

Girl Child Marriage in Egypt: Causes and Outcomes

Dr. Amany Y. Gad

The Demographic Center, Institute of National Planning, Egypt
E-mail: amanygad@yahoo.com**Abstract**

This study examines the major factors that causes the girl child marriage, and identifies the outcomes of girl child marriage with specific focus on urban rural residence using Egypt Demographic and Health Survey, 2008. This study fits six Logistic Regression Models divided into two groups each group includes three models. The first group was conducted to ascertain the impact of socio-economic characteristics that causes the girl child marriage. The second group was conducted to identify the associations between the girl child marriage and the outcome indicators. Based on the main findings derived from this study, the following are important recommendations that would help stopping child girl marriage: Enhance educational opportunities, especially, for girls through scholarships and develop a policy that encourage enrolment and retention of girls in primary and secondary education by improving quality of education and activate the role of school groups tutoring to reduce repetition and dropout, raise public awareness through building capacities of community leader to mobilize communities against girl child marriage; to encourage parents to keep their daughters in schools until they have finished their secondary schools, reduce the cost of education especially for poor families in rural areas, and raise the awareness about the dangers of child and consanguineous marriage on the health of births.

Key Words: Girl Child Marriage, Residence, Logistic Regression.

الأسباب والنتائج زواج الطفلة في مصر:**ملخص**

تهدف هذه الدراسة إلى دراسة العوامل الرئيسية التي تسبب زواج الطفلة بالإضافة إلى تحديد النتائج المترتبة على هذا الزواج مع تركيز خاص على محل الإقامة الحضر/ الريف ، وذلك باستخدام بيانات المسح الديموجرافي الصحي المصري، 2008. وقد طبقت هذه الدراسة ستة نماذج للانحدار اللوجستي، وتنقسم إلى مجموعتين تضم كل مجموعة ثلاثة نماذج: المجموعة الأولى تتعلق بتحديد أثر أهم الخصائص الاجتماعية والاقتصادية التي تسبب زواج الطفلة وذلك على المستوى الوطني وأيضاً على مستوى كل من المناطق الحضرية والريفية على التوالي، أما المجموعة الثانية فتتعلق بتحديد النتائج المترتبة على زواج الطفلة أيضاً على المستوى الوطني وفي كل من المناطق الحضرية والريفية على التوالي. واستناداً إلى النتائج الرئيسية المستمدة من هذه الدراسة، يمكن استعراض أهم التوصيات التي خرجت بها هذه الدراسة والتي من شأنها أن تساعد في وقف زواج الطفلة في المستقبل القريب وهي كالتالي: تعزيز الفرص التعليمية، خاصة للبنات من خلال تقديم منح دراسية لهن، وضع سياسة لتشجيع الالتحاق بالمدارس وإبقاء الفتيات في التعليم الابتدائي والثانوي وذلك من خلال تحسين جودة التعليم وتفعيل دور المجموعات المدرسية للحد من الرسوب والتسرب، رفع مستوى الوعي العام من خلال بناء قدرات قادة المجتمع لتعبئة المجتمعات المحلية ضد زواج الطفلة لتشجيع الآباء على إبقاء بناتهم في المدارس حتى الانتهاء من المرحلة الثانوية، خفض تكلفة التعليم وخاصة بالنسبة للأسر الفقيرة في المناطق الريفية، ورفع الوعي حول مخاطر زواج الأطفال بصفة عامة وللبنات بصفة خاصة و أيضاً زواج الأقارب على صحة المواليد.

كلمات دالة: زواج الطفلة، محل الإقامة، الانحدار اللوجستي.

1. Introduction

Marriage form is a central element of social life and one of the important social institution systems both for individual and the society at large. For individual, it is the most important foundation in the family formation process and the family is a nucleus of the society. For the society as a whole, it unites several individuals from different families. Marriage also has a significant effect on the structure of population through the timing of marriage (Kelly, 2003).

Child marriage, which is also referred to as an early marriage, defined as marriage before age 18 years. The Universal Declaration of Human Rights 1948, recognize the right to "free and full" consent to a marriage acknowledging. Consent can't be "free and full" when one of the individuals is not naturally sufficient to make an informed decision about a life partner. It is increasingly recognized as a fundamental human rights violation and a practice that undermines effects to promote sustainable development [(UNICEF, 2005) and (USIAD, 2012)].

In Egypt, Child Law No. 12 of 1996 (Article (2)), within the context, the term "Child", within the context of this Law and within the context of care and welfare, shall mean all individuals who have not reached the age of 18, complete calendar years¹.

Girl child marriage is common in the majority of the poorest countries and among the poorest household. It is continuous to be a strong social norm. In most cases of girl child marriage, she has no choice in either the timing of her marriage or whom she marries (Agaba, Atuhaire & Rutaremwa, 2010).

Estimates reveal that 10 million girls are married every year before they reach the age of 18 years, regionally 15% of girls less than 18 years are married in the East and North Africa, 29% in Latin America and Caribbean, and 41% in West and Central Africa (USIAD, 2012).

Girl child marriage is a critical social, health, and development issue in Egypt. Although, Egypt estimates 18 years as the minimum legal age for girls' marriage, the percentage of women aged (15-49) who wed before age 18 years is about 31% (20.6% for urban vs. 39.7% for rural) (Egypt Demographic and Health Survey, 2008), this is due to the weak application of the Law that protect girls (United Nations, 2013).

Girl child marriage remains a deeply rooted tradition in the Egyptian community. It is a complex phenomenon in the developing countries like Egypt which is affected by several factors that influence whether a girl is married early, these factors including economic and social conditions of population like poverty, lack of education, culture values and social customs [(Charles, 2003) and (Davis, Postlesand & Rose, 2013)].

Poverty is one of the major factors that pulls girls out of school and into marriage, thus child marriage often occurs in the shadows of poverty and can be seen as both a cause and an outcome of poverty (Fahimi & Ibrahim, 2013).

Girl's education is considered a pillar human capital investment, thus marriage at a young age limits a girl's opportunities for schooling and personal development. Several studies indicate that education emerged as the most important factor positively affecting age at first marriage which means that the more education young girls receive the later they marry, especially, if they reach at

¹ The Cabinet, The National Council for Childhood and Motherhood, available online at: http://www.nccm-egypt.org/e7/e2498/e2691/infoboxContent2692/ChildLawno126english_eng.

least secondary school compared with women who have either no education or only a primary school education. In Egypt, one requires at least sixteen years to complete university education at the first degree level. [(El Hamamsy, 1994), (Gad, 2001) and (Fahimi & Ibrahim, 2013)]

Child marriage is usually followed by early childbearing, as in most cases particularly in the developing countries, the main purpose of marriage is to have children, and young mothers are more likely to suffer from complicated pregnancy outcome, such as heavy bleeding and anemia which leads to higher maternal mortality rates of both mother and child. [(Gad, 2001), (Mathtra et al., 2011) and (UNFPA, 2013)]

Age at first marriage is universally and significantly associated with high fertility, delayed age at marriage directly affects completed fertility by reducing the number of years available for child bearing which leads to reduce the number of children she has. Also age at first marriage is related to contraceptive prevalence, because the woman who marries at an older age wants to produce her desired number of children. [(Khalaha, 1996) and (Shyam, 1996)]

Several studies indicate that women who marry at young ages are more to accept a husband to beat his wife, and are, therefore, more likely to experience domestic violence themselves (Santhya, et al., 2010).

Using the data from the Egypt Health Demographic Survey (EDHS, 2008), to determine the causes and outcomes of girl child marriage in Egypt. The plan of this paper is as follows: The next section contains the objectives and research hypotheses, section 2 contains the data source, section 3 contains the methodology, section 4 contains the results and discussion, section 5 contains the conclusion and recommendations.

1.1 Objectives and Research Hypotheses

The objectives of this study are:

- To examine the major factors that causes the girl child marriage, and,
- To identify the outcomes of girl child marriage (as will explain in subsection 3.1) with specific focus on urban rural residence.

The null hypotheses based on these of objective are:

- 1) H0: There is no significant difference in causes of girl child marriage in urban and rural areas.
- 2) H0: There is no significant difference in outcomes of interest of girl child marriage in urban and rural areas.

2. **Data Source**

The data used in this paper come from the 2008 Egypt Demographic and Health Survey (2008 EDHS) is the ninth in a series of Demographic and Health Surveys conducted in Egypt. The 2008 EDHS was undertaken to provide estimates for key population indicators including fertility, contraceptive use, infant and child mortality, immunization levels, maternal and child health, and nutrition. To obtain this information, a nationally representative sample of 16527 ever-married women aged 15-49 was interviewed.

Three questionnaires were used in the 2008 EDHS: A household questionnaire, an ever-married women questionnaire, and a health issues questionnaire. The household questionnaire was used to enumerate all usual members and visitors to the selected households and to collect

information on the age, sex, marital status, educational attainment, and relationship to the household head of each household member visitors. The women's questionnaire was administered to all ever-married women aged 15-49 who were usual residents in the household during the night before the interviewer's visit. It obtained information on the following topics: Respondent's background, reproduction, contraceptive knowledge and use, fertility preferences and attitudes about family planning, pregnancy and breastfeeding,...etc. The health issues questionnaire collected information on the following topics; Hepatitis C, smoking, health insurance coverage and health care cost.

3. Methodology

To examine the main factors, causes of and outcome indicators associated with girl child marriage. For this purpose, the dependent variable, GCM_i , age at first marriage is dichotomized by assessing the value of 1 for age at first marriage for female being less than 18 years and the value of 0 for age being 18 years and above (as the country's legal age at marriage for female is 18 years). The Logistic Regression Model is adopted because of the dichotomous nature of the dependent variable.

In a general form, the Logistic Regression Models with a set of socio-economic factors that causes the girl child marriage and the impact of girl child marriage on the outcomes of interest are stated as:

For cause's factors:

$$Pr ob (GCM_i = 1) = F (Cau_i)$$

For outcome indicators:

$$Pr ob (GCM_i = 1) = F (Out_i)$$

Where

GCM_i = Age at first marriage (1 if age at first marriage for female being less than 18 years; 0 otherwise).

Cau_i : is a set of characteristics of socio-economic characteristics that causes the girl child marriage, $i = 1, 2, \dots, n$.

Out_i : is a set of outcome indicators association with girl child marriage, $i = 1, 2, \dots, n$.

This study fits six models divided into two groups each group include three models. The first group was conducted to ascertain the impact of socio-economic characteristics that caused the girl child marriage; Model (1) at the national level, Model (2) and Model (3) for urban and rural areas separately. The second group was conducted to identify the associations between the girl child marriage and the outcome indicators; Model (4) at the national level, Model (5) and Model (6) for urban and rural areas, separately. In general, this study examined the main effect of all independent variables in all previous models.

3.1 Description of Variables

The dependent variable is a binary variable. Age at first marriage is coded 1 if a young woman marries before 18 years (child (early) marriage), and 0 if a woman marries at age 18 and older (late marriage).

The independent variables include two groups. First group: Socio-economic background characteristics that belong to the causes of girl child marriage; age of respondents (by single year of age), respondents and their husbands education (including two variables; years of schooling completed (continuous variable) and educational level that is used as a categorical variable (used non educated as a reference), place of residence is coded as 1 if the respondent lives in rural areas and 0 if lives in urban areas, spousal age difference (continuous variable (by single year of age)), household level of wealth index² is used in quartile with the lowest (poorest) quartile kept as the reference category, exposure to mass media (television, radio and newspapers/ magazines) that is used as categorical variables, each measure is coded 1 if regularly exposed to television, radio and newspapers/ magazines once or more times weekly, 0 otherwise, and type of relationship between spouses is coded as 1 if there is a relationship and 0 otherwise.

The second group: This study includes a number of outcome indicators that measure the impact of girl child marriage in many aspects like marital relationship; to measure participation in household decision making relating to the respondents own health care, large household purchases, spending household money, and visit to friends or relatives. Each measure is coded as 1 if the decisions were either made jointly or by the respondent, 0 otherwise.

To measure women's welfare status in the aspect of domestic violence, the 2008 EDHS assessed women's attitudes towards wife-beating but did not collect information on women's experience of domestic violence. Respondents were asked if a husband is justified in beating his wife if she goes out without telling him, neglects the children, argues with him and refuses to have sex with him. Each question has two outcomes (yes/ no) (EDHS, 2008). An index was computed and it's classified by low, middle, and high. Low has at least one score (at least one outcome is yes) and kept as the reference category, middle has at least two scores and high has three or four scores. Finally, we considered measures related to fertility and family planning matters, like age at first birth, number of children ever born, whether the respondent had used family planning methods which is coded as 1 if used any methods, 0 otherwise, and the decision making about family planning which is coded as 1 if decision was made jointly with her husband, 0 otherwise.

4. The Results and Discussion

This study investigates the main factors that causes the girl child marriage and identified the outcomes of it in Egypt, using data collected by the EDHS 2008. The proportion of women aged (15-49) who wed before age 18 (the minimum legal age at marriage for female in Egypt), is relatively high 31% among the whole sample in this study (39.7% in rural area vs. 20.6% in urban area). It is useful to understand the causes and the outcomes of the girl child marriage at the national level and in urban and rural areas, separately, seeking to end girl child marriage in Egypt.

4.1 Causes of Girl Child Marriage

Table (1) shows the main socio-economic background characteristics by timing of marriage; child (early) marriage (<18 years) and late marriage (≥ 18 years) at the national level and in both urban and rural areas. As shown, young women who had married early were less educated than those who had married late; the mean years of schooling completed at the national level (3.53 years vs. 8.69 years) while in urban areas (5.02 years vs. 10.41 years) and in rural areas (2.98 years vs. 7.11 years). Similar results were also found in the case of husband's education, that husbands who were less educated were more willing to marry a girl of an early age than those who had high education, the mean years of schooling completed at the national level (5.85 years vs. 9.65 years), while in urban areas (6.69 years vs. 10.96 years) and (5.54 vs. 8.45) in rural areas.

² Household level of wealth index is a measure related to inequalities in household income. It was constructed using household asset data and principle components analysis. Asset information was collected in the 2008 Egypt DHS Household Questionnaire and covers information on household ownership of a number of consumer items ranging from a radio to a computer, as well as dwelling characteristics such as source of drinking water, type of sanitation facilities, and type of material used in flooring. Each household was then assigned a score for each asset, and the scores were summed for each household; individuals were ranked according to the total score of the household in which they resided. The sample was then divided into quintiles from one (lowest) to five (highest) (EDHS, 2008, Report)

Table (1): Selected Characteristics of Married Women Aged (15-49), by Timing of Marriage, EDHS, 2008

	National Level			Test	Urban Areas			Test	Rural Areas			Test
	Married Early <18	Married Late ≥18	No.		Married Early <18	Married Late ≥18	No.		Married Early <18	Married Late ≥18	No.	
	n= 5256 (32%)	n=11271 (68%)			n = 1403 (20.6%)	n= 5407 (79.4%)			n = 3855 (39.6%)	n = 5864 (60.4%)		
Socio-Economic Background Characteristics:												
Mean Age of Married Women	33.18	33.12		T-test (0.389)*	34.4	34.5		T-test (-0.374)	32.73	31.85		T-t (4.6)
Place of Residence %				Chi-Square Test	-	-	-	-	-	-		-
Urban	20.6%	79.4%	6809	Test (671.61)*								
Rural	39.7%	60.3%	9718									
Mean Years of Schooling Completed for Married Women	3.52	8.69		T-test (-58.63)*	5.02	10.41		T-test (-36.87)*	2.98	7.11		T-t (-41)
Mean Years of Schooling Completed for Husbands	5.85	9.65		T-test (-36.69)*	6.69	10.96		T-test (-26.84)*	5.54	8.45		T-t (-21)
Household Level of Wealth Quartile (HLW):				Chi-Square Test (1498.82)*				Chi-Square Test (361.22)*				Chi-Square Test (529)
-Poorest 20%	52.3%	47.7%	3033		43.1%	56.9%	274		53.2%	46.8%	2760	
-Poor 20%	42.2%	57.8%	3252		36.2%	63.8%	447		43.2%	56.8%	2804	
-Middle 20%	32.6%	67.4%	3394		29.5%	70.2%	1084		34%	66%	2310	
-Rich 20%	22.6%	77.4%	3505		22.3%	77.7%	2154		23.1%	76.9%	1351	
-Richest 20%	11.9%	88.1%	3343		11.2%	88.8%	2849		15.8%	84.2%	294	
Exposure to Mass Media:				Chi-Square Test				Chi-Square Test				Chi-Square Test
-Watching Television at least Once a Week	31.2%	68.8%	15910	(77.64)*	20.4%	79.6%	6681	(9.07)*	33.3%	66.7%	4325	(35)
-Listening to Radio at least Once a Week	26.2%	73.8%	8115	(229.87)*	18.1%	81.9%	3791	(31.67)*	39%	61%	9229	(131)
Reading Newspapers/ Magazines at least Once a Week	9.4%	90.6%	1774	(458.83)*	7.7%	92.3%	1335	(168.32)*	14.6%	85.4%	439	(120)
Type of Relationship between Spouses (Yes)	40.2%	59.8%	5177	Chi-Square Test (244.96)*	28.2%	71.8%	1652	Chi-Square Test (77.34)*	45.8%	54.2%	3525	Chi-Square Test (87)
Mean Spousal Age Difference	7.232	8.295		T-test (-2.70)*	8.01	7.52		T-test (0.71)	6.94	9.000		T-t (-4.2)

Source: Calculated by the Researcher.

*Significant at the 0.05 level.

Exposure to mass media has significant effect on age at marriage. Results reveal that young women who had married early were less likely to have been exposed to the mass media channeled (television, radio and newspapers / magazines) at the national level and in both urban and rural areas. Wealth index disparities has a significant effect on girl child marriage, the respondent in the lowest wealth quintile (poorest) were more likely to marry at age less than 18 years at the national level and in both urban and rural areas. The mean age difference between respondents and their spouses was greater for those who had married early than those who had married late in urban areas while it was lower at the national level and in rural areas. From the previous results, it is clear that there is a significant difference in the variable of place of residence; therefore, this study will fit a separate model for each of urban and rural areas, where the author believes that there is a significant difference in the independent variables in each of them.

4.2 Outcome Indicators of Girl Child Marriage

Table (2) shows that age at marriage was associated with marital relationship; young women who had married early were less likely than those who had married late to report regularly participating in decision making with their husbands relating to own health care at the national level (29.4% vs. 70.6%) and in both urban and rural areas, respectively (19.1% vs. 80.9%) and (37.2% vs. 62.8%), a similar difference relating to large household patches at the national level and in both urban and rural areas, respectively (26.8% vs. 73.2%), (18.1% vs. 81.9%) and (34.5% vs. 65.5%), and also slightly difference in the aspect of how husbands spend their money and visit to friends and relatives.

More than half of young women had associated with a high index that expressed the attitudes about wife-beating at the national level and in rural areas 50.3% and 53.7%, respectively, than those who lived in urban areas, 35.3%.

Fertility and family planning measures are associated with the outcome indicators; like age at first birth, number of children ever born, respondent's participation in decision making about family planning use and whether the respondent used any family planning method. The mean age at first birth for young women who had married before age 18 years was less among those who had married late at the national level and also in both urban and rural areas, respectively (17.77 vs. 23.02), (17.94 vs. 23.70) and (17.7 vs. 22.37). The number of children ever born was significance associated with age at first marriage, and then the mean number of children ever born of young women who had married early was higher than among those who had married late at the national level (3.74 vs. 2.45) and also in both urban and rural areas, respectively (3.52 vs. 2.37) and (3.82 vs. 2.52). At the national level only, 30.5% of young women who had married early took a joint decision with their husbands related to using family planning methods compared with 69.5% of those who had married late. Similar results in both urban and rural areas. The ever use of family planning was far less prevalent among those who had married early than those who had married late at the national level and also in both urban and rural areas, respectively (32.8% vs. 67.2%), (21.6% vs. 78.4%) and (41% vs. 59%).

Table (2): Selected Outcome Indicators of Married Women Aged (15-49), by Timing of Marriage, EDHS, 2008

	National Level				Urban Areas				Rural Areas			
	Married Early <18	Married Late ≥18	No.	Test	Married Early <18	Married Late ≥18	No.	Test	Married Early <18	Married Late ≥18	No.	Test
	n= 5256 (32%)	n=11271 (68%)			n = 1403 (20.6%)	n= 5407 (79.4%)			n = 3855 (39.6%)	n = 5864 (60.4%)		
Outcome Indicators:												
Respondent's Participation either Alone or Jointly in Household Decision Making:				Chi-Square Test				Chi-Square Test				Chi-Square Test
- Own Health Care	29.4%	70.6%	13356	(191.11)*	19.1%	80.9%	5805	(51.96)*	37.2%	62.8%	7554	(83.3)
- Large Household Purchases	26.8%	73.2%	8399	(411.92)*	18.1%	81.9%	3909	(34.89)*	34.5%	65.5%	4489	(94.3)
- What to do with Husband Money	12.3%	87.3%	2065	(193.71)*	18.9%	81.1%	5531	(48.63)*	19.4%	80.6%	862	(162.7)
- Visit to Family or Relatives	28.8%	71.2%	12616	(217.01)*	7.3%	92.7%	1202	(157.19)*	36.6%	63.4%	7086	(105.9)
Women's Attitudes towards Wife-Beating Index:				Chi-Square Test (691.60)*				Chi-Square Test (167.45)*				Chi-Square Test (287.0)
- Low	25.6%	74.4%	11376		17.6%	82.4%	5513		33.1%	66.9%	5864	
- Middle	43.6%	56.4%	3084		33.6%	66.4%	885		47.6%	52.4%	2199	
- High	50.3%	49.7%	1842		35.3%	64.7%	343		53.7%	46.3%	1499	
Fertility and Family Planning:												
- Mean Age at First Birth	17.77	23.02		T-test (-105.0)*	17.94	23.70		T-test (-66.52)*	17.7	22.37		T-test (-75.8)
- Mean Number of Children Ever Born	3.74	2.45		T-test (40.53)*	3.52	2.37		T-test (19.42)*	3.82	2.52		T-test (28.4)
- Joint Decision to Use Family Planning Methods	30.5%	69.5%	7940	Chi-Square Test (12.62)*	19.8%	80.2%	3511	Chi-Square Test (2.63)	38.9%	61.1%	4430	Chi-Square Test (1.9)
- Ever Used Family Planning Methods	32.8%	67.2%	13314	Chi-Square Test (30.37)*	21.6%	78.4%	5661	Chi-Square Test (23.12)*	41%	59%	7653	Chi-Square Test (27.3)

Source: Calculated by the Researcher.

*Significant at the 0.05 level.

4.3 The Analysis

To examine the main socio-economic background characteristics that causes girl child marriage, this study estimates three Logistic Regression Models; Model (1) at the national level, Model (2) and Model (3) for urban and rural areas, separately. To identify the outcome indicators of girl child marriage, this study also estimates three Logistic Regression Models; Model (4) at the national level, Model (4) and Model (5) for urban and rural areas, separately. To test the statistical significance of the association between the dependent variable and independent variables and to determine the degree and direction of its association, the correlation technique, which is considered the first steps in the application of the regression models, was used.

Table (3): Correlation Coefficients of Girl Child Marriage with the Independent Variables Related to its Causes, EDHS, 2008

Independent Variables	Correlation Coefficient		
	National Level	Urban Areas	Rural Areas
Socio-Economic Background Characteristics:			
Residence (Urban/Rural)	0.202*	-	-
Household Level of Wealth Quintile	-0.288*	-0.228**	-0.227*
Respondent's Educational Level	-0.359*	-0.343**	-0.322*
Husband's Educational Level	-0.310**	-0.303**	-0.261*
Exposure to Mass Media:			
-Television	-0.068*	-0.036*	-0.060*
-Radio	-0.0117*	-0.068*	-0.116*
-Newspapers/Magazines	-0.164*	-0.153*	-0.111*
Relationship between Spouses through Blood or Marriage			
	0.122*	0.107**	0.095**
Spousal Age Difference			
	-0.021**	-0.009	-0.042**

Source: Computed by the Researcher.

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

- For qualitative variables, Contingency Coefficient is considered, while for quantitative variables, Pearson Correlation Coefficient is considered.

Results in table (3) show that there was a negative correlation between education level for the presenters and their husbands with the prevalence of girl child marriage -0.381 and -0.310 respectively at the national level. As the education level increased, the prevalence of girl child marriage had decreased, and the correlation coefficient in urban (-0.343 and -0.303) respectively, were slightly higher than in rural (-0.322 and -0.261) respectively. Also there was a negative correlation between girl child marriage with household level of wealth (-0.301). As the household level of wealth increased the prevalence of early marriage had decreased. The correlation coefficient in urban (-0.228) was slightly lower than in rural (-0.227). Consanguineous marriage was positively correlated with girl child marriage prevalence (0.122), and the correlation coefficient in urban (0.107) was slightly higher than in rural (0.095).

Exposure to mass media was negatively correlated with early marriage. The data show that the girl child marriage prevalence is gradually decreasing as using media exposure (television, radio and newspapers/magazines) in the national level, and correlation coefficients in rural areas were slightly higher than in urban areas for listening to the radio and reading a newspaper/magazine, while was slightly lower for watching television. In conclusion, the results show that household level of wealth and education level for both respondents and their husbands are considered the major factors correlated with the prevalence of girl child marriage.

Table (4): Correlation Coefficients of Girl Child Marriage with the Independent Variables Related to its Outcomes, EDHS, 2008

Independent Variables	Correlation Coefficient		
	National Level	Urban Areas	Rural Areas
Outcome Indicators:			
Respondent's Participation either Alone or Jointly in Household Decision Making:			
- Own Health Care	-0.107*	-0.087*	-0.093*
- Large Household Purchases	-0.108*	-0.072*	-0.099*
- What to do with Husband Money	-0.158*	-0.152*	-0.130*
- Visit to Family or Relatives	-0.115*	-0.084*	-0.104*
Women's Attitudes towards Wife- Beating Index	0.202*	0.156*	0.171*
Fertility and Family Planning:			
- Number of Children Ever Born	0.301**	0.274**	0.293**
- Joint Decision to Use Family Planning Methods	-0.028*	-0.020	-0.014
- Ever Used Family Planning Methods	-0.043*	-0.058*	-0.053*

Source: Computed by the Researcher.

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

- For qualitative variables, Contingency Coefficient is considered, while for quantitative variables, Pearson Correlation Coefficient is considered.

Results in table (4) show that there was a negative correlation between women's roles in household decision-making relating to: The women's own health care, large household purchases, spending their husbands' money, and visits to friends or relatives, with the girl child marriage prevalence at the national level, and the correlation coefficients in rural areas were slightly higher than in urban areas in all the previous dimensions except in the aspect of spending their husbands money (-0.152 vs. -0.130). Attitude towards wife-beating has a positive correlation with the prevalence of girl child marriage (0.202) at the national level. As the attitudes towards wife-beating index increases, the age at marriage decreases. The correlation coefficient in rural areas (0.171) was higher than in urban areas (0.156).

Ever used family planning methods has a negative correlation with the prevalence of girl child marriage at the national level and in both urban and rural areas, respectively (-0.043, -0.058 and -0.054). The number of children ever born has a positive correlation with the prevalence of girl child marriage (0.301) at the national level, and the correlation coefficient in urban (0.274), this is due to that marriage at age < 18 years extends a woman's reproductive span, thereby, contributing to large family size. We can conclude the results that the number of children ever born is the major outcome indicator correlated with the prevalence of girl child marriage followed by the attitude towards wife-beating index and respondent's roles in household decision making.

Table (5): The Significant Independent Variables Included in the Logistic Regression Model (1), Model (2) and Model (3) at the National Level and in both Urban and Rural Areas, EDHS, 2008

Socio-Economic Background Characteristics	National Level			Urban Areas			Rural Areas		
	β	Sig.	Odds Ratio	β	Sig.	Odds Ratio	β	Sig.	Odds Ratio
Place of Residence (Rural)	0.301	0.000	1.352	-	-	-	-	-	-
Respondent's Educational Level:									
Primary	-0.151	0.000	0.855	-0.359	0.000	0.698	-0.069	0.316	0.933
Secondary	-1.025	0.000	0.359	-1.175	0.000	0.309	-0.961	0.000	0.383
Higher and above	-2.684	0.000	0.068	-2.582	0.000	0.076	-2.929	0.000	0.053
Husband's Educational Level:									
Primary	-0.076	0.170	0.927	-0.082	0.422	0.921	-0.084	0.201	0.919
Secondary	-0.396	0.000	0.673	-0.455	0.000	0.635	-0.382	0.000	0.682
Higher and above	-0.578	0.000	0.561	-0.792	0.000	0.453	-0.470	0.000	0.625
Household Level of Wealth Quartile (HLW):									
-Poor 20%	-0.125	0.024	0.883	-0.085	0.613	0.919	-0.129	0.028	0.879
-Middle 20%	-0.217	0.000	0.805	-0.078	0.610	0.925	-0.243	0.000	0.784
-Rich 20%	-0.328	0.000	0.720	-0.161	0.286	0.852	-0.405	0.000	0.666
-Richest 20%	-0.460	0.000	0.631	-0.285	0.078	0.753	-0.556	0.000	0.574
Exposure to Mass Media:									
-Watching Television at least Once a Week	-0.025	0.786	0.975	0.158	0.466	1.171	-0.073	0.474	0.930
-Listening to Radio at least Once a Week	-0.098	0.011	0.907	0.034	0.621	1.034	-0.159	0.001	0.853
-Reading Newspapers/ Magazines at least Once a Week	-0.272	0.003	0.762	-0.206	0.087	0.814	-0.371	0.011	0.690
Relationship between Spouses (yes)	0.315	0.000	1.370	0.321	0.000	1.379	0.304	0.000	1.355
Spousal Age Difference	-0.007	0.000	0.993	-0.004	0.009	0.996	-0.008	0.000	0.992
Constant	0.153	0.126	1.165	-0.109	0.620	0.896	0.519	0.000	1.681
Correct Classification	72.2%			80%			66.8%		

Source: Calculated by the Researcher.

Table (5) shows the Logistic Regression Analysis Results for Model (1), Model (2) and Model (3). Model (1): Respondents and their husbands' education, household level of wealth, exposure to mass media (listening to radio and reading newspapers/ magazines), spousal age difference, and relationship between spouses were significant at 5% level. This finding is supported by the results of Sarker & Rahman, 2012 and Santhya, et al., 2010.

Table (5) shows that education is a key factor for the variation in the age at first marriage, respondents with primary, secondary and higher education are about 14.5%, 64% and 93%,

respectively were less likely to marry <18 years than those who are illiterate (non educated). While for their husbands education, husbands with secondary and higher education are about 33% and 44%, respectively were less likely to marry their wives at age <18 years than their illiterate counterparts. Respondents who live in rural areas are 1.35 times more likely to marry <18 years than those who live in urban areas.

Table (5) also shows that respondents in the poor, middle, rich, and the richest household level of wealth are 11.7%, 19.5%, 28% and 36.9%, respectively, were less likely to marry early than those in the poorest households. Women with access to mass media like radio and newspapers / magazines are 9.3% and 23.8% are less likely to marry < 18 years than those with no access to any of the mass media facilities. This finding is supported by Sarker, 2009. Consanguineous marriage is 1.37 times positively significant and more apt to child marriage (<18 years) than the reference category.

The percentage of cases correctly classified of Model (1) is 72.2%, while the minimum lower classification is about 70%, for Model (2) is 80%, while the minimum lower classification is about 82.5% and for Model (3) is 66.8%, while the minimum lower classification is about 63.7%.

The Logistic Regression Analysis and fit Model (1) is shown by the following equation:

$$\text{Logit (Y)} = 0.301 \text{ Residence (rural)} - 0.151 \text{ Respondent's Educational Level (primary)} - 1.025 \text{ Respondent's Educational Level (secondary)} - 2.684 \text{ Respondent's Educational Level (higher)} - 0.396 \text{ Husband's Educational Level (secondary)} - 0.578 \text{ Husband's Educational Level (higher)} - 0.125 \text{ HLW (poor)} - 0.217 \text{ HLW (middle)} - 0.328 \text{ HLW (rich)} - 0.460 \text{ HLW (richest)} - 0.098 \text{ Listing to Radio} - 0.272 \text{ Reading Newspapers/Magazines} - 0.007 \text{ Spouse Different Age} + 0.315 \text{ Relative to Husband.}$$

For Model (2) and Model (3): Respondents and their husbands education, spousal age difference, and relative to husband were significant at 5% level in both urban and rural areas. While household level of wealth and exposure to mass media (listening to radio and reading newspapers/magazines) were only significant in rural areas. The education for both respondents and their husbands play an important role affecting child marriage in both urban and rural areas.

Table (5) shows that respondent's education is more influential than their husbands' education in reducing the prevalence of child (early) marriage in both rural and urban areas. Women with secondary and higher education are less likely to marry < 18 years by about 69% and 92% respectively, than their illiterate counterparts in urban areas by about 61% and 95%, respectively, in rural areas. In another words, child marriage is very much affected by respondent's education especially higher level, in both urban and rural areas (95% vs. 92%). While for husband's education, husbands with secondary and higher education are less likely to be willing to marry their wives at age <18 years by 36.5% and 54.7%, respectively, than their illiterate counterparts in urban areas and about 32% and 37%, respectively, in rural areas. The previous results reveal that the influence of husband's education (secondary and higher level) in urban areas is greater than in rural areas.

Table (5) also shows that the household level of wealth has a significant negative effect in rural areas and women in the poor, middle, rich, and the richest wealth level are less likely by about 12%, 22%, 33% and 43%, respectively, to marry < 18 years than those in the poorest wealth level, while for urban areas is not significant. This finding is supported by the results of Agaba & Atuhaire and Rutaremwa, 2010.

Women with access to mass media like radio and newspapers/magazines are less likely to marry < 18 years by about 15% and 31%, respectively, than those with no access to any of the mass media facilities in rural areas, while it is not significant in urban areas. Young women that their husbands are relatives face a risk to marry at age < 18 years in both urban and rural areas by about 1.38 and 1.36 times, respectively, greater than a category reference. This finding is supported by the result of Sarker, 2007.

The Logistic Regression Analysis and fit Model (2) is shown by the following equation:

Logit (Y) = -0.359 Respondent's Educational Level (primary) -1.175 Respondent's Educational Level (secondary) - 2.582 Respondent's Educational Level (higher) -0.455 Husband's Educational Level (secondary) - 0.792 Husband's Educational Level (higher) -0.004 Spouse Different Age + 0.321 Relative to Husband.

The Logistic Regression Analysis and fit Model (3) is shown by the following equation:

Logit (Y) = -0.519 - 0.961 Respondent's Educational Level (secondary) - 2.929 Respondent's Educational Level (higher) -0.382 Husband's Educational Level (secondary) - 0.470 Husband's Educational Level (higher) - 0.129 HLW (poor) - 0.243 HLW (middle) - 0.406 HLW (rich) - 0.556 HLW (richest) - 0.159 Listening to Radio - 0.371 Reading Newspapers/Magazines - 0.008 Spouse Different Age -0.304 Relative to Husband.

Table (6): The Significant Independent Variables Included in the Logistic Regression Model (4), Model (5) and Model (6) at the National Level and in both Urban and Rural Areas, EDHS, 2008

Outcome Indicators:	National Level			Urban Areas			Rural Areas		
	β	Sig.	Odds Ratio	β	Sig.	Odds Ratio	β	Sig.	Odds Ratio
Respondent's Participation either Alone or Jointly in Household Decision Making:									
- Own Health Care	-0.127	0.029	0.880	-0.268	0.021	0.765	-0.072	0.292	0.931
- Large Household Purchases	-0.130	0.003	0.878	-0.063	0.406	0.939	-0.131	0.015	0.877
- What to do with Husband Money	-1.167	0.000	0.311	-1.245	0.000	0.288	-1.001	0.000	0.368
- Visit to Family or Relatives	-0.122	0.029	0.885	0.054	0.626	1.055	-0.180	0.006	0.835
Women's Attitudes towards Wife- Beating Index:									
- Middle Level	0.561	0.000	1.752	0.604	0.000	1.829	0.412	0.000	1.510
- High Level	0.630	0.000	1.878	0.453	0.001	1.574	0.487	0.000	1.627
Fertility and Family Planning:									
- Number of Children Ever Born	0.345	0.000	1.412	0.378	0.000	1.460	0.316	0.000	1.372
- Joint Decision to Use Family Planning Methods	-0.086	0.040	0.918	-0.130	0.071	0.878	-0.062	0.229	0.940
- Ever Used Family Planning Methods	-0.307	0.000	0.736	-0.148	0.185	0.863	-0.277	0.000	0.758
Constant	-1.338	0.000	1.878	-1.997	0.000	0.136	-1.005	0.000	0.366
Correct Classification	72.7%			80.5%			67.7%		

Source: Calculated by the Researcher.

Table (6) shows the Logistic Regression Analysis results for Model (3), Model (4) and Model (5). Model (4): Respondent's participation in household decision making, women's attitudes towards wife-beating, number of children ever born, using any family planning method and respondent's participation in decision making about family planning were significant at 5% level.

Table (6) shows that women who were early married are more likely to be in the middle and high level of wife-beating by about 75% and 88% than those marry >18 years. This finding is supported by the results of Santhya, et al., 2010.

Women who had married early were less likely to participate in making decision related to their health care, large household purchases, visit to friends or relatives and spending their husbands' money by about 12%, 12%, 11% and 69%, respectively, than those who had married late. The results indicate also that girl child marriage tends to compromise women's autonomy. These findings are supported by the results of Santhya, et al., 2010.

In the aspects of fertility and family planning indicators, women who had married early are more likely to have more children by about 41% than those who had married late. This finding is supported by Gordon, 2010. Women who had married early were less likely to have participated in making decision related to using family planning methods by about 8% than those who had married late. Respondent's percentage that had used any family planning methods and married early is less by about 26% than those had married late.

Also women who had married early were less likely to have participated in making decision related to using family planning methods by about 8% than those who had married late. Respondents, who had used family planning method and had married early, are about 26% less than those who had married late. These findings are supported by Sarker, 2009 & Santhya, et al., 2010 and Sarker & Rahman, 2012.

The percentage of cases correctly classified of Model (4) is 72.7%, while the minimum lower classification is about 70%, for Model (5) is 80.5%, while the minimum lower classification is about 82.5% and for Model (6) is 67.7%, while the minimum lower classification is about 63.7%.

The Logistic Regression Analysis and fit Model (4) is shown by the following equation:

$$\text{Logit (Y)} = -0.1338 + 0.561 \text{ Wife-Beating Index (middle)} + 0.630 \text{ Wife-Beating Index (high)} - 0.127 \text{ Decision Making (health care)} - 0.130 \text{ Decision Making (large household purchases)} - 0.122 \text{ Decision Making (visits to friends or relatives)} - 1.167 \text{ Decision Making (spending husband money)} + 0.345 \text{ Number of Children Ever Born} - 0.086 \text{ Decision Making Related to Using Family Planning Method} - 0.307 \text{ Ever Used Family Planning Methods.}$$

For Model (5) and Model (6): Respondents participation in decision making in aspect of how their husbands spend money, women's attitude towards wife-beating and total children ever born were significant at 5% level in both urban and rural areas, while respondent's participation in decision making in the aspect of their health care were only significant in urban area and respondent's participate in decision making in the aspect of large household purchases and using family planning method were only significant in rural areas.

Table (6) shows that women who had married early and their attitude about wife-beating index (middle level) are more likely to exist by about 83% and 51% in both urban and rural areas respectively, than those with low level index . Also their attitude about wife-beating index (high

level) are more likely to exist by about 57% and 62% in both urban and rural areas, respectively, than those with low level index. Respondent's participation in decision making related to how their husbands spending money are about 71% and 63% less likely in urban and rural areas, respectively, than those who had married late. Women who had married early are more likely to have more children by about 46% and 37% in urban and rural areas, respectively, than those who had married late.

The Logistic Regression Analysis and fit Model (5) is shown by the following equation:

$$\text{Logit (Y)} = -1.997 + 0.604 \text{ Wife-Beating Index (middle)} + 0.453 \text{ Wife-Beating Index (high)} - 0.268 \text{ Decision Making (health care)} - 1.245 \text{ Decision Making (spending husband money)} + 0.378 \text{ Number of Children Ever Born.}$$

The Logistic Regression Analysis and fit Model (6) is shown by the following equation:

$$\text{Logit (Y)} = -1.005 + 0.412 \text{ Wife-Beating Index (middle)} + 0.487 \text{ Wife-Beating Index (high)} - 0.131 \text{ Decision Making (large household purchases)} - 0.180 \text{ Decision Making (visits to friends or relatives)} - 1.001 \text{ Decision Making (spending husband money)} - 0.277 \text{ Ever Used Family Planning Methods} + 0.316 \text{ Number of Children Ever Born.}$$

The study reveals that the main significant socio-economic background characteristics that belong to the causes of girl child marriage at the national level as well in both urban and rural areas are: Respondents and their husbands' education play an important role in affecting girl child marriage followed by spousal age difference, while household level of wealth and relatives to husband are significant at the national level and in rural areas. These findings are supported by Sarker, 2009 & Agaba et al., 2010 & Santhya, et al., 2010 and Sarker & Rahman, 2012.

Based on the above findings, there is enough evidence to accept partially the null hypothesis that there is no significant difference in causes of girl child marriage in urban and rural areas regarding to the following main factors that belong to the causes like respondents and their husbands' education, exposure to mass media (listening to radio and reading newspapers/magazines), relation to husband and spousal age difference, while household level of wealth has a significant difference between urban and rural areas.

Also this study reveals that the main significant outcome indicators of girl child marriage at the national level and in both rural and urban areas are: The attitude towards wife-beating index and the number of children ever born, while respondent's roles in household decision making and ever used family planning methods were significant at the national level and in rural areas. These findings are supported by Sarker, 2009 & Santhya, et al., 2010 and Sarker & Rahman, 2012.

Based on the above findings, there is enough evidence to reject partially the null hypothesis that there is no significant difference in outcomes of interest of girl child marriage between urban and rural areas in regarding to the following main indicators like respondent's roles in household decision making (own health care, large household purchases and visit to family and relatives) and ever used family planning methods, while accept the null hypothesis for the attitude towards wife-beating index and the number of children ever born.

5. Conclusion and Recommendations

5.1 Conclusion

This study examines the major factors that causes the girl child marriage, and identifies the outcomes of girl child marriage with specific focus on urban and rural residence using Egypt Demographic and Health Survey (EDHS, 2008). Girl child marriage is a critical social, health, and development issue in Egypt, although Egypt has 18 years as the minimum legal age for girls, the percentage of women aged (15-49) who wed before age 18 years is about 31% (20.6% for urban vs. 39.7% for rural).

Then it is useful to understand the causes and outcome indicators that belong to girl child marriage in Egypt at the national level and in urban and rural areas, separately, seeking to end marriage. The study concluded that the main significant socio-economic background characteristics that belong to the causes of child marriage at the national level as well in both urban and rural areas are: Respondents and their husbands education play an important role in affecting girl child marriage followed by spousal age difference, while household level of wealth and relatives to husband are significant at the national level and in rural areas. Also the main significant outcome indicators of girl child marriage at the national level and in both rural and urban areas are: The attitude towards wife-beating index and number of children ever born, while respondent's roles in household decision making and ever used family planning methods were significant at the national level and in rural areas.

Based on the above findings, there is enough evidence to accept partially the null hypothesis that there is no significant difference in causes of girl child marriage in urban and rural areas regarding to the following main factors that belong to the causes like respondents and their husbands' education, exposure to mass media (listening to radio and reading newspapers/magazines), relation to husband and spousal age difference, while household level of wealth has a significant difference between urban and rural areas. Also, there is enough evidence to reject partially the null hypothesis that there is no significant difference in outcomes of interest of girl child marriage between urban and rural areas in regarding to the following main indicators like respondent's roles in household decision making (own health care, large household purchases and visit to family and relatives) and ever used family planning methods, while accept the null hypothesis for the attitude towards wife-beating index and the number of children ever born.

5.2 Recommendation

Based on the main findings derived from this study, the following are important recommendations that would seek to stop child girl marriage in the near future:

1. Enhance educational opportunities, especially, for girls through scholarships.
2. Develop a policy that encourage enrolment and withholding of girls in primary and secondary education by improving quality of education and activate the role of school groups tutoring (it refers to tutoring endorsed by the Ministry of Education and provided in the schools) to reduce repetition and dropout.
3. Raising public awareness through building capacities of community (civil) leaders to mobilize communities against girl child marriage; to encourage parents to keep their daughters in schools until they have finished their secondary schools and easing the cost of education, especially for poor families in rural areas.
4. Raising awareness about the dangers of child and consanguineous marriage on the health of births and, finally, activating the law of the minimum legal age for girl marriage.

References

- Agaba, P.; Atuhaire, L., Rutaremwa, G. 2010. Determinants of Age at First Marriage among Women in Western Uganda. *A Paper Presented in European Population Conference: Vienna.*
- Davis, A., Postles, C. and Rose, G. 2013. A Girl Right to Say No to Marriage: Working to End Child Marriage and Keep Girls in School, *Plan International: United Kingdom.*
- Charles, F., Westoff. 2003. Trends in Marriage and Early Childbearing in Developing Countries, *DHS Comparative Reports*, no. 5: ORC Macro Calverton, Maryland USA.
- Laila, El Hamamsy. 1994. Early Marriage & Reproduction in Two Egyptian Village, *Occasional Monograph: The Population Council/ UNFPA.*
- Fatma, El-Zanaty, and Ann, Way. 2009. Egypt Demographic and Health Survey, 2008: Cairo, Egypt: El-Zanaty & Associates and Macro International Inc.
- Hanaa, Gad. 2001. Family Building and Family Planning in Egypt. *Unpublished M. Sc. Thesis: Institute of Statistical Studies and Research, Cairo University, Egypt.*
- Gordon B. Dahl. 2010. Early Teen Marriage and Future Poverty. *Demography*, 47 (3): 689-718.
- Kelly Hallman. 2003. Mother-Father Resources, Marriage Payments, and Girl-Boy Health in Rural Bangladesh, in Agnes R. Quisumbing (ed.), *Household Decisions, Gender and Development: A Synthesis of Recent Research.* Distributed for International Food Policy Research Institute by Johns Hopkins University Press, Baltimore, Maryland, Chapter (17): 115-120.
- Nadia, Khalifa. 1996. Fertility Determinants in Egypt, 1993. In: Explorations of Fertility and Contraceptive Use in Egypt, *Studies Based on the Egypt Use Effectiveness of Contraceptives Survey: Cairo Demographic Center, Egypt.*
- Malhotra Anju, Warner Ann, McGonagle Allison and Lee-Rife, Susan. 2011. Solutions to End Child Marriage "What the Evidence Shows". *International Center for Research on Women (ICRW).*
- Santhya, et, al. 2010. Associations between Early Marriage and Young Women's Marital and Reproductive Health Outcomes: Evidence from India. *International Perspectives on Sexual and Reproductive Health*, 36 (3).
- Sarker Prosannajid. 2009. Determinants and Effect of Early Marriage in Bangladesh, 2007. *Research Journal of Applied Sciences*, 4 (5): 178-184.
- Sarker Nasrin and Rahman Mustafizue. 2012. Factors Affecting Early Marriage and Early Conception of Women: A Case of Slum Areas in Rajshahi City, Bangladesh. *International Journal of Sociology and Anthropology*, 4 (2): 54- 62.
- Shyam Thapa. 1996. Girl Child Marriage in Nepal: Its Prevalence and Correlates. *Contributions to Nepalese Studies*, 23 (2): 361-375.
- Rudi-Fahimi, Ibrahim Shaimaa. 2013. Ending Child Marriage in the Arab Region. *Inform Empower Advance (PRB): Policy Brief.*
- UNFPA. 2013. Motherhood in Childhood, State of World Population 2013.
- UNICEF. 2005. Early Marriage: A Harmful Traditional Practice, a Statistical Exploration. New York: UNICEF.
- USAID. 2012. Ending Child Marriage & Meeting the Needs of Married Children: The USAID Vision for Action.

