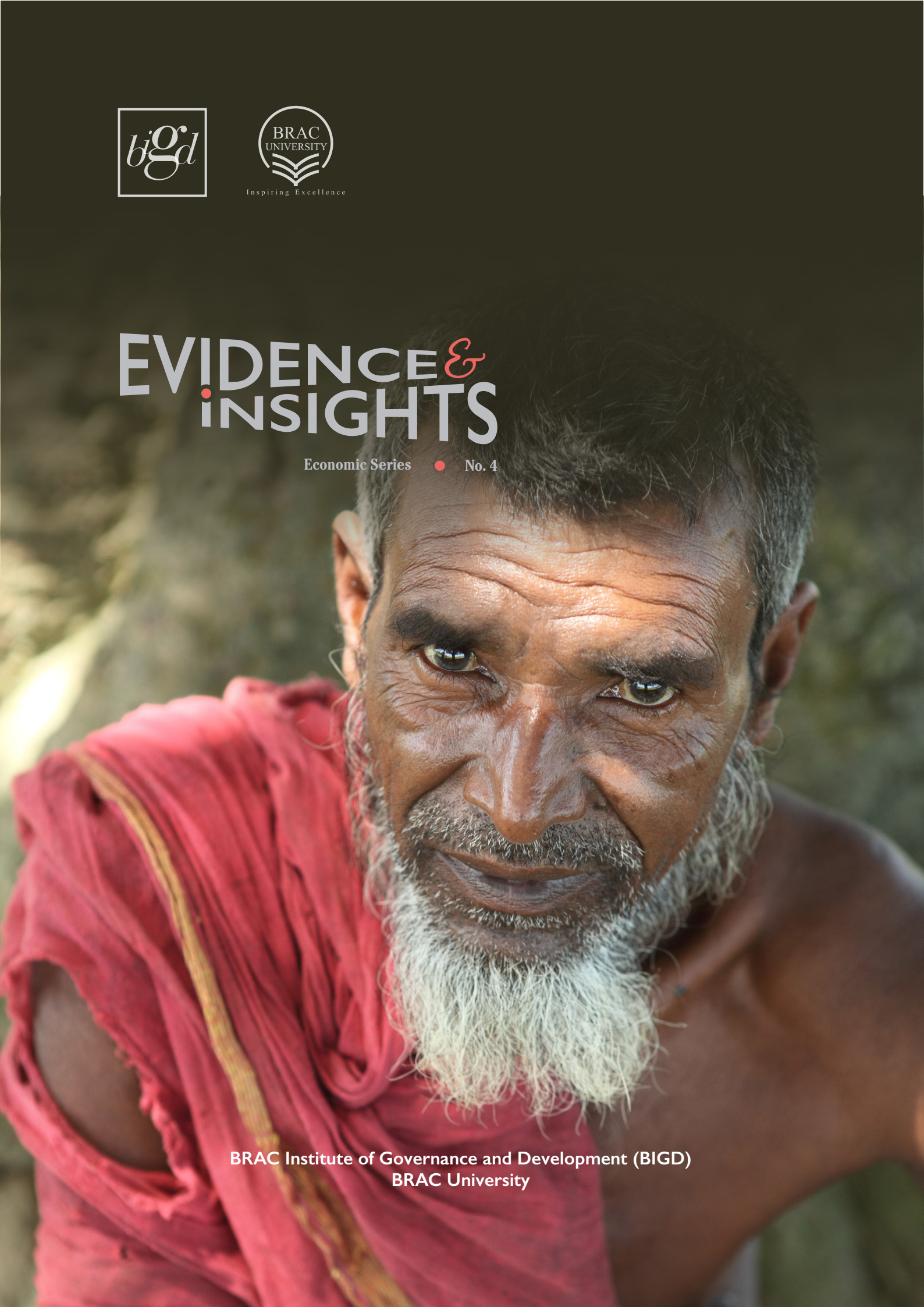

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Effects of Ultra-poor Graduation Program on Mortality and Morbidity

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Introduction

There is a large body of evidence on the impact of various poverty reduction initiatives, including transfer programs, in alleviating poverty. However, evidence on the effects of these initiatives on morbidity and mortality—two significant indicators of human well-being—remains relatively sparse. The Ultra-Poor Graduation (UPG) program is a BRAC initiative designed to lift the poorest households in developing countries out of poverty. Launched in 2002 in Bangladesh, the program has since been implemented in many other countries. Over the years, the UPG program has undergone numerous modifications, but its core model employs an innovative, multifaceted approach, offering beneficiaries a combination of productive asset transfers, training, short-term cash allowances, and coaching. While prior studies established the economic benefits of such programs, little was known about their long-term impact on health outcomes such as morbidity and mortality. Using data from a randomized controlled trial (RCT) conducted over seven years, this study investigates whether poverty reduction initiatives can also improve health outcomes and life expectancy among ultra-poor households.

Study Sample and the Interventions

The long-running RCT was conducted on the 2007 cohort of the UPG program implemented by BRAC in Bangladesh's 13 poorest districts; the data from this cohort served as the foundation for this study. The intervention targeted ultra-poor women, providing them with productive assets such as livestock and comprehensive support, including entrepreneurial training, cash allowances, and access to healthcare guidance.

A cluster RCT was carried out in 20 sub-districts, with branch offices randomly assigned to either the treatment or control group. Eligible households in all selected sub-districts were then identified through participatory wealth ranking. Eligible households in the treatment areas received the program benefits—assets valued at USD 560 in purchasing power parity (PPP) terms, coupled with extensive support. The program included a 40-week consumption stipend and ongoing technical training to transition beneficiaries from precarious casual labour to sustainable self-employment.

The study tracked 7,950 households and 25,802 individuals, with baseline data collected in 2007 and follow-ups conducted in 2009, 2011, 2014, and 2024. Along with economic indicators, detailed data on illness and mortality status were also collected during the surveys. Data on illness and treatment were available for all members up to the third follow-up in 2014.

Key Findings

Mortality

The most significant finding of this paper is the impact of the UPG program on reducing mortality. The widening gap in cumulative mortality rates between males in the control and treatment groups over time demonstrates that the intervention had both immediate and sustained effects on male mortality, particularly among those aged 25 and above at baseline. While we do not observe any impact on female cumulative mortality in the first three follow-ups, a notable reduction in the cumulative mortality rate is observed among older women (aged 55 and above at baseline) during the final follow-up.

We find that, 17 years after its inception, the intervention reduced 21 deaths per 1,000 for both men and women.. In the treatment group, cumulative mortality rates for males were lower than those in the control group by 0.56 percentage points in the first follow-up survey, 1.14 percentage points in the second, 2.12 percentage points in the third, and 2.16 percentage points in the fourth. These reductions represent a decline in male mortality of 21%, 26%, 28%, and 14% compared to the corresponding control group averages across the four follow-up surveys. Since the third follow-up, overall impact on cumulative mortality are primarily driven by these results, as no impacts were found for the female population. However, in the fourth follow-up, cumulative mortality rate for female in the treatment group is lower than those in control group by 2.12 percentage points , representing a 17% reduction compared to the control group average. This shows that although the program had impact on mortality of only men, there were almost equal magnitude of effects on women later on.

Among the men, those with non-communicable diseases at baseline have consistently higher cumulative mortality rates compared to those without such conditions. Female mortality remained much lower than male mortality in both groups during the earlier rounds. Heterogeneity analysis reveals that impact of the intervention on cumulative mortality are observed only among males who did not have any pre-existing non-communicable diseases at baseline. However, among females, the intervention had an impact on both groups.

Figure 1 presents Kaplan-Meier survival curves, which show the probability of survival in each period. The lines represent the percentage of the sample that

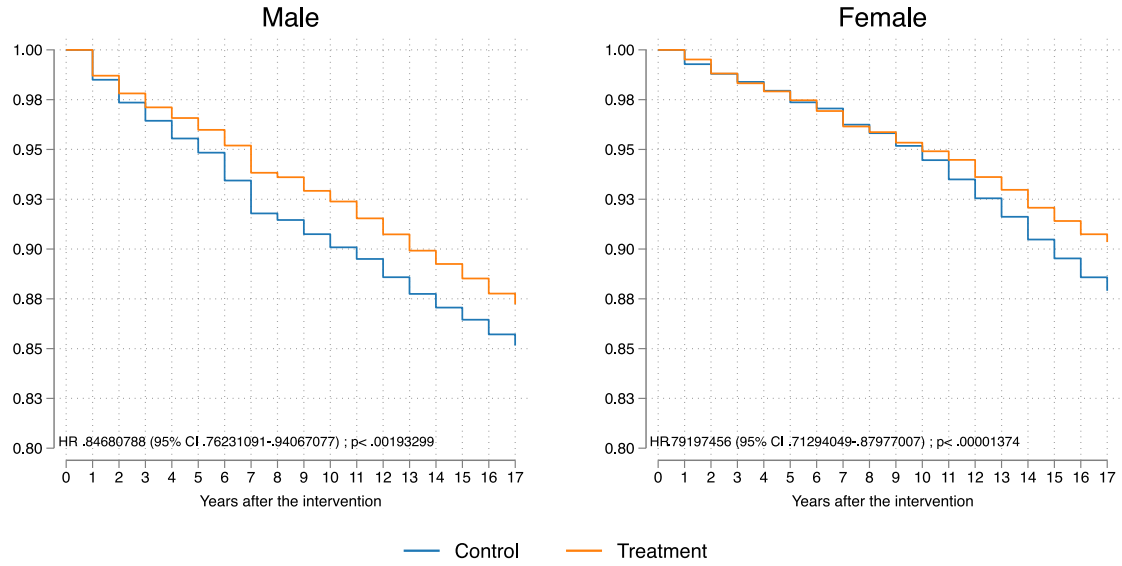


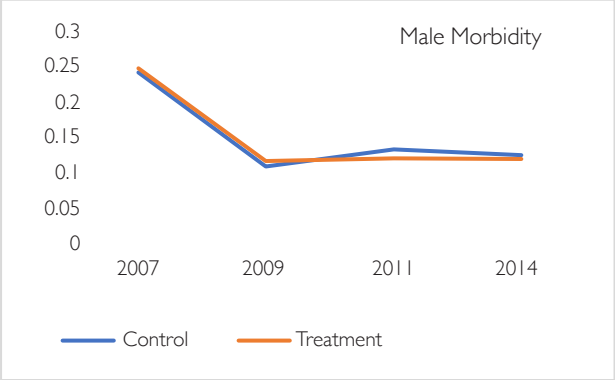
Figure 1. Kaplan-Meier Survival Curves for Males and Females

survived each year since the baseline year, which is also the year the interventions began. For males, the treatment group (orange line) consistently demonstrates a higher survival rate compared to the control group (blue line) in each year following the intervention. In contrast, for females, the difference became more pronounced approximately nine years after the intervention.

Morbidity

This study finds that the UPG program significantly reduced morbidity among members of ultra-poor households. Initially, the incidence of non-communicable diseases was higher in the treatment group compared to the control group in 2009. However, by 2011, this gap had nearly closed, and by the final follow-up, the treatment group had a lower non-communicable morbidity rate than the control group. On the other hand, the incidence of communicable illnesses was consistently lower among the treatment group throughout all follow-up surveys.

Figure 2 shows the all-cause morbidity rates for males and females over the baseline and three follow-up periods. Among females, the morbidity rate in the treatment group remained consistently lower than in the control group across all follow-ups.



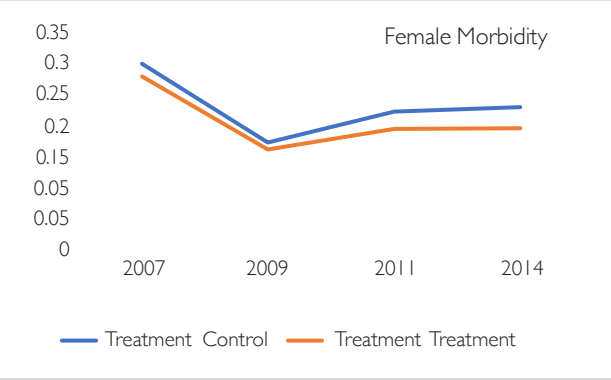


Figure 2. Morbidity Rates for Males and Females

Heterogeneity analysis reveals that elderly women (aged above 65 years) in treatment households consistently experienced lower morbidity rates compared to their counterparts in the control group. The impact estimates for this group are not only the highest but also statistically significant across all three rounds of follow-up surveys. Additionally, reduced morbidity was observed among middle-aged women in the third follow-up and among children under five in the second follow-up. The significant impact on elderly women underscores an improved quality of life, driven by their increased ability to access healthcare, combined with enhanced social empowerment and awareness.

Conclusion

This study underscores the potential of poverty reduction programs like UPG to not only improve economic well-being but also enhance health and longevity. By tackling the root causes of ill health, such as inadequate income and limited access to healthcare, the program achieved sustained reductions in morbidity and male mortality. These results highlight the potential of poverty reduction programs to deliver substantial health benefits, especially among vulnerable populations.

We believe that the inclusion of health outcomes in future evaluations of such programs would likely further improve their cost-benefit ratios, providing a more comprehensive understanding of their value. Future research should also explore additional mechanisms, such as improved nutrition and reduced stress, to further explain these health improvements. Policymakers should consider adopting similar models to achieve both economic and health benefits, especially for vulnerable populations.

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