Learning from a Bitter Past?
Behavioral Effect of Child's Death on Mothers

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Abstract:
Using Demographic and Health Surveys (DHS) from 26 African countries, I argue that experiencing a child's death during its infant period is a driving force which makes mothers seek health behaviors for their subsequent children, specifically delivery assistances and delivery at some health facility. Mothers who experienced the first child's death are 3 percentage points more likely to deliver the second child at some health facility and they are 0.8 percentage point more likely to deliver with some assistance than mothers who did not experience the first child's death.

1. Introduction

Despite international efforts, child mortality in sub-Saharan Africa is still high (WHO 2011). Recently, substantial attentions have been paid globally to the importance of mother's utilization of health services for the sake of their children such as antenatal care visits, delivery assistance and delivery at health facility in order to achieve lower mortality rate. In spite of its importance, the health facility utilization remains severely limited in most parts of sub-Saharan Africa. Although the minimum recommended times of antenatal care visits are four times, many pregnant women (63.3 percent) in Africa do not achieve this level (WHO 2003). According to Demographic and Health Survey (DHS), home delivery instead of the delivery at some health facility is still common (40.7 percent) and more than half of the deliveries (52 percent) are done without skilled health personnel (DHS 2009).

A number of studies focus on determinants of the health service use in developing countries in order to examine who does not utilize the health service and why (Heller 1982, Haddad and Fournier 1995, Lindelow 2002, Kasirye et al. 2004). Most of these studies emphasize the importance of financial factors such as cost paid for health services, travelling cost and income. Recent evaluation programs have found that the provision of financial incentives and information increase the health service use, although such studies are still very limited (Sharan et al 2010, Lagarde, Haines et al. 2009, Kabakian-Khasholian and Campbell 2007).

However, these studies have ignored the dynamic factors as a determinant of health service utilization. It takes time for women to raise their children and they might learn what is good for children and what is not during the rearing periods through learning-by-doing. Few previous studies focus on the past experience as one of the factors influencing the current health seeking behavior. Corno (2008) is one of the few examples of such studies. By examining the

relationship between the past illness experience and the current health seeking behaviors in Tanzania, she found that agents seek medical care repeatedly from the same type of health provider even if the past treatments are ineffective. This indicates the failure of behavior updates from the past experience. Her paper, however, does not take into consideration the severity of the past experience. Even though one's past experience does not satisfy a person, he might not change his behavior if the cost of behavioral change is more than an uncertain benefit of healing which can be induced by the change.

In this paper, I argue that experiencing a child's death during its infancy period is a driving force which makes mothers seek health behaviors for their subsequent children, specifically delivery assistances and delivery at some health facility. Because the child's death is a substantial shock unlike illness, it could dramatically increase the disutility of the same health seeking behavior to result in behavioral changes. Under the current situation in which over two-thirds of under-five child deaths are due to diseases that are preventable and treatable through simple and affordable health care (WHO 2011), this paper at least shows that these deaths do not happen in vain but save other lives.

The Health Belief Model (Rosenstock 1966) predicts that the experience of a child's death in the past might promote the current uptake of health services through informing them the perceived risk of developing the same condition. There are several mechanisms through which the past experience of the child death can affect current behaviors. On one hand, the child's death might inform the mother that she has problems specific to her that increases the probability of newborn baby's health risk. It can inform her, on the other hand, that delivery in general always comes along with the risk which can threaten the child's life. Although these mechanisms cannot be detangled, both will drive mothers towards more utilization of health services or in this case, more likelihood of delivery at some health facilities with assistance.

In order to detect a causal relationship between child deaths and subsequent health behaviors, I use Demographic and Health Surveys (DHS) from 26 African countries. There are two points to be noted here. The first point is the large sample size which enables the analysis of child death. Although the child mortality is high in sub-Saharan countries, it is still a minor incidence. Among the sample of my analysis, 10.1 percent of mothers experienced the first child's death and this number is comparable to child mortality in Africa. The large sample size, 65,644 children from 46,780 women, makes it possible for this analysis to focus on child's death. The second point is that it is important to create the panel structure in data to see the causal relationship of child death on subsequent health behaviors. Because this cross-sectional data set contains the information on woman's pregnancy history and their delivery history, it enables me to construct a panel structure of data on health seeking behavior for each woman at each pregnancy. I focus on the mother's first child's death and her health behavior at her second child's delivery for my main analysis. Also by focusing on the first and second children, I intend to control for reproduction selection because most of females deliver at least two children.

I find significant changes in mothers' health seeking behaviors after the experience of a child's death. Mothers who experienced the first child's death are 3 percentage points more likely to deliver the second child at some health facility and they are 0.8 percentage point more likely to deliver with some assistance than mothers who did not experience the first child's death. This evidence supports the hypothesis that the salient negative experience affects the current health seeking behaviors.

Because this study reveals that people change their behaviors if they receive salient negative information through their experience, one potential policy intervention is to emphasize and inform women of the negative effect of non-utilization of health facilities in a strong manner to increase the use of health facility. Future research should explore more of this area as

one possibility to improve health service use, and as a result, decrease the child mortality.

We proceed as follows. Section 2 discusses the data. Section 3 presents the results. Section 4 concludes.

2. Data

The data used for this study come from Demographic and Health Surveys (DHS) from 26 sub-Saharan African countries. It contains information on each woman's delivery records for the past five years from the year when the survey was conducted. For each birth which occurred during the reference period, they were asked about child mortality, the timing of the child death if he died, who assisted the delivery and the place where the delivery took place. It has to be noted that as this delivery records only captured the most recent births within the past 5 years, it does not include all the delivery history and it exclusively focuses on younger women at their reproductive age. Although this reduces the sample size, this has analytical advantages. Data do not suffer from severe recall bias as we solely focus on recent births. This also mitigates any changes in their environments and in their behaviors which can evolve over time such as new constructions of health facilities and shifts in their cultural values towards western technologies which may promote the health facility utilization. Controlling for these factors is crucial because they bias the analysis. With the same reason, I restrict the sample into those who gave birth to the first child between 2000 and 2010 and I refer to this set of data as the total sample. The main analysis uses the further restricted sample which includes only the first and the second child; that is, I examine the relationship between women's experience of the first child's death and health service utilizations for the second child. This is to control for the reproduction selection because most females deliver at least two children.

Evaluating the change in mothers' health behaviors requires the panel structure of the

data on health behaviors. I focus on two main variables: whether a mother seeks any human assistance at delivery and whether a mother delivers at any health facility. Human assistance includes health personnel such as doctors, nurses, and midwife and other persons such as traditional birth attendants, relatives and friends. Health facility includes hospital, health center, and health clinic. Although the data also contains a variety of information on health behaviors other than the ones related to delivery such as antenatal care and postnatal care visits and this information is very important to capture health behaviors, they will not be used here because of the data structure. Women were asked about antenatal care and postnatal care only for the last birth thus I cannot construct the panel structure for these behaviors. In addition to information on mortality and delivery of the child, surveys have data on mother's demographic and economic characteristics such as age and education as well as household characteristics such as wealth level.

The total sample consists of a total of 65,644 children from 46,780 women. Out of these, I mainly focus on 13,593 women who at least have two children. Table 1 represents the summary statistics of women, household and her husband. Overall, the women are on average 23 years old. Women have very low level of education on average: 42.5 percent of women did not receive any education and another one-third completed only primary school (35.1 percent). The number of children born is 2.1 which is much smaller than the African average fertility rate (around 5). This is because the analysis focuses on younger women who had the first child after 2000. Fifty-seven percent of women had delivered the first child in the previous year of second child's birth. The mortality rate for the first child on this data is 223 per 1,000 live births which is very high. Because the child mortality which does not restrict only for the first child is 121 per 1,000 live births (this figure is comparable to the average in sub-Saharan African countries: Under-5 child mortality rate is 125 deaths per 1,000 live births, UNICEF 2010), it implies that

the risk of the first child' death is much higher than the other. Actually 75 percent of deaths occurred with the first child.

The majority of women (70.6 percent) live in rural areas and 43 percent of their households are poor in wealth. Partners of women are on average 31.5 years old – this indicates that women are usually married to men who are much older than her. The distribution of highest education level attained by husbands does not differ much from that of women's; high percentage of male (42.8 percent) has no education.

In order to analyze differences in characteristics by experience of child's death, the sample is disaggregated. Column 2 and 3 in Table 1 corresponds to summary statistics respectively for women who lost her first child and for women who did not. The health status of the first child (dead or alive) is correlated with indicators of economic and health condition. Women who lost their first child are almost 1-year younger, attained much less education (they are 9.9 percentage points more likely to have obtained no education,) and more likely to be Muslim. The number of children born is 0.09 higher than others. The possible mechanism for this is that after the death of the child, mothers try to compensate for the loss by engaging in more reproduction within fixed duration. Furthermore, younger age at the first pregnancy (0.11 year younger), less weight (0.12kg lighter), and smaller height (0.63cm smaller) are associated with the child death. Mothers in rural areas with poor households are more likely to experience child death. Women with a child's death experience have partners who are less educated than others.

Table 2 provides summary statistics of the second-born children. Eight percent of the children are not alive. While home delivery is still very common (48.7 percent), the majority of children (94.5 percent) were delivered with some assistance. On average, women perceived that the children were born with average size. Mothers received prenatal care 0.86 times which is far

fewer than the recommended minimum of four times (WHO 2011). Thirty-five percent of these children have never been vaccinated and respectively 18.9 percent and 25.9 percent have suffered from diarrhea and fever in the last two weeks from the date when the survey was conducted.

Similar to the finding from Table 1, child death seems to be correlated with health behaviors and health outcomes (Table2, column 2 and 3). Compared to children of mothers whose first child is alive, the children of mothers with experience of the first child's death are 6.6 percent more likely to deliver at home with 0.7 percent less assistance and their children's sizes at birth were smaller. Experience of the first child's death is correlated with fewer prenatal care visits (0.05 times less) and with more incidences of diarrhea and fever.

3. Results

3.1 Theoretical consideration

If individuals use the past experience of their own children to update their behaviors to seek better outcomes for the subsequent children, a salient negative experience could be a driving force for health facility utilization. On one hand, those who experienced their child's death might perceive the general risks at the delivery and seek help in health facilities in the future. On the other hand, they might consider the death of their children as a signal that they have a higher risk at delivery than others. This can lead them to seek some help at health facilities for the next delivery. No matter whether they think the death experience as a signal of the general risk of delivery or as a signal of personal high risk at delivery, this perceived risk is more likely to increase the health facility utilization according to the Health Belief Model (Rosenstock 1966).

However, it is possible that experience of child's death dis-incentivizes mothers from

health facility utilization. For example, if a mother delivers at a health facility and her child dies, the mother may not want to try the same health facility for the next child but delivers at home. Psychological traumatic incidences may make one avoid a place which reminds her of the trauma (Dempsey et al. 2000). The same mechanism may increase the take-up of health services if the child's death occurs at home. Thus even if the result shows that women seek health service after they experience the child's death, this might not always be attributed to the awareness of the importance in health facility utilization but they might only switch their behaviors due to psychological factors. In the analysis, I try to differentiate these two different mechanisms.

3.2 Impact of Experience of Child Death on Health Seeking Behavior for the Next Child

I estimate the effect of the child death experience on the delivery assistance and the deliver at health facility for the subsequent child. As I mentioned in Data section, the main analysis restricts the sample to the first and the second child. The results show that the first child death has significant effect both on the delivery assistance and the delivery at health facilities for the second child.

3.2.1 Difference-in-Differences

Table 3 presents the simple analysis with tables. Panel A and B of Table 3 presents the difference-in-difference type analysis. The difference in health behavior (delivery assistance and delivery place) among women who lost their first child and women who did not is compared before and after the death. Although both the delivery assistance and the delivery at some facility are on average less for the second child than for the first child, mothers who lost the first child are more likely to seek the delivery assistance by 1.1 percentage point and to deliver at some health facility by 4.9 percentage points for the second child. This trend remains robust in

simple difference analyses when the sample is restricted only to those who delivered the first child without utilizing the health facility (Table 3, Panel C & D). Among those who did not use the facility before, the child's death experience increased the probability of seeking the delivery assistance by 10.1 percentage points and the probability of the delivery at health facility by 3.6 percentage points for the next child. To examine the effect of first child's death on the health seeking behavior in a difference-in-differences regression framework, I estimate

(1) $$y_{ij=}\alpha + \beta_1 1stChildDied_{ij} + \beta_2 2ndChild_{ij} + \beta_3(1stChildDied_{ij} \times 2ndChild_{ij}) + X'_{ij}\mu + \varepsilon_{ij}$$

The sample is women who delivered at least two children. Utilization of the health service for children is indicated by $y_{ij} = 1$ for a mother *i* in a locality *j*. "*1stChildDied*" indicates if a mother's first child died and "*2ndChild*" is the dummy for the second child. The hypothesis is that women utilize the health service more after they experience their child's death given all the other variables constant. "*X*" is a vector of controls including age, age-squared, Muslim dummy, rural dummy, wealth index dummy, education level, and country dummies. Experiencing the first child's death increases health facility utilization (Table 4). Experiencing the first child's death increases the probability of seeking delivery assistance for the second child by 0.3~0.8 percentage points although this is statistically insignificant, and it increases the probability of second child delivery at some facility by 4.8~5.4 percentage points.

3.2.2 Simple Difference

More straightforward way to examine the health behavioral change after the shock (death) is to use the simple difference. To examine the effect of first child's death on the health seeking behavior for the second child in a simple-difference regression framework, I estimate

(2) $$y_{ij} = \alpha + \beta_1 Death_{ij} + X'_{ij}\mu + \varepsilon_{ij}$$

Utilization of the health service for the second child is indicated by $y_{ij} = 1$ for a mother *i* in a locality *j*. "*Death*" indicates if a mother's first child died. It is expected that those who experience the first child's death utilize the health service more for the second child given all the other variables constant. "*X*" is a vector of controls included in (1) as well as a control for health service utilization for the first child. This past health behavior has a role to form a trend of mother *i*'s health behavior while the death experience can stimulate a deviation from the trend.

Here I discuss the possible econometrical problems which can threaten the validity of regression model as introduced in (2). Although the concern of the reversal causality is mitigated by restricting the sample to the first child's death and health service use for the second child, examining the model specifications with using the simple OLS could still cause biased estimators because the experience of the child's death is not randomly assigned. Unobservable factors can affect mothers' experience of their child's death. However, biases induced by the non-randomness seem to work against the hypothesis. As presented in Table 5, the use of health services is important determinants of child's survival. Delivery at some health facility and delivery assistance reduces the incidence of child deaths respectively by 0.8 to 2.1 percentage points and by 1.2 to 2.3 percentage points (Table 5). Other demographic and economic factors also explain the child's health outcome. Lower education attainment and poorer wealth level significantly increases the probability of the child's death while they are correlated with lower health service utilization (Table 4). It implies that mothers who lost the first child have characteristics which are negatively correlated with the health service use. Thus finding positive correlation between the first child's death and the health service use for the second child is not induced by biases as far as they work against finding the result. Unobservable genetic factors should also be correlated with the child's death. If a mother uses a health facility more because of her genetic problem which increases the probability of her child's death, then it induces the

upward bias in the specification (2). However, this bias should be mitigated by one of the control variables, health service use for the first child. If she learns her genetic problem through the experience of her child's death to change the health seeking behavior for the subsequent child, this is exactly what this analysis is trying to observe.

Another important concern is the reproduction decision for the second child. Because the sample is restricted to those women who have at least two children within 5 years from the survey year, there is a possibility of the sample selection. Two factors could affect this selection. One is the genetics of women and another is the preference for sexual activities or intensive reproduction. The specification (1) and (2) eliminates the women who are genetically weak and who are less capable of reproduction and it is possible that this genetic reproductive ability motivates women to seek assistance at health facility more than others. Similarly, the sample only includes those who have the stronger preference for the sexual behavior or the intensive reproduction. This preference can affect the health behavior at delivery in either way; if they know about their preference and that it can risk their infant at delivery, they might care to seek assistance more than others. If, on the other hand, they are risky both in the reproduction behavior as well as in general health behaviors, they might not care for delivery assistance as much as others do. However, I claim that the selection bias does not cause a serious problem because the average birth interval in Africa is 2.28 years (DHS) thus the average woman has two or more children within 5 years. My data is not restrictive to a specific sample, but deals with the average population.

The last concern is the change in the access to health facilities over time. For example, if the government decides to construct health facilities intensively in areas with worse health outcomes, people in such areas might improve their health behaviors simply because they benefit the better access to health services over time. Because DHS does not have information

on the access to health facilities, I intend to control for this problem by including district-level fixed effects in regression analysis. This might reduce the explanatory power of the child's death in explaining health behavior if the access to health facilities is the major drive of health behavior. Each regression table includes results with fixed effect but the sign of main coefficient did not change (For example, compare Table4 column (8) & (9)). Because it is likely that individuals within a community influence with each other on health behavior, standard errors are clustered by district which is the smallest unit available in DHS data. The results with clustered standard error, however, reduced the statistical power to explain the causal relationship of child death on health behavior any longer. I claim that this is because the data does not contain the adequate level of cluster which should be village because people influence with each other within very small geographical zone in Africa (Godlonton and Thornton, 2012).

Experiencing the first child's death increases health facility utilization. Without any covariates, the child death is negatively correlated with both delivery assistance and delivery at health facility (Table 6, Column 1 & 6). Variables in the error term are more likely to be responsible for this result. Those women with poor economic backgrounds might be more likely to experience their child's death and at the same time, they are less likely to use health facilities. Thus it is necessary to capture their past behavior as a trend and to factor out the deviation which is captured by child death. Once the past behavior; delivery assistance or delivery at health facility for the first child is included in the regression, the child death becomes a significant explanatory variable for an increase in health facility utilization (Table 6, Column 2~5&7~10). Experiencing the first child's death increases the probability of seeking delivery assistance for the second child by 0.8 percentage points and it increases the probability of second child delivery at some facility by 3 percentage points. The effect of child death is much smaller on the delivery assistance. This is because a very high proportion of mothers (94.5

percent) already receive the deliver assistance for the first child. If the sample is restricted to those who delivered the first child without using a health facility, even larger effects are observed. Among those who did not deliver the first child with any assistance, the first child death increased the probability of seeking assistance for the next child by 7.3 percentage points. Among those who delivered the first child at home, the first child death increased the probability of delivery at a health facility for the second child by 4.9 percent percentage points (Table 6, Column 11 & 14), although the effect becomes no different from zero after the inclusion of the cluster fixed effect .

The timing of the child death could be an important variation to explain the behavioral change. For example, if a child dies around the delivery, the mother may attribute his death to the environment at the delivery than the case in which the child dies at later time. Table 7 presents the differential effect of the death by its timing. Early death occurrences (within a month since birth) have a positive and significant effect on the subsequent delivery assistance and delivery at health facility. Death of the first child within a month increases the probability of seeking delivery assistance and of delivering at some health facility for the second child by 0.9 percentage points and by 6.1 to 6.8 percentage points, respectively. As the child's death deviates away from the birth, its effect on subsequent behavioral change gets weaker. This result adds to the evidence that mothers change their behavior due to the incidence of their child's death.

Although the results have shown that the child's death drives mothers for health behaviors, this behavioral change can be attributed not to learning but simply to switching. Because child death might be a significant negative shock on some mothers, they might only switch their behaviors due to psychological factors such as trauma, but not due to learning the importance of health service utilization. Table 8 confirms that the behavioral change is not driven by switching as a result of traumatic death incidence. If switching occurs, those who

delivered the first child with assistance at health facility can be more likely to deliver the second child without the assistance and at home. I restrict the sample to those who delivered the first child at some facility or with some assistance. If we find the result that mothers with the experience of their child's death are more likely to deliver the second child without any assistance and at home, it implies that mothers switch delivery behaviors due to the traumatic incidence of the child's death. However, I did not find this result. The first child's death does not significantly affect the health behavior in negative way (delivery at home, delivery without assistance) at the subsequent delivery. Combining with the main result, it indicates that women actually learn the importance of health service use from the salient experience of their child's death.

So far, the analysis was limited to the first and second child but it could be extended to all the children born between 2000 and 2010. To examine the effect of the child's death in the past on the health seeking behavior for the subsequent child in a regression framework, I estimate

(3) $$y_{ijk} = \propto + \beta_1 Death_{ij(k-1)} + X'_{ijk}\mu + \varepsilon_{ijk}$$

Utilization of health services for the "*k*-th" child is indicated by $y_{ijk} = 1$ for a mother *i* in a locality *j*. "$Death_{ij(k-1)}$" indicates if a mother's "*(k-1)*-th" child died. In order to capture the characteristics specific to each birth, the vector of controls "*X*" includes the birth-order dummies in addition to all the variables in (2). This specification has the similar result as the main one which limits the sample to the first and the second child only. Previous child's death increases the probability of seeking delivery assistance and of delivering at some health facility for the subsequent child by 0.6 ~ 1 percentage points and by 2.8~5.3 percentage points, respectively.

Overall, African mothers learn from a bitter salient past; child death, to update their health seeking behaviors. The child death is a driving force for mothers to seek delivery

assistance and to decide to deliver at some health facility for the subsequent child.

4. Conclusion

This paper examines whether the learning occurs from the salient negative experience from the past to result in health behavior updates. Specifically I analyzed the effect of a child's death on the health service uses at the next child's delivery such as delivery assistance and delivery at some health facility. Although the child's death does not randomly occur, the simple OLS method was used because potential biases seem to work against finding the result. I find significant changes in health seeking behavior after the experience of a child's death. Mothers who experienced the first child's death are 3 percentage points more likely to deliver the second child at some health facility and they are 0.8 percentage point more likely to deliver with some assistance than mothers who did not experience the first child's death. This evidence supports the claim that past bad experience affects the current health seeking behavior if the experience is severe.

An important message for policy emerges from this study. Because this study reveals that people change their behaviors if they receive salient negative information through their experience, policy makers could focus on intervention programs which emphasize and inform the negative effect of non-utilization of facilities to increase the use of health facilities in a salient manner. For example, in order to increase the immunization rate in African countries, education emphasizing the negative consequence of non-vaccination such as severe disease symptoms might appeal to their perceived risk of disease contraction. If the message the education conveys is salient enough, it may help them to change their behavior towards immunization. Thus an obvious question remaining for future research is whether negative information is the important factor for behavioral change and whether the negative information

can be transmitted not only through personal experience but also through other people's experience.

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Table 1: Summary Statistics: Demographic: Woman, Household, and Husband

		Total	First Child Died	First Child Did Not Die	Difference
		(1)	(2)	(3)	(2)-(3)
Woman's characteristics:					
Age		23.191	22.429	23.347	-0.918***
Highest Education					
	No education	0.425	0.508	0.409	0.099***
	Primary school	0.351	0.335	0.354	-0.019*
	Secondary school	0.197	0.146	0.207	-0.061***
	Tertiary school or more	0.027	0.010	0.030	-0.020***
Muslim		0.374	0.447	0.360	0.0867***
Total children ever born		2.140	2.212	2.124	0.088***
Births in past year		0.573	0.540	0.578	-0.038**
Children ever died		0.223	1.000	0.067	0.933***
Number of children dead (conditioned on children ever died)		1.143	1.176	1.040	0.136***
First children died		0.167	1.000	0.000	1.000***
Age at the first pregnancy		19.600	19.012	19.723	-0.711***
Weight (kg)		54.823	53.812	55.039	-1.227***
Height (cm)		157.902	157.380	158.013	-0.633***
Household characteristics:					
Rural		0.706	0.771	0.692	0.079***
Wealth Index					
	Poorest	0.224	0.241	0.218	0.023**
	Poorer	0.209	0.250	0.200	0.050***
	Middle	0.203	0.200	0.203	-0.003
	Richer	0.183	0.178	0.185	-0.007
	Richest	0.183	0.131	0.193	-0.062***
Partner's (Husband) characeristics:					
Age		31.512	31.424	31.538	-0.114
Highest Education					
	No education	0.359	0.428	0.345	0.083***
	Primary school	0.314	0.331	0.311	0.020*
	Secondary school	0.273	0.211	0.286	-0.075***
	Tertiary school or more	0.055	0.033	0.060	-0.027***
Number of Observations		13593	2263	11330	

Notes:

The Sample is restricted to women who gave birth to children between the year of 2000 and 2010.

* significant at 10%; ** significant at 5%; *** significant at 1%

Countries: Benin, Burkina Faso, Cameroon, Chad, Congo, CDR, Ghana, Guinea, Kenya, Lesotho, Liberia, Madagaskar, Malawi, Mali, Mozambique, Namibia, Niger, Nigeria, Rwanda, Saotome, Senegal, SeoraLeone, SwaziLand, Uganda, Zambia, Zimbabwe

Table 2: Summary Statistics: Demographic : Second Children

	Total	First Child Died	First Child Did Not Die	Difference
	(1)	(2)	(3)	(2)-(3)
Panel A:				
Female	0.490	0.494	0.490	0.004
Alive	0.923	0.848	0.938	-0.090***
Deliver at home	0.487	0.542	0.477	0.066***
Deliver assistance	0.945	0.939	0.947	-0.007
Size of baby at birth	3.228	3.219	3.232	-0.013
Panel B:				
Number of Prenatal care received	0.820	0.779	0.827	-0.048***
Had any vaccination	0.649	0.677	0.644	0.033**
Diarrhea in last 2 weeks	0.189	0.223	0.183	0.039***
Fever in last 2 weeks	0.259	0.309	0.250	0.0591***
Number of Observations	13593	2263	11330	

Notes;

Total sample: Second child of mothers who gave birth to the first child between 2000 to 2010

Size of baby at birth: 1=very small, 2=smaller than average, 3=average, 4=larger

* significant at 10%; ** significant at 5%; *** significant at 1%

Kenya, Lesotho, Liberia, Madagaskar, Malawi, Mali, Mozambique, Namibia, Niger, Nigeria, Rwanda, Saotome, Senegal, SeoraLeone, SwaziLand, Uganda, Zambia, Zimbabwe

Table3: Difference-in-Differences Type Analysis

Panel A: Any Delivery Assistance by Experience of Death of First Child

	Any Delivery Assistance		
	At First-Born Child	At Second-Born Child	Difference
First-born Child Died	0.950(N=3449)	0.939(N=2263)	-0.010*
First-born Child Did Not Die	0.968(N=29922)	0.947(N=11330)	-0.021***
Difference	-0.018***	-0.007	0.011***

Panel B: Delivery Not at Home by Experience of Death of First Child

	Delivery at Health Facility		
	At First-Born Child	At Second-Born Child	Difference
First-born Child Died	0.495(N=3449)	0.458(N=2263)	-0.037***
First-born Child Did Not Die	0.610(N=29922)	0.523(N=11330)	-0.087***
Difference	-0.115***	-0.066***	0.049***

Panel C: Restricted Sample: Those who Delivered without Any Assistance for the First Child

	Any Delivery Assistance
	At Second-Born Child
First-born Child Died	0.274(N=117)
First-born Child Did Not Die	0.172(N=436)
Difference	0.101**

Panel D: Restricted Sample: Those who Delivery at Home for the First Child

	Delivery Not at Health Facility
	At Second-Born Child
First-born Child Died	0.162(N=1183)
First-born Child Did Not Die	0.126(N=4806)
Difference	0.036***

Notes;

The Sample is restricted to women who gave birth to the first and second child between the year of 2000 and 2010.

* significant at 10%; ** significant at 5%; *** significant at 1%

Countries: Benin, Burkina Faso, Cameroon, Chad, Congo, CDR, Ghana, Guinea, Kenya, Lesotho, Liberia, Madagaskar, Malawi, Mali, Mozambique, Namibia, Niger, Nigeria, Rwanda, Saotome, Senegal, SeoraLeone, SwaziLand, Uganda, Zambia, Zimbabwe

Table4: Regression Result: The Effect of Experience of Death of First Child on the Delivery Assistance/Delivery Place at Second Delivery (Difference-in-Difference)

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
		Assistance at Second Delivery					Second Delivery at Health Facility				
First Child Died		-0.018***	-0.007**	-0.001	0.021**	0.021	-0.105***	-0.039***	-0.039***	0.009	0.009
		(0.003)	(0.003)	(0.006)	(0.010)	(0.026)	(0.008)	(0.006)	(0.012)	(0.020)	(0.037)
Dummy for Second Child		-0.023***	-0.016***	-0.014***	-0.013***	-0.013***	-0.106***	-0.070***	-0.050***	-0.051***	-0.051***
		(0.002)	(0.002)	(0.003)	(0.003)	(0.003)	(0.005)	(0.004)	(0.006)	(0.005)	(0.008)
(First Child Died)*(Dummy for Second Child)		0.012***	0.011**	0.008	0.003	0.003	0.051***	0.041***	0.048***	0.054***	0.054**
		(0.005)	(0.005)	(0.007)	(0.007)	(0.010)	(0.013)	(0.011)	(0.015)	(0.013)	(0.021)
age			0.004***	0.007**	0.003	0.003		0.015***	0.037***	0.025*	0.025
			(0.001)	(0.003)	(0.007)	(0.021)		(0.003)	(0.006)	(0.015)	(0.029)
age2			-0.000**	-0.000*	-0.000	-0.000		-0.000***	-0.001***	-0.001*	-0.001
			(0.000)	(0.000)	(0.000)	(0.000)		(0.000)	(0.000)	(0.000)	(0.001)
muslim			-0.047***	-0.058***	-0.010	-0.010		-0.066***	-0.096***	-0.021	-0.021
			(0.002)	(0.004)	(0.015)	(0.030)		(0.005)	(0.009)	(0.030)	(0.067)
Rural			-0.009***	-0.011***	0.000	0.000		-0.121***	-0.135***	0.000	0.000
			(0.002)	(0.004)	(0.000)	(0.000)		(0.005)	(0.008)	(0.000)	(0.000)
Wealth Index	Poorest		-0.023***	-0.032***	-0.025	-0.025		-0.279***	-0.293***	-0.186***	-0.186***
(control: Richest)			(0.003)	(0.005)	(0.016)	(0.034)		(0.007)	(0.011)	(0.033)	(0.065)
	Poorer		-0.017***	-0.027***	-0.003	-0.003		-0.228***	-0.267***	-0.147***	-0.147**
			(0.003)	(0.005)	(0.015)	(0.031)		(0.007)	(0.011)	(0.032)	(0.062)
	Middle		-0.008***	-0.017***	0.001	0.001		-0.152***	-0.177***	-0.165***	-0.165***
			(0.003)	(0.005)	(0.015)	(0.029)		(0.006)	(0.010)	(0.030)	(0.058)
	Richer		-0.003	-0.010**	0.024*	0.024		-0.075***	-0.091***	-0.080***	-0.080*
			(0.002)	(0.005)	(0.013)	(0.021)		(0.006)	(0.010)	(0.026)	(0.047)
Highest Education	No Education		-0.054***	-0.055***	-0.000	-0.000		-0.313***	-0.336***	-0.259***	-0.259***
(control: Tertiary and above)			(0.005)	(0.010)	(0.027)	(0.031)		(0.012)	(0.020)	(0.054)	(0.094)
	Primary		-0.021***	-0.023**	0.005	0.005		-0.176***	-0.210***	-0.227***	-0.227**
			(0.005)	(0.010)	(0.026)	(0.028)		(0.011)	(0.020)	(0.052)	(0.092)
	Secondary		-0.011**	-0.010	0.003	0.003		-0.078***	-0.097***	-0.117**	-0.117
			(0.005)	(0.009)	(0.025)	(0.025)		(0.011)	(0.019)	(0.051)	(0.086)
Constant		0.974***	0.988***	0.951***	0.917***	0.917***	0.634***	0.820***	0.715***	0.618***	0.618
		(0.001)	(0.019)	(0.040)	(0.093)	(0.258)	(0.002)	(0.042)	(0.079)	(0.188)	(0.379)
Observations		63,069	60,503	24,042	24,042	24,042	62,959	60,398	24,011	24,011	24,011
R-squared		0.00	0.08	0.08	0.80	0.80	0.01	0.31	0.32	0.85	0.85
Restricted sample				Yes	Yes	Yes			Yes	Yes	Yes
Fixed Effect					Yes	Yes				Yes	Yes
Clustered Standard Error						Yes					Yes

Notes;

The Sample is restricted to women who gave birth to the first and second child between the year of 2000 and 2010.

Fixed Effect:Columns represent OLS coefficients; with fixed effects clustered by district, birthyear of the first child and that of the second child) .

Clustered Standard Error: clustered by district

* significant at 10%; ** significant at 5%; *** significant at 1%

Countries: Benin, Burkina Faso, Cameroon, Chad, Congo, CDR, Ghana, Guinea, Kenya, Lesotho, Liberia, Madagaskar, Malawi, Mali, Mozambique, Namibia, Niger, Nigeria, Rwanda, Saotome, Senegal, SeoraLeone, SwaziLand, Uganda, Zambia, Zimbabwe

Table 5: Determinants of Child Death

		First Child Died					"i"th Child Died				
Dependent variable		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
First ("i"th) Delivery at Halth Facility		-0.022***		-0.021***	-0.008	-0.008	-0.018***		-0.017***	-0.008*	-0.008
		(0.003)		(0.004)	(0.007)	(0.012)	(0.003)		(0.003)	(0.005)	(0.008)
Assistance at First ("i"th) Delivery			-0.027***	-0.019**	-0.012	-0.012		-0.019***	-0.013**	-0.023**	-0.023
			(0.009)	(0.009)	(0.015)	(0.028)		(0.006)	(0.007)	(0.010)	(0.017)
age		0.003	0.003	0.003	-0.006	-0.006	0.001	0.001	0.001	-0.010***	-0.010*
		(0.003)	(0.003)	(0.003)	(0.005)	(0.009)	(0.002)	(0.002)	(0.002)	(0.004)	(0.006)
age2		-0.000	-0.000	-0.000	0.000	0.000	0.000	0.000	0.000	0.000***	0.000*
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
muslim		0.010**	0.009**	0.009*	-0.015	-0.015	0.006	0.006	0.005	-0.011	-0.011
		(0.005)	(0.005)	(0.005)	(0.012)	(0.020)	(0.004)	(0.004)	(0.004)	(0.008)	(0.013)
Rural		0.008**	0.010***	0.008**			0.011***	0.013***	0.011***		
		(0.004)	(0.004)	(0.004)			(0.003)	(0.003)	(0.003)		
Wealth Index	Poorest	0.013**	0.018***	0.013**	0.024*	0.024	0.012**	0.017***	0.012**	0.016*	0.016
(control: Richest)		(0.006)	(0.006)	(0.006)	(0.013)	(0.022)	(0.005)	(0.005)	(0.005)	(0.009)	(0.014)
	Poorer	0.017***	0.021***	0.017***	0.030**	0.030	0.015***	0.019***	0.015***	0.022**	0.022
		(0.006)	(0.006)	(0.006)	(0.012)	(0.021)	(0.005)	(0.005)	(0.005)	(0.009)	(0.014)
	Middle	0.012**	0.014***	0.012**	0.025**	0.025	0.010**	0.013***	0.010**	0.017**	0.017
		(0.005)	(0.005)	(0.005)	(0.011)	(0.019)	(0.004)	(0.004)	(0.004)	(0.008)	(0.012)
	Richer	0.014***	0.015***	0.014***	0.016*	0.016	0.013***	0.015***	0.013***	0.013*	0.013
		(0.005)	(0.005)	(0.005)	(0.010)	(0.015)	(0.004)	(0.004)	(0.004)	(0.007)	(0.010)
Highest Education	No Education	0.061***	0.065***	0.060***	0.053***	0.053**	0.057***	0.060***	0.056***	0.047***	0.047***
(control: Tertiary and above)		(0.010)	(0.010)	(0.010)	(0.018)	(0.027)	(0.008)	(0.008)	(0.008)	(0.013)	(0.017)
	Primary	0.041***	0.043***	0.040***	0.032*	0.032	0.037***	0.039***	0.037***	0.031**	0.031*
		(0.009)	(0.009)	(0.009)	(0.017)	(0.025)	(0.008)	(0.008)	(0.008)	(0.013)	(0.016)
	Secondary	0.023***	0.023***	0.023***	0.013	0.013	0.022***	0.022***	0.021***	0.014	0.014
		(0.009)	(0.009)	(0.009)	(0.017)	(0.023)	(0.008)	(0.008)	(0.008)	(0.012)	(0.015)
Constant		-0.072**	-0.019	-0.054	0.138**	0.138	-0.024	0.024	-0.020	0.237	0.237
		(0.036)	(0.036)	(0.037)	(0.063)	(0.112)	(0.044)	(0.044)	(3,431.601)	(0.167)	(0.232)
Observations		44542	44624	44455	44455	44,455	62518	62625	62395	62395	62,395
R-squared		0.02	0.01	0.02	0.67	0.67	0.01	0.01	0.01	0.58	0.58
Fixed Effect					Yes	Yes				Yes	Yes
Clustered Standard Error						Yes					Yes

Notes;

The Sample is restricted to women who gave birth to the first and second child between the year of 2000 and 2010.

Fixed-effect: Columns represent OLS coefficients with fixed effects clustered by birth-year and district in parentheses.

Clustered Standard Error: clustered by district

* significant at 10%; ** significant at 5%; *** significant at 1%

Countries: Benin, Burkina Faso, Cameroon, Chad, Congo, CDR, Ghana, Guinea, Kenya, Lesotho, Liberia, Madagaskar, Malawi, Mali, Mozambique, Namibia, Niger, Nigeria, Rwanda, Saotome, Senegal, SeoraLeone, SwaziLand, Uganda, Zambia, Zimbabwe

Column (6)-(10) includes birth-order dummy

Table6: Regression Result: The Effect of Experience of Death of First Child on the Delivery Assistance/Delivery Place at Second Delivery

											Restricted Sample: Only Those who Deliver the First Child without Any Assistance			Restricted Sample: Only Those who Deliver the First Child at Home		
Dependent variable		Assistance at Second Delivery					Second Delivery at Health Facility					Assistance at Second Delivery			Second Delivery at Health Facility		
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
First Child Died		-0.001	0.005	0.008**	0.014	0.014	-0.039***	0.014*	0.030***	0.059***	0.059	0.073*	-0.013	-0.013	0.049***	0.018	0.018
		(0.004)	(0.003)	(0.003)	(0.012)	(0.041)	(0.010)	(0.008)	(0.008)	(0.023)	(0.070)	(0.038)	(0.131)	(0.188)	(0.010)	(0.026)	(0.082)
Some assistant at First Delivery			0.750***	0.736***	0.689***	0.689***											
			(0.007)	(0.007)	(0.021)	(0.137)											
Delivery not at home at First Delivery								0.627***	0.524***	0.412***	0.412***						
								(0.006)	(0.007)	(0.021)	(0.085)						
age				-0.000	0.005	0.005			0.017***	0.037*	0.037	-0.011	-0.040	-0.040	0.015*	-0.017	-0.017
				(0.003)	(0.010)	(0.027)			(0.006)	(0.019)	(0.049)	(0.034)	(0.150)	(0.237)	(0.009)	(0.022)	(0.062)
age2				0.000	-0.000	-0.000			-0.000**	-0.001*	-0.001	0.000	0.001	0.001	-0.000*	0.000	0.000
				(0.000)	(0.000)	(0.001)			(0.000)	(0.000)	(0.001)	(0.001)	(0.003)	(0.006)	(0.000)	(0.000)	(0.001)
muslim				-0.024***	0.002	0.002			-0.033***	0.021	0.021	0.004	0.000	0.000	-0.027**	0.013	0.013
				(0.004)	(0.020)	(0.050)			(0.009)	(0.037)	(0.130)	(0.054)	(0.000)	(0.000)	(0.012)	(0.056)	(0.046)
rural				-0.000	0.000	0.000			-0.081***	0.000	0.000	-0.107*	0.000	0.000	-0.100***	0.000	0.000
				(0.004)	(0.000)	(0.000)			(0.008)	(0.000)	(0.000)	(0.055)	(0.000)	(0.000)	(0.014)	(0.000)	(0.000)
Wealth Index	Poorest			-0.020***	-0.034	-0.034			-0.152***	-0.126***	-0.126	0.092	0.004	0.004	-0.139***	-0.153**	-0.153
(control: Richest)				(0.005)	(0.022)	(0.059)			(0.012)	(0.042)	(0.126)	(0.091)	(0.338)	(0.398)	(0.021)	(0.075)	(0.339)
	Poorer			-0.016***	-0.023	-0.023			-0.148***	-0.099**	-0.099	0.078	-0.088	-0.088	-0.140***	-0.156**	-0.156
				(0.005)	(0.021)	(0.050)			(0.012)	(0.040)	(0.120)	(0.091)	(0.292)	(0.417)	(0.021)	(0.074)	(0.335)
	Middle			-0.014***	-0.017	-0.017			-0.109***	-0.106***	-0.106	-0.011	-0.028	-0.028	-0.119***	-0.132*	-0.132
				(0.005)	(0.020)	(0.042)			(0.011)	(0.038)	(0.118)	(0.089)	(0.302)	(0.282)	(0.021)	(0.075)	(0.344)
	Richer			-0.007	0.006	0.006			-0.047***	-0.063*	-0.063	0.150*	-0.080	-0.080	-0.085***	-0.123*	-0.123
				(0.005)	(0.017)	(0.036)			(0.010)	(0.033)	(0.096)	(0.089)	(0.237)	(0.329)	(0.020)	(0.070)	(0.357)
Highest Education	No Education			-0.022**	-0.016	-0.016			-0.143***	-0.219***	-0.219	-0.244***	0.156	0.156	-0.138	0.800**	0.800***
(control: Tertiary and above)				(0.010)	(0.037)	(0.076)			(0.021)	(0.071)	(0.193)	(0.090)	(0.139)	(0.594)	(0.084)	(0.319)	(0.250)
	Primary			-0.008	-0.004	-0.004			-0.098***	-0.221***	-0.221	-0.106	0.000	0.000	-0.092	0.789**	0.789***
				(0.009)	(0.036)	(0.074)			(0.021)	(0.068)	(0.189)	(0.093)	(0.000)	(0.000)	(0.084)	(0.319)	(0.263)
	Secondary			-0.001	-0.024	-0.024			-0.042**	-0.142**	-0.142	0.000	0.000	0.000	-0.031	0.994***	0.994***
				(0.009)	(0.035)	(0.066)			(0.020)	(0.067)	(0.181)	(0.000)	(0.000)	(0.000)	(0.084)	(0.315)	(0.029)
Constant		0.950***	0.227***	0.283***	0.241*	0.241	0.526***	0.164***	0.277***	0.078	0.078	0.164	0.478	0.478	0.444***	-0.360	-0.360
		(0.002)	(0.007)	(0.040)	(0.130)	(0.395)	(0.004)	(0.005)	(0.087)	(0.243)	(0.648)	(0.546)	(1.683)	(2.363)	(0.143)	(0.423)	(0.879)
Observations		16,574	16,390	15,705	15,705	15,705	16,550	16,342	15,660	15,660	15,660	607	607	607	6,843	6,843	6,843
R-squared		0.06	0.46	0.47	0.94	0.94	0.12	0.46	0.51	0.96	0.96	0.24	0.99	0.99	0.11	0.96	0.96
Fixed Effect					Yes	Yes				Yes	Yes		Yes	Yes		Yes	Yes
Clustered Standard Error						Yes					Yes			Yes			Yes

Notes;
The Sample is restricted to women who gave birth to the first and second child between the year of 2000 and 2010.
Standard errors in parentheses, * significant at 10%; ** significant at 5%; *** significant at 1%
Fixed Effect: Columns represent OLS coefficients; with fixed effects clustered by district, birthyear of the first child and that of the second child) .
Clustered Standard Error: clustered by district
Countries: Benin, Burkina Faso, Cameroon, Chad, Congo, CDR, Ghana, Guinea, Kenya, Lesotho, Liberia, Madagaskar, Malawi, Mali, Mozambique, Namibia, Niger, Nigeria, Rwanda, Saotome, Senegal, SeoraLeone, SwaziLand, Uganda, Zambia, Zimbabwe

Table 7: Regression Results: Experience of Death by the Timing of Death

Dependent variable		Assistance at Second Delivery			Second Delivery at Health Facility			Restricted Sample: Only Those who Deliver the First Child at Home		
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
First Child Died within 0 month since Birth		0.009*	0.019	0.019	0.061***	0.068*	0.068	0.054***	0.045***	0.045
		(0.005)	(0.019)	(0.066)	(0.012)	(0.037)	(0.111)	(0.012)	(0.014)	(0.049)
First Child Died within 1 month since Birth		0.007	0.029*	0.029	0.018	0.037	0.037	0.038***	-0.057***	-0.057
		(0.005)	(0.017)	(0.061)	(0.011)	(0.033)	(0.098)	(0.011)	(0.013)	(0.058)
First Child Died within 2 month since Birth		0.012	-0.020	-0.020	-0.014	0.055	0.055	0.007	0.022	0.022
		(0.008)	(0.025)	(0.087)	(0.018)	(0.047)	(0.141)	(0.017)	(0.017)	(0.048)
First Child Died within 3-5 month since Birth		0.002	-0.007	-0.007	0.022	0.190**	0.190	0.039	0.127***	0.127
		(0.016)	(0.046)	(0.253)	(0.036)	(0.087)	(0.213)	(0.034)	(0.032)	(0.149)
Some assistant at First Delivery		0.736***	0.688***	0.688***						
		(0.007)	(0.021)	(0.136)						
Delivery not at home at First Delivery					0.524***	0.412***	0.412***			
					(0.007)	(0.021)	(0.085)			
age		-0.000	0.006	0.006	0.018***	0.036*	0.036	0.020***	-0.000	-0.000
		(0.003)	(0.010)	(0.028)	(0.006)	(0.019)	(0.049)	(0.007)	(0.008)	(0.026)
age2		0.000	-0.000	-0.000	-0.000**	-0.001*	-0.001	-0.000***	0.000	0.000
		(0.000)	(0.000)	(0.001)	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)
muslim		-0.024***	0.004	0.004	-0.033***	0.020	0.020	-0.032***	-0.024	-0.024
		(0.004)	(0.020)	(0.050)	(0.009)	(0.037)	(0.131)	(0.010)	(0.022)	(0.051)
rural		-0.000	0.000	0.000	-0.081***	0.000	0.000	-0.096***	0.000	0.000
		(0.004)	(0.000)	(0.000)	(0.008)	(0.000)	(0.000)	(0.011)	(0.000)	(0.000)
Wealth Index	Poorest	-0.020***	-0.035	-0.035	-0.152***	-0.125***	-0.125	-0.129***	-0.140***	-0.140
(control: Richest)		(0.005)	(0.022)	(0.059)	(0.012)	(0.042)	(0.126)	(0.016)	(0.027)	(0.124)
	Poorer	-0.016***	-0.023	-0.023	-0.147***	-0.098**	-0.098	-0.130***	-0.160***	-0.160
		(0.005)	(0.021)	(0.050)	(0.012)	(0.040)	(0.120)	(0.016)	(0.026)	(0.123)
	Middle	-0.014***	-0.016	-0.016	-0.109***	-0.106***	-0.106	-0.111***	-0.129***	-0.129
		(0.005)	(0.020)	(0.042)	(0.011)	(0.038)	(0.118)	(0.016)	(0.026)	(0.124)
	Richer	-0.007	0.006	0.006	-0.047***	-0.062*	-0.062	-0.084***	-0.121***	-0.121
		(0.005)	(0.017)	(0.036)	(0.010)	(0.033)	(0.096)	(0.016)	(0.025)	(0.126)
Highest Education	No Education	-0.022**	-0.016	-0.016	-0.142***	-0.216***	-0.216	-0.116*	0.803***	0.803***
(control: Tertiary and above)		(0.010)	(0.037)	(0.077)	(0.021)	(0.071)	(0.190)	(0.070)	(0.158)	(0.117)
	Primary	-0.008	-0.004	-0.004	-0.098***	-0.218***	-0.218	-0.067	0.798***	0.798***
		(0.009)	(0.036)	(0.075)	(0.021)	(0.068)	(0.186)	(0.070)	(0.158)	(0.123)
	Secondary	-0.001	-0.024	-0.024	-0.042**	-0.140**	-0.140	-0.002	0.991***	0.991***
		(0.009)	(0.035)	(0.066)	(0.020)	(0.067)	(0.179)	(0.070)	(0.157)	(0.011)
Constant		0.284***	0.238*	0.238	0.267***	0.093	0.093	0.279*	-0.567***	-0.567
		(0.040)	(0.130)	(0.405)	(0.087)	(0.243)	(0.647)	(0.158)	(0.187)	(0.366)
Observations		15,705	15,705	15,705	15,660	15,660	15,660	11,410	11,410	11,410
R-squared		0.47	0.94	0.94	0.51	0.96	0.96	0.10	0.96	0.96
Fixed Effect			Yes	Yes		Yes	Yes		Yes	Yes
Clustered Standard Error				Yes			Yes			Yes

Notes;
The Sample is restricted to women who experienced death of their own children and gave birth to the first and second child between the year of 2000 and 2010.
Standard errors in parentheses, * significant at 10%; ** significant at 5%; *** significant at 1%
Fixed Effect: Columns represent OLS coefficients; with fixed effects clustered by district, birthyear of the first child and that of the second child) .
Clustered Standard Error: clustered by district
Countries: Benin, Burkina Faso, Cameroon, Chad, Congo, CDR, Ghana, Guinea, Kenya, Lesotho, Liberia, Madagaskar, Malawi, Mali, Mozambique, Namibia, Niger, Nigeria, Rwanda, Saotome, Senegal, SeoraLeone, SwaziLand, Uganda, Zambia, Zimbabwe

Table8: Regression Result: The Effect of Experience of Death of First Child on the Delivery Assistance/Delivery Place at Second Delivery (Restrict the Sample)

		Restricted Sample: Only Those who Deliver the First Child with Assistance			Restricted Sample: Only Those who Deliver the First Child at Health Facility		
		(1)	(2)	(3)	(4)	(5)	(6)
		No Assistance at Second Delivery			Second Delivery at Home		
First Child Died		-0.003	-0.011	-0.011	-0.010	-0.011	-0.011
		(0.003)	(0.011)	(0.036)	(0.011)	(0.038)	(0.146)
age		-0.001	-0.001	-0.001	-0.019**	-0.033	-0.033
		(0.003)	(0.009)	(0.017)	(0.009)	(0.030)	(0.084)
age2		0.000	0.000	0.000	0.000	0.001	0.001
		(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.002)
muslim		0.019***	0.001	0.001	0.014	-0.055	-0.055
		(0.004)	(0.017)	(0.048)	(0.013)	(0.053)	(0.217)
rural		-0.000	0.000	0.000	0.067***	0.000	0.000
		(0.003)	(0.000)	(0.000)	(0.010)	(0.000)	(0.000)
Wealth Index	Poorest	0.021***	0.026	0.026	0.164***	0.161***	0.161
(control: Richest)		(0.005)	(0.019)	(0.054)	(0.016)	(0.059)	(0.205)
	Poorer	0.018***	0.011	0.011	0.152***	0.082	0.082
		(0.005)	(0.018)	(0.042)	(0.015)	(0.054)	(0.212)
	Middle	0.013***	0.017	0.017	0.094***	0.127***	0.127
		(0.004)	(0.017)	(0.038)	(0.014)	(0.046)	(0.175)
	Richer	0.010**	0.004	0.004	0.025**	0.043	0.043
		(0.004)	(0.015)	(0.033)	(0.012)	(0.037)	(0.126)
Highest Education	No Education	0.011	0.011	0.011	0.113***	0.227***	0.227
(control: Tertiary and above)		(0.009)	(0.031)	(0.077)	(0.025)	(0.079)	(0.249)
	Primary	0.004	0.001	0.001	0.090***	0.232***	0.232
		(0.008)	(0.030)	(0.077)	(0.023)	(0.073)	(0.238)
	Secondary	-0.002	0.024	0.024	0.030	0.159**	0.159
		(0.008)	(0.029)	(0.068)	(0.022)	(0.070)	(0.214)
Constant	Constant	0.009	0.023	0.023	0.456***	0.350	0.350
		(0.036)	(0.115)	(0.235)	(0.118)	(0.373)	(1.101)
Observations		15,098	15,098	15,098	8,817	8,817	8,817
R-squared		0.02	0.91	0.91	0.13	0.96	0.96
Fixed Effect			Yes	Yes		Yes	Yes
Clustered Standard Error				Yes			Yes

Notes;
The Sample is restricted to women who gave birth to the first and second child between the year of 2000 and 2010.
Standard errors in parentheses, * significant at 10%; ** significant at 5%; *** significant at 1%
Fixed effect: Columns represent OLS coefficients; with fixed effects clustered by district, birthyear of the first child and that of the second child) .
Clustered Standard Error: clustered by district
Countries: Benin, Burkina Faso, Cameroon, Chad, Congo, CDR, Ghana, Guinea, Kenya, Lesotho, Liberia, Madagaskar, Malawi, Mali, Mozambique, Namibia, Niger, Nigeria, Rwanda, Saotome, Senegal, SeoraLeone, SwaziLand, Uganda, Zambia, Zimbabwe

Table9: Regression Result: The Effect of Experience of Death of "i-1"th Child on the Delivery Assistance/Delivery Place at "i"th Delivery

Dependent variable		Assistance at "i"th Delivery					"i"th Delivery at Health Facility				
		(1)	(2)	(3)	(4)	(5)	(6)	(5)	(7)	(8)	(9)
Previous("i-1"th) Child Died		-0.005	0.003	0.006*	0.010	0.010	0.012	0.028***	0.028***	0.053***	0.053
		(0.004)	(0.003)	(0.003)	(0.011)	(0.034)	(0.007)	(0.007)	(0.007)	(0.019)	(0.055)
Some Assistance at Previous("i-1"th) Child Delivery			0.736***	0.722***	0.669***	0.669***					
			(0.006)	(0.007)	(0.018)	(0.118)					
Deliver Previous("i-1"th) Child Not At Home							0.631***	0.529***	0.529***	0.404***	0.404***
							(0.006)	(0.006)	(0.006)	(0.018)	(0.073)
age				0.001	0.002	0.002		0.016***	0.016***	0.024	0.024
				(0.003)	(0.009)	(0.024)		(0.006)	(0.006)	(0.016)	(0.038)
age2				0.000	-0.000	-0.000		-0.000**	-0.000**	-0.000	-0.000
				(0.000)	(0.000)	(0.000)		(0.000)	(0.000)	(0.000)	(0.001)
muslim				-0.021***	0.008	0.008		-0.033***	-0.033***	0.010	0.010
				(0.004)	(0.018)	(0.045)		(0.008)	(0.008)	(0.033)	(0.108)
rural				-0.001	0.000	0.000		-0.081***	-0.081***	0.000	0.000
				(0.004)	(0.000)	(0.000)		(0.008)	(0.008)	(0.000)	(0.000)
Wealth Index	Poorest			-0.022***	-0.029	-0.029		-0.150***	-0.150***	-0.122***	-0.122
(control: Richest)				(0.005)	(0.020)	(0.052)		(0.011)	(0.011)	(0.037)	(0.106)
	Poorer			-0.018***	-0.027	-0.027		-0.145***	-0.145***	-0.100***	-0.100
				(0.005)	(0.019)	(0.048)		(0.011)	(0.011)	(0.035)	(0.101)
	Middle			-0.015***	-0.008	-0.008		-0.104***	-0.104***	-0.100***	-0.100
				(0.005)	(0.018)	(0.042)		(0.010)	(0.010)	(0.033)	(0.100)
	Richer			-0.008*	0.006	0.006		-0.050***	-0.050***	-0.062**	-0.062
				(0.004)	(0.016)	(0.034)		(0.009)	(0.009)	(0.029)	(0.083)
Highest Education	No Education			-0.022**	0.011	0.011		-0.141***	-0.141***	-0.162***	-0.162
(control: Tertiary and above)				(0.009)	(0.033)	(0.069)		(0.020)	(0.020)	(0.060)	(0.144)
	Primary			-0.008	0.016	0.016		-0.094***	-0.094***	-0.170***	-0.170
				(0.009)	(0.032)	(0.067)		(0.019)	(0.019)	(0.058)	(0.140)
	Secondary			-0.002	-0.001	-0.001		-0.040**	-0.040**	-0.094*	-0.094
				(0.009)	(0.031)	(0.064)		(0.019)	(0.019)	(0.056)	(0.133)
Constant		0.950***	0.241***	0.277***	0.832***	0.832	0.164***	0.301***	0.287***	-0.014	-0.014
		(0.002)	(0.006)	(0.042)	(0.207)	(1.017)	(0.004)	(0.082)	(0.088)	(0.375)	(0.683)
Observations		18,800	18,598	17,809	17,809	17,809	18,545	17,759	17,759	17,759	17,759
R-squared		0.05	0.44	0.46	0.93	0.93	0.46	0.51	0.51	0.95	0.95
Fixed Effect					Yes	Yes				Yes	Yes
Clustered Standard Error						Yes					Yes

Notes;
The Sample is restricted to women who gave birth to children between the year of 2000 and 2010.
Standard errors in parentheses, * significant at 10%; ** significant at 5%; *** significant at 1%
Fixed Effect: Columns represent OLS coefficients; with fixed effects clustered by district, birthyear of the first child and that of the second child) .
Clustered Standard Error: clustered by district
Countries: Benin, Burkina Faso, Cameroon, Chad, Congo, CDR, Ghana, Guinea, Kenya, Lesotho, Liberia, Madagaskar, Malawi, Mali, Mozambique, Namibia, Niger, Nigeria, Rwanda, Saotome, Senegal, SeoraLeone, SwaziLand, Uganda, Zambia, Zimbabwe
Include birht-order dummy