Proximate and Distal Determinants of the Stall in the Decline of Adolescent Pregnancy Rates in Uganda.

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Abstract

Purpose

Adolescent pregnancy is a global concern because of its effect on maternal and child health outcomes. Adolescent pregnancy rates in Uganda declined from 31% in 2000-01 to 25% in 2006 but this declined has since stalled. We investigate the reasons behind the recent stall.

Methods

We use four waves of the Uganda Demographic Health Survey, for the years 2000-01, 2006, 2011 and 2016. We estimate logistic regressions of the role of the proximate determents; sexual debut and child marriage on adolescent pregnancy, and more distal determents, such as that household wealth and the girl's education, on sexual debut and child marriage. We carry out a Blinder-Oaxaca decomposition (Jann, 2008)to explain the observed decline in adolescent pregnancy between 2001 and 2006, and the stall between 2006 and 2016.

Results

We find that child marriage, and early sexual debut, are key drivers of adolescent pregnancy These declined substantially between 2000-01 and 2006, leading to a decline in adolescent pregnancy. Their decline was driven in turn by rising levels of education and household wealth. After 2006 education levels and household wealth gains stalled, with consequent stalls in the decline of child marriage and sexual debut, leading to a stall in the decline of adolescent pregnancy.

Discussion

The stall in the decline in adolescent pregnancies in Uganda since 2006 can be traced back to a stall in the rise in girls' education and household wealth. We emphasize the need for a renewed focus on girl's education to reduce adolescent pregnancy in Uganda.

Introduction

Adolescent pregnancy is a global concern because of its effect on education and maternal and child health outcomes (Decker, Kalamar, Tunçalp, & Hindin, 2017) and disabilities resulting from unsafe abortions and fistula (https://www.unfpa.org/adolescent-pregnancy). Complications from pregnancy and childbirth are leading cause of death among adolescent girls (Ninsiima et al., 2018). Each year 21 million girls aged 15-19 years become pregnant in low- and middle-income Countries, and 16 million give birth each year (WHO 2018). Despite the global progress in the decline of adolescent pregnancy, projections indicate the number of adolescent pregnancies will increase globally by 2030, with the greatest proportional increases in West, Central, Eastern and Southern Africa (WHO 2018: https://www.who.int/news-room/fact-sheets/detail/adolescent-pregnancy).

The Uganda Demographic and Health Survey of 2016 revealed that, 25% of 15-19-year-old female adolescents were either pregnant with their first child or previously had a baby (Uganda Bureau of Statistics and ICF, 2018) Adolescent pregnancy declined from 31% in 2000-01 to 25% in 2006 and has since stalled at 25% from 2006 to 2016. This paper investigates the factors associated with teenage pregnancy in Uganda, and clarifies the reasons behind the recent stall in its decline.

Our conceptual framework is based on proximate determinants of fertility (Bongaarts, 1978) and on the framework for early adolescence - a platform for research, (Blum, Astone, Decker, & Mouli, 2014). The Bongaarts model distinguishes between proximate factors that determine adolescent pregnancy with while here are more distal socio-economic forces that determine the proximate factors. The framework for early adolescence proposes an ecological variable that provide the context that shapes adolescent health. These ecological factors in turn influence early sexual debut, marriage, and pregnancy.

We hypothesized that sexual debut and child marriage are the proximate factors that affect adolescent pregnancy. We further hypothesize that family income and the girl's education are the more distal facts that drive sexual debut and child marriage. We estimate models of the proximate determinants of adolescent pregnancy. We then construct models of the more distal socioeconomic factors that affect sexual debut and child marriage. We also estimate reduced form of the total effect of the socioeconomic factors on adolescent pregnancy. The models are estimated over the entire study period, allowing for time trends.

We use the model estimates to perform a Blinder-Oaxaca decomposition (Jann, 2008) to explain the observed decline in adolescent pregnancy between 2001 and 2006, and the stall between 2006 and 2016. The decomposition explains the observed changes in adolescent pregnancy by changes in the proximate and more distal socio-economic determinates.

Study Population and Measures

We used secondary data from the Uganda Demographic Health Survey data sets for four rounds of successive waves. The dataset is for women for the years 2000-01, 2006, 2011 and 2016. These cross-sectional surveys are designed to be nationally representative and collected comparable demographic and health data for women aged 15–49 at the time of the survey. The samples were obtained using a stratified two-stage cluster sampling process. Strata are urban and rural areas of regions. Clusters are randomly selected enumeration areas within each strata. Within each cluster around 20 households are sampled. The DHS data are available at http://www.dhsprogram.com/data/available-datasets.cfm. Our study the population consists of all adolescent females aged 15-19 years old from four waves of the Uganda Demographic Health survey of 2000-01, 2006, 2011 and 2016. Using the information on the stratification, and sampling weights, in the survey, we can weight the sample to make it representative of the population of Uganda at the time of each survey.

The outcome variable for this study is adolescent pregnancy among females 15-19-year-old. This is defined as those who have had a live birth or were pregnant with their first pregnancy at the time of the survey (Croft, Trevor

N., Aileen M. J. Marshall, Courtney K. Allen, 2018). Those whose pregnancies did not end in a live birth are excluded from the definition. The proximate factors we consider are sexual debut and ever married. We use as an explanatory variable "every had sex", and we also compute an early sex variable for reporting age at first sex below 15. We also include the age of the respondent as a proximate determinant. Older adolescents have a had longer exposure to the risk of pregnancy and higher pregnancy rates.

The distal variables are the respondent's education level, wealth index, urban or rural residence, and region. Education is measured as a categorical variable, no education, primary school education, and high school education or above. The wealth index is computed from the households ownership of a set of household goods. It is calculated from a principle component analysis of these household goods. Using the first principle component, we can construct an index based on a linear combination of goods. This asset index has been shown to be correlated with household income (Filmer & Pritchett, 2001). Each Uganda Demographic Health survey has such an asset index. The asset indices reported in the DHS are calculated differently in each survey, and while they allow comparisons across households within a survey, they do not allow comparison across surveys. To overcome this we undertake a principle component analysis of the ownership of household goods all the households in our sample and construct our own asset index. We then allocate households to wealth quintiles based on their ranking on the asset index. Our approach allows us to see the improvement over time in household ownership of assets and wealth.

Statistical methods

Each of our four models involves a binary outcome. We therefore estimate logistic models (C. Mitchell Dayton, 1992) of the form

$$log_e\left[\frac{p_i}{1-p_i}\right] = \alpha + \beta_1 x_1 + \beta_2 x_2 + \cdots . + \beta_n x_n$$

where; p_i = Probability of the outcome, α = Constant, β = The regression parameter, and xi = are the predictor variables (for i=1, …., n). We report exponentiated coefficients which can be interpreted as odds ratios. Confidence intervals are calculated based on robust standard errors clustered at the survey cluster level. Observation with missing data for any variable were excluded from the analysis.

The Blinder Oaxaca linear decomposition (Jann, 2008) can be used to explain changes in an outcome over time. Suppose we have a linear probability model

$$y_{it} = \beta_1 x_{it} + \beta_2 x_{it} + \beta_n x_{nit} + \ldots + \gamma_t + \epsilon_{it}$$

Where y= Dependent variable (adolescent pregnancy), i=individuals, t =Year of survey, Y_it= observation for individual y at time t

x represents a predictor variable, β represents regression coefficients, and γ_t are survey year dummies. The decomposition of the expected change in the average outcome between year t and year t+k can be written as

The model is denoted by

1. $\bar{Y}_{t+\kappa}$-$\bar{Y}_{t}$= $\beta_1(\bar{X}_{1,t+\kappa}$-$\bar{X}_{1,t})$+ $\beta_2(\bar{X}_{2,t+\kappa}$-$\bar{X}_{2,t})$+ …… +(γ_{t+k} − γ_t)

Where the bars over the variable denote the average outcome at the time of the survey. Note that by construction the average of the errors terms is zero given we have survey dummies.

We assume that the coefficients of the explanatory variables remain the same over time, so the change in the outcome over time is explained by the change in the explanatory variables. A second potential component of the decomposition is that the parameters may change over time, while the explanatory variables stay the same. However, we found no evidence of significant parameter shifts across time periods, and we focus on the role of changing explanatory variables. The explained part of the decomposition is the effect of the changes in the explanatory variables, multiplied by their coefficients. The unexplained part is the change in the survey year effects. We use a linear model for the decomposition since the logistic model is multiplicative and effects depend on interactions between changes in variables which are difficult to interpret. The Stata command, Oaxaca, was used to execute the Blinder–Oaxaca decomposition (Jann, 2008).

Ethical considerations

We obtained permission from Institutional Review Board (IRB) of Harvard Human Research Protection. The study was approved as not Human Subjects Research. In addition, we received approval IPUMS/MEASURE DHS to download and use the data sets available for on-line http://www.dhsprogram.com/data/available-datasets.cfm

Results

Table 1 shows the descriptive statistics for the women in our sample. The 2016 survey was somewhat larger than the earlier surveys and contributes a large fraction of our sample. Just under half the sample have had sex and around a quarter have married. About a quarter have had a pregnancy. Few women have no schooling. However, the majority have only primary school level education with a minority having secondary or higher level. On average women have 6.2 years of schooling in the sample. By construction, 20% of the sample are in each wealth quintile. About three quarters of our women live in rural areas. Table 1 shows the average age of women in our sample is 16.9 years. We also report age at first sex, age at marriage and age at first birth for women reporting these events.

Figure 1 show the trends in our key variables across the four waves of data. The mean of each variables are weighted by the survey sampling weights to make them representative of the population of Uganda. The error bars give 95% confidence intervals for the population averages using the stratification structure and these sampling weights. Figure 1A shows the high level of adolescent pregnancy, 31% in 2000-1 followed by a decline to 25% in 2006 but a stall thereafter. Figure 1B shows average years of schooling. This rises substantially between 2000-1 and 2006. There are also rises in 2011 and 2016 but the rate of increase it much lower over these later periods. Figures 1C and 1D show similar patterns for ever had sex and ever married. There are high levels in 2000-1 with large declines in 2006 but the levels than stabilize in the 2011 and 2016 survey waves. The percentage of girls 15-19 years who had ever had sex dropped from 50.5% in 2000-01 to 40.4% in 2006 and continued at about the same rate after 2006. Similarly, child marriage dropped from 30.5% in 2000-01 to 20.4% in 2006 and stopped declining after 2006.

Figure 2 shows the evolution of our wealth index across waves. In 2000-1, 37% of households are in the poorest quintile as measured by the asset index. This falls substantially and by 2006 just over one fifth are in the lowest quintile. In the later period's households tend to get a little wealthier but the gains are not as large as we see in the first period between 2000-1 and 2006. The percentage of the population in the poorest quintile dropped from 37% in 2000-01 to 11% in 2016.

Table 2 shows the results of our logistic regressions in each column Column 1 of table 2 shows model 1; the proximate determinants of and adolescent pregnancy. We take the proximate determinants to be sexual debut and marriage. We control for survey wave effects, but none of the wave effects are statistically significant. Women who have never had sex are not at risk of pregnancy and are dropped from the logistic regression, since they are perfectly predicted as not having a pregnancy. The reference group for the regression is therefore those who have ever had sex. We find that adolescents who initiated sex below age 15 years had higher odds (odds ratio 1.85 confidence interval [1.51, 2.28]) of being pregnant compared to those who reported sexual debut after age 15-19. Adolescents who have ever been married have much higher odds of experiencing a pregnancy (odds ratio 13.76 confidence interval [11.49, 16.47]) . In column 1 we also adjust for the age of the adolescent at the time of interview. Older adolescents are more likely to report pregnancy since they have had a longer period of exposure to becoming pregnant. While we have data on current use of contraception in the sample, we do not use it in model 1. The issue is that this is measured after any pregnancy has occurred. If a women is currently pregnant she will not be using contraception, but the causality runs from the pregnancy to the lack of current family planning use not vice versa. Again pregnancy prior to the interview date will depend on past, not current, contraceptive use.

Columns 2 and 3 of Table 2 show results for the socioeconomic factors that determine our proximate determinants. Model 2 shows the factors that affect sexual debut. We find no significant survey wave effects, but age is strongly associated with sexual debut, each added year of age increases the estimated odds of sexual debut by 2.22. A higher level of education, and being in a richer wealth quintile, are strongly associated with lower risk of sexual debut. Compared to those with no education, adolescents with a primary school education had lower odds of sexual debut (odds ratio 0.53 confidence interval [0.36, 0.76]) and those with a secondary school level of education much lower odds (0.29 confidence interval [0.20, 0.42]). The gradient in wealth quintile is not so steep, we find a significant effect only in the richest quintile compared to the poorest. We find significant effects of region; adolescents in the Western and Northern regions have lowers odds of sexual debut compared to other regions, which may reflect regional different cultural beliefs and traditions. However, we find no significant effect of rural versus urban residence.

Model 3 shows results for the determinants of child marriage. As expected, the likelihood of being married rises with the adolescent's age. We find strong gradients with education and the wealth quintile; educated girls, and those in richer households, are much less likely to be married. Child marriage is less common in the Western region, but we again find no significant difference between urban and rural residence. However, a striking feature of model 3 is that relative to 2000-01 the subsequent waves see declines in child marriage due to wave effects. Child marriage falls for unexplained reasons in 2006, and then remains at this lower level.

We can think of the socioeconomic factors, such as education, wealth quintile, and place of residence, acting on the proximate determinants, sexual debut and child marriage, and these in turn determining adolescent pregnancy. In model 4 of Table 2 we show a model explaining adolescent pregnancy with the distal socioeconomic factors. In this model we do not control for the mediating proximate determinants since we want to find the total effect of the distal forces. Note that the outcome changes slightly relative to model 1 due to the different sample when we

add covariates. This model finds effects of the girl's age, and lower risks of adolescent pregnancy with higher education levels and wealth quintiles, as well as region effects.

We now turn to our decomposition analysis shown in Table 3. The top portion of Table explains the changes observed over the period 2000-01 to 2006 while the bottom portion explains the changes over the period 2006-2016. Column 1 of table examines the role of the proximate determinants in contributing to the change in adolescent pregnancy. The rate of adolescent fell from 30% in 2000-01 to 24% in 2006, a drop of 6%. Our proximate determinants model predicts a drop of 7%, with 5% due to a drop in marriage rates and 2% due to a decline in sexual debut. Our sample in 2006 is a little younger than in 2000-01 and this change in age structure explains a further 1% decline in reported pregnancies. The large declines in sexual debut and child marriage over the period 20001-2006 are explained in columns 2 and 3 of Table 3. To some extent these declines are due to the sample being younger in the later period, however there are also significant contributions from rising education levels and household wealth. In our model of the distal determinants in column 4 of Table 3 we see the explanation of the decline in adolescent pregnancy is partially a change in the age structure of the sample , but there are also significant contributions of education levels and household wealth.

In the lower portion of Table 3 we repeat the decomposition analysis for the period 2006-2016. Adolescent pregnancy rates went up, but only slightly, over this period. However, this not mean that the explanatory variables were also necessarily stable, they could move moved significantly, but in opposite directions. Our decomposition results in table 3 suggest there was a small rise in the proportion of girls reporting sexual debut over this period but all the other possible explanatory variables were remarkably stable and unchanging.

Limitations

It is difficult to establish causality with cross-sectional data. Measures at the time of interview may not reflect the causal factors in place at the time the woman became pregnant. Current use and ever use of contraception to control pregnancy was dropped because of timing of contraceptive use clearly may be after, and the result of, the pregnancy. However this issue may also apply to our education measures and wealth index which were measured at the time of the survey.

Discussion

This study focused on understanding the drivers of stalled adolescent pregnancy decline in Uganda from 2000-01 to 2016. Despite a considerable decline in percentage of girls age 15-19 who have given birth or were pregnant with their first child between 2000-01 and 2006 , the rate has since stagnated, translating to one quarter of adolescent girls reporting a pregnancy.

We find that child marriage, and early sexual debut, are the key drivers of adolescent pregnancy (Gupta & Mahy, 2003; kidan Ayele, Gebregzabher, Hailu, & Assefa, 2018; MacQuarrie, Mallick, & Allen, 2017; Santelli et al., 2015; Yakubu & Salisu, 2018). These declined substantially between 2000-01 and 2006 leading to a decline in adolescent pregnancy. This decline was driven by rising education levels and wealth, though there was also an effect of changes in age structure in the two samples. These findings are consistent with the numerous studies (Approach et al., 2017; Buhi & Goodson, 2007; Gupta & Mahy, 2003; kidan Ayele et al., 2018; Lillian, 2015; MacQuarrie et al., 2017; Mkwananzi & Odimegwu, 2015; Mollborn, 2010; N, 2002; Neal, Chandra-Mouli, & Chou, 2015; Ninsiima et al., 2018; Rutaremwa Gideon, 2013; Santelli et al., 2015; Sedgh, Finer, Bankole, Eilers, & Singh, 2015; Stephenson, Simon, & Finneran, 2014; Yakubu & Salisu, 2018). After 2006 the gains in girls education, and wealth increases, stopped and we a slight rise sexual debut and adolescent pregnancies.

Our results suggest that the stall in the decline in adolescent pregnancies in Uganda since 2006 can be traced back to a stall in the rise in girls' education and household wealth. This leaves open the policy question of whether more targeted interventions could succeed. However, our results suggest the need for a renewed commitment to girl's education in Uganda, as a mechanism for reducing adolescent pregnancy.

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Table 1: Descriptive Statistics

Background Characteristics of sample and Wave	Number	Percentage
Wave/Year of Survey`		
Uganda Wave 4/ 2000-2001	1,687	16.98
Uganda Wave 5/ 2006	1,948	19.60
Uganda Wave 6/ 2011	2,026	20.39
Uganda Wave 7/ 2016	4,276	43.03
Age		
15	2,144	21.58
16	2,171	21.85
17	1,819	18.31
18	2,017	20.30
19	1,786	17.97
Sexual Debut		
Never had sex	5,387	54.21
Less than 15 years	1,156	11.63
15-19 years	3,394	34.16
Marital status		
Never Married	7,538	75.86
Married <15 years	345	3.47
Married 15-19 Years	2,054	20.67
Age at First Birth		
Never had birth	7,949	79.99
Had birth <15 years	154	1.55
Ha birth 15-19 Years	1,834	18.46
Adolescent Pregnancy		
Never had a pregnancy	7,396	74.43
Had a Pregnancy	2,541	25.57
Residence		
Urban	2,521	25.37
Rural	7,416	74.63
Education Level		
No education	458	4.61
Primary	6,441	64.82
Secondary+	3,038	30.57
Wealth Index		
Poorest	1,802	20.00
Poorer	1,802	20.00
Middle	1,802	20.00
Richer	1,802	20.00
Richest	1,801	19.99
Regional Variation		
Central	2,663	26.80
Eastern	3,014	30.33
Northern	1,949	19.61
Western	2,311	23.26

Variable	Obs	Mean	Std. Dev.	Min	Max
Age	9937	16.91245	1.412783	15	19
Age at first Sex	4485	15.4078	1.725932	7	19
Age at first marriage	2399	16.14756	1.567998	9	19
Age at first Birth	1988	16.59054	1.46262	10	19
Years of schooling	9936	6.176127	2.860905	0	17

Table 2: Estimation Results

	Regression Model 1	Regression Model 2	Regression Model 3	Regression Model 4
Outcome	**Adolescent pregnancy**	**Sexual debut**	**Child Marriage**	**Adolescent pregnancy**
Wave				
2000-01	Ref	ref	ref	ref
2006	1.26 [0.95,1.66]	0.85 [0.69,1.06]	0.71* [0.54,0.93]	0.92 [0.72,1.16]
2011	0.92 [0.70,1.22]	0.89 [0.71,1.11]	0.72* [0.54,0.95]	0.82 [0.63,1.06]
2016	1.04 [0.81,1.34]	0.86 [0.71,1.04]	0.77* [0.60,0.97]	0.93 [0.75,1.15]
Sexual Debut				
Had sex 15-19	Ref			
Had sex- Less or equal to 14 years	1.85*** [1.51,2.28]			
Marital Status				
Never Married	Ref			
1.ever_married	13.76***[11.49,16.47]			
Age of the respondents				
Age	1.58*** [1.45,1.73]	2.22***[2.12,2.33]	2.81***[2.67,2.97]	2.74*** [2.59,2.90]
Education Level				
No education		ref	ref	ref
Primary		0.53***[0.36,0.76]	0.33*** [0.22,0.48]	0.47*** [0.31,0.70]
Secondary+		0.29*** [0.20,0.42]	0.07*** [0.05,0.11]	0.13*** [0.08,0.19]
Wealth Index				
Poorest		ref	ref	ref
Poorer		0.91 [0.77,1.09]	0.93 [0.76,1.14]	0.89 [0.73,1.08]
Middle		0.94 [0.78,1.13]	0.69** [0.56,0.86]	0.75** [0.60,0.93]
Rich		0.94 [0.76,1.16]	0.70** [0.55,0.88]	0.66*** [0.52,0.85]
Richer		0.81* [0.66,1.00]	0.58*** [0.45,0.76]	0.48*** [0.37,0.63]
Regional Variation				
Central		ref	ref	ref
Eastern		1.08 [0.91,1.29]	1.17 [0.93,1.48]	1.00 [0.81,1.23]
Northern		0.66*** [0.52,0.84]	0.88 [0.67,1.16]	0.71** [0.55,0.92]
Western		0.57*** [0.47,0.69]	0.68** [0.53,0.86]	0.58*** [0.46,0.73]
Place of residence				
Urban		ref	ref	ref
Rural		0.96 [0.82,1.13]	1.16 [0.94,1.44]	1.10 [0.90,1.35]

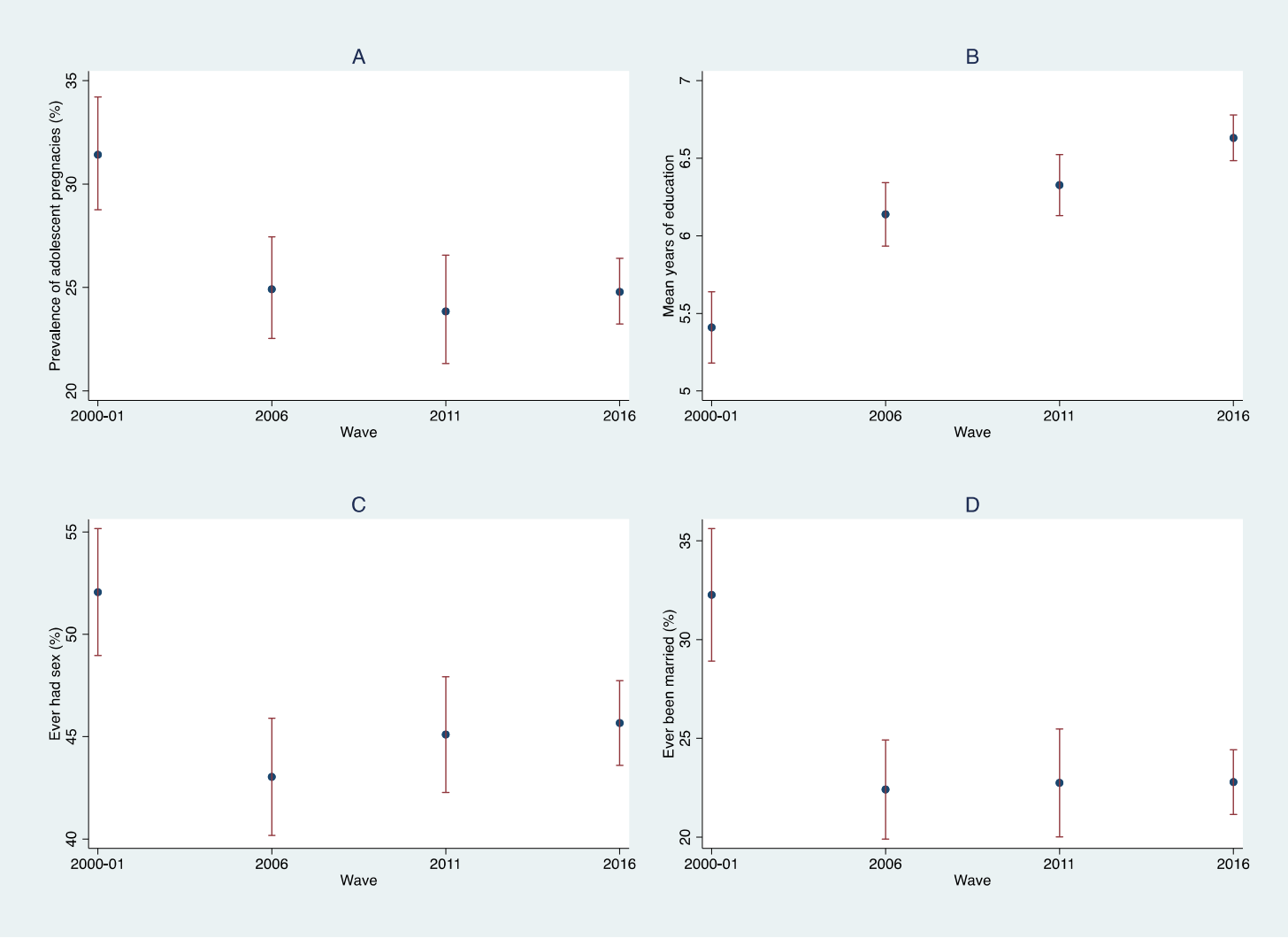
Logisitic regressions. Coefficients are reported as odds ratios; 95% confidence intervals in brackets * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Table 3: Blinder-Oaxaca Decomposition Results.

	Model 1	**Model 2**	**Model 3**	**Model 4**
	Adolescent Pregnancy	**Sexual Debut**	**Child Marriage**	**Adolescent Pregnancy**
Change 2001-2006				
2000-01	0.31*** [0.29,0.34]	0.52*** [0.49,0.55]	0.32*** [0.28,0.35]	0.31*** [0.28,0.34]
2006	0.25*** [0.23,0.27]	0.43*** [0.41,0.46]	0.22*** [0.19,0.24]	0.24*** [0.22,0.27]
Difference	0.07*** [0.03,0.10]	0.09*** [0.04,0.13]	0.10*** [0.06,0.14]	0.07*** [0.03,0.11]
Explained	0.08*** [0.05,0.11]	0.06*** [0.04,0.09]	0.07*** [0.04,0.09]	0.07*** [0.05,0.10]
Contribution of explanatory variables to explained difference				
Sexual Debut	0.02*** [0.01,0.03]			
Marital Status	0.06*** [0.03,0.08]			
Age	0.01** [0.00,0.01]	0.03** [0.01,0.05]	0.02** [0.01,0.04]	0.03** [0.01,0.04]
Education		0.02*** [0.01,0.02]	0.03*** [0.01,0.04]	0.02*** [0.01,0.03]
Wealth		0.01 [-0.00,0.02]	0.01** [0.01,0.02]	0.02** [0.01,0.03]
Regional variation		0.01** [0.00,0.02]	0.01[-0.00,0.01]	0.01* [0.00,0.02]
Rural		0.00 [-0.00,0.00]	-0.00 [-0.00,0.00]	-0.00 [-0.00,0.00]
Change 2006-2016				
2006	0.25*** [0.23,0.27]	0.43*** [0.41,0.46]	0.22*** [0.19,0.24]	0.24*** [0.22,0.27]
2016	0.25*** [0.23,0.26]	0.45*** [0.43,0.47]	0.22*** [0.20,0.24]	0.24*** [0.23,0.26]
Difference	0.00 [-0.03,0.03]	-0.02 [-0.06,0.02]	-0.00 [-0.03,0.02]	0.00 [-0.03,0.03]
Explained	-0.01 [-0.03,0.01]	-0.02* [-0.04, -0.00]	0.00 [-0.01,0.02]	-0.00 [-0.02,0.02]
Contribution of explanatory variables to explained difference				
Sexual Debut	-0.01 [-0.01,0.00]			
Marital Status	-0.00 [-0.02,0.01]			
Age	-0.00 [-0.00,0.00]	-0.01 [-0.03,0.00]	-0.01 [-0.02,0.00]	-0.01 [-0.02,0.00]
Education		0.00 [-0.00,0.01]	0.01[-0.00,0.02]	0.01 [-0.00,0.01]
Wealth		0.00 [-0.00,0.00]	0.01* [0.00,0.01]	0.01* [0.00,0.01]
Regional variation		-0.01*** [-0.02, -0.01]	-0.00 [-0.01,0.00]	-0.00 [-0.01,0.00]
Rural		0.00 [-0.00,0.00]	0.00 [-0.00,0.00]	0.00 [-0.00,0.00]

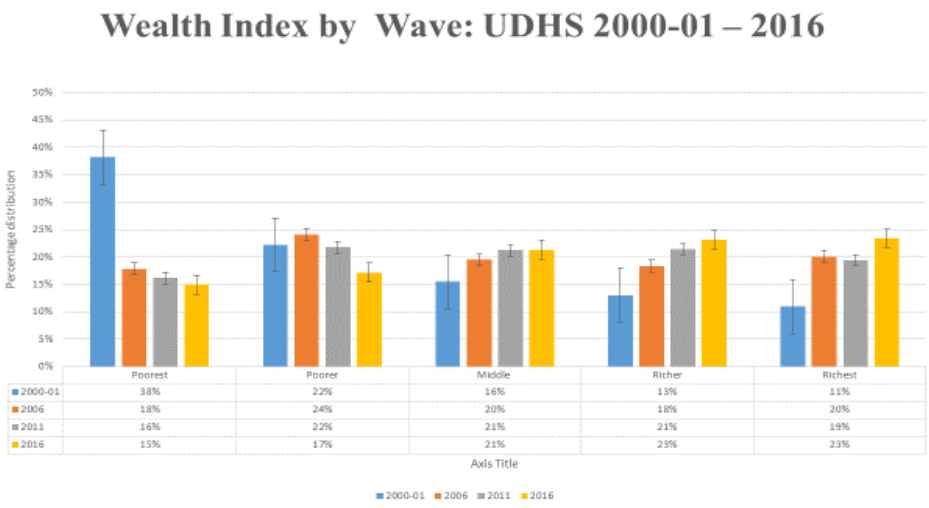
Estimates and confidence intervals are based on DHS samples adjusted for stratification and sampling weights to make the averages representative of the population.

Figure 1. Trends in teenage pregnancy and in determinants of teenage pregnancy in Uganda



A: prevalence of adolescent pregnancies, B: mean years of education, C: proportion of girls aged 15 – 19 years that ever had sex, D: proportion of girls aged 15 – 19 years that had ever been married. Estimates and confidence intervals are based on DHS samples adjusted for stratification and sampling weights to make the averages representative of the population.

Figure 2



Estimates are based on a principal components analysis of the household assets reported the pooled samples over all four DHS waves. We take the first principal component as the asset index. We divide households into quintiles based on a their ranking on the asset index.