAP needs to disburse payments to recipients prior to birth. If the three union councilwomen decide beneficiary selection, this will expedite the implementation process, but further measures should be made. Computerizing documents and utilizing electronic modes of mailing would minimize intra-governmental communication cost. Other options are to start the implementation process earlier, or to impose a financial penalty on union councils that chronically delay selection.

REVISE ELIGIBILITY CRITERIA: Revision is required to minimize ambiguity in selection criteria and provide measurable, realistic program objectives. Criteria must be up to date with income thresholds that incorporate latest inflation figures. Objectives need to be restated with specific outcomes and quantifiable indicators.

সার-সংক্ষেপ

সন্তান জন্মে ব্যর্থতা হ্রাস ও গর্ভকালীন ঝুঁকি এড়িয়ে সন্তান লাভের সক্ষমতা বৃদ্ধির উদ্দেশ্যে পল্লী মায়েদের জন্য বাংলাদেশ সরকার ২০০৭ সালে মাতৃত্বকালীন ভাতা কর্মসূচি [Maternity Allowance Program (MAP)] চালু করে। এই কর্মসূচির আওতায় ইউনিয়ন কাউন্সিল কর্তৃক নির্দিষ্ট যোগ্যতার মাপকাঠি এবং একটি সম্পূরক পরীক্ষার ভিত্তিতে নির্বাচিত মহিলাদের ২৪ মাসব্যাপী ৩৫০ টাকা (৪.৫ ডলার) করে মাসিক ভাতা দেয়ার ব্যবস্থা করা হয়।

এই গবেষণায়, ২০১৩ সালের আগষ্ট মাসে লক্ষীপুর জেলার তিনটি উপজেলায় পরিচালিত প্রাথমিক সমীক্ষা থেকে সংগৃহিত তথ্যের ভিত্তিতে MAP কর্মসূচির মূল্যায়ন করা হয়। সমান সংখ্যক (৩৫০) MAP এর সুবিধা ভোগকারি ও সুবিধা বঞ্চিত কিন্তু যোগ্য মায়েদের উপর এই সমীক্ষা চালানো হয়। সংখ্যাত্মক মুল্যায়নে পক্ষপাত ন্যূনতম মাত্রায় নামিয়ে আনার জন্য propensity score matching (PSM) কৌশল অবলম্বনে একটি তথ্যভিত্তিক তুলনামূলক ছায়া দল নির্ণয় করা হয়। PSM পদ্ধতিতে উভয় দলের অন্যান্য সকল বৈশিষ্ট্য অভিন্ন হওয়া সাপেক্ষে, কেবল MAP কর্মসূচীতে অংশ নিয়েছে অথবা নেয়নি, এই পার্থক্যের ভিত্তিতে দুইটি দলের অভিষ্ট ফলাফলের মধ্যে তুলনা করে কর্মসূচীর প্রভাবকে মূল্যায়ন করা হয়। যেসব প্রভাব মূল্যায়ন করা হয়, তা হলঃ প্রসূতি সেবার ব্যবহার, শিশুকে মায়ের দুধ খাওয়ানোর পদ্ধতি (practices), নানাবিধ স্বাস্থ্য এবং পুষ্টি বিষয়ক নির্ণায়ক (indicators) এবং ওজন-উচ্চতার সূচক।

MAP কর্মসূচীর প্রভাব মূল্যায়নঃ

প্রসূতি সেবার উপর প্রভাবঃ গর্ভকালীন ও প্রসব পরবর্তী সেবা প্রাপ্তির উপর MAP কর্মসূচীর গুরুত্বপূর্ণ ও উল্লেখযোগ্য ইতিবাচক প্রভাব রয়েছে। MAP সুবিধাপ্রাপ্ত মায়েদের গর্ভকালীন সেবা (ANC) একবার গ্রহনের হার MAP অন্তর্ভুক্ত নয় এমন মায়েদের তুলনায় ১৬ শতাংশ বেশি, এবং তাদের দুই বা ততোধিকবার সেবা গ্রহনের হার ৭ শতাংশ বেশি। প্রথম দলের মায়েদের প্রসব পরবর্তী সেবা গ্রহনের হার দ্বিতীয় দলের চেয়ে ৯ শতাংশ বেশি। তবে, প্রাতিষ্ঠানিক স্বাস্থ্য সেবার অধীনে সন্তান জন্মদান কিংবা জন্মকালীন সময়ে প্রশিক্ষিত স্বাস্থ্যকর্মী উপস্থিতির উপর MAP এর কোনও প্রভাব দেখা যায় নাই। সংস্কৃতি, কুসংস্কার, এবং বিশেষত সরকারী জনস্বাস্থ্য সেবার নিম্নমান, এধরণের অব্যয়বহুল বিষয়গুলো দিয়ে এর ব্যাখ্যা করা যেতে পারে।

মায়ের দুধ খাওয়ানোর উপর প্রভাবঃ গবেষণার একটি অনুমান ছিল MAP এর মাধ্যমে অনুদান, শিশুদের কৌটাজাত খাবার খাওয়ার পরিমাণকে উৎসাহিত করবে। তবে মায়ের দুধ পানের হার এবং শিশুদের কৌটাজাত খাবারের পেছনে ব্যয়ের ক্ষেত্রে

MAP এর কোনও গুরুত্বপূর্ণ পরিসংখ্যানগত (statistically significant) প্রভাব পাওয়া যায় নাই। সঠিক পদ্ধতিতে মায়ের দুধ খাওয়ানোর উপর MAP এর সহায়ক প্রভাব রয়েছে, যা থেকে এই কর্মসূচী মায়েদের স্বাস্থ্য শিক্ষার উন্নতি করেছে বলে মন্তব্য করা যেতে পারে।

স্বাস্থ্য এবং পুষ্টির উপর প্রভাবঃ কর্মসূচীতে অন্তর্ভুক্ত মায়েদের স্বাস্থ্য সম্পর্কে কল্যাণধর্মী ধারণা কর্মসূচীর অন্তর্ভুক্ত ছিলনা এমন মায়েদের তুলনায় ১৫.২ শতাংশ বেড়েছে। সম্ভবত MAP সুবিধার ফলে পর্যাপ্ত পরিমাণে বৈচিত্র্যময় খাবার গ্রহন এহেন কল্যাণধর্মী ধারণার পিছনে অবদান রেখেছে। MAP সুবিধাপ্রাপ্ত মায়েদের খাদ্যের পর্যাপ্ততা MAP এ অন্তর্ভুক্ত নয় এমন মায়েদের তুলনায় ১০.২ শতাংশ এবং খাদ্যের বৈচিত্র্য (FAO উদ্ভাবিত সূচক দিয়ে নির্ণীত) ০.২৪ শতাংশ বেশি দেখা যায়। এতসব উন্নতিতে অবদান রাখা সত্ত্বেও MAP রোগের প্রাদুর্ভাব কিংবা প্রশিক্ষিত চিকিৎসকের কাছ থেকে ঘনঘন চিকিৎসা সেবা নেওয়ার উপর কোনও প্রভাব বিস্তার করে নাই। MAP সুবিধা প্রাপ্তদের চিকিৎসা সেবার পিছনে মাসিক ব্যয় MAP এ অন্তর্ভুক্ত নয় এমনদের তুলনায় প্রায় ১০০ টাকা বেশী। অগাণিতিক (qualitative) তথ্য-উপাত্ত পর্যালোচনায় দেখা যায়, এই ব্যয় বৃদ্ধির প্রধান কারণ হল সরকারী চিকিৎসা সেবার পরিবর্তে বেসরকারি হাসপাতালের সেবা গ্রহণ। আয়রণ, ভিটামিন এবং ক্যালসিয়াম পুষ্টি সম্পূরকের ব্যবহারের PSM সূচকও সুবিধাভোগীদের ক্ষেত্রে উল্লেখযোগ্য পরিমাণে বেশি।

ওজন-উচ্চতার সূচকের উপর প্রভাবঃ উত্তর দাতাদের ওজন-উচ্চতার সূচকের উপর MAP-এর কোনও সত্যিকারের প্রভাব নেই। শারীরিক উন্নতি লাভের জন্য এই প্রাপ্ত অর্থের পরিমাণ খুবই নগণ্য।

গাণিতিক ফলাফল ছাড়াও MAP কর্মসূচীর আরও তিনটি সহায়ক প্রভাব উঠে এসেছে এই কর্মসূচীর সুবিধা প্রাপ্তদের সাথে দলবদ্ধ আলোচনা এবং ইউনিয়ন, উপজেলা, জেলা পর্যায়ের সরকারী কর্মকর্তাদের সাথে তথ্যভিত্তিক সাক্ষাৎকারের মাধ্যমে।

- মহিলাদের ক্ষমতায়ন এবং সংসারে তাদের মর্যাদা বাড়াতে MAP ভূমিকা পালন করে। বিশেষত এই কর্মসূচী নানাবিধ নারী-পুরুষ সম্পর্কিত (gender related) মাপকাঠি, যেমনঃ আত্মনির্ভরশীলতা, সিদ্ধান্ত গ্রহনে অংশগ্রহণ, সম্পত্তির উপর অধিকার, নিয়ন্ত্রণ এবং শারীরিক ও মানসিক নির্যাতন থেকে মুক্তি ইত্যাদিতে সহায়ক ভূমিকা রেখেছে।
- MAP মহিলা শিক্ষায় অবদান রেখেছে যা মাধ্যমে ছিল স্থানীয় সরকারি কর্মচারিদের সান্নিধ্য, যা স্বাস্থ্য ও পুষ্টি বিষয়ক জ্ঞানার্জন করতে সাহায্য করে। সরকারি কর্মচারিদের সাথে সম্পর্কের বিভিন্নতা থাকা সত্ত্বেও অধিকাংশ ক্ষেত্রেই ইউনিয়ন কাউন্সিলের মহিলা কর্মীদের সাথে সুবিধাভোগী মহিলাদের দীর্ঘ মেয়াদী সম্পর্ক বজায় রাখতে দেখা গিয়েছে।
- কেবল উপরোল্লিখিত শিক্ষাগত উন্নতির ফলাফল হিসাবেই নয় কর্মসূচীর শর্ত

হিসাবে সুবিধা প্রাপ্ত মহিলাদের কেউই দুইয়ের অধিক সন্তান গ্রহণ করতে পারবেনা বিধায় পরিবার পরিকল্পনার উপর MAP কর্মসূচী সহায়ক ভূমিকা রেখেছে। এমনকি বর্তমানে যারা এর অন্তর্ভুক্ত নয় তারাও ভবিষ্যতে এই কর্মসূচীতে অন্তর্ভুক্ত হওয়ার আশায় সন্তান কম রাখতে চান।

এহেন সহায়ক প্রভাব থাকা সত্ত্বেও বিভিন্ন বাস্তবায়নজনিত সমস্যার জন্য MAP কর্মসূচী ক্ষতিগ্রস্ত হয়েছে। বিশেষতঃ জাতীয় থেকে স্থানীয় পর্যায়ে তথ্য আদান-প্রদানের ধীরগতির কারণে এই কর্মসূচীতে স্থবিরতা এসেছে। এধরনের প্রশাসনিক বিলম্বের ফলে দেখা গিয়েছে যে সমীক্ষায় অংশগ্রহণকারী MAP সুবিধাপ্রাপ্ত মহিলাদের প্রায় অর্ধেক তাদের প্রাপ্য অর্থের প্রথম কিস্তি শিশু জন্মদানের পরে পেয়েছে। দ্বিতীয় সমস্যা হল; অর্থ বিতরণ ইউনিয়ন পর্যায়ে না হয়ে উপজেলা পর্যায়ে হয়। ফলে অনেক মহিলাকেই অর্থ সুবিধা পেতে হলে অনেক দূর যাতায়াত করতে হয়। প্রায়শই সন্তান সম্ভাবা অবস্থায় কিংবা সদ্যজাত শিশুকে নিয়ে দুর্গম পথে যাতায়াত করা সময় এবং অর্থ ব্যয় সাপেক্ষ। অন্যান্য সমস্যা সুবিধাভোগী মহিলা বাছাই করার সাথে সম্পর্কিত; যেমনঃ যোগ্যদের বাদ দেওয়া, অযোগ্যদের অন্তর্ভুক্ত করা এবং নানা ধরনের দুর্নীতি করা।

MAP কর্মসূচীর উন্নতিকল্পে সুপারিশসমূহঃ বাস্তবায়নের ত্রুটিসমূহ সংশোধন করাসহ এই কর্মসূচীর সার্বিক কার্যকারিতা বৃদ্ধির জন্য ছয়টি সংস্কার প্রস্তাব করা হয়েছেঃ

আরও বেশি সংখ্যক মহিলাদের MAP সুবিধা দেওয়াঃ বাজেটের সীমাবদ্ধতার কারণে সুবিধাভোগীদের সংখ্যা অথবা প্রাপ্ত অর্থের পরিমাণের মধ্যে যে কোনও একটিকে সংকুচিত করতে হয়। ২০১১-১২ অর্থ বছরের তথ্য

থেকে দেখা যায় যে, গ্রামাঞ্চলের প্রায় ৪% শিশুর জন্ম MAP এর আওতাধীন। MAP থেকে প্রাপ্ত অর্থের পরিমাণ কম হওয়া সত্ত্বেও যে স্বল্প সংখ্যক মহিলা MAP এর অন্তর্ভুক্ত তাদের নানাবিধ বাহ্যিক উন্নয়ন (ক্ষমতায়ন, শিক্ষা, জন্ম নিয়ন্ত্রন) এর কারণে এই কর্মসূচীর ব্যাপ্তি বাড়ানোর প্রধান পদক্ষেপ হওয়া উচিত সুবিধাভোগীর সংখ্যা বাড়ানো।

MAP এর অর্থ ইউনিয়ন কাউন্সিলে পাঠানোঃঅর্থ মন্ত্রণালয় থেকে MAP এর বরাদ্দকৃত অর্থ উপজেলা পর্যায়ের মহিলা বিষয়ক কার্যালয়ের পরিবর্তে সরাসরি ইউনিয়ন কাউন্সিলে পাঠানোর ব্যবস্থা করা উচিত। এর ফলে অর্থ সংগ্রহের ঝামেলা অনেকাংশে কমবে।

ইউনিয়ন কাউন্সিলের তিনজন মহিলা প্রতিনিধির মাধ্যমে সুবিধাভোগী বাছাইঃ স্বচ্ছতা নিশ্চিতকরণ, দ্রুত বাস্তবায়ন, দুর্নীতি কমানো এবং বাছাই এর ভুল সর্বনিম্ন রাখার জন্য অধ্যাদেশ বলে সরকারের কেবল ইউনিয়ন কাউন্সিলের তিনজন মহিলা প্রতিনিধিকে সুবিধাভোগী বাছাই করার ক্ষমতা দেওয়া উচিত।

নির্বাচন প্রক্রিয়ার সময় দৈবচয়িত নিরীক্ষণ কার্যক্রমঃ ইউনিয়ন পর্যায়ের গ্রহীতা নির্বাচনে দ্রুততা ও নিরপেক্ষতা নিশ্চিত করার জন্য জাতীয় মহিলা ও শিশু অধিদপ্তরকে নিয়মিত এবং দৈবচয়িত নিরীক্ষণ কার্যক্রমের পরিচালনার ক্ষমতা দেওয়া উচিত।

প্রথম কিস্তি প্রদান শিশুর জন্মের আগে নিশ্চিত করাঃ MAP গ্রহীতাদের মাঝে অর্থ বন্টন শিশুর জন্মের পূর্বেই করা প্রয়োজন। ইউনিয়ন কাউন্সিলের তিনজন মহিলা সদস্যের মাধ্যমে সুবিধাভোগী নির্বাচন করলে কর্মসূচী বাস্তবায়ন সহজ হলেও আরও প্রাসঙ্গিক কিছু ব্যবস্থা নেওয়ারও প্রয়োজন রয়েছে। এ সংক্রান্ত তথ্যাদি কম্পিউটারাইজড করার পাশাপাশি যান্ত্রিক উপায়ে চিঠি আদান-প্রদান করা হলে আন্তঃমন্ত্রণালয় যোগাযোগের খরচ অনেকাংশে কমে যাবে। অন্যান্য কর্মপন্থার মধ্যে, হাতে সময় রেখে বাস্তবায়ন শুরু করা অথবা, ইউনিয়ন কাউন্সিলকে গ্রহীতা নির্বাচন কার্যক্রমে ক্রমাগত দীর্ঘসূত্রীতার জন্য আর্থিক দণ্ড প্রদানের ব্যবস্থা করা যেতে পারে।

উপযুক্ততার মাপকাঠি পুনর্বিবেচনা করাঃ নির্বাচনে অস্বচ্ছতা দূর করা এবং কর্মসূচীর পরিমাপযোগ্য, বাস্তবসম্মত লক্ষ্য নির্ধারণের জন্য এধরনের পুনর্বিবেচনা আবশ্যক। মাপকাঠিগুলো আয়ের সীমা এবং মূল্যস্ফীতির সাথে সামঞ্জস্য করে পরিবর্তন করা উচিত। নির্দিষ্ট ফলাফল অর্জনের সাপেক্ষে লক্ষ্যগুলো পরিমাপযোগ্য সূচক দিয়ে ব্যাখ্যা করা উচিত।

CHAPTER 1

Introduction

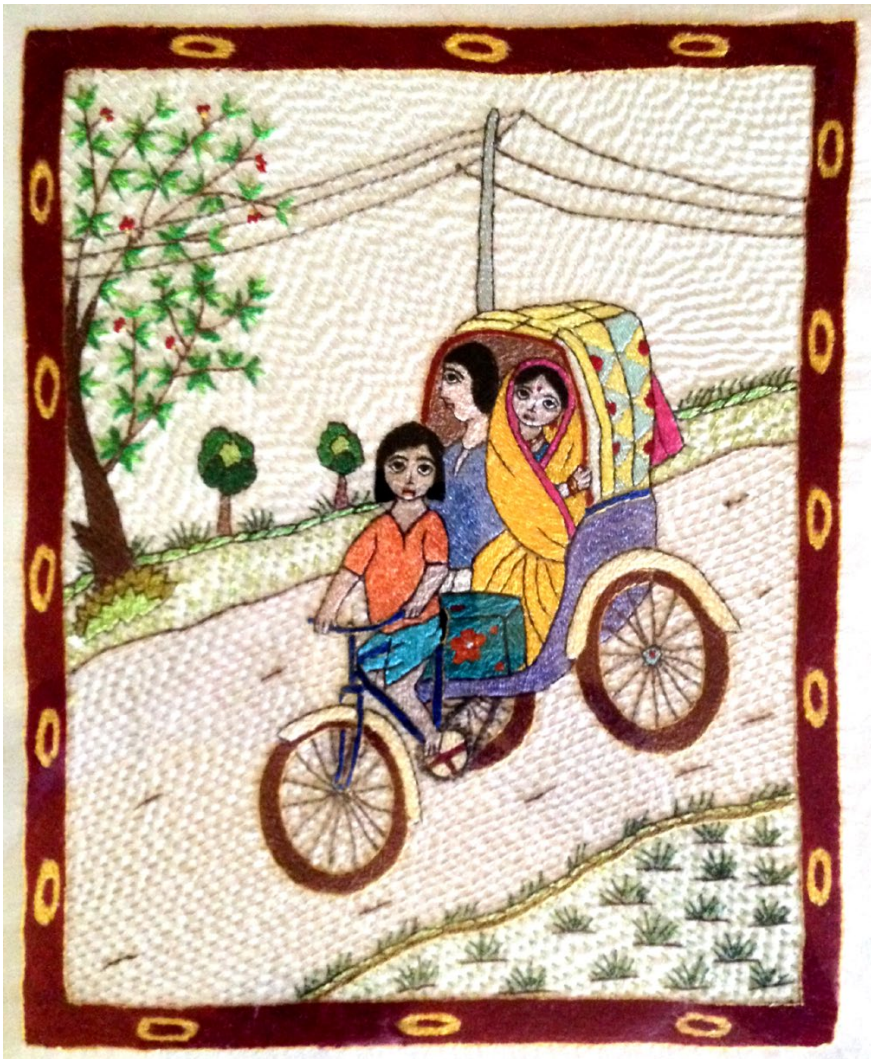
HOW CAN A GOVERNMENT PROVIDE A COMPREHENSIVE SYSTEM OF SOCIAL safety nets for its poor while still satisfying financial, administrative, and information constraints? For developing countries the question is difficult to answer; constraints are severe, and yet expectations are high that social programs reach a large number of risk-prone, low-income individuals.

Bangladesh has many cash or in-kind benefit programs targeted to people living in precarious situations. This study assesses one of them, the Maternity Allowance Program (MAP). The MAP is a means-tested cash transfer that distributes monthly stipends to pregnant mothers in rural areas. The objective of this study is to measure the MAP's impact on maternal health outcomes and identify possible measures to improve the policy's implementation and effectiveness. Specifically, the evaluation isolates the effect of the MAP on the following outcomes: the use of maternity services, breastfeeding practices, health and nutrition indicators, and anthropomorphic metrics of mothers.

This evaluation is in the tradition of studies that use econometric techniques to remove confounding factors and identify causal relationships between outcomes and program interventions. Such studies are an essential part of the design, feedback, and improvement of social programs.

This monograph is organized into seven chapters. Following this introductory chapter, the second provides a conceptual overview of social protection and cash transfer schemes, as well as a contextual overview of the economic, social, and population health landscape in Bangladesh. Chapter 3 introduces the Maternity Allowance Program and summarizes its implementation process. Chapter 4 describes the quantitative and

qualitative evaluation techniques applied in the study. Chapter 5 outlines the sample characteristics for the MAP beneficiary group and for the non-beneficiary control group. Chapter 6 discusses the evaluation results. Chapter 7 concludes by assessing the overall key results and proposes six policy reforms to further enhance the program's effectiveness.



Beneficiaries must fetch their MAP stipends at the sub-district (upazila) centre, which may mean an unwelcome lengthy rickshaw trip for the expectant mother. Payments could be made at nearby union centres. NAXIKHANTA CREATED BY WOMEN WORKING WITH BRAC

Background

Social Protection — Conceptual Issues and Empirical Evidence

"Social protection" is an umbrella term for policies and programs that attempt to reduce systemic poverty by providing essential social services and basic income security. Beyond arguments in terms of human rights, robust social protection is a necessity for economic development. At a micro level, livelihood support and cash stipend programs allow households to escape the poverty trap, while at a macro level they increase aggregate demand and the size of the spending multiplier. Social protection strengthens individuals' capabilities and empowers them to contribute to the economy and to society more generally (ILO, 2009). Non-contributory public programs that insure the poor against exogenous risky events provide families the ability to invest for the future with greater confidence and to look beyond basic daily sustenance (UNESCAP, 2011).

Types of Social Protection Policies

There are four commonly used categories of social protection policies: social assistance, social insurance, social services, and labour market programs (UNESCAP, 2011).

SOCIAL ASSISTANCE programs transfer cash or in-kind benefits to vulnerable segments of the population most in need of support. Generally these programs are funded by government, civil society, or the international donor community and are given to recipients based on targeting criteria, such as persons with disabilities, widowed mothers, orphans, the homeless, or in the case of the MAP, poor pregnant mothers.

SOCIAL INSURANCE refers to policies requiring mandatory contributions by individuals and/or employers. These are widespread in middle- and high-income countries where formal employment is prevalent. Social insurance programs include special funds

for accumulated contributions. Access to a social insurance benefit is a function of past contributions and not financial need. Examples include unemployment insurance and occupational pensions (Barrientos, 2010).

SOCIAL SERVICES include equitable access to essential services such as primary health care, primary and secondary education, sanitation, and provision of public safety. If essential services are universally guaranteed or supplied by government, this addresses the fact that private provision is often not feasible due to a range of "market failures." Social service programs often involve subsidies, reduced fees for targeted groups, or free provision via public supply (UNESCAP, 2011).

LABOUR MARKET PROGRAMS are designed to protect workers (minimum wage and occupational safety laws), increase employment (public works programs), and/or promote efficient labour markets (job training programs) (Barrientos, 2010).

Cash Transfer Schemes

Cash transfer programs deliver small regular payments to targeted populations. These interventions have become an increasingly popular vehicle to provide social assistance and to create a demand-side incentive for people to pursue socially sanctioned activities. Bangladesh's Female Education Stipend, introduced in 1994, was one of the world's first large conditional cash transfer programs. It provided rural families a monetary stipend and tuition-free education for their daughters — provided they obtained acceptable marks and did not marry. The program's success at reducing gender disparities paved the way for future cash transfer policies (Fuwa, 2001; Hove, 2007). Cash transfer programs truly became a mainstay of development practice in 1997 as a result of positive evaluations of Mexico's conditional cash transfer program, PROGRESA (IFPRI, 2000). Today, over one billion people are beneficiaries of such schemes (Haushofer, 2013).

There is no universal blueprint for designing cash transfer programs; however, there are three fundamental design dichotomies to consider: conditional vs. unconditional, targeted vs. universal, and cash vs. in-kind. Policy makers must decide amongst these dichotomies by taking into account the priority needs of vulnerable groups, and by assessing the administrative and financial capacity of government. In addition to the core design decisions, peripheral options also influence effectiveness. Examples include tying payments to financial infrastructure, utilizing technology such as biometric identification cards, and varying the size and schedule of benefits.

Many cash transfer programs have received rigorous evaluation (Rawlings, 2005). Results have mostly been positive: cash transfers typically provide vulnerable groups with additional financial security and higher rates of investment in activities having long-term benefits. Direct redistribution by cash transfers is especially important when public supply of services fails to reach the poor, and when private supply does not

exist or is prohibitively expensive (Fiszbein, 2009).

However, not all evaluations have been glowing. Design and implementation may be ineffective, even destructive. In addition, some critics object that conditional cash transfers are paternalistic, unduly distorting the beneficiaries' choices. Others believe transfers reduce the supply of labour, are inflationary, or inherently ineffective when the available supply of services is lacking or of low quality (Standing, 2012). Although many of the criticisms have been disproven empirically, cash transfer programs are not a panacea for poverty (Shah, 2008). They should be seen as a useful piece of a larger system of social safety nets.

Cash Transfers for Maternal and Child Health

Two renowned pioneer cash transfers—PROGRESA in Mexico, and Bolsa Familia in Brazil—both incorporated maternal health conditionalities. PROGRESA explicitly aimed to reduce maternal mortality by mandating that beneficiary women complete a series of four antenatal care visits, two postnatal care visits, and attend a maternal health education program (IFPRI, 2000). Similarly, Bolsa Familia beneficiaries receive payments contingent on their utilization of antenatal and postnatal care (Glewwe, 2010).

Policy interest in cash transfers coincided with new evidence on the importance of maternal and early child health and the diplomatic push post-2000 to realize Millennium Development Goals (MDGs) 4 and 5 (reducing child mortality and improving maternal health). Currently, India, Pakistan, Nepal, and Bangladesh all employ demand-side cash transfer schemes with conditions on antenatal care, delivery at public facilities with skilled personnel, or other mechanisms to increase the uptake of maternity services (Jehan, 2012).

Millennium Development Goals in South Asia and Bangladesh

Despite reasonably high GDP growth rates, large foreign remittance inflows, and important strides taken to meet some MDGs, South Asia has not witnessed a sustained and inclusive reduction in poverty (Devereux, 2009). Instead, globalization and domestic political elites have exacerbated income inequality (Ghosh, 2013). South Asia is home to 500 million living on less than $1.25/day, nearly half of the world's poor by this measure (Aziz, 2011). Discrimination and social exclusion plague minorities (Jodhka, 2010). Rigid labour laws unnecessarily constrain the growth of formal employment opportunities. Political corruption and inefficient provision of public services are endemic. Climate change is generating more, and more serious, natural disasters. As the fertility rate declines, the population pyramid is gradually inverting (Bloom, 2011). The severity of these problems is summarized by the low standing of South Asia (and Bangladesh) in the inter-regional

Table 2.1: Regional Poverty Indicators			
Region	**Human Development Indicator 2012 (UNDP)[a]**	**Poverty Headcount Ratio 2010 (% living on less than PPP$1.25/day)[b]**	**GNI per Capita 2012 (PPP$US)[a]**
Eastern Europe and Central Asia	0.771	0.7	$12,243
Latin America and the Caribbean	0.741	5.5	$10,300
East Asia and the Pacific	0.683	12.5	$6,874
Middle East and North Africa	0.652	2.4	$8,317
South Asia	0.558	31.0	$3,343
Bangladesh	*0.515*	*43.3*	*$1,785*
Sub-Saharan Africa	0.475	48.5	$2,010

Sources: [a] UNDP HDI Dataset, accessed 25 June 2014 at https://data.undp.org/dataset/Table-1-Human-Development-Index-and-its-components/wxub-qc5k;
[b] World Bank, accessed 25 June 2014 at http://povertydata.worldbank.org/poverty/region/EAP

poverty and wellbeing indicators shown in Table 2.1.

While progress has been less impressive than in East and Southeast Asia, Bangladesh has experienced important reductions in poverty and improvements in average living standards since its liberation from Pakistan in 1971. For example, average life expectancy at birth has risen from 46 in 1971, a level below that in India or Pakistan, to nearly 70 in 2011, a level above that in either India or Pakistan (Berland, 2014). Bangladesh has been able to meet many of the indicators set forth under MDG1 (to eradicate extreme hunger and poverty). The number living below $2/day or consuming fewer than 2100 calories/day declined from 63 million in 2000 to 47 million in 2010. During the same period, the number of extreme poor (below $1.25/day) declined from 44 million to 26 million. As is true elsewhere in South Asia, poverty rates are higher in rural than urban Bangladesh.

Bangladesh is on track to meet the severe deficiency target 1.9a of MDG1, which requires that the proportion of the population consuming less than 1805 kilocalories/day fall below 14%. It will not meet the moderate deficiency target 1.9c, which requires the percentage of the population consuming below 2122 kilocalories/day fall under 24%. Nationally, in 2010 16% were below 1.9a, and 38% below 1.9c (World Bank, 2013,33).

Maternal and Child Health

While many developing countries have struggled to achieve MDGs 4 and 5, Bangladesh has made significant strides in reducing child mortality and improving maternal health. The country is one of only six in the world that have halved child mortality since 1999.[1] Table 2.2 charts Bangladesh's progress in achieving MDGs 4 and 5.

One obstacle to further progress is the low uptake of maternal health services. 2011 Bangladesh Demographic Health Survey (BDHS) data report that 71% of births occur at home—due to poverty and widespread mistrust of the quality of public hospitals and clinics. Delivering a child in the presence of a skilled health professional is considered the most effective measure to reduce maternal mortality. Fifteen percent of all births involve serious, but treatable complications, which can cause direct obstetric death through eclampsia, haemorrhaging, hypertension, or obstructed labour. The presence of competent professionals can minimize mortality by expediting the

Table 2.2: Bangladesh MDG 4 & 5 Progress

Goals, Indicators	Base Year (1990)	Current Status	Target by 2015	Status of Progress
Goal 4 — Reduce Child Mortality				
4.1 Under 5 Mortality Rate (per 1,000 live births)	146	41	48	On track
4.2 Infant Mortality Rate (per 1,000 live births)	92	33	31	On track
4.3 % of 1 year olds immunized against measles and DPT	54	96	100	On track
Goal 5 — Improve Maternal Health				
5.1 Maternal Mortality Rate (per 100,000 live births)	574	170	143	On track
5.2 % of Births Attended by a Skilled Health Personnel	5	32	50	Needs Attention
5.3 Antenatal Care Coverage (at least one visit) (%)	28	55	100	Needs Attention
5.4 Antenatal Care Coverage (at least four visits) (%)	5.5	26	50	Needs Attention

Source: UNDP, Bangladesh's Progress on the MDGs; World Bank, accessed 25 June 2014 at http://data.worldbank.org/indicator/SH.STA.ACSN/countries

Note: The UNDP used data from the 2011 Bangladesh Demographic and Health Survey (BDHS), the 2011 Sample Vital Registration System, and the 2010 Bangladesh Maternal Mortality and Health Care Survey

1 UNICEF—National Launch of the State of the World Children 2008.

MOTHER AND CHILD ON BED Relative to mothers in the control group, MAP beneficiaries are significantly more likely to receive ante- and postnatal care. LAURA ELIZABETH POHL PHOTO VIA FLICKR

delivery of emergency obstetric care when potentially dangerous complications arise.[2] Yet, professionals in Bangladesh attend only 32% of all births.

Antenatal (ANC) and postnatal care (PNC) are also severely underutilized. These are important services that help screen complications and treat infections. According to the WHO, from 2005 to 2011, only one half of mothers in Bangladesh obtained one ANC check-up; only one quarter received the WHO-recommended four ANC visits. Over the same time period, three quarters of mothers did not receive a PNC check-up within two days following childbirth.[3]

Exclusive breastfeeding is unfortunately not a universal practice. 2011 Demographic Health Survey data identified that 98% of children are breastfed at birth, but only 64% are breastfed exclusively for the first six months. Being bottle-fed increases the risk of diarrhea due to bacterial build-up in non-sterile bottles (UNDP, 2013).

Malnutrition has pronounced adverse effects on a child's ability to grow and develop. While nutrition has improved in the past decade, 37% of children under age five weigh more than two standard deviations below the median for their age.[4] Children in Bangladesh also disproportionately suffer from anemia, a deficiency that hampers growth and brain development (Farque, 2006).

2 UNFPA—www.unfpa.org/public/mothers/pid/4383

3 WHO—World Health Statistics 2011

4 World Bank, World Development Indicators, accessed 25 June 2014 at http://data.worldbank.org/indicator/SH.STA.MALN.ZS

Social Protection in Bangladesh

South Asia has a history of social protection dating back to colonial rule. All eight South Asian countries currently possess some social assistance programs to support marginalized groups. Several countries have gone further by adopting employment guarantee schemes and social insurance programs (Köhler, 2009).

Over the past 40 years, the safety net programs in Bangladesh have evolved, due in large part to the international donor community and non-governmental actors such as BRAC (formerly Bangladesh Rural Advancement Committee). Social protection schemes have shifted from focusing predominantly on emergency relief to a more holistic emphasis on poverty reduction, education, and employment (World Bank, 2013).

During the past decade, the Government of Bangladesh has made a concerted effort to expand its social protection floor. From 2008 to 2011, expenditure on social programs increased from 1.5% to 2.64% of GDP (World Bank, 2013). Household Income and Expenditure Survey data in Table 2.3 show that the share of households receiving social protection benefits almost doubled from 2005 to 2010.

Although a higher share of the population now receive social benefits, the majority—even among those in the bottom quintile—do not. Furthermore, the adequacy of benefits and targeting leave much to be desired. Table 2.3 illustrates the extent to which those in upper income quintiles receive benefits. Other problems include eroding real value of cash transfers due to inflation, large leakages of in-kind transfers from corruption, and high administrative expenses.

Table 2.3: Proportion of Households Covered by Safety Net Programs, by Expenditure Quintiles

Quintile	2005	2010
I (bottom)	24%	39%
II	16%	32%
III	14%	25%
IV	8%	20%
V (top)	4%	10%
TOTAL:	12.6%	24.6%

Source: World Bank, 2013

CHAPTER 3

Maternity Allowance Program Overview

Program Overview

The MAP is intended to reduce maternal mortality by providing a cash stipend to poor pregnant mothers in rural areas. According to the Department of Women Affairs—an agency under the Ministry of Women and Child Affairs (MOWCA)—the aims of the program are to improve maternal health outcomes by:

- Reducing maternal mortality
- Increasing the rate of lactation
- Enhancing mother's nutritional status
- Increasing the use of maternity-related services
- Ensuring safe motherhood and sound upbringing of infant.

MAP recipients receive Tk.350 (equivalent to US$4.50 at prevailing exchange rate) each month for two years. Recipients obtain the stipend in three- or six-month instalments to minimize the travelling costs associated with collecting the payment from the sub-district Department of Women Affairs office. The 12 union council officials, who govern each of the approximate 4,500 unions in Bangladesh, select as MAP beneficiaries a pre-determined number of pregnant women in their union each year, usually 10 to 30. For the 2013-2014 fiscal year, approximately 120,000 mothers received the allowance.[5] The exact process of beneficiary selection differs among union councils, but the means-test governing selection is universal. To be eligible, a rural mother is required to meet the first two mandatory criteria and at least two of the remaining five non-mandatory requirements:

- Pregnant with her first or second child
- At least 18 years of age

5 Ministry of Finance budget for 2013-2014. MOWCA, Chapter 12 (page 107).

MAP BENEFICIARIES were significantly more likely to report having sufficient food than mothers in the control group. LAURA ELIZABETH POHL PHOTO VIA FLICKR

- Total household monthly income below Tk.1500 (~US$20)
- Poor mother of a female headed household
- Poor mother with a disability
- Owning no land holdings other than their homestead
- Owning no productive assets, such as agricultural land, livestock, etc.

Along the continuum between a pure unconditional cash transfer and a detailed conditional cash transfer, the MAP falls somewhere in the middle. Beneficiaries must abide by the program conditionality that requires them to have a lifetime maximum of two children. However, since this is a verbal commitment, not actively monitored, and cannot be enforced, the MAP is de-facto an unconditional cash transfer. Despite the lack of verification, there is very little anecdotal evidence of beneficiaries violating the conditionality imposed. Local officials speculate this is partly a result of community stigma towards MAP violators. Implicit community monitoring is an interesting by-product of the program that deserves additional study. Can community pressure assure compliance with conditionalities?

The Logistical Process

The government officials interviewed routinely used the euphemism "processing delays" to describe inefficiencies of MAP implementation at all stages, from the initial budget allotment, to the beneficiary selection process, and to the final stipend disbursement. A central challenge is the slow bureaucratic movement of information between the national government in Dhaka and the union councils throughout

THREE BOYS The MAP contributes to population control. Potential beneficiaries must have no more than two children, and must promise not to have more than two children over their lifetime. QAYAM JETHA PHOTO

Bangladesh. The following description of the implementation process illustrates the extent of "processing delays."

SETTING THE BUDGET: Before the new fiscal year, the national Ministry of Women and Child Affairs in Dhaka determines the number of prospective beneficiaries allocated to each union. This calculation is made subjectively, based on the union's population and poverty metrics. Once the total number of nationwide beneficiaries is known, a provisional budget is created and sent to the Finance Ministry for ratification.

THE PURIPUTRO: Following ratification, the Ministry of Women and Child Affairs Office composes a letter, known as the Puriputro. The Puriputro contains information specifying the rules of the MAP including the number of beneficiaries per union, the size of the benefit, the seven means test criteria, and other information regarding the process of selection. This letter is sent from the national offices in Dhaka to each district level MOWCA. The district offices forward the letter to each sub-district MOWCA office. The sub-district MOWCA then arranges a meeting for all union chairmen in the sub-district. Presiding over this meeting is the head of the sub-district, the Executive Officer. He officially "declares" the Puriputro by informing the union officials about the rules of the MAP outlined in the document. Upon completion of the meeting, the sub-district Department of Women Affairs (DOWA) officer sends each union chairman the Puriputro and requests a list of the names of beneficiaries within a week's time.

ONLY FIVE PERCENT of beneficiary mothers surveyed gave birth in a government hospital. Government hospitals have the reputation of being unable to provide good care. The photo illustrates a typical ward in a Khulna division public hospital. KAREN LUND PHOTO

INTRA-UNION SELECTION PROCESS: The selection process depends on the discretion of union councils. The most common selection method is delegation to the three women members of each council. In some unions all members of the council make the selection; in others one member selects, and in some unions selection is out-sourced to a non-council member. It is rare that union councils compile a list of eligible beneficiaries within the one-week deadline.

The union chairman sends the list to the sub-district DOWA officer who checks it, signs it, and gives it to the sub-district Executive Officer. The Executive Officer signs it and sends it to the district level DOWA officer, who again signs it and mails it to the national Department of Women Affairs in Dhaka. Following approval from the national agency, the DOWA sends all of the union lists to the Ministry of Finance.

FUND DISBURSEMENT: The Ministry of Finance sends the full two-year payment for all beneficiaries to each sub-district's bank account. Following receipt of the money, the sub-districts call a second meeting to set a distribution date for the first MAP instalment. On the scheduled day of collection each beneficiary goes to the sub-district DOWA office. There they receive a Maternity Allowance card, which includes a photocopy of their national ID, a picture, their pregnancy certificate, and address. After signing the card, the recipients receive their stipend from the DOWA officer. Following payment, the Executive Officer makes a speech to the beneficiaries giving educational advice on safe motherhood, suggesting what to do with the money, and emphasizing that mothers have no more than two children.

CHAPTER 4

Methodology and Data

TO MEASURE THE MATERNITY ALLOWANCE PROGRAM'S IMPACT, THIS STUDY relies on quantitative and qualitative analysis of primary data collected in the district of Lakshmipur during August 2013. The quantitative portion draws primarily on the results of a closed-ended questionnaire administered to 700 beneficiary and non-beneficiary mothers. To estimate the treatment effect of the program, responses were analyzed using the technique of propensity score matching.

Qualitative data were gathered by focus group discussions with beneficiary mothers, and by informant interviews with government officials at the union, district, and sub-district levels. The purpose of the qualitative research was to substantiate the quantitative findings, learn more about the operational efficiency of the program, and determine recommendations to enhance the MAP's effectiveness.

This chapter summarizes the methods of quantitative and qualitative analysis. The first section presents an introduction to propensity score matching, and details the data collection and sampling methods. The subsequent section outlines the two qualitative methods used: focus group discussions and informant interviews.

Quantitative Analysis

Propensity Score Matching

The fundamental problem of project evaluation is the impossibility of comparing the outcome from someone receiving a program benefit with the outcome of the same person had he/she not received the benefit. Either the individual receives the benefit or doesn't. The evaluation must therefore compare beneficiaries with a counterfactual group that permits an unbiased answer to

the question, what would have happened to beneficiaries had they not received the program benefit. Counterfactuals must be created in a way that minimizes selection bias. Selection bias implies that program participants differ from the counterfactual group in unobservable characteristics that affect whether an individual participates in a program. Many alternative evaluation methodologies can be used to estimate the outcome indicator of interest while minimizing bias. In experimental methods, such as randomized control trials, individuals are assigned randomly to treatment and control groups, thus eliminating selection bias. In quasi-experimental studies, qualifying assumptions must be made before estimating the treatment effect.

Propensity Score Matching (PSM) is one such quasi-experimental methodology growing in popularity in recent years (Caliendo, 2005). PSM creates a counterfactual group by identifying for every beneficiary a non-beneficiary (or set of non-beneficiaries) that has the most similar set of characteristics. This is achieved by computing for each beneficiary and non-beneficiary their predicted probability of receiving the program based on pre-treatment observable characteristics. Once these predicted "propensity scores" are calculated, beneficiary individuals can be matched with non-beneficiaries in the control group who have the closest propensity scores. The non-beneficiaries with the closest propensity scores become the control group. The impact of the program is therefore defined as the difference in outcomes between each treatment group individual and his or her matched control counterfactual (Gertler, 2011).

The matching methodology relies on two assumptions. If both hold, then PSM provides an unbiased method for estimating the probability of participation in the treatment group:

1. **CONDITIONAL INDEPENDENCE** — There is a vector of observable characteristics, such that after controlling for these variables, the assignment into the treatment group is effectively random. If this assumption holds, it follows that after controlling for the probability of participating in the treatment group, outcomes between "matched pairs" will be independent of the treatment status.

2. **COMMON SUPPORT** — There must be a positive probability of finding a match between the estimated probability of someone being in the treatment group and someone in the counterfactual control group. This assumption necessitates sufficient overlap in the distribution of propensity scores for treatment and control group observations.

PSM estimation utilizes four steps. The first is to calculate the propensity scores using a discrete choice model (e.g., probit model) to explain the likelihood of participation into the program. The second step is to tailor the distributions of the control and treated propensity scores so that they maximize overlap. This is done by dropping observations with extreme propensity scores that cannot be adequately matched. The third step is to match treated observations with control observations by using a

matching algorithm. (This study utilizes the nearest neighbour matching technique as per the *teffects* command in STATA13). The fourth and final step is to use the matched observations to calculate the average treatment effect on the treated (ATET).

Data Collection and Sampling

Quantitative data were collected using a household survey administered to 350 beneficiary and 350 non-beneficiary mothers. Specifically, the treatment group and control group consisted of respondents who met the following criteria:

TREATMENT GROUP: Mothers who were beneficiaries of the Maternity Allowance Program during the 2011 fiscal year (selected by union council members in July of 2011). Beneficiary mothers would give birth to their child at any time in the interval between August 2011 at the earliest and March 2012 at the latest. At the time of the survey in August 2013 the treatment group were in the last month of their 24 month stipend.

CONTROL GROUP: Mothers who gave birth to a child during the same interval as treatment mothers, August 2011 to March 2012, but who had never been MAP beneficiaries. While they did not receive the MAP, they had similar probabilities of being selected relative to those actually selected. Thus, mothers eligible to the control group must have given birth to either their first or second child, been over the age of 20 at the time of birth, belonged to families comparably poor and owned no other land besides their homestead.

The case study was conducted in Lakshmipur district, located 150 km south of Dhaka. Of the five Lakshmipur sub-districts, three were chosen as primary sampling locations: Lakshmipur Sadar (LS), Komol Nagar (KN), and Ramgati (R). The study was able to acquire beneficiary lists from 31 unions: 4 from Ramgati, 9 from Komol Nagar, and 18 from Lakshmipur Sadar.

To allocate the 350 beneficiaries to each of the sub-districts, the survey design used a variant of proportional allocation to allocate the number of respondents per sub-district in accordance with the number of unions and the number of enumerators in each sub-district. The distribution of treatment respondents was as follows: 70 for Ramgati, 105 for Komol Nagar and 175 for Lakshmipur Sadar. Simple random sampling was used to select respondents within each union.

The control group was allocated in a similar manner, 70 non-beneficiaries were chosen from Ramgati, 105 from Komol Nagar, and 175 from Lakshmipur Sadar. Since there was no government list of eligible mothers who did not receive the MAP allowance, the control group was identified by the 10 enumerators according to the criteria indicated above. There were no difficulties identifying suitable control group respondents because union council members aided in the search and the enumerators were local to their sub-districts and knew their respective communities well.

Questionnaire Design

Two questionnaires were designed, one for the treatment and another for the control group. Both consisted of 36 questions and were translated into Bangla by a qualified professional (see Appendix). The questionnaires solicited information related to six areas: household characteristics, economic status, maternity services, breastfeeding practices, nutrition and health, and anthropometric measurements of respondents.

HOUSEHOLD CHARACTERISTICS: Questions were asked to ensure that non-beneficiary mothers met the criteria required to be eligible for the MAP and to confirm that beneficiary group mothers did in fact receive the MAP allowance. Treatment group mothers were also directly asked how the MAP impacted their quality of life and health. Other questions pertained to household demographics, including number of family members, educational attainment, disabilities, religion, hours worked, and occupation of the head of household.

ECONOMIC STATUS: Along with a categorical income question, a simple asset score of durable goods was created using equal weighting of family assets. Other proxies of socioeconomic standing included the type of sanitation facility utilized, the material used for roof of the respondent's house, and ownership of land and livestock. To ensure accurate matching, these questions assessed pre-program levels.

MATERNITY SERVICES: This section assessed utilization of antenatal and postnatal care, having a skilled attendant present during birth, and delivery at a public health facility.

BREASTFEEDING PRACTICES: The questionnaire investigated rates of exclusive breastfeeding and use of breast milk substitutes, particularly infant formula. A knowledge-based question asked respondents to select the healthiest option for feeding infants among breast-milk, infant formula, or a mix of the two.

NUTRITION AND HEALTH: The goal of these questions was a comprehensive understanding of the diversity and adequacy of the respondent's diet, as well as the consumption of micronutrients. The study created an individual diet diversity score replicating the methodology proposed by the Food and Agriculture Organization (FAO) (Kennedy, 2011). Health, outcome measures were the frequency of diarrhea and fever, number of doctor visits in the past month, total treatment expenditure, and micronutrient supplement consumption.

ANTHROPOMETRIC MEASUREMENTS: Using a set of weight-scales and tape measures, enumerators measured the height and weight of respondents. Using this information, mother's body mass index (BMI) was calculated.

Survey Administration

The survey instrument was tested in Kaliganj, a sub-district located in Gazipur, near Dhaka. The questionnaire was finalized after incorporating observations from the pilot. Surveying in Lakshmipur was conducted between 18th and 30th August 2013. Ten local enumerators were hired to administer the questionnaires, five from Lakshmipur Sadar, three from Komol Nagar, and two from Ramgati. Prior to the fieldwork, one full day was taken to train the enumerators on the questionnaire design and on surveying methods. Quality control was ensured throughout the twelve days by overseeing interviews and ensuring proper completion of questionnaires. Following the interviewing period, data were translated to English and checked for logical inconsistencies.

Qualitative Analysis

Qualitative information was gathered from two sets of stakeholders: local government officials and program beneficiaries. Open-ended interviews sought to gather normative opinions and anecdotal evidence from the stakeholder perspective. Questions probed three general topics: implementation, outcomes, and recommendations.

Focus Group Discussions

Six focus group discussions (FGDs) were conducted, two from each of the three sub-districts. Focus groups were facilitated by a team of experienced female researchers and followed a semi-structured format. Enumerators identified FGD participants by asking (non-randomly) beneficiary mothers if they would be willing to participate. Discussions were held at various locations including households, union councils, and schools. FGDs lasted approximately an hour and participants were paid Tk.100 to reimburse their time and travel expenditure. Snacks and drinks were also provided.

Informant Interviews

Nine local government officials (seven union councilwomen, one sub-district Department of Women Affairs officer, and one district Department of Women Affairs officer) discussed implementation of the MAP. Participants were questioned about their perception of the program, its effectiveness, and what policy measures they would take, if any, to bolster the success of the program. Questions were asked by a team of three researchers, including the principal investigator, and followed a semi-structured template.

CHAPTER 5

Profile of Survey Households

THIS CHAPTER PRESENTS DESCRIPTIVE STATISTICS FOR THE MOTHERS SURVEYED. Included are respondents from both the treatment group of MAP beneficiaries and the comparison control group of non-beneficiaries. Since the descriptive statistics do not control for selection bias, the mean difference in outcome variables between groups does not provide the true impact of the MAP. The impact evaluation results, using the Propensity Score Matching approach, are discussed in the subsequent chapter.

Household Characteristics

Table 5.1 details household characteristics of the 700 survey respondents, disaggregated by the three sub-districts, Ramgati (R), Komol Nagar (KN), and Lakshmipur Sadar (LS), and by treatment vs. control group.

The average age difference in the sample between spouses, 6 years, reflects national trends in spouse age differentials. According to the 2011 DHS, 40% of Bangladeshi couples have an age disparity between 5 to 9 years. Household sizes of control and treatment groups are similar (4.5 and 4.4), and close to the national average (4.6). The treatment group dependency ratio is higher than in the control group.[6] Higher ratios imply a larger burden on productive household members to support the young and the aged (File, 2009).

One (non-mandatory) MAP selection criterion is that beneficiaries be from female-headed households. In this sample, only 2.6% of treatment mothers were in

6 The dependency ratio is calculated by adding the total number of people aged between 0-14 and > 65 and dividing by the number of people aged between 15 and 64.

Table 5.1: Household Characteristics of Survey Respondents								
Characteristic	**Treatment Group**				**Control Group**			
	R	**KN**	**LS**	**Total**	**R**	**KN**	**LS**	**Total**
Respondent's age	25.8	25.3	25.3	25.4	24.5	24.4	25.3	24.9
Husband's age	31.9	30.2	31.7	30.8	31.7	29.2	31.3	31.3
Household size	4.6	4.7	4.2	4.4	4.6	4.8	4.2	4.5
Number of children	1.6	1.7	1.6	1.7	1.6	1.4	1.6	1.5
Dependency ratio	0.81	0.88	0.83	0.84	0.87	0.74	0.78	0.79
Respondent literate (%)	40.6	46.7	70.0	57.1	57.1	57.7	52.3	54.8
Husband literate (%)	47.8	24.5	55.9	44.9	50.7	35.7	33.9	37.8
Respondent's highest class completed	3.4	2.5	4.9	3.9	4.5	3.3	4.1	4.0
Husband's highest class completed	4	1.7	3.7	3.1	5.6	2.4	2.7	3.2
Household's highest class completed	5.0	3.3	5.9	4.9	5.6	4.2	4.8	4.8
Religion: Muslim (%) Hindu (%)	 94 6	 99 1	 98 2	 98 2	 100 0	 100 0	 96 4	 98 2
Female headed household (%)	0	2.9	3.5	2.6	1.4	4.8	7.3	5.4
Respondent disability (%)	1.5	0.0	1.2	0.9	1.4	1.0	1.1	1.1
Husband disability (%)	2.9	1.0	0.0	0.9	2.9	0.0	0.6	0.8
Own their home (%)	71.0	59.0	79.8	71.8	82.9	44.8	79.6	69.8
Own other land (%)	0.0	1.0	2.3	1.4	15.7	0.0	1.7	4.0

households headed by a female. This is less than half that of the control group (5.4%) and the national average (11%). Since this criterion is non-mandatory, it does not necessarily reflect problems in selection, although it may. Another non-mandatory MAP criterion is that beneficiary families own no land besides their homestead. On average only 1.4% of treatment mothers had alternate land holdings before receiving the MAP. The comparable control group statistic (4%) was higher, due to the proportion of Ramgati control group mothers owning land holdings (16%).

Economic Indicators

For beneficiaries, questions queried economic indicators before receipt of the MAP. For non-beneficiaries, questions asked mothers their economic status prior to the delivery of their child (see Table 5.2).

In aggregate, the percent of mothers working was similar between the treatment and control groups. However, there was considerable variation among sub-groups. The Ramgati treatment group rate (17%) was an obvious outlier; it was also the only group rate above the national average (13%) for employed married women aged 15-49. The majority of the employed women in the sample worked in cottage textile industries. The dominant occupation for the husband was as a daily labourer, which included individuals who worked as a daily agricultural labourer.

The durable asset score sums equally weighted household ownership of 12 assets (potential maximum score, 12; minimum, 0). These assets include a sewing machine, fishing net, electricity connection, wardrobe, table, mattress, radio, television, cellphone, mosquito net, bicycle, and motorbike. A wide dispersion of asset ownership exists, with recorded values ranging from 0 to 7. Mosquito nets (owned by 96% of all respondents) were the most common asset. No major variation in durable asset scores exists between treatment and control groups. Total livestock holdings, consisting of chickens, goats, and cows, was highest in Ramgati, the most agriculturally dependent of the three sub-districts. The treatment group had 0.6 more livestock holdings than the control group (2.6 vs. 2.0).

Monthly income was assessed by a categorical dummy variable, decomposing income into five income classes. One of the non-mandatory MAP eligibility criteria is that households earn less than Tk.1500 a month. Relatively few households meet this criterion; in part, this is because the requirement was established at the time of the program's inception and has not been indexed to inflation or rising living standards. Allowing for inflation since 2005, the real value of the original threshold is now in the Tk.2001–2500 interval. While roughly half the MAP beneficiaries report income above Tk.2500 and are probably not below the $1.25/day poverty threshold, they are all below the $2/day threshold.

Table 5.2: Economic Indicators								
Characteristic	Treatment Group				Control Group			
	R	KN	LS	Total	R	KN	LS	Total
Total hours worked in household	9.2	10.8	6.6	8.4	9.2	12.1	6.6	8.7
Respondent worked (%)	17.4	1.9	1.7	4.9	5.7	6.7	3.4	4.8
Husband's occupation (%)								
Daily laborer	85.5	51.0	73.5	69.2	66.2	68.0	66.7	67.0
Small business worker	7.3	5.9	5.3	5.9	10.3	9.0	4.6	7.0
Rickshaw driver	4.4	13.7	11.2	10.6	10.3	10.0	14.4	12.3
Fisherman	0.0	20.6	1.2	6.7	4.4	10.0	2.9	5.3
Other	1.5	7.8	7.1	6.2	5.9	2.0	8.1	5.9
Not working	1.5	1.0	1.8	1.5	2.9	1.0	3.5	2.6
Durable asset score	2.6	2.2	2.2	2.3	2.3	2.6	2.2	2.3
Total livestock holdings	4.4	1.9	2.3	2.6	3.3	1.5	1.8	2.0
Monthly income (%)								
<Tk.1000	0.0	0.0	2.9	1.4	0.0	1.9	0.6	0.9
Tk.1001-1500	5.8	2.9	2.9	3.5	2.9	3.8	7.4	5.4
Tk.1501-2000	18.8	8.6	9.3	11.0	42.9	21.9	14.2	22.2
Tk.2001-2500	37.7	21.9	26.0	27.1	28.6	10.5	13.1	15.4
>Tk.2500	37.7	66.7	59.0	57.1	25.7	61.9	64.8	56.1
Roofing material (%)								
Plastic	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.3
Metal	71.0	89.5	93.1	87.6	90.0	99.0	93.2	94.3
Straw	29.0	10.5	4.1	11.0	7.1	0.0	4.0	3.4
Bamboo	0.0	0.0	0.6	0.3	0.0	0.0	1.1	0.6
Coconut Leaf	0.0	0.0	2.3	1.2	0.0	0.0	1.7	0.9
Cement	0.0	0.0	0.0	0.0	2.9	0.0	0.0	0.6
Toilet								
"Here and there"	1.5	1.0	2.3	1.7	1.4	1.0	7.4	4.3
Open hole	43.5	28.6	12.1	23.3	41.4	37.1	19.3	29.0
Pit with cement	1.5	0.0	0.6	0.6	0.0	0.0	0.6	0.3
Ring slab	53.6	48.6	79.2	64.8	54.3	48.6	69.3	60.1
Other home's toilet	0.0	21.9	5.8	9.5	2.9	13.3	3.4	6.3

Maternity Service Utilization

The gap between the proportion of treatment and control group mothers seeking antenatal care (ANC) during pregnancy is almost 17 percentage points (Table 5.3). The percentage of mothers in both groups receiving at least one pre-birth check up is much higher then the national average (50%). Of those who received ANC, the average number of check-ups obtained is roughly two, and is similar for both treatment and control.

The statistics provide a portrait of the typical birthing practice employed by respondents. Most mothers deliver at home and pay community skilled birth attendants (CSBA), family welfare visitors (FWV), or dais to provide obstetric assistance. Lakshmipur is the anomaly however; over half of the births are presided over by relatives or untrained attendants. Approximately 11% of mothers in control and treatment groups had a qualified doctor attend their delivery. This is below the 24% figure found in the DHS for mothers aged 20-34.

Table 5.3: Maternity Service Utilization

Characteristic	Treatment Group				Control Group			
	R	KN	LS	Total	R	KN	LS	Total
Use of ante- and postnatal care								
Used ANC (%)	100.0	78.1	74.0	80.4	74.3	73.3	54.0	63.8
Average number of ANC visits for those who used ANC	2.1	1.8	2.3	2.1	2.6	2.3	2.0	2.2
Used PNC (%)	75.4	74.0	61.2	70.1	77.1	73.3	59.7	67.2
Attendants at delivery (%)								
No one / relatives	11.6	7.6	58.4	33.7	5.7	9.5	68.2	38.2
NGO worker	0.0	1.0	1.2	0.9	1.4	0.0	1.7	1.1
Dai (traditional birth attendant)	37.7	41.9	26.0	33.1	34.3	27.6	23.9	27.1
CSBA/ FWV	39.1	27.6	9.3	20.8	41.4	41.0	4.0	22.5
Doctor	11.6	21.9	5.2	11.5	17.1	21.9	2.3	11.1
Location of birth (%)								
Family's home	94.2	94.3	86.7	90.5	97.1	98.1	89.2	93.5
Health provider's home	0.0	0.0	1.7	1.4	0.0	0.0	0.0	0.0
Health provider's clinic	0.0	0.0	1.2	0.6	0.0	0.0	0.6	0.3
Government hospital	2.9	2.9	7.5	4.6	1.4	1.0	6.3	3.7
Non-government hospital	2.9	2.9	2.9	2.9	1.4	1.0	4.0	2.6

Nutrition and Health

Due to the overwhelmingly positive health perception of MAP beneficiaries in Lakshmipur, the respondents in the treatment group were much more likely to profess their current health as positive compared to the control group (see Table 5.4). The superior health perception among MAP beneficiaries may well be due to their relatively positive food adequacy perceptions. Among MAP beneficiaries over a third reported having sufficient food; among the control group the equivalent statistic is below a quarter. Descriptive statistics for the FAO food diversity index show modestly greater variation among MAP beneficiaries relative to the control sample (5.6 vs. 5.2).

Diarrhea, leading to excessive dehydration, is the main cause of morbidity and mortality among children. The overall incidence of fever or diarrhea during the

Table 5.4: Nutrition and Health

Characteristic	Treatment Group				Control Group			
	R	KN	LS	Total	R	KN	LS	Total
Health perception (%)								
Positive	39.1	53.3	79.8	63.7	32.9	41.9	59.7	49.0
Negative	60.9	46.7	20.2	36.3	67.1	58.1	40.3	51.0
Current food adequacy (%)								
Sufficient	50.7	23.8	39.9	37.2	34.3	16.2	23.9	23.7
Not sufficient	49.3	76.2	60.1	62.8	65.7	83.8	76.1	76.3
Food Score (dietary diversity)								
Score	5.6	5.4	5.7	5.6	4.8	5.2	5.4	5.2
Number of times child sick in past month (%)								
0 times	21.7	10.6	30.8	22.9	12.9	13.3	27.3	20.2
1 or more times	78.3	89.4	69.2	77.1	87.1	86.7	72.7	79.8
Number of times respondent sick in past month (%)								
0 times	31.9	47.6	47.4	44.4	25.7	54.3	48.3	45.6
1 or more times	68.1	52.4	52.6	55.6	74.3	45.7	51.7	54.4
Doctor treatment								
Respondent went to doctor in past month (%)	66.7	89.5	79.8	80.1	82.9	74.3	78.4	78.1
Total money spent on doctor treatment (Tk.)	570.8	690.1	898.0	770.0	752.3	504.9	842.8	727.8

preceding thirty days was very high among children and respondents. Over the entire sample 78% of children and 55% of mothers had at least one incident during the past month. The share of children with more than one incident of diarrhea or fever was slightly less in the treatment than in the control group. Conversely, treatment group mothers experienced a slightly greater incidence of illness than mothers in the control group.

Micronutrient Supplementation

The consumption of micronutrient supplements (Table 5.5) displays large variation between sub-districts. For example, out of 210 women surveyed in Komol Nagar, fewer than 5% in either treatment or control group are regularly using any of the three supplements listed. In Ragmati, regular users of each supplement exceed 20%. There are also large differences between

Table 5.5: Micronutrient Consumption

Characteristic (%)	Treatment Group				Control Group			
	R	KN	LS	Total	R	KN	LS	Total
Calcium supplement								
Regularly	34.8	0.0	23.1	18.4	30.0	0.0	5.1	8.6
Not regularly	18.8	32.4	18.5	22.8	18.6	24.8	14.8	18.5
When pregnant	4.3	12.4	14.5	11.8	4.3	14.3	18.8	14.5
Never	42.0	51.4	39.9	43.8	47.1	60.0	56.9	55.8
Don't know	0.0	3.8	4.0	3.2	0.0	1.0	4.6	2.6
Iron supplement								
Regularly	34.8	2.9	22.5	19.0	11.4	3.8	5.1	6.0
Not regularly	13.0	47.6	16.2	25.1	30.0	36.2	18.2	26.0
When pregnant	14.5	5.7	19.7	14.4	11.4	13.3	21.0	16.8
Never	36.2	39.0	39.3	38.6	47.1	43.8	50.6	47.9
Don't know	1.5	4.8	2.3	2.9	0.0	2.9	5.1	3.4
Vitamin supplement								
Regularly	17.4	1.0	21.4	14.4	22.9	1.9	4.6	7.4
Not regularly	20.3	38.1	19.1	25.1	22.9	37.1	11.9	21.7
When pregnant	8.7	2.9	17.9	11.5	8.6	8.6	14.8	11.7
Never	53.6	58.1	38.7	47.6	45.7	50.5	65.3	57.0
Don't know	0.0	0.0	2.9	1.4	0.0	1.9	3.4	2.3

treatment and control groups. The share of regular users of each supplement in the treatment group is two to three times larger than in the control group.

Breastfeeding

Table 5.6 presents encouraging results for breastfeeding practices among those surveyed. Almost 90% of babies are exclusively breastfed for the first six months, a much higher probability than the national exclusively breastfed average of 64% (BDHS, 2011). Results are similar between the treatment and control groups. Almost certainly the positive breastfeeding results are related to the near unanimity of answers to the question as to the health merits of

Table 5.6: Breastfeeding Practices

Characteristic (%)	Treatment Group				Control Group			
	R	KN	LS	Total	R	KN	LS	Total
Child been breastfed	98.6	99.0	98.3	98.6	100.0	98.1	100.0	99.4
Exclusive breastfed	89.9	95.2	86.7	89.9	81.4	89.5	90.3	88.3
Child given infant formula	2.9	3.8	11.6	7.5	10.0	9.5	8.0	8.8
Money spent on infant formula								
Tk.0	97.1	96.2	88.4	92.5	90.0	90.5	92.0	91.2
<Tk.250	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Tk.251-500	0.0	1.0	0.0	0.3	0.0	1.9	0.0	0.6
Tk.501-1000	1.5	0.0	1.2	0.9	1.4	0.0	1.1	0.9
Tk.1001-1500	0.0	0.0	2.3	1.2	0.0	1.9	0.0	0.6
Tk.1501-2000	0.0	1.9	0.6	0.9	0.0	1.9	1.1	1.1
Tk.2001-2500	1.5	0.0	0.6	0.6	1.4	0.0	2.3	1.4
>Tk.2500	0.0	1.0	6.9	3.8	7.1	3.8	3.4	4.3
Which is healthier knowledge question								
Breast-milk	100.0	95.2	97.1	97.1	98.6	94.3	89.8	92.9
Infant formula	0.0	0.0	0.6	0.3	0.0	0.0	1.7	1.1
Mix of breast-milk + formula	0.0	4.8	2.3	2.6	1.4	5.7	8.5	6.0
How soon after birth did breastfeeding start?								
Within 1st hour	84.1	72.8	66.9	72.1	82.9	87.4	64.8	75.1
After 1st hour within 1st day	14.5	24.3	30.8	25.6	12.9	8.7	31.8	21.2
After 1st day within first three days	1.5	1.9	2.3	2.3	4.3	1.9	2.3	2.6
After three days within first week	0.0	1.0	0.0	0.3	0.0	1.9	1.1	1.2

breast milk. An initial hypothesis was that the increase in family income from the MAP allowance could lead to substitution of formula among mothers in the treatment group. Clearly, the low percentage of formula-fed babies as well as the results of the knowledge question provide no support for this hypothesis.

Anthropomorphic Measurements

The mean body mass index (BMI) across the entire sample is 20.7, which is within the normal healthy range.[7] Table 5.7 shows that average BMI results were very similar across sub-districts and between treatment and control groups. However, nearly one in five had BMIs below the healthy threshold (18.5), a slightly higher share in the treatment group than the control.

THROUGHOUT South Asia, malnutrition is serious. In Bangladesh nearly 40 percent of children under age 5 are more than two standard deviations below the median weight-for-age standard.
SAVE THE CHILDREN PHOTO VIA FLICKR

Table 5.7: Anthropomorphic Measurements

Characteristic	Treatment Group				Control Group			
	R	KN	LS	Total	R	KN	LS	Total
Respondent's Body Mass Index	20.8	20.6	20.9	20.8	20.9	21.2	20.2	20.6
Percentage of mothers below 18.5 BMI	21.7	22.9	20.2	21.3	12.8	10.5	27.3	19.3

7 Pregnant women were excluded from BMI calculations. The BMI is defined as the respondent's weight (in kg) divided by the height (in meters) squared. The normal healthy range is usually defined as 18.5 – 25.

MAP-specific Questions

Table 5.8 presents the descriptive results of two questions asked of mothers receiving the MAP allowance. In response to the first question, 80% suggested that the MAP "greatly improved" the quality of their lives while the remaining 20% said it "slightly improved" quality of life; none answered that it had no effect or worsened their situation. Responses to the second question corroborate the "processing delay" anecdotes mentioned previously. Beneficiaries were to receive their first payment prior to giving birth; only half did. This delay probably has serious implications on the indicators, especially the uptake of maternity services. We return to this theme in Chapter 7.

Table 5.8: MAP Specific Indicators (Treatment group only)

Characteristic (%)	Treatment Group			
	R	KN	LS	Total
How has the MAP impacted quality of life				
Greatly improved	91.3	88.6	69.4	79.5
Slightly improved	8.7	11.4	30.6	20.5
Not improved	0.0	0.0	0.0	0.0
Worsened	0.0	0.0	0.0	0.0
Received first MAP payment after birth	47.8	64.8	42.2	50.1

Beneficiary mothers were more likely to answer correctly a breastfeeding knowledge question, indicating that the MAP leads to increases in education. Maternal health knowledge transfers that occur between union councilwomen and beneficiaries may increase the health of children.

LAURA ELIZABETH POHL PHOTO VIA FLICKR

CHAPTER 6

Results

THIS CHAPTER PRESENTS THE ESTIMATED IMPACT OF THE MAP ON MATERNITY service uptake, breastfeeding, nutrition and health, as well as anthropomorphic measurements of the respondents. As mentioned in Chapter 4, the approach used to isolate the impact of the program is propensity score matching (PSM). Recall that PSM predicts the probability of receiving the intervention for all observations (treatment and control) based on a series of observable characteristics. PSM then matches members of the treatment group with individuals from the control group who have similar propensity scores. Based on these matches, PSM identifies the average treatment effect for the treatment observations (Average Treatment Effect on the Treated). This technique effectively randomizes assignment into the treatment group, thus minimizing selection bias.

Estimating Propensity Scores

The first step in application of PSM is selecting the observable variables to use in estimating the propensity score. These covariates are either time-invariant measures (such as a mother's education level) or pre-program levels (such as income and assets). Covariate selection in this study was based on the MAP's eligibility criteria, anecdotal information from informant interviews, previous literature, and general economic theory. (Note that the inclusion of non-significant covariates will not bias the results (Caliendo, 2005).) Table 6.1 on the following page identifies the 24 matching covariates used.

Following determination of the covariates, propensity scores matching was undertaken using the STATA 13, *teffects* command. This command performs three tasks. First, it calculates propensity scores using a probit binary choice model. The binary dependent variable is whether an individual was a treatment or control observation; the independent variables are

MAP cards held by women on receipt of final MAP payment. QAYAM JETHA PHOTO

Table 6.1: PSM Matching Covariates	
Household Demographic Characteristics:	
Religion	Female headed household
Respondent's age	Husband's age
Mother literate	Husband literate
Class respondent	Class husband
Head of household disability	Respondent disability
Dependency ratio	Household size
Pre-food adequacy	
Economic Indicators	
Total hours worked	If respondent worked
Head of household occupation	Material of roof
Type of toilet facility	If household owned their home
If household owned other land	Monthly income of household
If household received another stipend	Durable goods asset score
Livestock asset score	

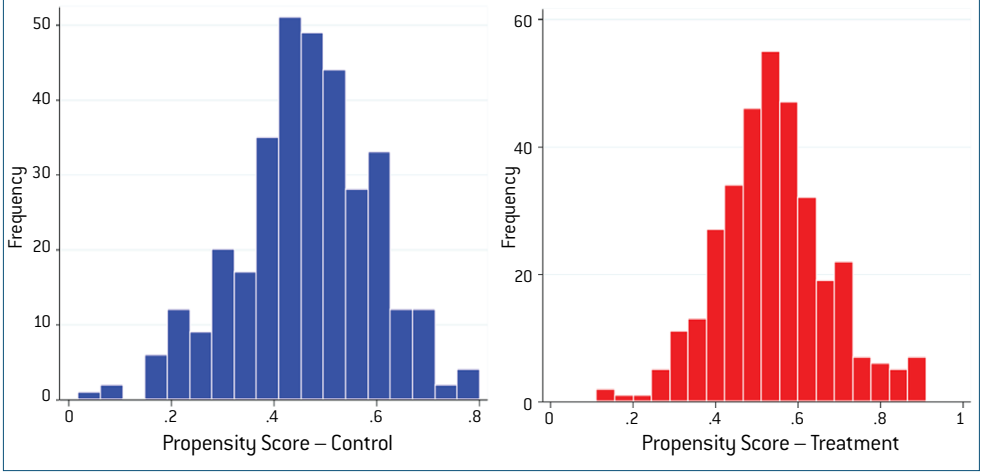
the matching covariates. Second, *teffects* matches treatment and control observations together based on their estimated propensity scores. This is done using the matching specification of "nearest neighbour", where each treatment observation is matched to five control observations with the nearest propensity scores. Lastly, the STATA command calculates the average treatment effect for those receiving the intervention (ATET).

To ensure robust application of PSM, estimated propensity scores must satisfy the common support assumption outlined in Chapter 4. This means there must be sufficient overlap in the distributions of propensity scores for treatment and control groups (Caliendo, 2005). Figure 6.1 graphically depicts the frequency distributions of propensity scores for the control group (blue histogram) and treatment group (red histogram). A common support is ensured due to the high degree of overlap between the distributions. To further enhance the quality of the matching, treatment observations were dropped if they had propensity scores greater than 0.8. The number of observations used in the evaluation, net of sample trimming, was 677.

Impact on Maternity Service Uptake

The first set of results assesses the MAP's impact on use of maternity services. To simplify the interpretation of results, categorical indicator variables were transformed into binary variables prior to evaluation. For example, the average number of ANC visits was replaced with a binary variable having the value 1 if the mother attended more than two ANC check-ups and 0 otherwise. The location of delivery has the value 1 if the birth took place at a clinic or hospital and 0 if it took place at home. The categorical

Figure 6.1: Distribution of Propensity Scores



skilled birth attendant variable assumed the value 1 if an NGO worker, traditional attendant, CSBA, FWV, or doctor attended the birth, and 0 if a respondent gave birth with no attendant present. Table 6.2 presents the PSM impact estimates for maternity services.

Results of the matching exercise indicate that the MAP has significant and substantial positive effects on whether a mother received antenatal and postnatal care. Compared to the control group, those who receive the monthly MAP stipend were 16 percentage points more likely to have undertaken an ANC visit.

If we restrict the sample to those who did have an ANC check-up, MAP mothers were 7 percentage points more likely than non-MAP mothers to have more than two ANC visits. This finding is significant at the 5% level. Also significant at the 5% level was the use of postnatal care, which was 9 percentage points higher for beneficiary mothers.

The treatment effects for delivery at a medical facility and in the presence of a skilled attendant were both positive. However, the ATETs for both variables were insignificant.

Overall, the MAP's effect on the use of maternity services is encouraging. The increased use of antenatal care is somewhat surprising given that half the MAP beneficiaries received their first cash instalment *after* giving birth. The MAP may increase ANC in ways other than simply lowering the financial barriers to access. One important mechanism, corroborated from the qualitative data, was the positive gender-related impacts that the MAP created. For example, many of the focus group discussion respondents mentioned that their intra-household standing increased upon receipt of the MAP, so much so that they were finally able to seek medical care without prior approval of their spouses. The positive gender impact does not diminish the role of the MAP as a tool for demand-side financing. Mothers who received the first cash instalment after birth indicated that the assurance of a future income stream made them willing to consume in the present.

Table 6.2: Propensity Score Matching Impact Estimates of Maternity Service Indicators

Indicator	MAP's effect (ATET) (percentage points unless otherwise indicated)	z-Statistic	P-value
Antenatal care	15.8	4.08	0.000***
More than two ANC visits (among mothers with at least one visit)	6.7	2.07	0.038**
Postnatal care	9.1	2.30	0.022**
Birth at a clinic or hospital	3.2	1.62	0.106
Birth with attendant	4.4	1.09	0.274

Note: *** Denotes significance at 1%, ** at 5%, * at 10%.

An interesting finding from the qualitative data is an understanding of how the rural poor view healthcare. Respondents in the focus groups viewed care strictly in terms of treatment—not prevention. A mother summarized this by saying, "if they are sick, they treat; if they are not sick, they don't treat." Increased ANC and PNC among MAP recipients may be a result of a change in attitudes arising from advice given by government officials at the time of stipend collection.

Harder to explain are the lower values and insignificant results for the variables capturing the actual delivery practices: attendance of a skilled personnel and delivery at a medical facility. One explanation for the latter variable, alluded to earlier, is that rural birthing is predominantly done at home and that this may be a cultural practice. Also, there may be other non-cost factors such as stigma or poor service quality that impede delivery at a health facility.

Impact on Breastfeeding

Descriptive statistics in the previous chapter show that general breastfeeding indicators for the three sub-districts were well above national averages. With exclusive breastfeeding rates near 90% in the total sample, it is no surprise that the MAP does not enhance breastfeeding. The impact estimates of the MAP in Table 6.3 show that the program modestly reduces general breastfeeding and exclusive breastfeeding, and causes modest increases in the use of and spending on infant formula. However, these results are all insignificant.

The one statistically significant result in Table 6.3 is for the breastfeeding knowledge question. To assess the MAP's impact on knowledge surrounding breastfeeding practices, the question has been recoded as a binary variable (0 = formula or a mix of breast-milk and formula, 1 = breast-milk only). The result, significant at the 5% level,

Table 6.3: Propensity Score Matching Impact Estimates of Breastfeeding Indicators

Indicator	MAP's effect (ATET) (percentage points unless otherwise indicated)	z-Statistic	P-value
Breastfed	-1.1	-1.51	0.131
Exclusively breastfed	-1.2	-0.55	0.584
Infant formula	0.5	0.26	0.792
Money spent on infant formula (> Tk.2000)	0.7	0.35	0.729
Breastfeeding knowledge question	2.8	1.98	0.048**

Note: *** Denotes significance at 1%, ** at 5%, * at 10%.

is that the MAP causes a roughly 3-percentage point increase in the number of people who believe breastfeeding to be the healthiest option for children below six months. The result, although modest, reinforces the conclusion that one of the main merits of the MAP program is increased health care knowledge among beneficiaries arising from interaction with local government officials over the course of the selection and receipt of funds.

Health and Nutrition

The MAP's most pronounced benefit is revealed in Table 6.4, the estimated impact on health and nutrition indicators. Highly significant is the MAP's effect on health perception. The intervention increased the share of people with positive health perceptions by 15.2 percentage points compared to the control group. Better health perceptions may arise from an increase in the amount and quality of food intake. The MAP program caused a 10.2 percentage point increase in levels of reported food adequacy. The diversity of food consumption, measured by the FAO food score, is 0.24 points higher for MAP participants. Both effects are statistically significant.

Qualitative data reinforce the positive nutrition conclusion. The most frequent answer to the FGD question, on what did you spend the MAP payment, was increased food purchases. Prior to receiving the MAP, mothers said they were unable to afford enough rice to consume it three times a day. Following the intervention, they were able to purchase enough rice as well as local fruits such as bananas, guavas, pineapples, and mangos. Respondents also claimed that, because of the MAP, they were able to enhance the regularity of meat, egg, and milk

Table 6.4: Propensity Score Matching Impact Estimates of Health and Nutrition Indicators

Indicator	MAP's effect (ATET) (percentage points unless otherwise indicated)	z-Statistic	P-value
Health perception	15.2	3.40	0.001***
Current food adequacy	10.2	2.62	0.009***
FAO food score (diet diversity)	0.24 points	2.23	0.025**
Child sick in past month	-0.7	-0.18	0.853
Mother sick in past month	1.8	0.44	0.661
Saw doctor in past month	4.2	1.22	0.222
Total money spent on doctor treatment in past month (Tk.)	Tk.102.1	1.79	0.074*

Note: *** Denotes significance at 1%, ** at 5%, * at 10%.

MAP recipients reported that the program allowed them to eat rice three times a day, whereas previously this wasn't always the case. Diet diversity for beneficiaries also increased marginally; however, many still consume an inadequate amount of vegetables, fruits and dairy products, which leads to micronutrient deficiencies.

consumption—although these "luxury" food items were still consumed infrequently.

Table 6.4 also shows treatment effects on illness during the preceding month. Differences between treatment and control groups for these two variables are not statistically significant. Since access to the MAP does not affect incidence of disease relative to the control group, we would expect the stipend, either through increases in purchasing power or through increases in gender equity, to allow MAP beneficiaries to visit the doctor more frequently than their control counterparts. Surprisingly, the variable "saw doctor in past month" has a positive average treatment effect, but is not significant.

The MAP increases total monthly treatment spending by roughly Tk.100 (significant at the 10% level). This implies that almost 30% of the monthly MAP payment (Tk.350) goes to medical treatment. Therefore, although the MAP doesn't increase the number of doctor visits, it does influence how much is spent at the doctor. Beneficiaries must either visit more expensive private doctors or spend more on medications. Qualitative evidence suggests a tendency for MAP beneficiaries to shift from public to private hospitals. Respondents mentioned that in public hospitals the government doctor is usually not available and, although they provide free pharmaceuticals, the quality of the drugs are usually poor. One respondent accused doctors of distributing "poor" medicine to poor women and keeping "good" medicine for themselves. Anecdotally, it is found to be common practice for public doctors in rural areas to siphon hospital supplies and open their own private clinics while still receiving a government salary. In a 2003 study commissioned by the World Bank, the authors made unannounced visits to public health clinics to quantify the fraction of medical professionals absent from their assigned post. The mean absenteeism rate for doctors was over 40% (Chaudhury, 2003).

Impact on Micronutrient Supplementation

To simplify interpretation of results, the micronutrient variables were transformed to a binary variable (1 if the respondent consumed the nutrient; 0 if not). MAP beneficiaries made significantly greater use of supplements than their control counterparts. Focus group participants at Mandari in Lakshmipur Sadar revealed that mothers in this union bought calcium and iron tablets because sub-district officers told them to do so. This suggests advice from government officials is important in changing behaviour. The increase in income undoubtedly matters as well.

Impact on Anthropomorphic Measurements

Although the MAP increases a mother's BMI by 0.26, the impact is not statistically significant (Table 6.6). This is not surprising; the transfer is too small to significantly change body compositions. A study by the International Food Policy Research Institute used PSM to isolate the impact of four social protection schemes. They found BMI differences between treatment and control groups were insignificant at the 5% level and that PSM estimates for height for age, weight for age, and weight for height were also insignificant (Ahmed, 2009).

Table 6.5: Propensity Score Matching Impact Estimates of Micronutrient Supplementation

Indicator	MAP's effect (ATET) (percentage points unless otherwise indicated)	z-Statistic	P-value
Consumed calcium supplements	12.1	2.90	0.004***
Consumed iron supplements	9.4	2.42	0.015**
Consumed vitamin supplements	9.8	2.48	0.013**

Note: *** Denotes significance at 1%, ** at 5%, * at 10%.

Table 6.6: Propensity Score Matching Impact Estimates of Anthropomorphic Measurements

Indicator	MAP's effect (ATET) (change in BMI)	z-Statistic	P-value
Mother's BMI	0.255	1.13	0.258

Note: *** Denotes significance at 1%, ** at 5%, * at 10%.

CHAPTER 7

Discussion and Recommendations

THE UNDERLYING OBJECTIVE OF THIS RESEARCH IS TWOFOLD: TO MEASURE the MAP's efficacy at improving maternal and child health outcomes, and to identify possible measures to enhance the policy's effectiveness. This chapter synthesizes the quantitative and qualitative findings to address both of these objectives.

Main Findings

Six key findings related to the program's impact on health outcomes were identified. The first five summarize components of maternal and child health positively impacted by the MAP: family planning, gender empowerment, education, nutrition and health, and maternity services. The first three findings derive from focus group discussions and informant interviews; the other two from the PSM impact assessment results detailed in the previous chapter. The final key finding is a negative one: identification of health indicators that were not improved by the program and why this was the case.

Family Planning

As discussed in Chapter 3, the MAP imposed a loose conditionality on beneficiaries, mandating no more than two children during their lifetime. The MAP allowance will be terminated if beneficiaries violate this requirement. Those who complete the program and subsequently disobey the condition will not be retroactively punished.

FAMILY PLANNING knowledge transfered to beneficiaries by councilwomen and sub-district officials, as well as informal community monitoring, have kept infraction rates low regarding the loose conditionality on beneficiaries mandating no more than two children during their lifetime. QAYAM JETHA PHOTO

Rates of infraction are low. This is partly due to informal community monitoring, but is also due to family planning knowledge transferred to beneficiaries by councilwomen and sub-district officials. For example, a councilwoman mentioned that she dissuaded first-time pregnant MAP recipients against having a second child and counselled them to employ sufficient birth spacing if they still wanted another child. Mothers in the focus groups were adamant that they had no intention of disobeying the stipulation. Citing a lack of income, those receiving the MAP for their first child expressed an unwillingness to conceive a second. Beneficiaries with two daughters were asked if they would renege on the condition for the birth of a son. They answered a resounding no, and pointed to the two female enumerators leading the focus group saying that these women were educated and they proved there was no need for a son.

In addition to changing the behaviour of beneficiaries, the MAP conditionality impacted non-recipients as well. Councilwomen found that prospective beneficiaries reduced the number of children to remain eligible. In summary, the MAP plays a role in reducing total fertility rates.

Gender Empowerment

A fundamental determinant of maternal health is a women's status in her household and community. Although survey questions did not assess gender-related behaviour, the qualitative research was designed to capture anecdotal evidence on this topic.

Information gathered from FGDs and informant interviews suggest the generation of a steady income stream improved MAP recipients' status and value within the household. Specifically, the MAP improved

a number of gender-related indicators such as autonomy, participation in decision-making, access to and control over resources, and freedom from physical or verbal abuse:

- **AUTONOMY:** The increase in respondents' autonomy has been described in the previous chapter in the context of health care. FGD participants stated that since receiving the program they were more willing to disclose illnesses to spouses and to seek treatment without consent or accompaniment.
- **PARTICIPATION IN DECISION-MAKING:** In rural Bangladesh, cultural convention dictates that men, not women, go to village markets to purchase food and other goods. Whereas previously respondents had little say on consumption decision making, following receipt of the MAP, mothers would give husbands their own shopping lists and provide them the money required.
- **ACCESS TO AND CONTROL OVER RESOURCES:** The overwhelming majority of mothers indicated that they had complete control over use of their stipend. The data provided no evidence of family members appropriating the stipend; however, one mother described how she willingly ceded the entire stipend to her husband.
- **FREEDOM FROM PHYSICAL AND VERBAL ABUSE:** Anecdotes described an end to beatings by husbands and mothers-in-law among recipients selected into the MAP. In particular, women identified mothers-in-law as major perpetrators of abuse. It was common for respondents to use a portion of the MAP stipend to purchase a gift for their in-laws, such as a dress, which solidified a mother's standing in the household.

Gender empowerment is inherently a complex issue. The positive effect of the MAP on the indicators explored does not necessarily mean that gender roles have been redefined. Also unknown is whether any shift in the status of respondents survives following conclusion of the program. Few beneficiaries indicated increased respect from neighbours because of MAP selection. In fact, there may be negative effects due to jealousy.

Education

An unintended benefit of the MAP is knowledge transfers between government officials and beneficiaries. As mentioned in Chapter 3, the Executive Officer gives a short speech to recipients during the disbursement of the first MAP payment. In his speech, the Executive Officer reinforces the conditionality and imparts advice on matters related to health and livelihood. The full extent of the knowledge transfer depends on the relationship between union councilwomen and the beneficiary as well as the level of involvement of the sub-district Department of Women Affairs officer.

Many union councilwomen offered nutrition and birthing advice from the moment selection occurred. In one union in Ramgati, councilwomen stressed the importance of breastfeeding. The outcome was that all 18 of the recipients surveyed in the union answered the breastfeeding

knowledge question correctly and initiated breastfeeding immediately following birth. In some instances, councilwomen form a mentor/mentee relationship. Many of the councilwomen interviewed described giving stern informal guidelines on how to spend the MAP stipend. Some councilwomen suggested that beneficiaries use the money only for food and treatment. Others counselled the mothers to save the stipend and invest in income-generating assets such as a goat. Interviews with sub-district Department of Women Affairs officers reveal that they too inform beneficiaries of health and livelihood best practices during the periodic disbursement of MAP funds.

Dispensing piecemeal advice may not be the most effective means of education. However, given the dearth of opportunities to obtain basic health and livelihood knowledge, the information imparted is likely at least somewhat responsible for the positive evaluation results identified.

Nutrition and Health

The nutrition and health indicators provide the most encouraging quantitative evidence to support the MAP. The program impacted both quality and quantity of food intake. It increased the number of women citing positive health perceptions (increase of 15.2 percentage points) and levels of food adequacy (increase of 10.2 percentage points). Diet diversity food scores increased (by 0.24 points), meaning that quality improved as well. Although the number of doctor visits did not increase, the MAP increased the amount spent on total medical treatment by approximately Tk.100. The increased expenditure is probably the result of substituting private for public care. Finally, impact estimates show that the MAP increased the use of calcium, iron, and vitamin supplements (increases of 12, 9, and 10 percentage points respectively).

Maternity Services

The matching estimates gave convincing evidence that the MAP significantly reduced barriers to essential maternal services. Specifically, it increased both the probability of ANC and PNC (increase of 16 percentage points and 7 percentage points respectively). In addition, the probability of MAP mothers receiving more than two ANC visits was 7 percentage points higher than control mothers.

Program Limitations

The program is not a panacea for the problems that beset poor mothers in rural locales. The PSM estimates reveal dimensions in which the MAP fails to fulfill its mandate. Four results in particular support this conclusion.

BREASTFEEDING: Contrary to the program aim of increasing rates of lactation, the MAP did not have a positive effect on breastfeeding or exclusive breastfeeding. This result may be a consequence of sampling bias, which generated extremely high rates of breastfeeding among control and treatment groups.

ANTHROPOMORPHIC MEASUREMENTS: MAP beneficiaries do not have statistically different anthropomorphic measurements compared to the control sample, meaning that the monthly Tk.350 payment did not improve nutrition enough to influence mother's current nutritional status. A reason for this, confirmed from the interviews, is that the payment is simply too small to impact these outcomes.

DELIVERY SERVICES: Although the MAP had a significant impact on the use of certain maternity services, it did not impact whether mothers had skilled health personnel attending their delivery. Since the presence of a birth attendant is the most important measure to reduce maternal mortality, this is a major failure of the MAP. The reasons for this failure are several. It may be that beneficiaries simply aren't provided enough education to enable them to make this decision, or professional attendants are considered too expensive.

INCIDENCE OF DISEASE: The MAP does not decrease the incidence of disease. This is a surprising result given the positive impacts on nutrition. The result might indicate that there are other important determinants that the program fails to address. One possibility is environmental enteropathy, a condition of chronic intestinal inflammation caused by fecal-oral contamination that reduces the body's ability to absorb food (Korpe, 2012).

While stipend size, educational deficits, and environmental enteropathy may all be plausible causes for the program's shortcomings, a simpler explanation may be endogenous to the program itself, implementation failures.

Implementation of the MAP

Implementation can be decomposed into three parts: program selection, benefit disbursement, and general "processing delays." Various failures of implementation have serious ramifications on the efficacy of the program. The next section proposes policy recommendations that attempt to remedy the failures discussed here.

Program Selection

Pivotal to implementation is that the program selection be done in a fair, transparent, and unbiased manner. This relates not only to beneficiary selection by union councils but also to the determination of the number of prospective beneficiaries per district, sub-district, and union done by the Ministry of Women and Child Affairs. Anecdotal evidence reveals several problems.

First is the issue of corruption. Every 12 member union council contains three councilwomen, who are the optimal beneficiary selectors. As mentioned, the process of intra-union selection differs for each union council. In many instances council members other than councilwomen are tasked with selection. This is problematic for three reasons. First, male officials cannot realistically ask women sensitive questions surrounding their pregnancy. Second, when councilwomen are not selecting

HOW MANY OF THESE CHILDRENS' MOTHERS received MAP payments when they were born? At present, only four percent of expectant rural mothers become MAP beneficiaries. Expanding the program's coverage and improving its implementation should be a high priority. SAMI A. KHAN PHOTO

beneficiaries, the time to compile a list of recipients usually takes much longer. The third problem is an increase in corruption. When union council members other than councilwomen select beneficiaries, the risk of extortion and bribery rises. The most egregious outcome is when non-council members are commissioned to perform the selection. In one union, for example, the guard of the union council was delegated the task of selection. In this instance, all seven of the beneficiaries selected by the guard were extorted: three of the women paid the guard Tk.2000; two women gave Tk.1,000, and another was unsure of the exact amount because her husband furtively paid the bribe. There were no reported instances of extortion when councilwomen chose beneficiaries.

The second problem with program selection is errors in targeting. Errors that include mothers who don't need the program (inclusion error) and exclude those who do (exclusion error) are inevitable given the nature of the means test. The sample descriptive statistics show that very few mothers met the criterion of female-headed household (3%), and even fewer met the respondent disability criterion (1%). Additionally, the income criterion (<Tk.2500 monthly income) was also violated more often than it was met.

Only 43% of beneficiaries surveyed had income less than Tk.2500. While only 2% of beneficiaries owned land other than their household, roughly half owned agricultural livestock, violating the criterion mandating no productive assets. The beneficiaries were no doubt poor mothers, but not the poorest.

Benefit Disbursement

Mothers must travel from their respective unions, usually in remote villages, to the sub-district Department of Women Affairs office. Travel is far from easy. Women often must travel alone, either while pregnant or with their newborn child, over long distance, through difficult terrain, at significant cost (both monetary cost and opportunity cost). For example, from Chor Badam, a union in Ramgati, to the sub-district Department of Women Affairs office in the union Alexandar, a motorized rickshaw (CNG) took one hour and cost Tk.300. Beneficiaries queried in the focus group discussions repeatedly mentioned their frustration at travelling so far at such a vulnerable time. Many told anecdotes of birthing complications from travelling over bumpy roads to the sub-district office.

"Processing Delays"

The final problem is the extensive processing delays that occur throughout the MAP's implementation. The impact is that many beneficiaries — half in this study sample — received their first cash instalment *after* they give birth.

Policy recommendations

Despite its limitations, the MAP has increased the well being of rural pregnant mothers. Below are six recommendations, intended to scale up the program and enhance its efficacy.

ENHANCE COVERAGE RATES OF THE MAP: Efforts should be made to increase the coverage rates of the MAP, which currently are very low. (In the 2011–2012 fiscal year there were 101,200 beneficiaries.[8] Using the 2012 birth rate, population size, and rural/urban ratio, this was approximately 4% of annual rural births.[9]) Inevitably fiscal constraints impose a trade-off between size of the individual benefit and coverage of the program. Any attempt to scale up the program should be directed to increasing coverage rates of the MAP as opposed to increasing the stipend size. This is because the positive externalities associated with being a MAP beneficiary are largely independent of the size of the stipend (e.g. gender empowerment, knowledge transfers, family planning).

SEND THE MAP FUNDS TO THE UNION COUNCIL: Instead of sending the full amount of the stipend to each sub-district's bank account, the Ministry of Finance could reroute the payments to the union councils. This will increase the number of bank transfers the Ministry must send by 3,968 (= 4,451 unions – 483 sub-districts) and entail addi-

8 Rahman, S. (2012, June 8). Social Safety Net Shrinks. *The Daily Star* [Dhaka]

9 2012 CIA World Factbook data

tional banking and administrative costs. However, the benefit to program recipients from this change dwarfs the extra cost for the Ministry of Finance.

LEGISLATE THAT THE THREE UNION COUNCILWOMEN SELECT BENEFICIARIES: To ensure transparency, expedite implementation, reduce corruption, and minimize targeting errors, the government should legislate that the three councilwomen be the sole beneficiary selectors in each union. This administrative requirement should be announced in the annual Puriputro and be reiterated by the sub-district executive officers during the first sub-district MAP meeting. This is a contentious recommendation given intra-union political dynamics. Union chairmen may be opposed to this selection rule as it affords an opportunity for councilwomen to canvass for future elections. However, the importance of this decree in guaranteeing a credible and sound MAP selection process supersedes any associated political strife at the union level.

CONDUCT RANDOM SELECTION AUDITS: Mandate that the National Department of Women and Child Affairs conduct random audits to verify that sub-union level selection is fair.

ENSURE THAT THE FIRST MAP PAYMENT IS GIVEN BEFORE BIRTH: The efficacy of a cash transfer aimed at increasing the purchase of maternity services relies on beneficiaries having money in their pockets, as opposed to future financial guarantees. The MAP needs to disburse payments to recipients prior to birth. If the three union councilwomen decide beneficiary selection, this will expedite the implementation process, but further measures should be made. Computerizing documents and utilizing electronic modes of mailing to minimize intra-governmental communication costs would be ideal. Other options are to start the implementation process earlier, or to impose a financial penalty on union councils that chronically delay their selection.

REVISE ELIGIBILITY CRITERIA AND PROGRAM OBJECTIVES: To minimize ambiguity in selection criteria and provide measurable, clear, and realistic program objectives, the criteria and objectives need to be restated. This recommendation does not imply changes to the eligibility criteria; however they must be made more specific. Remove the vague word "poor", specify mothers with one to two *live* births, clarify productive assets, and update the out-dated Tk.1500 maximum monthly income to the currently used cap of Tk.2500. Similarly, the objectives of the program must be set out clearly with specific outcomes and indicators that can be quantified.

Conclusion

This study has found that the MAP expands the capabilities of rural, pregnant mothers by increasing their household status and enabling better health and education outcomes. Two caveats must be made. The first relates to the limited ability to generalize from a sample in one district. This is particularly the case since there exists substantial heterogeneity in program implementation within Bangladesh. In other unions, NGOs play a role in MAP beneficiary selection and in providing recipients with education. This evaluation was limited to three sub-districts and may not be representative of outcomes for the 480 other Bangladeshi sub-districts. The second caveat is that although the MAP is an important initiative to help poor, vulnerable households, the program is not a cure-all solution for reducing poverty. The MAP should be seen as one element in a coordinated and holistic system of government social safety nets.

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Appendix: Survey Instruments

1. Treatment Questionnaire

District	Thana/ Upazilla	Union/ Ward	Village

Hello. My name is _____. I work for DORP, the Development Organization for the Rural Poor, a NGO working to improve the health of women in rural villages. We are doing a study in partnership with a university in Canada to find out about the health of mothers who receive the Maternity Allowance Program in the Lakshmipur sub-district. Your household was selected and we would like to ask you some questions to help DORP plan future health services.

The questions usually take about 20 to 25 minutes. All of the answers you give will be shared with no one other than members of our survey team. It is completely your choice if you would like to participate in the survey or not. If I ask any question you don't want to answer, let me know and I will go on to the next question or you can choose to stop the interview at anytime you wish. We do very much hope that you will agree to answer the questions since your views are important.

Your name will not be kept in our data and the responses you give will be held by DORP and Simon Fraser University in a confidential manner. In case you would like more information about the survey, you may contact the DORP office at the number and address listed on this card.

1. Do you agree to be interviewed?
   - ☐ Yes
   - ☐ No

   Interviewer's Initials _____

Mother and Household Information

2. How has receiving the Maternity Allowance Program impacted your family's quality of life?
   - ☐ It has greatly improved my family's quality of life
   - ☐ It has slightly improved my family's quality of life
   - ☐ It has not affected my family's quality of life
   - ☐ It has worsened my family's quality of life

3. Before you began to receive the Maternity Allowance Program how many times had you previously given birth?
   - ☐ None
   - ☐ Once
   - ☐ More than once

4. Did you receive the first Maternity Allowance payment before or after you gave birth?
   - ☐ Before
   - ☐ After

5. In general would you say your health today is:
   - ☐ Very good
   - ☐ Good
   - ☐ Okay
   - ☐ Poor
   - ☐ Very poor

6. What is your religion?

- ☐ Muslim
- ☐ Hindu
- ☐ Christian
- ☐ Buddhist
- ☐ Other

7. We would like to know some details about everyone who is living in the same household as you:

Member of the Household	Head of House hold (Check one)	Age (in years)	Can read? (Y = Yes N = No)	Highest class attended (in numbers)	Has a serious disability (Y = Yes N= No)	Hours worked per day **before receiving Maternity Allowance**	Occupation **before receiving Maternity Allowance**
Respondent							
Husband							
Child 1							
Child 2							
Other Members:							
1.							
2.							
3.							
4.							
5.							
6.							

Maternity Service Uptake

For all of the following questions we would like to know information about your child that was born while you were receiving the Maternity Allowance Program

8. When you were pregnant with your child, did you receive any antenatal (pre-birth) health checkups by a health professional such as a doctor, nurse, midwife, family welfare visitor or a community skilled birth attendant?
   - ☐ YES
   - ☐ NO

9. [NOTE: Ask only if yes for question #7]
   How many times did you receive antenatal health checkups?
   - ☐ 1 time
   - ☐ 2 times
   - ☐ 3 times
   - ☐ 4 times

10. Who assisted during the delivery of your child?
[all that apply]

- ☐ No one
- ☐ Relatives
- ☐ NGO Worker
- ☐ A Nurse or a Midwife
- ☐ A Family Welfare Visitor or Assistant
- ☐ A Community Skilled Birth Attendant
- ☐ A Doctor
- ☐ Other

11. Where was your child born?

- ☐ Mother's home
- ☐ Health professional's home
- ☐ Health professional's clinic
- ☐ Government hospital
- ☐ Non-government hospital
- ☐ Other

12. In the two months after your child was born, did a health professional such as a doctor, nurse, midwife, family welfare visitor or a community skilled birth attendant check your health or the health of your child?

- ☐ YES
- ☐ NO

Breastfeeding

13. Has your child been breastfed?

- ☐ YES
- ☐ NO

14. [NOTE: Ask only if yes for question #12]
How soon after birth did you first begin breastfeeding your child?

- ☐ Within the first hour
- ☐ After the first hour but within the first day
- ☐ After the first day but within the first three days
- ☐ After the first three days but within the first week

15. During the first six months of your child's life was your child given anything to drink other than breast milk?

- ☐ YES
- ☐ NO

16. [NOTE: Ask only if yes for question #14]
What was your child given to drink?
[all that apply]

- ☐ Infant formula mixed from a can
- ☐ Cow/ Goat/ Buffalo Milk
- ☐ Plain water
- ☐ Sugar water
- ☐ Fruit Juice
- ☐ Honey
- ☐ Rice water
- ☐ Other

17. [NOTE: Ask only if box checked for infant formula in Question #15]
During the first six months of your child's life, about how many taka did you spend on infant formula?

- ☐ No Taka
- ☐ Below 250 Taka
- ☐ Between 251 Taka and 500 Taka
- ☐ Between 501 Taka and 1000 Taka
- ☐ Between 1001 Taka and 1500 Taka
- ☐ Between 1501 Taka and 2000 Taka
- ☐ Between 2001 Taka and 2500 Taka
- ☐ Greater than 2500 Taka

18. Do you think it is healthier to feed children that are less than 6 months old only breast milk, only infant formula or a mix of breast milk and infant formula?

- ☐ Feeding only breast milk is healthier
- ☐ Feeding only Infant formula is healthier
- ☐ Feeding a mix of breast milk and infant formula

Nutrition/ Health

19. What is the overall food adequacy situation of your family/household?

Now	Before receiving the Maternity Allowance Program
☐ More than enough	☐ More than enough
☐ Enough	☐ Enough
☐ Sometimes not enough	☐ Sometimes not enough
☐ Never enough	☐ Never enough

20. Please report if you have eaten the following food types in the past 24 hours.

Food Type	Examples	Yes = Y No = N
Eggs	Eggs from chicken, duck or any other egg	
Meat	Beef, lamb, goat, chicken, duck	
Fish and seafood	Eel, carp, catfish, shellfish, shrimp	
Cereals	Rice, wheat, biscuits, bread, noodles	
Green leafy vegetables	Spinach, cassava leaves, okra	
Non-green vegetables	Squash, carrot, tomatoes, eggplant, onion	
Milk products	Milk, cheese, yoghurt	
Fruit	Mango, banana, dates, apricots, peaches	
Oils and Fats	Oil, ghee or butter added to food	
Sweets	Sugar, honey, juice, chocolate, candies, cakes	
Spices	Black pepper, salt, garlic, turmeric	
Legumes, nuts and seeds	Beans, peas, lentils, nuts, seeds	

21. Since receiving the Maternity Allowance Program have you taken any of the following nutritional supplements?

Supplements	Regularly	Not Regularly	When pregnant and nursing my child	Never	Don't know
Calcium tablets					
Vitamins (example A)					
Iron tablets or syrup					
Zinc tablet					
Other supplements or fortified foods (specify):					

22. How often has your child had diarrhea or fever in the past 30 days?

- ☐ 0 times
- ☐ 1-2 times
- ☐ 3-4 times
- ☐ More than 4 times

23. How often have you had diarrhea or fever in the past 30 days?

- ☐ 0 times
- ☐ 1-2 times
- ☐ 3-4 times
- ☐ More than 4 times

24. In the past 30 days have you or your child received any treatment from a doctor or nurse?

- ☐ Yes
- ☐ No

25. [NOTE: Ask only if yes for question #12]
What was the total cost of the treatment you and your child have received in the past 30 days?

_____(in Tk.)

Assets/ Wealth and Income

I would like to ask about items you owned **before** you became pregnant and before you began to receive the Maternity Allowance Program – **not** about what you own now.

26. Before you became pregnant and started to receive the Maternity Allowance Program did your household own any of the following livestock?

Type of Animal	**Numbers**
Chicken/ Duck/ Pigeon	
Goat/ Lamb	
Cow	
Buffaloes	
Other (specify)	

27. Before you became pregnant and before you began to receive the Maternity Allowance Program did your household own any of the following:

Type of Asset	**YES**	**NO**
Farm plough		
Sewing machine		
Fishing net		
Electricity in home		
Almirah/ Wardrobe		
Table		
Mattress		
Radio		
Television		
Mobile phone		
Refrigerator		
Mosquito Net		
Bicycle or Rickshaw		
Motorbike		

28. Before you became pregnant and began to receive the Maternity Allowance Program did your family own the house or homestead you were living in?

- ☐ YES
- ☐ NO

29. Before you became pregnant and began to receive the Maternity Allowance Program did your household own any land other than your homestead?

- ☐ YES
- ☐ NO

30. What was the roof of the house you were living in before you became pregnant made out of?

- ☐ Plastic
- ☐ Bamboo
- ☐ Tin/ Metal
- ☐ Cement
- ☐ Mud
- ☐ Wood
- ☐ Brick
- ☐ Cardboard
- ☐ No roof
- ☐ Other (specify) _____

31. Before you became pregnant and before you began to receive the Maternity Allowance Program what was your toilet facility?

- ☐ Here and there
- ☐ Open hole
- ☐ Drain to pond/ canal/ river
- ☐ Hanging latrine (over water)
- ☐ Pit (with cement)
- ☐ Ring slab
- ☐ Sanitary
- ☐ Other (specify): _____

32. Before you became pregnant and began to receive the Maternity Allowance Program approximately how much money did your household earn per month on average?

- ☐ Below 1000 Tk.
- ☐ Between 1001 Tk. and 1500 Tk.
- ☐ Between 1501 Tk. and 2000 Tk.
- ☐ Between 2001 Tk. and 2500 Tk.
- ☐ Greater than 2500 Tk.

33. Does any member of your household receive any additional income from government allowances or stipends - besides the Maternity Allowance?

Now	Before receiving the Maternity Allowance Program
☐ Yes ☐ No If yes, specify what program:	☐ Yes ☐ No If yes, specify what program:

Physical Measurements

Child	Weight with mother (in kg)	Age of child (in months)	Sex
Child born while receiving the Maternity Allowance Program			
Other child below the age of 5			

34. Weight of mother without child (in kg)? _____

35. Height of mother (in cm)? _____

36. Is the mother currently pregnant?

- ☐ YES
- ☐ NO

2. Control Questionnaire

District	Thana/ Upazilla	Union/ Ward	Village

Hello. My name is _____. I work for DORP, the Development Organization for the Rural Poor, a NGO working to improve the health of women in rural villages. We are doing a study in partnership with a university in Canada to find out about the health of mothers who have given birth between September 2011 and March 2012 in the Lakshmipur sub-district. Your household was selected and we would like to ask you some questions to help DORP plan future health services.

The questions usually take about 20 to 25 minutes. All of the answers you give will be shared with no one other than members of our survey team. It is completely your choice if you would like to participate in the survey or not. If I ask any question you don't want to answer, let me know and I will go on to the next question or you can choose to stop the interview at anytime you wish. We do very much hope that you will agree to answer the questions since your views are important.

Your name will not be kept in our data and the responses you give will be held by DORP and Simon Fraser University in a confidential manner. In case you would like more information about the survey, you may contact the DORP office at the number and address listed on this card.

1. Do you agree to be interviewed?

   ☐ Yes

   ☐ No

   Interviewer's Initials _____

Mother and Household Demographic Information

2. Did you give birth to a child between September 2011 and March 2012?

   ☐ Yes

   ☐ No

3. Before you gave birth to your child born between September 2011 and March 2012 how many times had you previously given birth?

   ☐ None

   ☐ Once

   ☐ More than once

4. Were you 20 years or older when you gave birth to your child born between September 2011 and March 2012?

   ☐ Yes

   ☐ No

5. In general would you say your health today is:

   ☐ Very good

   ☐ Good

   ☐ Okay

   ☐ Poor

   ☐ Very poor

6. What is the religion of the head of household?

- ☐ Muslim
- ☐ Hindu
- ☐ Christian
- ☐ Buddhist
- ☐ Other

7. We would like to know some details about everyone who is living in the same house as you:

Member of the Household	Head of House hold (Check one)	Age (in years)	Can read? (Y = Yes N = No)	Highest class attended (in numbers)	Has a serious disability (Y = Yes N= No)	Hours worked per day **(Before you became pregnant with your child born between Sept 2011 and March 2012)**	Occupation **(Before you became pregnant with your child born between Sept 2011 and March 2012)**
Respondent							
Husband							
Child 1							
Child 2							
Other Members:							
1.							
2.							
3.							
4.							
5.							
6.							

Maternity Service Uptake

For all of the following questions we would like to know information about your child that was born between September 2011 and March 2012 and May 2013

8. When you were pregnant with your child, did you receive any antenatal (pre-birth) health checkups by a health professional such as a doctor, nurse, midwife, family welfare visitor or a community skilled birth attendant?

- ☐ YES
- ☐ NO

9. [NOTE: Ask only if yes for question #7]
How many times did you receive antenatal health checkups?

- ☐ 1 time
- ☐ 2 times
- ☐ 3 times
- ☐ 4 times

10. Who assisted during the delivery of your child?
[all that apply]

- ☐ No one
- ☐ Relatives
- ☐ NGO Worker
- ☐ A Nurse or a Midwife
- ☐ A Family Welfare Visitor or Assistant
- ☐ A Community Skilled Birth Attendant
- ☐ A Doctor
- ☐ Other

11. Where was your child born?

- ☐ Mother's home
- ☐ Health professional's home
- ☐ Health professional's clinic
- ☐ Government hospital
- ☐ Non-government hospital
- ☐ Other

12. In the two months after your child was born, did a health professional such as a doctor, nurse, midwife, family welfare visitor or a community skilled birth attendant check your health or the health of your child?

- ☐ YES
- ☐ NO

Breastfeeding

13. Has your child been breastfed?

- ☐ YES
- ☐ NO

14. [NOTE: Ask only if yes for question #12]
How soon after birth did you first begin breastfeeding your child?

- ☐ Within the first hour
- ☐ After the first hour but within the first day
- ☐ After the first day but within the first three days
- ☐ After the first three days but within the first week

15. During the first six months of your child's life was your child given anything to drink other than breast milk?

- ☐ YES
- ☐ NO

16. [NOTE: Ask only if yes for question #14]
IF YES: What was your child given to drink?
[all that apply]

- ☐ Infant formula mixed from a can
- ☐ Cow/ Goat/ Buffalo Milk
- ☐ Plain water
- ☐ Sugar water
- ☐ Fruit juice
- ☐ Honey
- ☐ Rice water
- ☐ Other

17. [NOTE: Ask only if box checked for "infant formula from a can" in Question #15]
During the first six months of your child's life, about how many taka did you spend on infant formula?

- ☐ No Taka
- ☐ Below 250 Taka
- ☐ Between 251 Taka and 500 Taka
- ☐ Between 501 Taka and 1000 Taka
- ☐ Between 1001 Taka and 1500 Taka
- ☐ Between 1501 Taka and 2000 Taka
- ☐ Between 2001 Taka and 2500 Taka
- ☐ Greater than 2500 Taka

18. Do you think it is healthier to feed children that are less than 6 months old only breast milk, only infant formula or a mix of breast milk and infant formula?

- ☐ Feeding only breast milk is healthier
- ☐ Feeding only Infant formula is healthier
- ☐ Feeding a mix of breast milk and infant formula is healthier

Nutrition

19. What is the overall food adequacy situation of your family/household?

Now	Before you became pregnant with your child born between Sept 2011 and March 2012
☐ More than enough	☐ More than enough
☐ Enough	☐ Enough
☐ Sometimes not enough	☐ Sometimes not enough
☐ Never enough	☐ Never enough

20. Please report if you have eaten the following food types in the past 24 hours.

Food Type	Examples	Yes = Y No = N
Eggs	Eggs from chicken, duck or any other egg	
Meat	Beef, lamb, goat, chicken, duck	
Fish and seafood	Eel, carp, catfish, shellfish, shrimp	
Cereals	Rice, wheat, biscuits, bread, noodles	
Green leafy vegetables	Spinach, cassava leaves, okra	
Non-green vegetables	Squash, carrot, tomatoes, eggplant, onion	
Milk products	Milk, cheese, yoghurt	
Fruit	Mango, banana, dates, apricots, peaches	
Oils and Fats	Oil, ghee or butter added to food	
Sweets	Sugar, honey, juice, chocolate, candies, cakes	
Spices	Black pepper, salt, garlic, turmeric	
Legumes, nuts and seeds	Beans, peas, lentils, nuts, seeds	

21. Since giving birth between September 2011 and March 2012 have you taken any of the following nutritional supplements?

Supplements	Regularly	Not Regularly	When pregnant and nursing my child	Never	Don't know
Calcium tablets					
Vitamins (example A)					
Iron tablets or syrup					
Other supplements or fortified foods (specify):					

22. How often has your child had diarrhea or fever in the past 30 days?

- ☐ 0 times
- ☐ 1-2 times
- ☐ 3-4 times
- ☐ More than 4 times

23. How often have you had diarrhea or fever in the past 30 days?

- ☐ 0 times
- ☐ 1-2 times
- ☐ 3-4 times
- ☐ More than 4 times

24. In the past 30 days have you or your child received any treatment from a doctor or nurse?

- ☐ Yes
- ☐ No

25. [NOTE: Ask only if yes for question #12]
What was the total cost of the treatment you and your child have received in the past 30 days?

_____(in Tk.)

Assets/ Wealth and Income

I would like to ask about items you owned **before** you became pregnant with your child that was born between September 2011 and March 2012 – **not** about what you own now.

26. Before you became pregnant did your household own any of the following livestock?

Type of Animal	Numbers
Chicken/ Duck/ Pigeon	
Goat/ Lamb	
Cow	
Buffalos	
Other (specify)	

27. Before you became pregnant did your household own any of the following:

Type of Asset	YES	NO
Farm plough		
Sewing machine		
Fishing net		
Electricity in home		
Almirah/ Wardrobe		
Table		
Mattress		
Radio		
Television		
Mobile phone		
Refrigerator		
Mosquito Net		
Bicycle or Rickshaw		
Motorbike		

28. Before you became pregnant did your family own the house or homestead you were living in?

- ☐ YES
- ☐ NO

29. Before you became pregnant did your household own any land other than your homestead?

- ☐ YES
- ☐ NO

30. What was the roof of the house you were living in before you became pregnant made out of?

- ☐ Plastic
- ☐ Bamboo
- ☐ Tin/ Metal
- ☐ Cement
- ☐ Mud
- ☐ Wood
- ☐ Brick
- ☐ Cardboard
- ☐ No roof
- ☐ Other (specify): _____

31. Before you became pregnant what was your toilet facility?

- ☐ Here and there
- ☐ Open hole
- ☐ Drain to pond/ canal/ river
- ☐ Hanging latrine (over water)
- ☐ Pit (with cement)
- ☐ Ring slab
- ☐ Sanitary
- ☐ Other (specify): _____

32. Before you became pregnant approximately how much money did your household earn per month on average?

- ☐ Below 1000 Tk.
- ☐ Between 1001 Tk. and 1500 Tk.
- ☐ Between 1501 Tk. and 2000 Tk.
- ☐ Between 2001 Tk. and 2500 Tk.
- ☐ Greater than 2500 Tk.

33. Does any member of your household receive any additional income from other government allowances or stipends?

Now	**Before you became pregnant with your child born between Sept 2011 and March 2012**
☐ Yes ☐ No If yes, specify what program:	☐ Yes ☐ No If yes, specify what program:

Physical Measurements

Child	**Weight with mother (in kg)**	**Age of child (in months)**	**Sex**
Child born between September 2011 and March 2012			
Other child below the age of 5			

34. Weight of mother without child (in kg)? _____

35. Height of mother (in cm)? _____

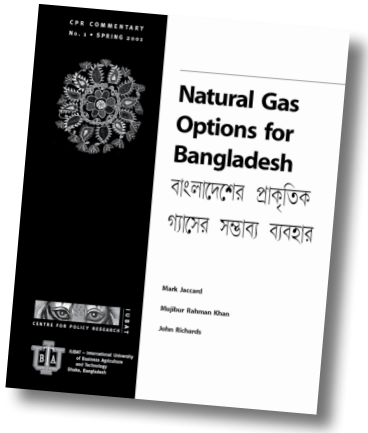
36. Is the mother currently pregnant?

- ☐ YES
- ☐ No

CPR COMMENTARY NO. 1

Natural Gas Options for Bangladesh

বাংলাদেশের প্রাকৃতিক গ্যাসের সম্ভাব্য ব্যবহার



by **MARK JACCARD**, *Director, Energy Research Group, School of Resource and Environmental Management at Simon Fraser University,* **MUJIBUR RAHMAN KHAN**, *Professor, College of Engineering and Technology at IUBAT, and* **JOHN RICHARDS,** *Professor, Master of Public Policy Program at Simon Fraser University*

The very low level of available commercial energy is a serious constraint on economic development in Bangladesh. Fortunately, there is one bright prospect – sizeable discoveries of natural gas.

This monograph explores three options for how Bangladesh might use its natural gas endowment: exporting gas to provide public revenues that could be directed to many other development needs; expanding the many possible end-uses for gas in domestic industry, agriculture and households; or concentrating natural gas use on accelerated electrification. After assessing the three options, the authors conclude that rapid electrification should have the highest priority.

In addition, the monograph discusses institutional reforms to foster private investment and to improve the transparency, efficiency and consistency of government corporations, ministries and agencies. There is an important case to be made for integrated resource planning that includes environmental and social objectives.

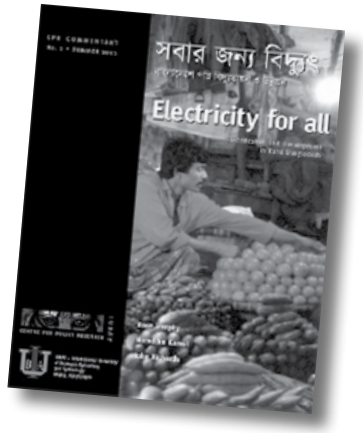
বাণিজ্যিক খাতে জ্বালানি শক্তির অতিস্বল্পতা বাংলাদেশের অর্থনৈতিক উন্নয়নের পথে একটি গুরুত্বপূর্ণ অন্তরায়। সৌভাগ্যক্রমে প্রাকৃতিক গ্যাসের বড় ধরনের উৎস আবিস্কৃত হওয়ায় উন্নয়ন ক্ষেত্রে একটি উজ্জ্বল সম্ভাবনা সৃষ্টি হয়েছে। এই প্রতিবেদনে বাংলাদেশের প্রাকৃতিক গ্যাস সম্পদ ব্যবহারের তিনটি সম্ভাবনা নিয়ে পর্যালোচনা করা হয়েছে ঃ গ্যাস বিদেশে রপ্তানী করে সরকারী রাজস্বখাতে অর্থ আয় যা উন্নয়নের চাহিদা মিটাতে পারবে, দেশীয় শিল্প, কৃষি, গৃহস্থলি ও অন্যান্য সম্ভাব্য কাজে গ্যাসের ব্যবহার সম্প্রসারণ; বা দ্রুত বিদ্যুতায়নের ক্ষেত্রে প্রাকৃতিক গ্যাসের ব্যবহার কেন্দ্রীভূত করা। এই তিনটি সম্ভাবনা যাচাই করে প্রতিবেদকগণ এই সিদ্ধান্তে পৌছেন যে দ্রুত বিদ্যুতায়নই সর্বোচ্চ প্রাধান্য পাওয়া উচিৎ।

অধিকন্ত এই প্রতিবেদনে কিছু কিছু প্রাতিষ্ঠানিক সংস্কারের বিষয় আলোচনা করা হয়েছে যা বেসরকারী বিনিয়োগকে উৎসাহিত করবে এবং সরকারী প্রতিষ্ঠান, মন্ত্রণালয়সমূহ এবং এজেন্সিসমূহের কাজের স্বচ্ছতা, দক্ষতা এবং নির্ভরযোগ্যতা বৃদ্ধি করবে। পরিবেশগত এবং সামাজিক লক্ষ্যগুলি অন্তর্ভূক্ত করে সমন্বিত সম্পদ পরিকল্পানার গুরুত্বের বিষয়ও এই প্রতিবেদনে সুপারিশ করা হয়েছে।

CPR COMMENTARY NO. 2

Electricity for All

সবার জন্য বিদ্যুৎ



by **ROSE MURPHY,** *Research Associate with the Energy and Materials Research Group at the School of Resource and Environmental Management at Simon Fraser University,* **NURUDDIN KAMAL**, *Senior Research Fellow for the Centre for Policy Research at IUBAT, and* **JOHN RICHARDS,** *Professor, Master of Public Policy Program at Simon Fraser University*

বাংলাদেশে পাঁচজনের মধ্যে মাত্র একজন বিদ্যুতের সুবিধা পান। গ্রাম বাংলায় বিদ্যুতের সুবিধা পান প্রতি সাতজনে একজন।

বাংলাদেশে বিদ্যুৎ খাতে এই সমস্যাগুলি কেন অব্যাহত থাকছে? এই সমস্যাগুলি সমাধানের জন্য কি ব্যবস্থা নেয়া যায়? এই রিপোর্টে দ্রুত বিদ্যুতায়ন, বিশেষ করে পল্লি বিদ্যুতায়নের ক্ষেত্রে বাধা সমূহের মূল্যায়ন করা হয়েছে। একই সাথে এই বাধাসমূহ দূর করার জন্য কিছু বাস্তবধর্মী সুপারিশ রাখা হয়েছে।

বর্তমানে পল্লি বিদ্যুতায়ন বোর্ড (আর ই বি) এবং তার সমবায় নেটওয়ার্ক পল্লি বিদ্যুৎ সমিতিগুলির মাধ্যমে পল্লি এলাকায় দেশে ব্যবহৃত বিদ্যুতের এক চতুর্থাংশ বিতরণ করে। এই আকর্ষণীয় সাফল্য সত্ত্বেও, বাংলাদেশে বিদ্যুতায়নের ক্ষেত্রে আরো অনেক কিছু করার বাকি আছে।

গবেষকগণ সুপারিশ করেন যে আর ই বি'কে স্বাধীনভাবে বিদ্যুৎ উৎপাদনের প্রতি অগ্রাধিকার ভিত্তিতে অধিক গুরুত্ব দিতে হবে, বিশেষ করে জাতীয় সঞ্চালন গ্রীড বহির্ভূত এলাকাসমূহে। এই সম্প্রসারণের জন্য প্রয়োজন হবে অধিকতর মাত্রায় ব্যক্তিখাতে বিনিয়োগে এবং আর ই বি গ্রাহকদের ক্ষেত্রে বর্ধিত হারে গড় ট্যারিফ।

অধিকতর হারে নতুন বিনিয়োগ আকর্ষণ এবং ট্যারিফসমূহের সংস্কার কঠিন কাজ, তবে বিদ্যুৎ ব্যবস্থার ব্যাপক সম্প্রসারণের লক্ষ্যে গুরুত্বের সাথে এই প্রয়োজনীয় সংস্কারসমূহ বাস্তবায়ন যুক্তিসঙ্গত।

Only one in five Bangladeshis has access to power; among those in rural areas the ratio is about one in seven. What can be done to improve access? This monograph assesses the barriers to accelerated electrification – rural electrification in particular – and offers practical recommendations.

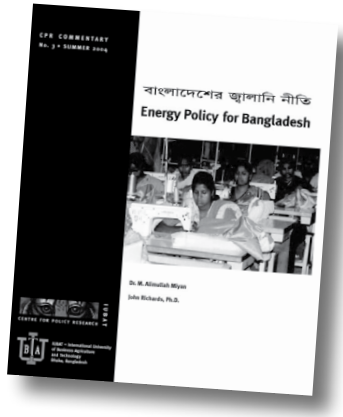
The Rural Electrification Board (REB) and its network of cooperatives – Palli Biddyut Samitees – now distribute nearly a quarter of electricity consumed in the country. Despite this impressive accomplishment, they need to do more.

The authors recommend that the REB place a high priority on power generation independent of the national transmission grid. This expansion will require private investment and higher average tariffs for REB customers. Securing major new investment and revising tariffs will not be easy, but the goal of increased electrification is sufficiently important to justify the required reforms.

CPR COMMENTARY NO. 3

Energy Policy for Bangladesh

বাংলাদেশের জ্বালানি নীতি



by **DR. M. ALIMULLAH MIYAN,** *Vice Chancellor and Founder, IUBAT, and* **JOHN RICHARDS,** *Professor, Master of Public Policy Program at Simon Fraser University*

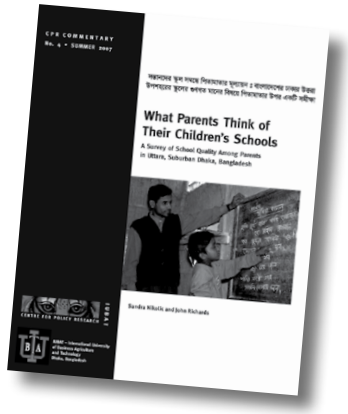
বাংলাদেশের ভবিষ্যৎ সমৃদ্ধির জন্য পর্যাপ্ত পরিমাণ বাণিজ্যিক জ্বালানি সরবরাহের গুরুত্ব সম্বন্ধে অতিরঞ্জনের কোন অবকাশ নেই। বাংলাদেশ সরকার ২০০৪ সালের মে মাসে একটি খসড়া জাতীয় জ্বালানি নীতি ঘোষণা করে এবং এর উপর জনসাধারণের অভিমত আহবান করে। সরকারের এই প্রতিবেদনে বর্তমান নীতির গুরুতর সমস্যার বিষয় এবং নূতন নীতি প্রণয়ন যে অতীব বিতর্কপূর্ণ তা স্বীকার করা হয়।

সেন্টার ফর পলিসি রিচার্সের এই তৃতীয় প্রতিবেদনটির মাধ্যমে খসড়া জাতীয় জ্বালানি নীতির উপর মন্তব্য এবং সুপারিশ করা হয়েছে। ড. এম আলিমউল্যা মিয়ান, উপাচার্য ও প্রতিষ্ঠাতা, আই ইউ বি এ টি - ইন্টারন্যাশনাল ইউনিভার্সিটি অব বিজনেস এগ্রিকালচর এন্ড টেকনোলজি এবং ড. জন রিচার্ডস, অধ্যাপক, সাইমন ফ্রেজার ইউনিভার্সিটি, কানাডা এবং আই ইউ বি এ টি'র ভিজিটিং অধ্যাপক এই প্রতিবেদনটি প্রণয়ন করেছেন। তাঁদের সুপারিশ মালার মধ্যে প্রাকৃতিক গ্যাসের রপ্তানি থেকে শুরু করে জৈব জ্বালানি শক্তি ব্যবহারের উন্নতি সাধনসহ গুরুত্বপূর্ণ বিষয় সমূহ অন্তর্ভূক্ত হয়েছে।

It is hard to exaggerate the importance of adequate supplies of commercial energy for the future development of Bangladesh. In May 2004, the Government of Bangladesh released a draft National Energy Policy, and invited public commentary. The government report acknowledges the serious shortcomings of present policy and the dilemmas in designing new policy.

In this third monograph of the Centre for Policy Research, Dr. Alimullah Miyan, Vice-Chancellor and Founder of IUBAT—International University of Business Agriculture and Technology, and Dr. John Richards, Professor at Simon Fraser University in Canada and Visiting Professor at IUBAT, respond to the draft National Energy Policy and offer a series of recommendations. The recommendations cover major issues from export of natural gas to improvements in the utilisation of biomass fuels.

CPR COMMENTARY NO. 4



What Parents Think of Their Children's Schools

A Survey of School Quality Among Parents in Uttara, Suburban Dhaka, Bangladesh

সন্তানদের স্কুল সম্বন্ধে পিতামাতার মূল্যায়ন ঃ বাংলাদেশের ঢাকার উত্তরা উপশহরের স্কুলের গুণগত মানের বিষয়ে পিতামাতার উপর একটি সমীক্ষা

by **SANDRA NIKOLIC,** *Planner, Health Services Authority of British Columbia, and*
JOHN RICHARDS, *Professor, Master of Public Policy Program at Simon Fraser University*

বিগত এক দশকে শিক্ষার প্রাপ্যতা বিস্তারে বাংলাদেশ প্রশংসনীয় সাফল্য অর্জন করেছে। ২০০৪ ইংরেজি সালে ১৮ মিলিয়ন শিশু, ১,১০,০০০ প্রাথমিক স্কুলে ভর্তি হয়। এতদ্‌সত্ত্বেও অনেক পিতামাতা তাঁদের সন্তানদেরকে বেসরকারি স্কুলে ভর্তি করান, যার ব্যয়ভার তাঁদেরকে বহন করতে হয়। আরো অনেকে বেছে নেন বেসরকারি সংস্থা কর্তৃক পরিচালিত স্কুল, যেমন ব্রাক পরিচালিত স্কুল বা মাদ্রাসা। সরকার পরিচালিত স্কুলের চেয়ে বেসরকারি পর্যায়ে পরিচালিত স্কুলের জনপ্রিয়তার মধ্যে আমরা দুটি বিষয়ের দিক নির্দেশনা দেখতে পাই যথা স্কুলের গুণগতমান সম্বন্ধে পিতামাতার উদ্বেগ এবং স্কুলে স্থান সঙ্কুলান সম্পর্কে সচেতনতা।

স্কুলের গুণগতমান সম্পর্কীয় সমস্যা সম্পর্কে পিতামাতার মনোভাব যাচাই করার জন্য, ঢাকা শহরের উত্তরে অবস্থিত উত্তরায় আইইউবিএটি-ইন্টারন্যাশনাল ইউনিভার্সিটি অব বিজনেস এগ্রিকালচার এবং টেকনোলজি'র গবেষণারত ছাত্র-ছাত্রীরা একটি জরিপ পরিচালনা করে। জরিপের ফলাফল এই প্রতিবেদনে উপস্থাপন করা হয়েছে। এই সমীক্ষায় শিক্ষার ফলাফল উন্নত করার লক্ষ্যে কয়েকটি কৌশলের মূল্যায়ন করা হয়েছে।

Over the last decade, Bangladesh has made impressive gains in the *quantity* of education available. As of 2004, there were 18 million children enrolled in 110,000 primary schools. Still, many parents choose to enrol their children in private schools where parents pay, in nonformal schools run by NGOs such as BRAC, and in madrasas. The popularity of school types other than government-run schools suggests that parents have concerns about school quality – as well as the availability of school spaces.

To assess parental attitudes to problems of school quality, student researchers from IUBAT—International University of Business Agriculture and Technology surveyed residents in Uttara, a suburb in northern Dhaka. This study reports their findings. The study also assesses broad strategies for improving education outcomes.

CPR COMMENTARY NO. 5

Barriers to Girls' Secondary School Participation in Rural Bangladesh

গ্রাম-বাংলায় মাধ্যমিক স্কুলে মেয়েদের অংশগ্রহণে প্রতিবন্ধকতা

by **JENNIFER HOVE,** *Bachelor of International Relations at University of British Columbia 2000, Master of Public Policy at Simon Fraser University 2007, Visiting Fellow, IUBAT*

বিগত ১৫ বছর মাধ্যমিক স্কুলে ছেলে-মেয়ে উভয়ের ভর্তির হার নাটকীয়ভাবে বেড়েছে। অবশ্য মেয়েদের ৬ষ্ঠ থেকে ১০ম মান পর্যন্ত লেগে থেকে পড়া শেষ করার হার হতাশাব্যঞ্জকভাবে কম। তুলনামূলকভাবে যদিও ছেলেদের টিকে থকার হারও কম। ৬ষ্ঠ মানে ভর্তির বেলায় ছেলে-মেয়ের ভর্তির হার প্রায় সমান সমান। ১০ম মান পর্যায়ে ছেলেরা মাধ্যমিক সরকারি পরীক্ষায় বিশেষভাবে মেয়েদের থেকে এগিয়ে। দশম মানের পরবর্তী উচ্চ মাধ্যমিক পর্যায়ে ভর্তির বেলায়ও ছেলেদের হারই বেশি। মেয়েদের মধ্যে যাঁরা ১০ম মান শেষ করে উচ্চ মাধ্যমিক একাদশ ও দ্বাদশ শ্রেণীতে প্রবেশ করে তাদের হার মাত্র ১৩%। স্কুল, পরিবার ও বৃহত্তর পর্যায়ে সমাজের মধ্যে এমন কিছু ক্ষমতাধর শক্তি কাজ করে যা মেয়েদেরকে স্কুলে টিকে থাকতে নিরুৎসাহিত করে। পলী এলাকার ৪টি স্কুলের শিক্ষক, ছাত্রী ও পিতামাতার মধ্যে সমীক্ষা চালানোর মাধ্যমে এই গবেষণায় ছাত্রীরা কেন স্কুল ছেড়ে যায় তার কারণ বিশেষণ করা হয় এবং একই সাথে কি নীতিমালা অবলম্বনে ছাত্রীদের মাধ্যমিক স্তরে স্কুল শেষ করার হার বাড়ানো যায় তার সুপারিশ পেশ করা হয়।

Over the last 15 years, secondary school enrolment rates among both boys and girls have risen dramatically. However, girls' rates of progression and completion of the secondary cycle (from Grades 6 through 10) are disturbingly low – albeit the comparable rates for boys are also low. At Grade 6 there is near parity between the number of boys and girls enrolled. By Grade 10, boys are significantly ahead of girls in participation in public examinations and promotion to higher secondary school. Only 13 per cent of girls who complete the tenth grade transition to the higher secondary Grades of 11 and 12. There are powerful forces at work within schools, families and the broader society that dissuade girls from staying in school. Based on interview responses among teachers, students and parents in four rural schools, this study analyses why girls drop out of school, and offers policy recommendations to increase completion rates.

CPR COMMENTARY NO. 6

A New Mandate for the Rural Electrification Board

পল্লী বিদ্যুতায়ন বোর্ডের জন্য নতুন নির্দেশাবলীঃ

বিদ্যুৎ স্বল্পতা নিরসনে এলাকা-ভিত্তিক পরিকল্পনার পদক্ষেপ

by **B.D. RAHMATULLAH, NANCY NORRIS, JOHN RICHARDS**

নির্ভরযোগ্য বিদ্যুৎ অভাব বাংলাদেশের অর্থনৈতিক উন্নয়নকে দারুণভাবে বাধাগ্রস্ত করছে। বাংলাদেশের শতকরা ৭৮ ভাগ প্রতিষ্ঠান দুর্বল বিদ্যুৎ সেবাকে তাদের ব্যবসা সম্প্রসারণে প্রধান অন্তরায় হিসাবে চিহ্নিত করে।

সফল সংস্কারের ভিত্তি হলো প্রশাসনিক বিশ্বাসযোগ্যতা। বিদ্যুৎ খাতের প্রধান সংস্থাগুলির মধ্যে সবচাইতে বেশী বিশ্বাসযোগ্য হলো পল্লী বিদ্যুতায়ন বোর্ড (আর ই বি)। বিগত একদশকে আর ই বি বিদ্যুৎ সংযোগের সংখ্যা দ্বিগুণ করেছে এবং এই সংস্থা বর্তমানে বাংলাদেশে উৎপাদিত মোট বিদ্যুতের শতকরা ৪০ ভাগ বিতরণ করে থাকে। এই মনোগ্রাফের প্রণেতাগণ সুপারিশ করেন যে আর ই বি-এর ম্যান্ডেট সম্প্রসারণ করে জাতীয় গ্রীডের বাইরে স্বাধীনভাবে বিদ্যুৎ উৎপাদনের ব্যবস্থা করা। স্বাধীনভাবে বিদ্যুৎ উৎপাদনে স্বাভাবিকভাবেই এই সংস্থার সহযোগী পল্লী সমবায় (পল্লী বিদ্যুৎ সমিতি)গুলি সম্পৃক্ত হবে। উৎপাদিত বিদ্যুত অগ্রাধিকার ভিত্তিতে স্থানীয়ভাবে সহযোগী পি বি এস এর গ্রাহকদের মধ্যে বিতরণ করা হবে।

A lack of reliable electrical power is severely impeding Bangladesh economic development. Seventy-eight per cent of Bangladeshi firms cite poor electricity service as a “major” or “severe” obstacle to expansion.

Successful reform requires building on a foundation of administrative credibility. The most credible of the major agencies in the power sector is the Rural Electrification Board (REB). Over the last decade, it has doubled the number of customer connections, and now distributes 40 per cent of all power generated in Bangladesh. The authors of this monograph recommend an expansion of the REB mandate to enable the REB and its network of rural cooperatives (Palli Biddyut Samitee) to create generating capacity independent of the national grid, capacity whose power would be distributed on a priority basis to customers in the local participating PBS.

CPR COMMENTARY NO. 7

Benchmarking the Nutritional Status of Women in the Tongi-Ashulia Road Slums

টঙ্গি–আশুলিয়া সড়কের বস্তিবাসি মহিলাদের পুষ্টিমান মূল্যায়ন

by **JOHN RICHARDS, AFIFA SHAHRIN AND KAREN LUND**

এই সমীক্ষায় উত্তরার তুরাগ নদী সংলগ্ন এলাকার বস্তিবাসী মহিলাদের পুষ্টিমানের একটি প্রতিবেদন তুলে ধরা হয়েছে। গবেষণাটির উপাত্ত সংগ্রহ করে আই ইউ বি এ টি— ইন্টারন্যাশনাল ইউনিভার্সিটি অফ বিজনেস এগ্রিকালচার এণ্ড টেকনোলজি-এর নার্সিং শিক্ষার্থীরা। জরিপে দেখা যায় যে অধিকাংশ মহিলার খাবারে পর্যাপ্ত পরিমাণ ক্যালরী থাকে। তবে তাদের অধিকাংশই সব শ্রেণীর খাদ্যের সুষম বন্টন থেকে বঞ্চিত। চালের মূল্যস্ফিতির কারণে হয়তবা তারা একই পরিমাণ চাল ক্রয়ের জন্য অন্যান্য শ্রেণীর খাবার বাদ দিতে বাধ্য হয়েছে।

অধিকাংশ পরিবার কোনও ধরণের বিশুদ্ধিকরণ ছাড়াই ঢাকা পানি ও পয় কর্তৃপক্ষের পানি ব্যবহার করে। ভূ-পৃষ্ঠের পানি দূষণের কারণে ওয়াসার পানিতে আশংকামুক্ত মাত্রায় রোগ-বালাইয়ের জীবানু থাকতে পারে। পরিবারের সদস্যদের মাঝে তামাক ও পানের ব্যাপক ব্যবহার লক্ষণীয়। দীর্ঘমেয়াদী ব্যবহার এই দুইটিই ভয়ানক স্বাস্থ্যহানীর কারণ হতে পারে। স্বাস্থ্যকর্মীদের কাছ থেকে প্রাপ্ত প্রত্যক্ষ উপদেশ এবং মহিলাদের স্বাক্ষরতা পুষ্টিমানের উপর ইতিবাচক প্রভাব ফেলে।

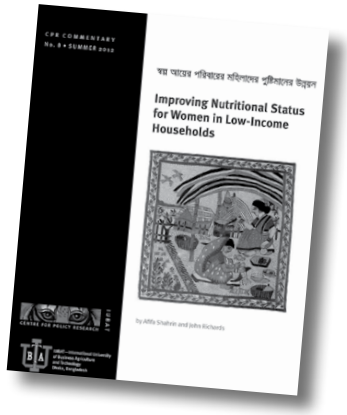
This Commentary reports on the nutritional status of shanty dwelling women in Uttara (near the Turag River). Data were collected by nursing students at IUBAT—International University of Business Agriculture and Technology. Most women have an adequate caloric intake. However, most lack adequate servings from the full range of food groups. Inflation in rice prices may have induced them to sacrifice other foods in order to maintain rice consumption.

The majority use non-boiled tap water from the Dhaka Water and Sewage Authority. Due to contamination from ground water, it may contain high levels of pathogens. Tobacco and betel nut are widely used by family members. Both pose serious health hazards if consumed on a long-term basis. The ability of women to read, and receiving one-on-one advice from a health worker had positive impacts on aspects of nutrition.

CPR COMMENTARY NO. 8

Improving Nutritional Status for Women in Low-Income Households

স্বল্প আয়ের পরিবারের মহিলাদের পুষ্টিমানের উন্নয়ন



by **AFIFA SHAHRIN AND JOHN RICHARDS**

এই গবেষনায় বাংলাদেশের দুইটি অঞ্চলের স্বল্প আয়ের পরিবারের মহিলাদের খাদ্য ও পুষ্টিমানের অবস্থা তুলে ধরা হয়েছে। অঞ্চল দুটির একটি হল জামালপুর জেলার পাশাপাশি চারটি গ্রাম, অপরটি হল ঢাকা মহানগরীর উত্তরা এলাকার বস্তি। স্বল্পসংখ্যক মহিলা ক্যালরী স্বল্পতায় ভুগলেও অধিকাংশের সমস্যা হল আমিষ, ভিটামিন, মিনারেল এবং খনিজ পদার্থের স্বল্পতা।

পুষ্টিকে প্রভাবিত করতে পারে এমন উপাদানগুলোর গুরুত্ব এই গবেষণায় পর্যালোচনা করা হয়েছে। সাধারনত কম শিক্ষিত পরিবারের মহিলাদের তুলনায় বেশি শিক্ষিত পরিবারের মহিলাদের পুষ্টিমান উন্নত; তাদের অধি কাংশ ধূমপানও করেনা, তবে যেসব পরিবারে ধূমপায়ী সদস্য রয়েছে সেসব পরিবারের মহিলাদের পুষ্টির অবস্থা তুলনামূলক খারাপ।

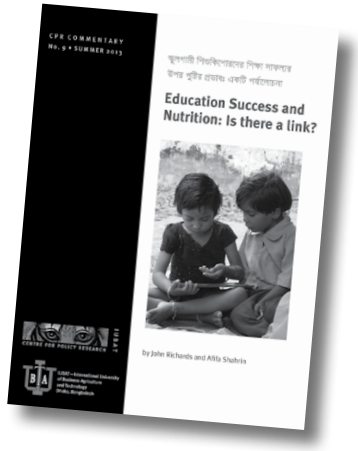
এক্ষেত্রে সরকারের প্রতি যে প্রধান দুইটি সুপারিশ তা হলঃ পুষ্টি সম্পূরক উপাদান যোগ করে চালের পুষ্টিগুণ বাড়ানো (Rice fortification) এবং যেসব অঞ্চলে আর্সেনিকের প্রকোপ বেশি নয় সেসব অঞ্চলে অগভীর টিউবওয়েল বসানো। বেসরকারী সংস্থাগুলোর প্রতি সুপারিশ হলঃ গনস্বাস্থ্যকর্মীদের উন্নতমানের প্রশিক্ষণ দিয়ে তথ্য-উপদেশের কার্যকারিতা বাড়ানো এবং গ্রামাঞ্চলের বাড়িগুলোতে সবজি বাগান করতে জনগণকে সহযোগিতা করা।

This monograph reports on the nutritional status of a sample of 600 women in two sites: four villages near Jamalpur, and shanty dwellers in the Dhaka metropolitan area. While some suffer inadequate calorie intake, the major nutritional problem is inadequate consumption of protein, vitamins and micronutrients.

The authors assess the importance of factors that influence nutrition. In general, women's nutrition is better in households with higher education levels; most women do not smoke, but their nutrition is worse if other family members use tobacco.

The recommendation to government is to pursue two programs: rice fortification, and setting of tube wells in slum neighbourhoods (where groundwater is not affected by arsenic). NGOs are invited to improve training of community health workers, and encourage household vegetable gardens in rural villages.

CPR COMMENTARY NO. 9



Education success and nutrition: Is there a link?

স্কুলগামী শিশুকিশোরদের শিক্ষা সাফল্যের উপর পুষ্টির প্রভাবঃ একটি পর্যালোচনা

by **AFIFA SHAHRIN AND JOHN RICHARDS**

শিশুদের শিক্ষা সাফল্যের সাথে পুষ্টির কোন সম্পর্ক আছে কি? অনেক আন্তর্জাতিক গবেষণা মতে এই সম্পর্ক ইতিবাচক। বাংলাদেশের শহর ও গ্রামাঞ্চলের নিম্ন আয়ের পরিবারের উপর পরিচালিত এই গবেষণায় প্রাথমিক এবং মাধ্যমিক স্কুল পর্যায়ে এই সম্পর্কের মাত্রাজনিত প্রমাণ পাওয়া যায়।

গবেষণায় অন্তর্ভুক্ত শিশুদের মধ্যে যাদের পিতা-মাতা পড়তে পারে তাদের স্কুলের শিক্ষা সম্পন্ন করার সম্ভাবনা পিতা-মাতা পড়তে পারেনা এমন শিশুদের চাইতে বেশি। যেসব পিতা-মাতার আয় বেশী তারা সাধারণত তাদের শিশুদের বেশী সময় পর্যন্ত স্কুলের পড়া শেষ করার সুযোগ দিতে পারে। আবার বাড়ীতে বিদ্যুৎ সংযোগ থাকায় অর্থনৈতিকভাবে সম্পন্ন পিতা-মাতার সন্তানেরা পড়াশুনায় ভাল করে। দেখা গেছে, স্কুলের সাফল্যের ক্ষেত্রে উন্নত পুষ্টি একটি গুরুত্বপূর্ণ নিয়ামক।

জরিপে হতে প্রাপ্ত তথ্যের বিশ্লেষণে আলোচ্য গবেষণা মা এবং শিশুদের উন্নততর পুষ্টির উপর গুরুত্ব আরোপ করেছে। প্রসূতি মা এবং নবজাত শিশুর পুষ্টি কর্মসূচী থেকে শুরু করে সামাজিক বিপনন উদ্যোগ, দরিদ্র পরিবারের শিশুরা পড়ে এমন স্কুলগুলোতে খাদ্য কর্মসূচী ইত্যাদি অনেক ধরনের নীতিই দরিদ্র জনগোষ্ঠীর পুষ্টিমান উন্নয়নে সহায়ক ভূমিকা রাখে।

Is there a link between nutrition and children's education success? The answer from international studies is "yes." Here we provide evidence on the extent of the link – both at the primary and secondary school level – among a sample of low-income families in urban and rural Bangladesh.

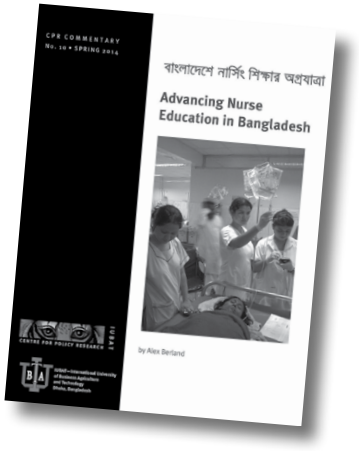
Children whose parents can read are more likely to complete their studies than children whose parents cannot. Higher-income parents typically have more time to help their children, and usually their homes have access to electricity, a valuable aid to learning. This study demonstrate that, among the factors bearing on success at school, good nutrition matters.

Evidence from the families surveyed indicates the importance of better maternal and child nutrition. The range of potentially valuable programs is wide: from nutrition campaigns targeting pregnant mothers and pre-school children, to social marketing campaigns that promote improved diets, to school feeding programs.

CPR COMMENTARY NO. 10

Advancing Nurse Education in Bangladesh

বাংলাদেশে নার্সিং শিক্ষার অগ্রযাত্রা



by **ALEX BERLAND**

অন্যান্য নিম্ন আয়ের দেশের মত বাংলাদেশেও গনস্বাস্থ্যের উন্নয়নে আধুনিক নার্সিং সেবা গুরুত্বপূর্ণ ভূমিকা রাখতে পারে। কিন্তু এই ব্যাপারে বাস্তবে বিশেষ করে প্রশিক্ষনের ক্ষেত্রে প্রতিবন্ধকতা রয়েছে। এই প্রতিবেদনটিতে বাংলাদেশে নার্সের প্রাপ্যতা এবং শিক্ষার বর্তমান অবস্থা ও অন্যান্য দেশের প্রাসঙ্গিক অবস্থা তুলে ধরা হয়েছে এবং একই সাথে বাংলাদেশের জন্য একটি দেশীয় কর্মকৌশলের প্রস্তাবনা রাখা হয়েছে।

লেখক একজন কানাডাভিত্তিক নার্সিং প্রশাসক ও নীতি নির্ধারনী পর্যায়ের পরামর্শক। তিনি অনেক বছর ধরে ঢাকায় একটি উদ্ভাবনাময়ী নার্সিং শিক্ষা কর্মসূচীতে সহায়তা করে আসছেন। সেই অভিজ্ঞতা এবং বাংলাদেশের বেশ কিছু নার্সিং শিক্ষক, ডাক্তার ও হাসপাতাল ব্যবস্থাপকের আলোচনা থেকে লব্ধ জ্ঞানের আলোকে এই প্রতিবেদনটির মাধ্যমে বাংলাদেশে নার্সিং শিক্ষার দিকনির্দেশনা তুলে ধরেছেন। এখানে যে মূল প্রতিবন্ধকতার কথা তুলে ধরা হয়েছে তা হল যোগ্যতা সম্পন্ন নার্সিং শিক্ষকের দুষ্প্রাপ্যতা। একটি যুগোপযোগী নার্সিং শিক্ষা পদ্ধতি শুশ্রুষাকারী, রোগীর সচেতনতা বৃদ্ধি ও জনস্বাস্থ্যের পৃষ্ঠপোষক হিসাবে নার্সদের দক্ষতার বিকাশ ঘটাতে পারে।

Modern nursing practice has the potential to improve population health in Bangladesh, as shown in other low-income countries. However, there are significant practical challenges, especially with training. This monograph summarizes the current situation for nurse supply and education, introduces relevant ideas from other countries and suggests a made-in-Bangladesh strategy.

The author, a nurse executive and policy consultant in Canada, has spent many years supporting an innovative nurse education program in Dhaka. From that experience, as well as discussions with Bangladeshi nurse educators, physicians and hospital managers, this monograph proposes a way forward. It focuses on the critical obstacle — the shortage of qualified nurse educators. A strong nurse education system could release nurses' capacity as caregivers, patient educators and health promoters.

গত দশকে বাংলাদেশ সরকার মাতৃত্বকালীন ভাতা (MAP) কর্মসূচী চালু করে। এই কর্মসূচীর অধীনে ২৪ মাস ধরে গ্রামাঞ্চলের নিম্ন আয়ের মায়েদের কিছু অর্থ দেওয়া হয়। MAP এর উদ্দেশ্য হলো মা এবং শিশুর স্বাস্থ্য ও পুষ্টির উন্নয়ন।

প্রকৃতপক্ষে MAP এর সুবিধাভোগী নয় এমন মায়েদের তুলনায় MAP কি সুবিধাভোগী মায়েদের উন্নয়ন অধিক নিশ্চিত করে? লক্ষ্মীপুর জেলায় দৈবচয়ন উপায়ে নির্বাচিত ৭০০ মায়েদের উপর পরিচালিত একটি সমীক্ষার পুঙ্খানুপুঙ্খ মূল্যায়নের মাধ্যমে আলোচ্য সমীক্ষায় দেখানো হয়েছে বিভিন্ন উপায়ে, যেমন প্রসব পূর্ববর্তী ও পরবর্তী সময়ের উন্নত স্বাস্থ্য সেবা ও পুষ্টির মাধ্যমে MAP সুবিধা প্রাপ্ত মহিলাদের উন্নয়নে অবদান রাখছে। তবে অন্যান্য ক্ষেত্র, যেমনঃ রোগের প্রাদুর্ভাব কমানোতে সুবিধাভোগী মায়েরা, সুবিধা পায়নি এমন মায়েদের তুলনায় ভাল ছিলনা।

The Maternal Allowance Program (MAP) is a program established in the last decade by the Government of Bangladesh. It provides a modest monthly cash transfer, for 24 months, to low-income mothers in rural Bangladesh. The goal of the MAP is to improve the health and nutritional status of mother and child.

Is the MAP actually improving outcomes among mothers who receive the benefit relative to those who do not receive it? Via a rigourous evaluation of a random sample of 700 mothers in Lakshmipur district, the author provides strong evidence that, in many aspects, such as better ante- and postnatal care and nutrition, the MAP is improving outcomes. In other aspects, however, such as lowering the incidence of disease, mothers who received the MAP benefit are faring no better than those who do not receive it.

US$15 — Taka 200