

Abortion Access and Child Maltreatment: A Cross-National Analysis

By

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Abstract

This thesis has examined the impact of restricted abortion access on different indicators of child maltreatment. Drawing from literature linking unwanted pregnancies to child maltreatment, I posited that given the proposed relationship between unintended pregnancies and child maltreatment, we should expect to see increased instances of maltreatment within countries that allow less of forbid women from accessing abortions.

For this purpose, I created an index of abortion access to numerically rate a country's level of liberality or restrictiveness. Then, using data from 49 countries, this thesis examined the potential linkage across a variety of measures that indicate child maltreatment while controlling for relevant alternative explanations. The results should be widely applicable across different cultures, given the wide-variety of countries that were examined.

In general, my results provide that even when controlling for impactful factors such as poverty rate and parental attitudes towards physical punishment, abortion access within a country still has a significant effect on some indicators of child maltreatment such as severe physical punishment.

This is significant because it shows that when governments make abortion hard to access this has negative effects that reach beyond merely the women denied these services. Forcing women to have children that are unwanted can negatively affect the children by increasing the likelihood of later maltreatment. These results add to the growing literature investigating the relationship between measures of child well-being and the effect of public policies. This should be considered when countries draft abortion policy.

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Unintended Pregnancy, Abortion Access, and Child Maltreatment

Unintended pregnancy holds predictive value as one of the earliest identifiable risk-factors for child maltreatment (Guterman, 2015). Unintended pregnancy has been associated with worse prenatal behavior and worse parenting than intended pregnancies (Guterman, 2015). One factor that may influence the number of unintended pregnancies is access to safe and affordable abortion services. With limited access to abortion more women will be forced to carry unwanted pregnancies to term. In this thesis I explore the link between the content of a country's abortion laws and rates of child maltreatment across a variety of measures.

In the literature, the broader category of unintended pregnancy is typically divided into two subcategories: mistimed and unwanted pregnancies. Mistimed pregnancies constitute those that occur either too early or too late to coincide with the initially planned timing of when to have children. Unwanted pregnancies go beyond that, and occur when women who have no desire to ever be a mother, as well as women that already have children and do not wish to have any more, become pregnant (Guterman, 2015). Unintended pregnancy has been associated with substandard parenting and worse prenatal outcomes, which can include delayed or no prenatal care at all (Kost and Lindenberg, 2015) and delays in the termination of drinking or smoking (Green-Raleigh, Lawrence, Chen, Devine, & Prue, 2005). Unintended pregnancies also result in higher rates of underweight and premature infants (Kost and Lindenberg, 2015). When either one of parents did not plan a pregnancy, attachment security and mental proficiency have been found to be lower than with intentional pregnancies (Bronte-Tinkew, Scott, & Horowitz, 2009). This may be in part due to the fact that the sentiments and ideas that

parents have about their children, even before that child's birth, have been shown to have an effect on the quality of their later parenting outcomes (Fonagy, Steele, & Steele, 1991). Additionally, evidence exists that children being born as a result of unintended pregnancies are more likely to have difficulties in social, interpersonal, mental health, and occupational areas that can have last well into adulthood, and even include an increased likelihood of involvement in illegal activity (Dagg, 1991).

It does not seem to matter which one of the parents views the pregnancy as being unintended, the likelihood of later maltreatment largely remains the same (Guterman, 2015). However, the gender differences often result in different forms of maltreatment. When the mother evaluates the pregnancy as unintended, maltreatment is more likely to take the form of psychological aggression and neglect. In contrast, if the father thinks of the pregnancy as unintended, later maltreatment is more likely to include physical aggression (Guterman, 2015). Because it is identifiable even before the child's birth as a characteristic that increases the likelihood of later maltreatment, unintended pregnancies hold predictive value and aid in the process of understanding child maltreatment (Guterman, 2015). The circumstances of pregnancy, and the viewpoint of the parents with regard to whether the child is desired or not, may have a considerable impact on the environment in which the later parenting occurs. These early conditions chart the path of the future childhood environment. A situation in which children enter the world unwanted and unwelcome does not set a positive trajectory for their life quality and conditions (Guterman, 2015).

Conceptualizing Child Maltreatment

Child maltreatment is behavior toward a child that is outside the societal norms of conduct and entails a substantial risk of causing the child physical or emotional harm. There are four types of maltreatment: physical abuse, sexual abuse¹, emotional abuse (psychological abuse), and neglect. Different forms of maltreatment often coexist, and overlap is considerable (Pekarsky, 2014).

Physical abuse is defined by Pekarsky as when a caregiver is inflicting physical harm or engaging in actions that carry a high risk of such harm. Specific forms can include shaking, dropping, striking, biting, or burning. Abuse is the most common cause of serious head injury in infants. In toddlers, abdominal injury is also common (Pekarsky, 2018). Infants and toddlers are the most vulnerable because the developmental stages that they go through (eg, colic, inconsistent sleep patterns, temper tantrums, toilet training) tend to frustrate and thus may subsequently enrage caregivers. This age group is also at increased risk because are unable to report their abuse given their limited speech capabilities. The risk declines with increasing age and the widening of social contacts (Pekarsky, 2018).

Emotional abuse, as defined by Pekarsky, is the infliction of emotional harm through the use of either words or actions. Specific forms of this abuse may include berating a child by yelling at him or her, disparaging or downplaying the child's talents and accomplishments, intimidating and terrorizing the child, and exploiting or corrupting by encouraging deviant or criminal activities. Emotional abuse can also occur through the withholding of words or actions, for example ignoring or rejecting children attempts at

¹ Sexual abuse is defined by Pekarsky as any action with a child that is done for the sexual gratification of an adult or significantly older child. Sexual abuse as a form of abuse is not examined in this analysis given a lack of data.

interaction and affection or isolating them from social contact with their peers or other adults (Pekarsky, 2018).

Furthermore, Pekarsky defines neglect as the failure to provide for or meet a child's basic physical, emotional, educational, and medical needs. Physical neglect includes failure to provide adequate food, clothing, shelter, supervision, and protection from potential harm. Emotional neglect is failure to provide affection or love or other kinds of emotional support. Educational neglect is the failure to enroll a child in school, ensure attendance at school, provide home schooling, or engage in activities that support learning. Medical neglect is failure to ensure that a child receives appropriate preventive care or needed treatment for injuries or physical or mental disorders. Neglect differs from abuse in that it usually occurs without a specific intent to harm (Pekarsky, 2018). Neglect is more directly linked with poverty than other types of child maltreatment. Children living in high poverty areas are six times as likely to experience neglect, compared with children living wealthier areas (Black and Oberlander, 2011). Impoverished neighborhoods are often defined by high levels of unemployment and large areas of vacant housing, both of which are generally also associated with high levels of maltreatment (Black and Oberlander, 2011). Black and Oberlander also believe that families living in impoverished neighborhoods generally have fewer opportunities to meet children's needs than families living in middle-income communities, the poverty affects reductions in services such as hospitals, schools, playgrounds, and transportation. Families in low-income communities also have fewer resources available to adequately meet the physical and material needs of nutrition, clothing, and personal hygiene. Furthermore, poverty exacerbates other risk factors associated with neglect, such as food

insecurity, poor maternal nutrition, maternal depression, and stressful life events (Black and Oberlander, 2011).

Theoretical Framework

Given the research cited above, I propose to examine the link between abortion access and child maltreatment. My expectation is that I will find a positive relationship between restrictiveness of abortion laws and child maltreatment. The more restrictive a given country's abortion laws, the higher one can expect the number of unintended pregnancies in that country to be. This is given that there are limited to no resources that would enable women to avoid having to give birth to a child that they did not plan and do not desire. The less resources are available to women when it comes to planning to avoid a pregnancy (limited, bad quality, or abstinence only sex-education in schools, restrictive birth control disbursement, prescription laws on the morning-after pill, low quality and accessibility of free women's health services) the more likely it becomes that a woman will suffer an unintended pregnancy. Liberal abortion laws can act as a fail-safe that could be a resource to prevent the coming to term of unintended pregnancies in the unfortunate situation where other previously mentioned resources failed due to personal or structural reasons.

According to Medoff, restrictive abortion laws may influence the likelihood of women terminating an unintended pregnancy in two ways. First, restrictive abortion laws increase the financial costs (e.g., out-of-pocket expenses on travel and accommodations, the price of the abortion procedure, lost work time, and childcare expenses) and the emotional costs (e.g., guilt, psychological trauma, remorse, regret, and humiliation)

incurred by women seeking an abortion (Medoff, 2012). Second, restrictive abortion laws may decrease the accessibility of abortion services by reducing the number of abortion providers. This can result in increased search costs in locating an abortion provider and increased time costs associated with obtaining an abortion (women with a time-consuming jobs and little financial means are often unable to shoulder these additional burdens). The more restrictive the abortion law, the more costly the abortion. If abortions become more costly, women will have fewer of them (Medoff, 2012).

Research Design

My analytical approach is to examine the link between abortion access and child maltreatment by analyzing aggregate data on abortion access and rates of child maltreatment and neglect across countries. In addition, I will control for common alternative explanations related to child maltreatment, including both contextual (e.g.: literacy rate) and attitudinal (e.g.: appropriateness of toward physical punishment).

Cross-national analysis is a common approach in comparative quantitative research, allowing for a quasi-experimental means of examining differences across countries and context. While this method does not allow for the same richness of descriptive detail found in comparative case studies, it is useful for helping to determine whether generalizations can be made about the relationships between variables (Jackman, 1985: 166).

Case Selection

Case selection was determined, by availability of appropriate data on both abortion laws and, in particular, data on incidence of child maltreatment. To reduce potential complications of differences in data gathering across countries, data from common (rather than country-specific) sources were used as much as possible. For example, for abortion policies, I utilized the Global Abortion Policies Database (GAPD), compiled by the World Health Organization (WHO).

National data on child maltreatment are more difficult to obtain than abortion laws, and thus it is availability of these data that provided the primary constraints on case selection. These measures are taken from UNICEF's Multi-Indicator Cluster Surveys (MICS), which has emerged as an important source of internationally comparable data related largely to issues that affect the quality of life of women and children. These data are explained in more detail below, but in terms of case selection, the MICS allow me to examine child maltreatment in a maximum of 49 countries, depending on the specific measure being examined, as not all measures are equally available for all countries and not all of the surveys were conducted within a reasonable enough time frame to enable comparison to each other. The countries that had a wide variety of the measures available and whose surveys were conducted within a reasonable timeframe are Afghanistan, Algeria, Argentina, Bangladesh, Barbados, Belarus, Belize, Benin, Bosnia, Cameroon, Central African Republic, Chad, Congo, Costa Rica, Cuba, Dominican Rep, Gambia, Ghana, Guyana, Iraq, Jamaica, Kazakhstan, Kyrgyzstan, Laos, Macedonia, Malawi, Mauritania, Moldova, Mongolia, Nepal, Nigeria, Oman, Panama, Paraguay, Saint Lucia,

Sao Tome, Serbia, Sierra Leone, Sudan, Suriname, Swaziland, Thailand, Togo, Turkmenistan, Ukraine, Uruguay, Vietnam, Zimbabwe.²

Data and Measurement

Primary Independent variable: legality of abortion services

Abortion is defined as the termination of pregnancy by various methods, including medical or surgical, before the fetus is able to sustain independent life (USLegal, Inc). Surgical methods of abortion use transcervical procedures for terminating pregnancy, including vacuum aspiration and dilatation and evacuation. The less invasive option is medical abortion which uses pharmacological drugs to terminate the pregnancy. This option is only available up to a certain gestational time period (USLegal, Inc).

As noted above, data for measuring abortion access are taken from the World Health Organization's Global Abortion Policies Database (GAPD). The GAPD is the result of WHO's Global Abortion Policies Project, designed to, among other things, promote the transparency of abortion laws and facilitate comparative analyses of countries' abortion laws and policies (WHO GAPD).³

The legal status of abortion is an important indicator of women's ability to enjoy their reproductive rights. In their efforts to promote greater transparency of abortion laws

² Originally Tunisia was also being considered, however upon further research it became clear that the volatile situation in the country post-Arab Spring has changed the situation on the ground to the point where NGO's find themselves incapable of accurately evaluating recent changes in abortion access in Tunisia due to a lack of data and peer-reviewed literature. ('This Is Real Misery': Experiences of Women Denied Legal Abortion in Tunisia, Selma Hajri, Sarah Raifman, Caitlin Gerdts, Sarah Baum, Diana Greene Foster.)

³ The Project Database is a collaborative effort by the Population Division of the Department of Economic and Social Affairs of the United Nations and the Department of Reproductive Health and Research of the World Health Organization.

and policies, as well as to improve countries' accountability for the protection of women and girls' health and human rights WHO identified policy and legal sources relating to abortion. These sources include Reproductive Health Acts, Constitutions, General Medicinal Health Acts, Criminal/Penal Codes, Civil Codes, Ministerial Decrees, Medical Ethics Code, Case Law, Abortion Specific Law, Law on Medical Practitioners, Law on Health Care Services. These sources were then used to gather information on the legality of abortion services in the 49 countries listed above. Based on these data, I use the following indicators of abortion access and coded them as follows:

- ❖ Exception to preserve the life of the mother [1=Yes; 0=No]
- ❖ Exception if performed to preserve the physical health of the mother [1=Yes; .5=Necessity defensible; 0=No/Necessity unlikely to be defensible]
- ❖ Exception if performed to preserve the mental health of the mother [1=Yes; 0=No]
- ❖ Exception if conception was the result of rape [1=Yes; 0=No]
- ❖ Exception if conception was the result in incest [1=Yes; 0=No]
- ❖ Exception in the case of fetal impairment [1=Yes; 0=No]
- ❖ Exception if performed to preserve the socioeconomic wellbeing of the mother [1=Yes; 0=No]
- ❖ Abortion is legal upon request [1=Yes; 0=No]
- ❖ Abortion permissible only with spousal authorization [reverse coded; 1=No; 0=Yes]

- ❖ Abortion permissible only with parental authorization [reverse coded; 1=No; 0=Yes]
- ❖ Abortion is permissible only within a certain gestational period (calculated as the percentage of the total gestational period (40 weeks))

Each individual country is scored by adding together the numerical values of each of these factors related to abortion access, with a theoretical maximum being 11. These values were then indexed by dividing each country's score by the theoretical maximum, creating an abortion access index running from 0.00 to 1.00. As shown in Figure 1, Congo, Dominican Republic, Iraq, Laos, and Mauritania, have the most restrictive abortion laws of the subset of countries examined here (0.0). Vietnam has the highest degree of abortion access (.959).

For illustrative purposes, and following classification schemes developed by the Center of Reproductive Rights, I organized each country into broader categories of abortion access, based on the circumstances under which a woman can legally obtain abortion services. The first category includes countries that prohibit abortion altogether or permit it only to save the life of a woman. As mentioned above, countries with the lowest scores such as Congo, Dominican Republic, Iraq, Laos, Mauritania, and Senegal fall into this category. Roughly 25.5 percent of the world's population resides in the 66 countries with such laws (Center for Reproductive Rights). These countries are mostly located in the Global South, with the exception of several countries in central and eastern Asia. Many of these countries include explicit provisions in their penal codes that exempt

providers from punishment if they perform an abortion to save a woman's life (Center for Reproductive Rights).

Other countries, such as Haiti, prohibit abortion altogether in their penal codes, but may allow it in some special cases on the basis of criminal law defense of "necessity." Many penal codes excuse criminal liability if the act is performed in order to save one's own life or the life of another person. In these distinct circumstances, although abortion is not technically permitted by law, it could be performed on the basis that it was necessary to preserve a woman's life (Center for Reproductive Rights). To account for this special case of necessity exemption the countries that fall into this category were coded as 0.5 instead of 1/0. However it needs to be mentioned that in many cases this necessity defense is generally theoretical and only applicable to avoid criminal liability. Thus, abortion providers or women can only invoke the defense once they face criminal charges (Center for Reproductive Rights).

The countries in each subsequent category recognize additional grounds on which a woman is able to gain access to abortion services. The Category II countries might allow abortion either to preserve physical health, to preserve mental health, in the case of rape, in the case of incest, in the case of fetal impairment, or on the basis of socioeconomic grounds. If abortion is allowed on the basis of socioeconomic grounds, countries generally allow women to obtain abortions for factors such as their age, economic status, or marital status (Center for Reproductive Rights). The Category III countries allow abortion on request and without restriction as to reason. In these countries the pregnant woman is generally allowed to make the decision about whether she chooses to terminate a pregnancy without having to meet any specific criteria. However, Category

III countries yet might still impose certain legal barriers on abortion services, such as spousal and parental authorization for underage women or gestational week limits (Center for Reproductive Rights). The gestational age of pregnancy (gestation) is defined as the number of days or weeks since the first day of the woman's last normal menstrual period in women with regular cycles (for women with irregular cycles, the gestational age may need to be determined by physical or ultrasound examination). The first trimester is generally considered to consist of the first 12 or the first 14 weeks of pregnancy (Mongelli, 2016). Many countries in Category III do not allow abortions on request past the first trimester (Center for Reproductive Rights).

It is important to note that, on the ground, abortion laws may be applied differently than their categorization would suggest. In some countries where abortion is permitted, inadequate implementation of legal provisions may yet render safe abortion services inaccessible or unaffordable. Additionally, abortion laws may be interpreted more liberally or restrictively than a literal reading of the law might suggest, this could depend on factors such as public support for abortion rights, the personal views of government officials and providers, and individual circumstances. Therefore, the country classifications and numbers have practical limitations (Center for Reproductive Rights).

Dependent variables: Indicators of Child Maltreatment

The UNICEF Multi Cluster (MICS) survey includes information on many variables that can either directly or indirectly serve as measures of child maltreatment. Since its inception in 1995, the MICS has become the largest source of statistically sound and internationally comparable data on women and children worldwide. Trained and competent teams go out into the field and administer surveys to household members, focusing primarily on issues that directly affect the lives of children and women (UNICEF MICS).

National teams create the individual questionnaire on the basis of an assessment of their country's specific data needs. The base blueprint is the standard MICS questionnaires as it is designed by UNICEF. From there, countries choose the MICS modules that appear most relevant to their individual needs. UNICEF's MICS experts aid in this process of creating a survey that works within the national context of each country (UNICEF MICS). Effective on-site support is provided by country MICS coordinators and UNICEF workers, with continuous technical assistance on a regional and global level. High-quality data are obtained thanks to thorough and tested field procedures that are combined with rigorous data verification (UNICEF MICS).

The average sample size is around 11,000 households, although this may vary greatly from one survey to the other. Interviewers administer a household questionnaire as well as an individual questionnaire to men and women aged 15 to 49 years and to mothers or caretakers of all children under 5 years of age (UNICEF MICS).

Most relevant to this study, MICS explores knowledge of and attitudes to certain topics; specific behaviors of women, men and children. This enables us to gain insight

into behaviours that may affect women's and children's lives and use this data for this study. MICS data have been gathered as far back as 1993 (UNICEF MICS). In order to ensure reasonable continuity across countries, I chose to use only those countries for which data was gathered during the 2010 to 2015 time frame.

Operationalized dependent variables

This paper examines a variety of measures of child maltreatment under three broad categories: discipline (both physical and psychological), child development, and child health.

Child Maltreatment: Discipline

Teaching children the societal norms of behavior is an important part of parenting everywhere. This process is often frustrating and repetitive for parents and thus often involves disciplining the child in one fashion or another. Positive parenting practices involve imparting knowledge and skills to handle emotions or conflicts in constructive ways that encourage improvement and change, while also preserving the child's self-esteem, physical and psychological integrity and dignity. However, in many cases, children are expected to learn and change behavior based on the repetitive use of punitive methods. These methods depend on the use or threat of physical force or verbal scare tactics to achieve the desired behaviors (UNICEF MICS). Studies have found that exposing children to violent discipline has harmful consequences, which range from immediate impacts to long-term harm that children carry forward into adult life (Gershoff, 2010). Violence impedes children's development, learning abilities and school performance. Additionally, it inhibits the growth of positive and close relationships,

incites low self-esteem, emotional distress and depression. In some cases it can even lead to to disproportionate risk taking behavior and ideas or actions of self harm (UNICEF MICS).

In addition, emotional harm presents a vigorous attack on a child's development and sense of self and social competence. This type of behavior can either be a conscious or unconscious act by the caregiver, however the negative result is often the same. This behavior can appear either in the form of consistently failing to engage in positive reinforcement such as praise or the form of active commission of insults and belittling speech. Emotional harm can be one of the most damaging types of maltreatment. It is especially dangerous for younger children since they have often not yet developed a strong sense of self-worth. The less developed the child's sense of self and identity, the more serious the physical, social, and emotional consequences (Child Welfare Collaborative Group, 2008).

The disciplinary methods examined in this study range from non-violent approaches to psychological aggression and include moderate to severe forms of physical punishment. In the MICS, respondents to the household questionnaire were asked a series of questions on the methods adults in the household used to discipline their children during the past month (UNICEF MICS). I evaluate three of these measures, as outlined below.

1) Any Physical punishment:

Defined as having shook the child; spanked, hit, slapped on bottom with bare hand; hit with belt, hairbrush, stick or other hard object; hit/slapped on the face, head or

ears; hit/slapped on hand, arm or leg; beat up, hit over and over as hard as one could.

Operationalized as the percentage of children in each country aged 2-14 who were subjected to physical punishment during the past month (UNICEF MICS).

2) Severe physical punishment:

Defined as having hit/slapped on the face, head or ears; hit/slapped on hand, arm or leg; beat up, hit over and over as hard as one could. Operationalized as the percentage of children in each country aged 2-14 who were subjected to severe physical punishment (UNICEF MICS).

3) Psychological aggression:

Defined as having shouted, yelled, screamed; called the child 'dumb, lazy or any other name' (UNICEF MICS).

Child Maltreatment: Child Health

The weight of a child at the time of its birth is both a good indicator of the mother's well-being and nutritional status as well as the newborn's chances for survival, growth, long-term health, and further development (UNICEF MICS). Recent research by Black and Oberlander suggests that the nutritional status of the mother may be related to poorer and neglectful parenting behavior. For example, iron deficiency, the most prevalent single nutrient deficiency in the world, is associated with reduced work

capacity, poor immune function, and changes in cognition, emotions, and behavior (Black and Oberlander, 2011).

Beyond the possible negative nutritional implication for parental behavior, low birth weight (defined as less than 2,500 grams) also carries serious health risks for children. Babies who were undernourished in their mother's womb face a greatly increased risk of dying during their childhood (Uthman, 2007). Those who survive are more likely to present with impaired immune function. Many of these low birthweight children run at great risk of remaining undernourished even in adolescence and adulthood. This can lead to reduced muscle strength and thus lower life quality expectations (Annan, 2001; 30). These children additionally tend to suffer a higher incidence of diabetes and heart disease when they reach a higher age. Low birthweight also carries the risk lower IQ and cognitive disabilities. This is likely to affect these children's later performance in school and their job opportunities as adults (Annan, 2001; 30).

The antenatal period is therefore an important opportunity to teach pregnant women measures that could possibly improve their own health and also contribute to their infant's wellbeing. Health care providers are able to use antenatal appointments to educate mothers on important health issues, including diet and nutrition (which can prevent low birthweight births) (Child Trends Databank, 2015; 2). Additionally, proper feeding of infants and young children can increase their chances of survival while simultaneously promoting optimal growth and development (UNICEF MICS).

For example, breastfeeding during the first two years has many advantages, such as protection from possible infections, and it is also cheap and safe even when the family

is unable to access clean drinking water. UNICEF and WHO recommend that infants be breastfed within the hour of their birth. They then recommend breastfeeding exclusively for the first six months of life and continuing to be breastfed up to two years of age and beyond. Problematically, often mothers do not start to breastfeed early enough or do not exclusively breastfeed for the recommended 6 months. There are often pressures to switch to infant formula too early, which in turn can result in decreased growth and micronutrient deficiency. Switching to formula before the recommended 6 months can be especially dangerous when safe drinking water is not widely accessible. In combination with breastfeeding, UNICEF recommends the consumption of safe solid, semi-solid and soft foods from the age of 6 months onwards. Doing this seems to lead to better health and growth outcomes, with the potential to reduce stunting during the first two years of life (UNICEF MICS).

Adequacy of care (defined by the frequency and timing of these antenatal visits) has been correlated with more positive parental outcomes and may also confer benefits such as reduced likelihood of postpartum depression and infant injuries (Child Trends Databank, 2015; 2). This is important since maternal depression has been identified as a predictor of neglect. Depression can interfere with mothers' ability to provide a consistently affectionate environment and decrease their contact-seeking behavior, both of these actions resulting in negative consequences for the infant. In some extreme cases, mothers may not be able to respond to their infant's needs at all (Black and Oberlander, 2011).

Fatal maltreatment is the worst outcome of child maltreatment. This type of abuse may involve repeated abuse over a period of time or it may only constitute a single

incident. In the subcategory of fatal child neglect, the death may not result from any specific action on the part of the caregiver but instead from a caregiver's acute or continuous lack of action (Children's Bureau, 2015).

However, it is hard to quantify this type of fatal maltreatment, as many cases are incorrectly attributed to falls, burns, drowning and other more accidental and innocent causes. Although the untimely deaths of children due to illness and accidents are closely monitored in many countries, deaths that result from physical abuse or severe neglect can be more difficult to track (Children's Bureau, 2015). This can be attributed to several different possible factors. These include the variation among requirements for reporting and definitions of child abuse and neglect, as well as the variation in death investigation guidelines. It also may be affected by the inaccurate determination of the manner and cause of death, which can result in the miscoding of death certificates and includes deaths labeled as accidents, sudden infant death syndrome, or undetermined that would have been attributed to abuse or neglect if more comprehensive investigations had been conducted. The ease with which the circumstances surrounding many child maltreatment deaths can be concealed or made unclear and the lack of coordination or cooperation among different organizations and jurisdictions can also contribute to this problem (Children's Bureau, 2015).

Based on this examination and availability of data, I am using the following measures as indicators of child maltreatment related to child health:

Percentage of women who have had 4 or more antenatal visits:

This measure is calculated as percentage of women age 15-49 years with a live birth in the last 2 years who were attended during their last pregnancy that led to a live birth (UNICEF MICS).

Under five mortality/Infant mortality:

Infant mortality is defined as the probability of dying between birth and the first birthday. Under five mortality is defined as the probability of dying between birth and the fifth birthday. Rates are expressed as deaths per 1,000 live births (UNICEF MICS).

Age appropriate breastfeeding:

Measured as percentage of children age 0-23 months appropriately fed during the previous day. Different criteria of feeding are used depending on the age of the child. For infants aged 0–5 months, exclusive breastfeeding is considered as age-appropriate feeding, while children aged 6–23 months are considered to be appropriately fed if they are receiving breast milk and solid, semi-solid or soft food (UNICEF MICS).

Low birthweight:

Percentage of last live-born children in the last two years that are estimated to have weighed below 2,500 grams at birth. There are limitations to this measure given that many infants are not weighed at birth and those who are weighed may be a biased sample of all births, the reported birth weights usually cannot be used to estimate the prevalence of low birth weight among all children. Therefore, the percentage of births weighing below 2500 grams is estimated from two items in the questionnaire: the mother's

assessment of the child's size at birth (i.e. very small, smaller than average, average, larger than average, very large) and the mother's recall of the child's weight or the weight as recorded on a health card if the child was weighed at birth (UNICEF MICS).

Child Maltreatment: Development

It is well recognized by developmental experts that a period of very important brain development occurs in the first 3-4 years of life (Jha, 2012). The quality the environment is a major determinant of a child's neurological development during this period. When children are not provided with a healthy environment, it could contribute to emotional, physical and mental health problems (Royal Society of Canada & Canadian Academy of Health Sciences Expert Panel, 2012). In this context, engagement of adults in activities with children, presence of books in the home for the child, and the conditions of care are important indicators of quality of home care. As set out in UNICEF'S millennium Development Goals document "A World Fit for Children", "children should be physically healthy, mentally alert, emotionally secure, socially competent and ready to learn." Parents regularly engaging in educational activities with their children contributes to these goals. Similarly, exposing children to books in early years provides the child with greater understanding of the importance of books before entering school and also may also give the child opportunities to see others reading. Having books in the home is important for later school performance. However, because neglect is so closely associated with low education and low income, it is important to discover how best to distinguish neglect by parents from deprivation through poverty (UNICEF MICS). Following this

literature, I use the following as measures of child maltreatment related to child development:

Percentage of children under age 5 who have three or more children's books:

Mothers/caretakers of all children under-5 years were asked about the number of children's books or picture books they have for the child, and the types of playthings that are available at home (UNICEF MICS).

Percentage of children under age 5 left alone or in the care of another child younger than 10 years of age for more than one hour at least once in the last week:

This measure serves as an indicator of inadequate care which is a form of neglect. Leaving children alone or in the presence of other young children is known to increase the risk of injuries. UNICEF asked two questions to find out whether children age 0-59 months were left alone during the week preceding the interview, and whether children were left in the care of other children under 10 years of age (UNICEF MICS).

Percentage of children age 36-59 months with whom an adult has engaged in four or more activities to promote learning and school readiness in the last 3 days:

This measure serves as an indicator for support for learning. According to psychologist Diana Baumrind, neglectful parents have the least amount of involvement or response towards their children's needs. They just provide the most basic of facilities but no room or opportunity for recreational and developmental activities (Rosli, 2009).

Percentage of children age 0-17 years living with neither biological parent (both alive):

This measure serves as an indicator of low quality parenting on the part of the biological parents. Children living with other adults than their biological parents is a potential indicator of past maltreatment that led to government or familiar intervention in removing the child from its biological parents. Can also be indicative of a chaotic and unstable living situation and indicate an insufficient bond to parental figures.

Control Variables

In order to reduce the likelihood of making conclusions about spurious relationships between abortion access and child maltreatment, my statistical analysis includes several control variables. The control variables need to account for things that could also be related to child maltreatment. This includes literacy rate, poverty rate, contraception rate, attitudes towards domestic violence, attitudes towards physical punishment, and religious affiliation.

Use of contraception:

Calculated as percent of women age 15-49 years currently married or in union who are using (or whose partner is using) a modern contraceptive method. Measured methods include female sterilization, the pill, injectables, male condoms, and implants, IUD, male sterilization, diaphragm, foam, jelly, or female condom. My expectation is that increased use of contraception will be negatively associated with measures of child maltreatment (UNICEF MICS).

Attitudes towards physical punishment

Measured as percent of respondents to the child discipline module who believe that physical punishment is needed to bring up, raise, or educate a child properly (UNICEF MICS). If the belief that a child needs to be physically punished is prevalent within a country that then this societal norm could have a significantly increase instances of child maltreatment as per our definition.

Attitudes towards domestic violence

MICS assessed the attitudes of women and men aged 15-49 years towards wife/partner beating by asking the respondents whether husbands/partners are justified to hit or beat their wives/partners in a variety of situations. The purpose of these questions is to see to what extent violence, as a disciplinary action when a woman does not comply with certain expected gender roles, is socially accepted. Women are asked if it a man is justified in hitting or beating his wife in at least one of the five situations. Women who justify a husband's violence agree and justify violence in instances in which a wife

neglects the children, if she goes out without telling him, if she argues with him, if she refuses sex with him, if she burns the food (UNICEF MICS). The specific variable I used measures the percentage of women who believe their husbands are justified in using violence for any of these five reasons.

Poverty rate:

Poverty is strongly linked with child neglect. For example, in the Third National Incidence Study, neglect was 44 more times likely to be identified in families earning less than \$15,000 a year compared with those earning over \$30,000. There are also plenty of data demonstrating that poverty in itself jeopardizes children's health, development, and safety. Poverty often goes beyond just material deprivation, with financial strains acting as daily stressors on a family's emotional and material resources, exacerbating family conflict, and thus potentially lead to neglect (Dubowitz, 2011). Poverty rate is measured as percentage of the population living below the poverty line in 2013 (CIA World Factbook)

Religious Affiliation

A woman's unintended pregnancy resolution decision may depend on the intensity of her commitment to her religion's moral opposition to abortion. The Catholic Church for example has an unequivocal opinion against abortion. However, there is also considerable evidence that Catholic women do not uniformly support the Catholic Church's official position on abortion (Medoff, 2012). Additionally, the religious beliefs

of a country's residents regarding women's sexual activity, contraceptive practices, and abortion may influence both the restrictiveness of a country's abortion policies and the risky sexual behavior of women of childbearing age. Differences may exist in the attitudes among a country's residents that are specific to each country and may affect women's unintended pregnancy resolution decision (Medoff, 2012). I examine literature in terms of the percentage of the population adhering to Islam, Catholicism, and Protestantism. Data for religion are taken from the World Religion Dataset.

Literacy Rate

Operationalized as the percentage of the population age 15 and over who can read and write (CIA, The World Factbook).

Analysis

I begin my examination of the impact of abortion access on child maltreatment by examining several measures of child discipline. The results are detailed in Table 1 below.⁴

Beginning with instances of severe discipline, we see a strong negative relationship between increased abortion access and the percentage of children who experienced severe physical punishment in the form of slapping, hitting, beating, etc. In countries with more liberal abortion access, severe punishment is significantly lower.

Importantly, this effect is found within the context of several significant control variables, including those that account for attitudes toward punishment. While overall

⁴ All models use ordinary least squares regression. In order to account for potential violations of OLS assumptions that can occur with cross-national data, OLS with robust standard errors is employed.

attitudes toward physical punishment is not significant, the analysis reveals a significant and positive effect for women's attitudes toward domestic violence. In countries where a greater percentage of women believe their husbands are justified in hitting them, there tends to be greater levels of severe punishment of children. The controls for literacy rates and contraception prevalence also behave as expected. As literacy rates across countries increase, there is a tendency toward lower levels of severe physical punishment.

Table 1: Abortion Access and Discipline – Baseline Models			
Variable	Severe	Physical	Psychological
Abortion Access	-12.45*** (2.86)	-6.03 (5.22)	.823 (8.18)
Contraception Prevalence	-.122*** (.042)	-.281*** (.093)	-.264** (.148)
Literacy Rate	-.128** (.074)	.002 (.156)	.214 (.26)
Poverty Rate	-.039 (.046)	.117 (.126)	.182 (.127)
Women - Attitudes Toward Domestic Violence	.136** (.06)	.104 (.11)	.19 (.156)
Attitude - Physical Punishment	.074 (.048)	.298*** (.093)	.307*** (.094)
Constant	28.36	52.45	36.14
N/R2	38/.849	39/.745	39/.525
Significant at .05 *Significant at .01 level, one-tailed Standard errors in parentheses			

Similarly, higher rates of contraception use are also significantly related to lower levels of maltreatment in the form of severe punishment. When accounting for these other factors, poverty rate does not emerge as significant.

Turning to broader and less severe instances of physical discipline, increased abortion access is not a significant influence on lower rates of child maltreatment. However, control for prevalence of contraception exerts a significant influence. While literacy rate and women's attitudes toward domestic violence drop out, attitudes toward the use of physical punishment emerge as significant in this model. The analysis for psychological discipline follows the same pattern of results as the physical discipline model.

Overall, the analyses provide initial support for the idea that finding ways to reduce unwanted pregnancies can have an impact on reducing child maltreatment. Contraception prevalence is significant across all forms of punishment, and attitudes toward whether domestic violence or physical punishment are appropriate emerge in some form in each of the models. Importantly, in the face of these attitudinal and contextual controls, increased abortion access still emerges with a strong negative effect on instances of severe physical discipline.

In addition to the variables examined above, I also recognize that there may be broader contextual differences across countries that may influence both abortion access and prevalence of punishment or maltreatment. In particular, my concern is about religious differences. In order to evaluate this, I reexamined the initial models including a variable for the percentage of religious adherents. Because of the relatively small number

of cases, I examine any potential impacts of religion separately in individual models. The results of these additional analyses are detailed in Table 2 - Table 4

Table 2: Abortion Access and Severe Discipline, Including Religion				
Variable	Baseline Model	Include Islam	Include Cath	Include Prot
Abortion Access	-12.46*** (2.86)	-11.48*** (2.98)	-11.5*** (3.06)	-11.65*** (3.11)
Contraception Prevalence	-.122*** (.044)	-.109** (.044)	-.113** (.046)	-.110*** (.041)
Literacy Rate	-.128** (.074)	-.161** (.088)	-.155** (.092)	-.157** (.076)
Poverty Rate	-.039 (.045)	-.05 (.049)	-.053 (.047)	-.05 (.05)
Attitude - Domestic Violence	.136** (.06)	.116 (.081)	.122** (.071)	.118** (.064)
Attitude - Physical Punishment	.074 (.048)	.086** (.051)	.087 (.053)	.089** (.056)
Islam	-----	.264 (4.3)	-----	-----
Catholic	-----	-----	.442 (3.67)	-----
Protestant	-----	-----	-----	-1.28 (8.11)
Constant	28.36	30.57	30.08	30.39
N/R2	38/.849	37/.851	37/.851	37/.851

Significant at .05. *Significant at .01, one-tailed Standard errors in parentheses

Table 2 shows the results of maltreatment in the form of severe discipline controlling for religion. The first set of coefficients (baseline) simply mirrors the results in Table 1. The next columns enter and then substitute the percentage of citizens ascribing to Islam, Catholic, and Protestant. As Table 2 illustrates, there is no case where religion is a significant variable. Most importantly, the introduction of controls for percentage of religious adherents does nothing to reduce the impact of abortion access on severe child maltreatment.

Table 3 and 4 shows the analysis for the possible impact of religious context on the relationship between physical and psychological discipline and percent Islam, Catholic, and Protestant, respectively. The most interesting thing about Table 3 is that when controlling for Islam, the relationship between abortion access and physical discipline emerges as significant and negative. In addition, the model indicates a direct negative effect of Islam on instances of physical discipline. Finally, including Islam in the model also leads to the previously insignificant control variable of women's attitudes towards domestic violence to emerge as significant.⁵

With regard to the models in Table 4, the inclusion of religion does little to effect the impact of abortion access on psychological discipline. As with physical discipline, the addition of percent Islamic is again significantly negative. In contrast the addition of percent Protestant has a significant positive relationship with psychological discipline.

⁵ The correlation between percent of the population that follows Islam and severe discipline is .62; between Islam and abortion index is -.382.

Table 3: Abortion Access and Physical Discipline, Including Religion

Variable	Baseline Model	Include Islam	Include Cath	Include Prot
Abortion Access	-6.03 (5.22)	-9.96** (5.44)	-4.69 (5.76)	-4.76 (5.45)
Contraception Prevalence	-.281*** (.093)	-.36*** (.098)	-.317*** (.106)	-.280*** (.091)
Literacy Rate	.002 (.156)	.08 (.172)	.055 (.174)	-.041 (.159)
Poverty Rate	.117 (.126)	.067 (.132)	.102 (.124)	.082 (.137)
Attitude - Domestic Violence	.104 (.11)	.213** (.126)	.14 (.126)	.117 (.114)
Attitude - Physical Punishment	.298*** (.093)	.274*** (.095))	.328*** (.087)	.248** (.109)
Islam	-----	-11.57** (.5.86)	-----	-----
Catholic	-----	-----	6.23 (7.54)	-----
Protestant	-----	-----	-----	17.02 (11.69)
Constant	58.99	53.04	46.07	55.48
N/R2	39/.741	38/.771	38/.756	38/.76

Significant at .05. *Significant at .01, one-tailed Standard errors in parentheses

Table 4: Abortion Access and Psychological Discipline, Including Religion				
Variable	Baseline Model	Include Islam	Include Catholic	Include Protestant
Abortion Access	-3.24 (8.63)	-7.91 (10.17)	-3.78 (10.14)	1.01 (8.79)
Contraception Prevalence	-.277 (.149)	-.405** (.147)	-.228 (.156)	.268** (.147)
Literacy Rate	.182 (.241)	.327 (.275)	.096 (.278)	.105 (.252)
Women - Attitudes Toward Domestic Violence	.196 (.145)	.378** (.16)	.143 (.166)	.216 (.148)
Attitude - Physical Punishment	.342*** (.099)	.286*** (.091)	.323*** (.111)	.231** (.119)
Islam		-19.94*** (7.48)	-----	-----
Catholic	-----	-----	-6.26 (11.41)	-----
Protestant	-----	-----	-----	33.71** (15.67)
Constant	46.35	42.76	55.15	48.72
N/R2	39/.494	38/.55	38/.494	38/.53
Significant at .05. *Significant at .01, one-tailed Standard errors in parentheses				

Tuning to my next category of maltreatment indicators, child health, Table 5 shows results of the baseline models. Here I find that abortion access has a significant relationship with low birthweight and antenatal care. The low birthweight indicator presents a significant negative relationship with abortion access, meaning that as abortion access increases instances of low birthweight decrease. The relationship between antenatal care and abortion access also behaves as expected. That is, as abortion access becomes more liberal, the number of antenatal care visits goes up. The control variables perform as expected with the exception of literacy rate in the model examining the percentage of women who appropriately breastfeed their children. I am unsure why this is the case, however this trend has also been found in other studies. For example, Wade (2010) finds: “people with less than a high school education are more likely to breastfeed, especially at six and 12 months, than people with a high school education.” This might be due to the fact that more educated mothers have more financial means available to take on the extra cost of infant formula.

Table 5: Abortion Access and Child Health – Baseline Models				
Variable	Low Birthweight	Infant Mortality	Antenatal Care	Appropriately Breastfed
Abortion Access	-6.19** (3.25)	-9.81 (18.14)	19.52** (9.4)	13.6 (9.2)
Contraception Prevalence	.058 (.043)	-.349 (.264)	-.035 (.102)	.245** (.133)
Literacy Rate	-.244*** (.096)	-1.23*** (.428)	.698*** (.19)	-.528** (.232)
Poverty Rate	-.059 (.052)	1.01*** (.379)	.002 (.126)	.155 (.14)
Constant	33.63	137.71	9.56	66.31
N/R2	42/.394	33/.72	38/.659	41/.232
Significant at .10 **Significant at .05 ***Significant at .01 level, one-tailed Standard errors in parentheses				

Inclusion of the separate religion variables do not emerge as significant and do not affect the significant relationship between abortion access and low birthweight, as demonstrated in Table 6. Similarly, as shown in Table 7, the relationships remain as they are in the baseline model, even when accounting for the significant impacts of percent Islamic and Protestant, the relationship between abortion access and infant mortality remains insignificant.

Table 6: Abortion Access and Low Birthweight, Including Religion

Variable	Baseline Model	Include Islam	Include Catholic	Include Protestant
Abortion Access	-6.19** (3.25)	-6.03** (3.25)	-6.93** (3.69)	-6.09** (3.52)
Contraception Prevalence	.058 (.043)	.067 (.048)	.074 (.046)	-.043 (.046)
Literacy Rate	-.244*** (.096)	-.238** (.10)	-.242** (.103)	-.146** (.102)
Poverty Rate	-.059 (.052)	-.049 (.047)	-.05 (.051)	-.087 (.063)
Islam	-----	1.46 (3.67)	-----	-----
Catholic	-----	-----	-3.11 (3.62)	-----
Protestant	-----	-----	-----	12.04 (12.51)
Constant	33.63	32.06	33.67	34.05
N/R2	42/.394	41/.398	41/.405	41/.423

* Significant at .01 **Significant at .05. ***Significant at .01, one-tailed
Standard errors in parentheses

Table 7: Abortion Access and Infant Mortality, Including Religion				
Variable	Baseline Model	Include Islam	Include Catholic	Include Protestant
Abortion Access	-9.81 (18.14)	-25.09 (17.76)	-21.09 (15.89)	-16.99 (15.71)
Contraception Prevalence	-.349 (.264)	-.617*** (.244)	-.396 (.272)	-.521*** (.214)
Literacy Rate	-1.23*** (.428)	-1.09*** (.319)	-.956*** (.34)	-1.08*** (.30)
Poverty Rate	1.01*** (.379)	1.08*** (.382)	1.33*** (.342)	1.02*** (.408)
Islam	-----	-22.84* (16.9)	-----	-----
Catholic	-----	-----	-22.63 (22.94)	-----
Protestant	-----	-----	-----	79.93** (42.34)
Constant	137.71	152.68	119.92	131.96
N/R2	33/.72	32/.761	32/.753	32/.77
* Significant at .01 **Significant at .05. ***Significant at .01, one-tailed Standard errors in parentheses				

As in the previous tables, Table 8, shows that the relationship between abortion access and antenatal care remains significant and positive even with the inclusion of the

religion variables. Of these individual religious variables only percent Catholic emerges as significant.

Table 8: Abortion Access and Antenatal Care, Including Religion				
Variable	Baseline Model	Include Islam	Include Catholic	Include Protestant
Abortion Access	19.52** (9.4)	20.63** (10.54)	24.81*** (9.05)	21.62** (9.74)
Contraception Prevalence	-.035 (.102)	-.018 (.115)	-.142 (.11)	.009 (.102)
Literacy Rate	.698*** (.19)	.631*** (.187)	.668*** (.194)	.633*** (.186)
Poverty Rate	.002 (.126)	-.046 (.138)	-.07 (.112_)	-.031 (.137)
Islam	-----	-3.52 (7.77)	-----	-----
Catholic	-----	-----	21.21*** (7.74)	-----
Protestant	-----	-----	-----	.947 (25.66)
Constant	9.56	15.98	10.98	12.73
N/R2	38/.659	37/.677	37/.731	37/.675
* Significant at .01 **Significant at .05. ***Significant at .01, one-tailed Standard errors in parentheses				

Finally, Table 9 shows the results for abortion access and percent appropriately breastfed, controlling for religion. The relationship between abortion access and percent

appropriately breastfed does not change its insignificant nature, even with the inclusion of the religion variables. Interestingly, the negative relationship between literacy rate and percent appropriately breastfed does not change, even when controlling for religion.

Table 10 displays the next category of variables, these variables are all associated with child development. The model shows that there is a significant positive relationship between abortion access and the number of activities to promote learning, as well as between abortion access and number of children's books available in the household. This shows that when abortion access increases, activities to promote learning and the number of children's books in a household also increase.

The control variables also behave as expected. For example, the number of children's books available in a household is an example of a variable that closely links to poverty, given that this type of neglect that includes the deprivation of certain material possessions is often intertwined with lack of funds. This relationship is reflected in the model with poverty rate presenting a significant negative influence on the number of children's books available in the household.

Table 9: Abortion Access and Appropriately Breastfed, Including Religion				
Variable	Baseline	Include Islam	Include Catholic	Include Protestant
Abortion Access	13.6 (9.2)	15.04 (10.29)	14.99 (10.33)	16.16 (9.73)
Contraception Prevalence	.245** (.133)	.282** (.161)	.217 (.158)	.225** (.128)
Literacy Rate	-.528** (.232)	-.54** (.261)	-.534** (.248)	-.609*** (.234)
Poverty Rate	.155 (.14)	.162 (.154)	.136 (.152)	.011 (.15)
Islam	-----	3.25 (8.07)	-----	-----
Catholic	-----	-----	6.1 (9.0)	-----
Protestant	-----	-----	-----	50.85*** (18.67)
Constant	66.31	64.0	66.45	71.9
N/R2	41/.232	40/.236	40/.241	40/.336
* Significant at .01 **Significant at .05. ***Significant at .01, one-tailed Standard errors in parentheses				

Table 10: Abortion Access and Child Development – Baseline Models				
Variable	Activities to Promote Learning	Children’s Books	Left with Inadequate Care	Living with Neither Parent
Abortion Access	15.58** (8.00)	23.16** (11.06)	-4.33 (4.76)	2.4 (2.11)
Contraception Prevalence	-.182 (.13)	-.03 (.207)	-.092 (.072)	.08 (.051)
Literacy Rate	.375 (.255)	.371 (.25)	-.441*** (.118)	-.031 (.055)
Poverty Rate	-.241 (.145)	-.393*** (.133)	.165** (.075)	.152*** (.042)
Constant	45.3	-.752	52.71	-.035
N/R2	38/.432	43/.528	43/.723	42/.294
Significant at .10 **Significant at .05 ***Significant at .01 level, one-tailed Standard errors in parentheses				

Table 11 shows that the inclusion of percent Islamic and Catholic do not change the positive and significant relationship between abortion access and activities that promote learning. However, when the models includes percent Protestant the significance of the relationships drops out.

Table 11: Abortion Access and Activities to Promote Learning, Including Religion				
Variable	Baseline Model	Include Islam	Include Catholic	Include Protestant
Abortion Access	15.58** (8.00)	15.7** (8.82)	16.47** (8.91)	13.76 (8.68)
Contraception Prevalence	-.182 (.13)	-.197 (.153)	-.187 (.169)	-.154 (.125)
Literacy Rate	.375 (.255)	.362 (.275)	.368 (.276)	.398 (.27)
Poverty Rate	-.241 (.145)	-.254 (.158)	-.248 (.153)	-.161 (.152)
Islam	-----	-3.11 (8.05)	-----	-----
Catholic	-----	-----	2.1 (7.83)	-----
Protestant	-----	-----	-----	-36.95 (26.85)
Constant	45.3	47.87	45.31	44.48
N/R2	38/.432	37/.431	37/.43	37/.469
* Significant at .01 **Significant at .05. ***Significant at .01, one-tailed Standard errors in parentheses				

Table 12 shows that the relationship between abortion access and number of children's books in the home remains significant throughout the inclusion of the individual religious variables.

Table 12: Abortion Access and Children's Books, Including Religion				
Variable	Baseline Model	Include Islam	Include Catholic	Include Protestant
Abortion Access	23.16** (11.06)	25.46** (11.39)	19.86** (10.96)	21.0** (12.01)
Contraception Prevalence	-.03 (.207)	.034 (.256)	.068 (.242)	-.0035 (.204)
Literacy Rate	.371 (.25)	.406 (.246)	.381 (.229)	.452** (.251)
Poverty Rate	-.393*** (.133)	-.344** (.147)	-.352*** (.139)	-.242 (.146)
Islam	-----	9.76 (12.06)	-----	-----
Catholic	-----	-----	-18.7 (11.94)	-----
Protestant	-----	-----	-----	-55.8** (24.36)
Constant	-.752	-11.54	-1.19	-6.81
N/R2	43/.528	42/.53	42/.55	42/.569
* Significant at .01 **Significant at .05. ***Significant at .01, one-tailed Standard errors in parentheses				

In this model, Table 13, we can see that the religion variables do not change the insignificant relationship between abortion access and children left with inadequate care that is presented in the baseline model.

Table 13: Abortion Access and Left with Inadequate Care, Including Religion				
Variable	Baseline Model	Include Islam	Include Catholic	Include Protestant
Abortion Access	-4.33 (4.76)	-5.21 (.497)	-2.74 (4.97)	-1.61 (4.28)
Contraception Prevalence	-.092 (.072)	-.122 (.075)	-.046 (.081)	-.073 (.063)
Literacy Rate	-.441*** (.118)	-.519*** (.112)	-.491*** (.118)	-.529*** (.102)
Poverty Rate	.165** (.075)	.085 (.072)	.145** (.072)	.057 (.066)
Islam	-----	-9.22** (4.27)	-----	-----
Catholic	-----	-----	-2.43 (4.34)	-----
Protestant	-----	-----	-----	28.72** (13.45)
Constant	52.71	65.51	55.05	58.18
N/R2	43/.723	42/.76	42/.732	42/.769
* Significant at .01 **Significant at .05. ***Significant at .01, one-tailed Standard errors in parentheses				

The insignificance of the relationships presented in Table 14 remains unchanged by the addition of the religious variables. Poverty rate, the only statistically significant variable in the model remains significant with the addition, while all the other variables remain insignificant.

Table 14: Abortion Access and Children Living with Neither Parent, Including Religion				
Variable	Baseline Model	Include Islam	Include Catholic	Include Protestant
Abortion Access	2.4 (2.11)	1.33 (2.39)	2.65 (2.28)	3.14 (2.17)
Contraception Prevalence	.08 (.051)	.053 (.051)	.089 (.066)	.081 (.052)
Literacy Rate	-.031 (.055)	-.053 (.512)	-.04 (.059)	-.055 (.053)
Poverty Rate	.152*** (.042)	.119** (.049)	.149*** (.042)	.114*** (.047)
Islam	-.035	-5.18** (2.21)	----	----
Catholic	42/.294	----	-.643 (3.48)	----
Protestant			----	12.16 (7.41)
Constant	-.035	5.41	.104	1.21
N/R2	42/.294	41/.361	41/.289	41/.345
* Significant at .01 **Significant at .05. ***Significant at .01, one-tailed Standard errors in parentheses				

Discussion and Conclusions

This thesis has examined the impact of restricted abortion access on different indicators of child maltreatment. Drawing from literature linking unwanted pregnancies to child maltreatment, I posited that given the proposed relationship between unintended pregnancies and child maltreatment, we should expect to see increased instances of maltreatment within countries that allow less of forbid women from accessing abortions.

For this purpose, I created an index of abortion access to numerically rate a country's level of liberality or restrictiveness. Then, using data from 49 countries, this thesis examined the potential linkage across a variety of measures that indicate child maltreatment while controlling for relevant alternative explanations. The results should be widely applicable across different cultures, given the wide-variety of countries that were examined.

In general, my results provide that even when controlling for impactful factors such as poverty rate and parental attitudes towards physical punishment, abortion access within a country still has a significant effect on some indicators of child maltreatment such as severe physical punishment.

This is significant because it shows that when governments make abortion hard to access this has negative effects that reach beyond merely the women denied these services. Forcing women to have children that are unwanted can negatively affect the children by increasing the likelihood of later maltreatment. These results add to the growing literature investigating the relationship between measures of child well-being and the effect of public policies. This should be considered when countries draft abortion policy.

However, there are limitations to this study, given that fact that, as previously mentioned, while it is easy to read and analyse the abortion laws of a country, the reality on the ground may significantly diverge from the description on paper.

This study looks at aggregate data at the country level. For future study it might be worthwhile looking at the effects abortion policies on children while taking into account the mother's economic situation and education status. Since poorer women have a harder time in overcoming the barriers to accessing abortion services when they are not widely available, it might be worthwhile seeing if this means that certain demographics have higher maltreatment rates that could be linked to that population having a harder time receiving abortions.

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