INTIMATE PARTNER VIOLENCE AND INFERTILITY IN ZAMBIA

A DISSERTATION

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS

FOR THE DEGREE OF DOCTOR OF PHILOSOPHY

IN THE GRADUATE SCHOOL OF THE

TEXAS WOMAN'S UNIVERSITY

COLLEGE OF ARTS AND SCIENCES

BY

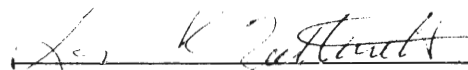CYNTHIA KAY SHINABARGER REED, B.A., M.A., M.S. PH.D.

DENTON, TEXAS

AUGUST 2010

TEXAS WOMAN'S UNIVERSITY
DENTON, TEXAS

July 7, 2010

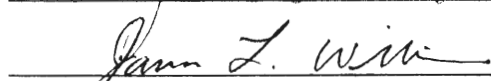To the Dean of the Graduate School:

I am submitting herewith a dissertation written by Cynthia Kay Shinabarger Reed entitled "Intimate Partner Violence and Infertility in Zambia." I have examined this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of doctorate of philosophy with a major in Sociology.
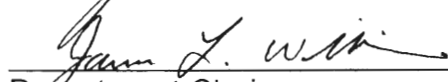
_____
Lisa K. Zottarelli, Ph.D., Major Professor

We have read this dissertation and recommend its acceptance:

_____

_____
Department Chair

Accepted:

_____
Dean of the Graduate School

DEDICATION

To Jehovah Jireh, my provider, for making all things possible.

To my husband, Robert Earl Reed, M.A., for his unconditional love, encouragement, and endless support.

ABSTRACT

CYNTHIA KAY SHINABARGER REED

INTIMATE PARTNER VIOLENCE AND INFERTILITY IN ZAMBIA

AUGUST 2010

Existing studies have examined numerous predictors of intimate partner violence (IPV) but no previous studies have examined infertility as a predictor of IPV. This study adds to the literature by examining the relationship between infertility and IPV along with mediator and moderator variables known to impact IPV including: a woman's attitude about IPV, education, type of marriage (monogamous or polygamous), area of residence (urban or rural), employment status, experience of the death of a son, and socioeconomic status. Data from the 2007 Zambia Demographic and Health Survey (ZDHS) was utilized. The relationship between intimate partner violence, infertility, and mediator and moderator variables was tested using descriptive statistics and logistic regression models. Two analyses were run; one testing the impact of primary infertility on IPV and the second testing the impact of secondary infertility on IPV. Three logistic regression models were tested in each analysis; each explained less than three percent of the variance in intimate partner violence. Neither primary nor secondary infertility were significantly correlated with intimate partner violence nor were they significant predictors of IPV in the regression models. The results

suggest that infertility does not significantly impact intimate partner violence.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURE

x

CHAPTER I

INTRODUCTION

Domestic violence in developing countries has received increasing attention in both research and policy in recent years. Many now agree that domestic abuse hinders the drive toward sustainable national development (World Development Report [WDR] 2004 and Lawoko 2006). The most prevalent type of domestic violence is intimate partner violence (IPV), a pattern of abusive behaviors perpetrated by one intimate partner against another in a relationship (Walker 1999). Research has revealed numerous correlates of IPV. In Africa, IPV has been found to increase when a wife challenges her husband's authority. African women perceive violence as acceptable even for minor failures to fulfill their duties, such as burning the husband's food (Lawoko 2006). The duties a wife is expected to fulfill include bearing and raising children (Boerma and Mgalla 1999 and Hollos, Kokole 1994, and Larsen 2008). Fulfilling the duty of motherhood can be problematic given that in sub-Saharan Africa, as many as 33 percent of couples are unable to conceive (Inhorn 2003). When sterility is suspected it is the wife who is held responsible (Boerma and Mgalla 1999, Sunil and Pillai 2002, and Taylor 2006). If a wife does not fulfill the expected role of mother, it is logical to question whether this could increase her risk of IPV. One anthropologist found that infertile women in north-west Tanzania were subjected

1

to public derogation, beatings, and divorce (Boerma and Mgalla 1999). However, previous studies have not explored the potential relationship between sterility and IPV in African societies. The purpose of the current study is to attempt to narrow this gap by investigating the relationship between infertility and IPV in Zambia.

Definitions of Key Terms

Intimate Partner Violence

Walker provides a comprehensive definition of intimate partner violence and defines it as "a pattern of abusive behaviors including a wide range of physical, sexual, and psychological maltreatment used by one person in an intimate relationship against another to gain power unfairly or maintain that person's misuse of power, control, and authority" (1999, p. 23). Physical violence includes behaviors such as beating, pulling hair, burning, kicking, biting, and attacking with weapons and other objects. Sexual violence involves actions that force women to engage in sexual acts against their will and without their consent. Psychological violence comprises threats of harm; intimidation; humiliation; accusations; insults and constant criticism; attribution of blame; abandonment; ignoring; controlling what the victim can or cannot do; giving insufficient attention or ridiculing the victim's needs; deprivation of liberty; and withholding basic needs (de Bruyn 2003). These forms of violence are interrelated and often occur together in intimate relationships.

Primary Infertility

There is a lack of consensus among researchers as to how primary infertility should be defined (Marchbanks, Peterson, Rubin, Wingo, and The Cancer and Steroid Hormone Study Group 1989). The definition commonly used in the literature is an absence of conception after engaging in regular, unprotected sex for a period of 12 months (Sciarra 1994 and Thonneau and Spira 1990); however, some recommend using 24 months as the minimum time period (Larsen 2005). In a study on infertility in sub-Saharan Africa, Larsen (2000) defined primary infertility as the inability of a non-contracepting sexually active woman to have a live birth after seven years. Larsen (2000) argued that defining couples as infertile if they had not conceived after more than one year of unprotected sexual activity was a nonspecific definition and could lead to overestimation of infertility since a substantial proportion of couples defined as infertile after one year go on to conceive without receiving fertility treatment. However, in a later study examining which definition of fertility should be used, Larsen (2005) concluded that 24 months should be used as the minimum time frame in both research and clinical practice. This recommendation was made based on simulation analyses that showed the measure was not sensitive to variations in reproductive characteristics including age at onset of sterility and fecundity (the monthly probability of contraception). In Africa the 24-month

definitions were tested using microsimulation analyses and Larsen (2005) concluded that these definitions had satisfactory validity and reliability.

In addition to a lack of agreement concerning the time frame to be used for determining primary infertility, there is a lack of consistency concerning whether the definition should focus on conception or live births. While in the past many used a lack of conception as the defining factor, many demographers have now modified the epidemiological definition of infertility and focus on the endpoint of live birth since it is difficult to collect complete data about conceptions in population based studies.

In this study, the following definition of primary infertility will be used: an inability to give birth after 12 months of regular, unprotected sex. The decision was made to use the 12-month time period because it is the most commonly used definition in the literature. In addition, this time frame seemed appropriate for the population under study since the majority of Zambian women give birth within the first year of marriage (Harwood-Lejeune 2000 and Letamo and Letamo 2001-2002). Thus, it is reasonable to question whether a married woman in Zambia would face negative reactions associated with infertility in her culture if she did not give birth to a child within one year. The decision was made to focus on giving birth rather than conception because if a woman has experienced a spontaneous abortion but has no children, it is presumed that she will face

negative reactions associated with infertility (Hollos and Larsen 2008 and Sciarra 1994).

Secondary Infertility

As with primary infertility, there is a lack of consensus in regards to the definition of secondary infertility. Larsen (2000) stated that secondary infertility occurs when parous (having given birth on at least one occasion), non-contracepting women who are sexually active have not given birth in the last five years. Other researchers use the same time period for secondary infertility that is used with primary, either 12 or 24 months, and definitions between the two types only differ in that women with primary infertility have never given birth and those with secondary have not given birth in more than 12 or 24 months (Hollos and Larsen 2008, Larsen 2005, and Thonneau and Spira 1990). In this study, secondary infertility will be defined as occurring when parous, non-contracepting women who are sexually active have not given birth in the last two years. The decision to use two years as the time period was made in order to reduce the number of false positives that might occur using a one-year time frame. The two-year time frame was preferred over the five-year time period because in Zambia, having a large number of children is highly desirable (Hollos and Larsen 2008; Kokole 1994) and in sub-Saharan African countries, it is common for the husband to want to have the next child sooner than his wife, often desiring another child within the next two years (Bankole and Singh 1998).

5

Incidence and Prevalence of Intimate Partner Violence

Intimate partner violence has been recognized as a serious public health problem (Wilt and Olson 1996). IPV can impact physical health, mental health, and sexual and reproductive health (de Bruyn 2003). Injuries, disability, as well as death are among the outcomes affecting physical health. Mental health outcomes can include diminished self-worth, anxiety, depression, and feelings of terror (de Bruyn 2003 and Fischbach and Herbert 1997). Sexual violence can result in sexually transmitted infections, pregnancy complications, gynecological, and sexual problems (de Bruyn 2003).

In spite of an increase in awareness of IPV as a public health concern, there are no indications that it is decreasing. A World Health Organization (WHO 1997) review of national studies on physical forms of IPV against women showed lifetime incidence figures of greater than 50 percent for several countries including: Papua New Guinea (67%), Finland (52%), and Belgium (68%). A study in South Africa revealed a lifetime prevalence of 24.6 percent (Jewkes, Levin, and Penn-Kekana 2002) and a study in Zambia found that 47 percent of the married women surveyed reported they had experienced some form of physical IPV (Chonya and Tolosi 2009).

Compared to developed countries, it has only been in recent years that attempts have been made to determine the prevalence of IPV in developing countries (Fischbach and Herbert 1997). The majority of studies on IPV

6

conducted in developing countries indicate that it is a serious issue (Koenig, Ahmed, Hossain, and Mozumder 2003). Nationally representative and community samples in developing nations show that lifetime prevalence of IPV of women is between 11 percent and 52 percent with an annual incidence between four and 29 percent (Gage 2005; Kishor and Johnson 2004; Mwenesi, Buluma, Kong'ani, and Nyarunda 2004). In Sierra Leone, two-thirds of female participants in one study had been beaten by their partners or spouses and 50 percent reported they had been forced to have sexual intercourse against their will (Coker and Richter 1998). Studies from Uganda (Blanc, Wolff, Gage, Ezeh, Neema, and Ssekamatte-Ssebuliba 1996) South Africa (Jewkes, Penn-Kekana, Levin, Ratsaka, and Schrieber 2001), and Zimbabwe (Watts, Keough, Ndlovu, and Kwaramba 1998) have also found high rates of physical violence. In a study of 24 adolescent females in South Africa, all but one of the participants reported that assault was a regular part of their sexual relationships (Wood and Jewkes 1997). Data from the 2007 Zambia Demographic and Health Survey (ZDHS) indicated that 47 percent of women who have been married reported they had experienced some form of physical IPV, 17 percent reported having experienced sexual IPV, and 26 percent reported having experienced emotional IPV (Chonya and Tolosi 2009).

Prevalence of Infertility

Fertility has declined appreciably in developing countries since 1960. One factor contributing to this decline is an increase in the use of contraception (Feyistetan & Casterline 2000). First marriage is also being delayed in most countries, partially due to school attendance of adolescent girls. Delayed marriage does not necessarily lead to decreased fertility however, since premarital fertility is now more common in sub-Saharan African countries (Garenne and Joseph 2002). Sexually transmitted infections also contribute to infertility of females in these countries. HIV/AIDS has influenced female fertility by impacting marriage rates and contraception use (Ntozi 2002). It also reduces pregnancy rates and increases levels of induced and spontaneous abortion (Ntozi 2002). Male infertility accounts for about half the cases of infertility in sub-Saharan African countries but it is rarely acknowledged (Inhorn 2003). In males, infertility is commonly caused by oligospermia (low sperm count) and azoospermia (lack of sperm in the ejaculate). The etiology of these problems is not well understood and has not been clearly linked to a single factor, such as infection (Inhorn 2003).

Estimates of the prevalence of infertility in women in less-developed nations range from 6.9 percent to 9.3 percent (Boivin, Bunting, Collins, and Nygren 2007). In the "infertility belt" of sub-Saharan Africa, as many as one-third of all couples are unable to conceive (Inhorn 2003) and the rate of childlessness

8

during the first eight years of marriage has been estimated at 16.4 percent (Boivin et al. 2007). One study reported the following infertility rates of women 20 to 44 years of age in sub-Saharan Africa: 17 percent in Botswana, 25 percent in Cameroon, 29 percent in Central African Republic, 27 percent in Lesotho, 23 percent in Mozambique, and 19 percent in Zimbabwe (Larsen 2000).

Fertility has been declining in Zambia in particular (Garenne and Joseph 2002 and Harwood-Lejeune 2000); in part due to the HIV/AIDS epidemic (Ntozi 2002). One of the AIDS prevention strategies being attempted in Zambia is condom social marketing. A study examining the prevalence of condom use in Lusaka, Zambia found that 17 percent of women and 24 percent of men reported they had used a condom at last intercourse (Agha 1998). Primary infertility among women between the ages of 20 and 44 has been estimated at 16 percent in Zambia (Larsen 2000). It is likely that this prevalence has been underestimated because having children is highly valued in Zambia and barren women tend to hide their infertility or avoid being interviewed (Larsen 2000).

Gender Roles and Cultural Expectations

In Zambia, as in Africa in general, women enjoy less status than men and all aspects of life including social, family, legal, and economic, are harder for women. Marriage is an important part of gender relations in Zambia. Most men and women get married and in the marriage, the woman is often considered a junior partner (Taylor 2006). Sub-Saharan African culture is also pronatalist and

9

choosing voluntary childlessness is rare. Most men and women place a great deal of importance on having children (Hollos and Larsen 2008). Religious beliefs that there is life after death and that the number of children one has impacts one's length of life are quite common (Kokole 1994). Another incentive for having many children is the high infant mortality rate in Africa. The uncertainty of how many children will survive motivates couples to have as many children as possible (Kokole 1994). In addition, sons are often valued more than daughters (Kokole 1994) and the death of a son increases a woman's chance of being a victim of IPV (González-Brenes 2004).

If a couple's union does not produce a child, the wife is usually blamed (Boerma and Mgalla 1999, Sunil and Pillai 2002, and Taylor 2006). There are numerous consequences for childless women in Africa. One consequence is stigmatization which may involve neighbors calling the childless woman derogatory names and her husband telling her that she is useless (Hollos and Larsen 2008). Childless women may also be ostracized by their husbands' families and experience a larger workload compared to women who have children to assist with household chores (Hollos and Larsen 2008). One study in sub-Saharan Africa found that infertile women were subjected to public derogation and beatings (Boerma and Mgalla 1999). Women without children are also at higher risk of being divorced by their husbands compared to women with

10

children (Boerma and Mgalla 1999, Hollos and Larsen 2008, Kokole 1994, and Taylor 2006).

Purpose of Study

Women in Zambia live in a cultural climate that puts them at high risk for IPV. Their gender places them in a group that is both socially and economically marginalized (Ellsberg et al. 2000). Patriarchal norms accord women inferior status in society and in marriage relationships. Women are also vulnerable to IPV due to the fact that Zambian culture considers violence toward women as normal if a woman fails to fulfill her roles in the marriage including, but not limited to, agreeing to sex with her husband and cooking his food without burning it (Bowman 2003). Motherhood is also an expected role for Zambian women. If a couple fails to conceive, the wife is automatically blamed and it is sufficient grounds for a husband to seek divorce (Sunil and Pillai 2002 and Taylor 2006). It is logical to question whether failure to fulfill a role as important as motherhood could lead to an increased risk for IPV. However, no currently available studies have investigated the relationship between infertility and IPV. The purpose of the current study is to investigate the research question "What is the relationship between a woman's fertility status and intimate partner violence?" This research question will be explored by testing two hypotheses. A married woman who has no children has not fulfilled the expectation of motherhood and therefore, primary infertility may increase the risk of IPV. The first hypothesis is: Women who

11

experience primary infertility are more likely to experience IPV than women with children. Since women are expected to have multiple children, a woman experiencing secondary infertility may also be at increased risk of IPV. Giving birth to a son is more highly valued than giving birth to a daughter and research indicates that the death of a son increases a woman's risk of IPV (González-Brenes 2004). Thus, a woman experiencing secondary infertility may also be at increased risk for IPV, especially if she has no living sons. The second hypothesis is: Women who experience secondary infertility and have no living sons are more likely to experience IPV than women who do not experience secondary infertility.

Rationale

In recent years, researchers and policy makers have recognized the need to focus attention on the health and status of women in developing countries (Koenig et al. 2003). Intimate partner violence is a widespread problem throughout developing countries and research interest in this area has been increasing. Surveys have found the prevalence of IPV in sub-Saharan African countries to be high with 46 percent of Ugandan women, 60 percent of Tanzanian women, 42 percent of women in Kenya, and 40 percent of women in Zambia reporting regular physical abuse (Wood and Jewkes 1997). In spite of its prevalence, there is little available research on IPV in Zambia. The current study will help to narrow this gap. In addition, the results of this study are relevant to

policy makers in Zambia and other developing countries who are interested in addressing the human rights issues and public health consequences associated with IPV (Ellsberg, Jansen, Heise, Watts, and Garcia-Moreno 2008).

Conclusion

This chapter has defined the key terms used in this study including IPV, primary infertility, and secondary infertility. Information on the prevalence of IPV and infertility in developing countries, Africa, and Zambia was provided. In addition, this chapter described gender roles and expectations in Zambia. Finally, the purpose of the study was identified and the study's rationale was discussed.

The second chapter provides a description of Zambia including demographic characteristics, health characteristics, and a discussion of gender roles. Chapter two also describes both macro- and micro-level correlates of IPV in African countries in general, as well as in Zambia in particular. The outcomes of IPV are also addressed, including outcomes affecting physical, mental, and sexual and reproductive health.

Chapter three describes the cultural theoretical perspective used as a framework for the study. In addition, the chapter explains the theoretical model tested in the study. Chapter four describes the data and methodology for this study. First, the characteristics of the participants in the 2007 Zambian Demographic and Health Survey are identified. Secondly, a description of the sampling technique is given followed by the procedures used for collecting the

data. Finally, the techniques used in this study to analyze the data are outlined.

Chapter five describes the results of the study. First, descriptive statistics and crosstabulations for variables in the subsamples used for the primary infertility and secondary infertility models are provided. Next is a discussion of the correlation matrices and finally, the multivariate analyses are described. Chapter six begins with a discussion of whether the hypotheses of the study were supported. Next, the results are discussed in relation to the theoretical model and research question. Limitations of the study are discussed and suggestions for future research are provided.

CHAPTER II

REVIEW OF THE LITERATURE

Zambia is an African country that adheres to patriarchal norms and traditional gender roles. The inferior status of women increases their risk of abuse. In this chapter, Zambian culture, including demographic characteristics, health characteristics, and gender roles, will be briefly described. Next, correlates of IPV in developing countries, Africa, and Zambia in particular; will be identified. Outcomes of IPV will also be discussed.

Zambia

Zambia is a landlocked country located in the south-central part of Africa. The country gained its political independence in October of 1964 and has a multiparty system of government (Central Statistical Office [CSO], Ministry of Health [MOH], Tropical Diseases Research Centre [TDRC], University of Zambia, and Macro International Inc. 2009). The 2000 Zambia Census Reports listed the population as 9.9 million with a majority (65 percent) living in rural areas (CSO et al. 2009). Zambia is a country rich in natural resources but it suffers from high unemployment, inflation, a high disease rate, and a high prevalence of AIDS/HIV (CSO et al. 2009; Holmes and Wong 2009). The HIV-infection rate has been estimated between 16 and 19 percent (Taylor 2006). In spite of the success of the copper-mining industry which propelled Zambia into the modern world

15

(Homes and Wong 2009), the Zambian economy is not growing quickly; rather poverty is increasing (World Bank 2004).

Gerontocratic principles are adhered to in Zambia in that older adults are to be revered and respected (Taylor 2006). Although a person's position in the household or community is a determining factor of their status in society, age tends to be a more prominent identifier. Thus, older women command respect from younger women and girls. Although younger men are also expected to treat elder women with respect, there are limits to gerontocratic practices due to an overall gender hierarchy in which males dominate (Taylor 2006). Even older women are expected to serve the needs of men first.

Compared to Zambian men, Zambian women are relatively powerless. Women have always been regarded as inferior to men in Zambian culture and this inferiority impacts their roles and position in the family (Taylor 2006). Girls and women are responsible for household tasks that do not contribute to the family's income such as cooking, cleaning the house, and doing the laundry. In rural areas, they are also responsible for taking care of the children, gathering firewood and water, and taking care of small gardens to grow food for the family (Taylor 2006). Tasks that do not produce income are devalued in Zambian society. Men do not assist women with these tasks; men are either employed or responsible for cash crops.

In Zambia, females are married at a younger age than males and many girls become mothers by the age of fifteen. In the marriage, females are considered junior partners (Taylor 2006). Women are almost always considered subordinate to men and are sometimes even expected to kneel before their husbands. While women are expected to be faithful to their husbands, it is expected that men will cheat on their wives and their girlfriends (Taylor 2006). Spousal abuse is tolerated socially, especially in rural areas (Taylor 2006).

Divorce is legally, culturally, and religiously permitted in Zambia; husbands may divorce their wives for various reasons including if they are infertile (Kokole 1994 and Boerma and Mgalla 1999), unwilling to have sex with them, or cook for them (Taylor 2006). Women may also divorce their husbands but many wives will not seek a divorce even if they are victims of IPV because there are significant losses associated with divorce. Women face both stigmatization and loss of property upon divorce and may lose their children (Taylor 2006).

<center>Correlates of Intimate Partner Violence (IPV)</center>

Research has revealed numerous factors associated with intimate partner violence. Increased vulnerability has been associated with belonging to economically and socially marginalized groups (Ellsberg et al. 2000; Hoffman, Demo, & Edwards 1994; Jewkes 2002; Krishnan 2005; Levinson 1989; Malcoe, Duran, & Montgomery 2004; Ratner 1993), having been victimized or witnessing abuse during childhood (Bensley, Eenwyk, & Simmons 2003; Gage 2005;

<center>17</center>

Jewkes 2002; Jewkes et al. 2002; Jeyaseelan et al. 2004; Lipsky, Caetano, Field, & Larkin 2005), and belonging to societies with a high level of patriarchal norms (Jewkes 2002).

Studies of IPV in developing countries have revealed a number of correlates of IPV. Women who requested their partners use condoms or be tested for HIV have reported increased abuse (Campbell 2002). In addition, notifying her partner of her positive HIV status frequently results in incidents of abuse, along with accusations of infidelity (Campbell 2002). A study exploring factors related to IPV in rural areas of Bangladesh found that higher socioeconomic status, increased education, extended family residence, and non-Muslim religion were all associated with lower risk of IPV (Koenig et al. 2003b). However, in areas that were less culturally conservative, individual-level women's status indicators were not related to their risk of violence. In these regions, community-level measures of women's status (such as overall levels of socioeconomic development, norms and sanctions related to domestic violence, gender inequality, and overall crime) were associated with a significantly lower risk of violence (Koenig et al. 2003b).

Previous studies have also revealed correlates of IPV in African countries. A survey of 5,109 women in Uganda revealed that a male partner's alcohol consumption was a risk factor for IPV (Koenig et al 2003a). For women whose partners often drank alcohol before sex, their risk of violence was nearly five

times higher than the risk of women whose partners did not drink. While most socioeconomic and demographic variables were largely unrelated to IPV in this sample, women's education was an exception as women with higher levels of education were at significantly less risk of experiencing IPV. Women were found to be at greater risk for IPV if they became sexually active before the age of 15 years; their risk was almost double that faced by women who became sexually active after the age of 18 years (Koenig et al 2003a). Finally, this study also found a strong association between women's perceptions of their partner's HIV risk and the women's risk of IPV. Specifically, for women who believed it was very likely that their partner was at high risk of HIV, their risk of IPV was close to three times greater than those who perceived their partners' HIV risk to be very low. One potential explanation for this relationship offered by the researchers is that women who fear their partners' HIV risk to be high may be reluctant to engage in sexual relations with their partners and their resistance may be met by coercion and physical violence by their partners (Koenig et al 2003a). Another study, conducted in Zambia, found that the death of a son increased the probability of violence and demographic variables such as polygamy, marital duration, and urban residence were also positively correlated with IPV (González-Brenes 2004). A woman's attitude toward IPV was also associated with risk of victimization in Zambia (Lawoko 2006).

19

There are numerous cultural, legal, economic, and political factors that account for IPV perpetrated against women. Many of the cultural factors that have kept women vulnerable to IPV are manifestations of historically unequal power relations between men and women (Wood and Jewkes 1997). Contributing to unequal power are the family institution where power relations are enforced; belief in the inherent superiority of males; customs of marriage (e.g. bride price/dowry in which the husband's family pays a price to the bride's family for her); cultural definitions of appropriate gender roles; notion of the family as the private sphere and under male control; values that give men proprietary rights over women; and acceptability of violence as a means to resolve conflict. Legal factors that contribute to unequal power include lesser legal status of women by either written law and/or by practice; low levels of legal literacy among women; laws regarding divorce, child custody, maintenance and inheritance; legal definitions of rape and domestic abuse; and insensitive treatment of women by police and judiciary (UNICEF 2000). Contributing economic factors to unequal power include discriminatory laws regarding inheritance, property rights, use of communal lands, and maintenance after divorce or widowhood; limited access to cash and credit; women's economic dependence on men; limited access to education and training for women; and limited access to employment in formal and informal sectors. Finally, political factors contribute to unequal power as well, and include failure to take domestic violence seriously; under-representation of

20

women in power, politics, the media and in the legal and medical professions; limited participation of women in organized political systems; notions of family being private and beyond the control of the state; limited organization of women as a political force; and risk of challenge to the status quo and/or religious laws (Heise, Pitanguy, and Germaine 1994).

Given that IPV is more likely to occur when women have unequal power compared to men, live in a patriarchal society, and have limited educational and economic resources, it comes as no surprise that IPV is prevalent among women in Zambia. Lawoko (2006) investigated factors affecting attitudes toward IPV amongst Zambian women. Specifically, the relationship between attitudes toward IPV and history of IPV, demographic, social-status variables, and empowerment indicators was examined. Data from the 2001-2002 Zambia Demographic and Health Survey (ZDHS) was analyzed; the sample included 5,029 women. The data revealed that 85 percent of the women surveyed would justify IPV for one or more reasons. Eighty percent of the women participating believed IPV was justified if a woman went out without telling her husband; while 63 percent believed it was justified if a woman neglected her children (Lawoko 2006). Arguing with her husband was considered a justifiable reason for IPV by 55 percent of the women; refusing to have sex with her husband by 51 percent; and burning the food was considered a justifiable reason by 48 percent of participants.

21

Lawoko (2006) also found that significantly higher proportions of women had tolerant attitudes regarding IPV among formerly and currently married women; women lacking a postsecondary education; rural residents; agricultural employees; and illiterate women. Women who lacked access to television, radio, and newspaper and women without autonomy in household decisions were also more likely to express tolerant attitudes toward IPV. In addition, Zambian women with a history of IPV were more likely to express tolerant attitudes toward IPV compared with peers who had never experienced such abuse (Lawoko 2006).

Outcomes of Intimate Partner Violence

Intimate partner violence results in numerous health problems. Worldwide, IPV is a significant cause of morbidity and mortality among women aged 15-44 (Fischbach and Herbert 1997). Outcomes can be fatal because of intentional injury (murder), suicide resulting from feelings of hopelessness, AIDS, or maternal mortality caused by sexual violence (de Bruyn 2003). Non-fatal outcomes may impact mental health, physical health, or sexual and reproductive health. Mental health outcomes include low self-esteem, anxiety and depression, substance and alcohol abuse, and sexual risk-taking (de Bruyn 2003). Women in developing countries have reported numerous mental health problems related to IPV. In Nicaragua, 70 percent of cases of emotional distress among women were attributed to IPV. Women in Pakistan have also reported experiencing anxiety and depression in response to IPV (Campbell 2003). Even a single episode of

22

IPV can result in a profound psychological consequence. Victims can feel terrorized and experience diminished self-worth (Fischbach and Herbert 1997). Physical health can be impacted by injury, disability, or other physical symptoms. Potential sexual and reproductive health outcomes include gynecological problems; sexually transmitted infections; unwanted pregnancy and pregnancy complications; miscarriage; unsafe abortion; and sexual problems (de Bruyn 2003). In addition to health problems, consequences of IPV include the denial of fundamental human rights as well as the inability of countries to reach their full potential because women are denied the opportunity to participate fully in society (United Nations Children's Fund [UNICEF] 2000).

Conclusion

This chapter has described the country of Zambia, including its physical and cultural characteristics. Gender roles and relationships in Zambia have also been described. In addition, this chapter has described correlates of IPV. Outcomes of IPV have also been identified including mortality and outcomes to mental health, physical health, sexual, and reproductive health. In the next chapter, the theoretical perspective used in this study will be described. The chapter will describe the cultural theoretical perspective and how it can be used as a framework for investigating the relationship between infertility and IPV in Zambia.

CHAPTER III

THEORY

This chapter will describe theoretical perspectives used to explain intimate partner violence. The theoretical perspectives used in this study, including cultural and demographic perspectives, are discussed. Finally, the theoretical model proposed in this study is described.

Theoretical Perspectives

Numerous theories have attempted to explain the occurrence of intimate partner violence (Rothman, Butchart, and Cerdá 2003, Wallace 2008). An examination of theories from across the globe reveal two prominent explanations. The first, social learning theory, proposes that intimate partner violence is a learned behavior that is transmitted from one generation to the next via modeling and reinforcement. A child learns to behave violently toward family members by observing one or both parents behaving violently. The child models the learned violent behavior and is reinforced for it; the behavior continues in the child's relationships during adulthood (Rothman et al. 2003, Wallace 2008). The second theory appearing frequently in the literature on intimate partner violence is feminist theory which proposes that male dominance in society affects intimate relationships (Rothman et al. 2003). Women are subordinate to men in society

24

and are viewed as possessions and violence toward women by men is viewed as acceptable (Wallace 2008).

Globally, theories of intimate partner violence differ when comparing collectivistic and individualistic cultures (Bowman 2003). Psychological explanations of IPV are prominent in individualistic cultures but absent in collectivistic cultures (Bowman 2003, Wallace 2008). For example, in the United States, an individualistic culture, some models attribute intimate partner violence to the perpetrator's personality characteristics, psychopathology, or substance abuse. There is an absence of theories based on individual psychology or psychopathology in Africa, where collectivistic culture is more common (Bowman 2003, Wallace 2008).

Across cultures, sociological models of intimate partner violence link violence to gender inequality. According to such models, the causes of violence lie in the way society is organized (González-Brenes 2004). For example, unequal economic opportunities available to women and men, the protection—or lack thereof—offered to victims by the legal system and the unavailability of other institutional resources for victims.

Although there are common features of IPV across cultures, variations also exist. Thus, to be effective, any explanatory theory must take into account such variations. Bowman (2003) has studied theories of IPV in the African context. She examined implicit theories offered in African writing about IPV and

25

identified five general categories of theory appearing in the literature on IPV in Africa including: rights theories, feminist theories, "cultural" explanations, "society-in-transition" explanations, and "culture of violence" explanations. All of the theories present in writings about IPV in Africa are consistent with theories of IPV used in other cultures. Rights theories exist in African literature on intimate partner violence but are not prominent. The most prominent theories of IPV in African societies are feminist explanations and cultural explanations.

Rights theories of IPV in Africa link freedom from violence with human rights guarantees and propose that intimate partner violence is part of a larger issue of violence against women that includes female genital mutilation, child marriage, and rape (Bowman 2003). Rights theories of intimate partner violence have been criticized for ignoring the relational component of women's lives by basing gender inequality on notions of individual rights (Bowman 2003).

Feminist explanations of intimate partner violence describe IPV as part of the struggle for gender equality. Most traditional African societies are patriarchal and inequality has become a part of every institution (Bowman 2003). For example, in most African countries women are not regarded as sharing ownership of marital property, they cannot own land, and have no right to inherit from their husbands. Feminist perspectives on IPV in Africa hold that systematic inequality between women and men must be addressed before IPV can be eliminated (Bowman 2003).

26

Like feminist explanations of IPV, cultural explanations also emphasize the unequal distribution of power between men and women in Africa; however, cultural theories also focus on the view among Africans that violence toward wives is normal and acceptable. According to cultural explanations of IPV in Africa, the power of tradition and norms within African society explains the widespread prevalence of IPV (Bowman 2003). This connection may be direct in that IPV is regarded as normal within traditional African culture. This was illustrated in an interview of a woman at a Social Welfare Office in Nigeria in which the woman reported that police officers had reminded her that their culture allows men to beat women (Atinmo 2000). Some cultural explanations are more indirect and point to the uneven distribution of power within traditional African marriages; the impact of polygamy; the acceptance of male promiscuity; the power of the extended family over the married couple; and the almost universal practice of the bride price as underlying the widespread abuse of wives. It is extremely difficult for women to leave abusive husbands if a bride price has been paid unless the families of origin are able and willing to return the amount paid (Armstrong 1998, Bowman 2003).

Armstrong (1998) conducted a study of IPV in Zimbabwe and her findings lend support to the theory that cultural factors contribute to IPV. She found that violence arose more frequently in Zimbabwe out of quarrels over money and jealousy. In Zimbabwe men usually have complete control over the finances,

27

determining how money is spent and how much money to give their wives for household expenses. In her sample, Armstrong (1998) found that violence occurred when a wife asked her husband for money because her request was perceived as challenging the traditionally absolute control by the male head of the household over the family's finances. The husband decides how much money to give the wife and by asking for more, she is challenging his authority by implying that what he decided to give her was insufficient. The wife indicates by her request that she has decided she should have more money; this implication is perceived as disrespectful (Armstrong 1998). Husbands were also more likely to become violent if wives challenged their authority by inquiring about their extramarital involvements. Traditionally, male promiscuity is accepted while a woman's sexuality was controlled by her husband. For a woman to ask about her husband's extramarital involvements is viewed as a challenge to his right to be sexually active outside of the marriage (Armstrong 1998). In addition, jealousy often led to IPV when husbands were jealous of their wives' contact with other men. Traditionally in African society, married women have very little contact with men other than their husbands. Now that more women work outside the home it is more difficult to limit contact with other men, especially in urban areas. In spite of this, men who are more traditional in their thinking feel threatened when their wives interact with other men and may react with violence due to a real or imagined threat (Armstrong 1998).

Society in transition explanations of IPV in Africa propose that the transition from traditional cultures to modern, urbanized societies contributes to IPV (Armstrong 1998, Bowman 2003). For example, migration and urbanization have weakened social controls; many couples are separated from families of origin who traditionally have served as mediators in disputes and lessened the frequency and severity of intimate partner violence. Family elders also have less influence because their adult children are now more economically independent than in the past. Since the family of origin is not relied upon as much for financial support, the elders have less authority to regulate daily family life (Bowman 2003). The transitioning of society also contributes to arguments over resources. In traditional society, a man was expected to maintain all of his wives equally. This was often possible in agrarian settings but in a modern economy it can be difficult since the husband may move to the city for work, leaving his wife to take care of herself in the countryside. Meanwhile, in the city he may take a "city wife" (Bowman 2003). When the wife in the village asks her husband for money he may become angry because he is barely making enough to cover his own needs in the city. According to society in transition explanations, the transition to different social relations and a different economy increases stress; increased stress leads to an increase in violent quarrels and intimate partner violence (Bowman 2003).

29

Culture of violence explanations attribute intimate partner violence, as well as violence against women in general, to a "culture of violence" in modern Africa in which violence is considered an acceptable method for resolving disputes (Bowman 2003). The culture of violence is linked to a colonial heritage in which Africans were treated violently by colonizers. Not only has Africa gone through long civil wars but many post-colonial regimes have continued oppressive practices that have continued the culture of violence (Bowman 2003).

The theoretical approaches discussed above are not mutually exclusive. One element common to several theories is the unequal status of men and women in society. In this study, the cultural perspective will be utilized. It was chosen because not only does it focus on the inequality women experience across cultures, but it is broader in scope than many of the available theories. It includes an emphasis on women as an economically and socially marginalized group, the power of tradition and norms, and the view that violence is acceptable (Bowman 2003).

Theoretical Model

A visual representation of the theoretical model used in this study is in Figure 1. This model utilizes cultural and demographic theoretical perspectives as frames of reference for understanding intimate partner violence in Zambia. The model posits that, on a cultural level, patriarchal norms, belonging to a socially and economically marginalized group, and historically unequal power

30

Culture
economically & socially
marginalized group

belonging to societies
with high level of
patriarchal norms

historically unequal power relations
between men & women

Primary Infertility

and

Secondary Infertility
with no sons

IPV

cultural factors create a
climate that increases the
likelihood that IPV is considered
acceptable & creates a climate
that values sons

Mediator

woman's attitude
about IPV

Moderators

little or no education
polygamous marriage
urban residence
unemployed
death of a son
low socioeconomic status

Figure 1. Theoretical model

relations between men and women (with women being subordinate), all create a climate that increases the likelihood that IPV is considered acceptable and create a climate that values sons. Within this climate, certain demographic variables serve as moderators and increase a woman's risk of experiencing IPV. When a variable acts as a moderator, the relationship between the independent and dependent variable is different for different values of the moderator variable (Yoder 2008). A moderator is often, but not always, a characteristic of the person or situation that is relatively fixed such as gender, age, race, or ethnicity (Yoder 2008). Moderator variables in this model include: having little or no education, being in a polygamous relationship, being of low socioeconomic status, living in a rural area, being unemployed, or having experienced the death of a son.

When a variable acts as a mediator, the initial relationship between the independent and dependent variables is statistically significant. When the mediator variable is introduced, the relationship between the independent and dependent variables is weaker for each value of the mediator variable than it was for the initial relationship (Yoder 2008). In the model used in this study, having an accepting attitude regarding IPV serves as a mediator to increase the likelihood of IPV.

In the model used in this study, it is theorized that the cultural factors and moderators and mediator described above increase the likelihood that infertility will lead to IPV. Some studies have found that IPV increases when husbands are

angry over their wives' perceived failure to adequately fulfill the role of a wife within the traditional division of household labor (Bowman 2003). Since motherhood is an expected role for Zambian women, it seems a logical extension that infertility could increase the likelihood of IPV because the woman has failed to fulfill an important role. Thus, a cultural and demographic perspective can be extended to, and is consistent with, the hypothesis that IPV is related to infertility.

Conclusion

This chapter explains how sociological models of IPV link violence to gender inequality. The chapter has also explained how cultural explanations of violence, as well as demographic theoretical perspectives, can be used to explain IPV in Zambia. In the next chapter, the methods utilized in this study will be described. This will include a description of the sampling, participants, procedures, and analysis used. The variables used in the study will be identified and operationally defined.

CHAPTER IV

DATA AND METHODS

In this chapter the data set used for the study will be discussed. A description will be given of the study participants. The type of analyses used in the study will be explained and the dependent, independent, mediator and moderator variables will be identified.

Sampling

The 2007 Zambia Demographic and Health Survey (ZDHS) is a nationally representative sample survey of women and men of reproductive age. Households across Zambia were randomly selected. The sample design allowed for specific indicators to be calculated for each of Zambia's nine provinces (Central, Copperbelt, Eastern, Lusaka, Luapula, Northern, North-Western, Southern, and Western). The sample frame used was adopted from the 2000 Census of Population and Housing of the Republic of Zambia (CPH). The frame consisted of 16,757 standard enumeration areas (SEA)—convenient geographical areas with an average size of 130 households or 600 people. A representative sample of 8,000 households was drawn for the survey. The nine provinces were stratified into 18 sampling strata and samples were independently selected in all stratum by a two-stage process. The sampling frame was sorted according to the geographical/administrative order and by

34

using a probability proportional to size selection at the first-stage sampling. In each household surveyed, one eligible woman was randomly selected using the Kish-grid technique to answer the questions on domestic violence.

Participants

Data from female participants in the 2007 Zambia Demographic and Health Survey (ZDHS) were used. Female participants ranged in age from 15-49. Data from married females who had been married for at least one year (for primary infertility) or at least two years (for secondary infertility) and who completed the questions on intimate partner violence were included. These time frames were selected because they were the minimum number of years used in this study for determining primary infertility (one year) (Sciarra 1994 and Thonneau and Spira 1990) and secondary infertility (two years) (Hollos and Larsen 2008, Larsen 2005, and Thonneau and Spira 1990).

Two subsamples of women were created for the analyses. The first subsample included women who had been married one year or more and who had answered the questions on IPV. This subsample was used for the analyses on primary infertility. Marital status was measured by asking the following questions: "What is your marital status now: are you married, widowed, divorced, or separated? Responses were coded as follows: "Never married" = "0," "Married" = "1," "Living together" = "2," "Widowed" = "3," "Divorced" = "4," "Married, not living together" = "5." The length of the marriage was measured by

35

asking "In what month and year did you start living with your husband/partner?" The interviewer recorded the month and year and recorded the number of years the relationship had lasted. The second subsample was used for the analyses on secondary infertility. It included women who had been married for two years or more and who had answered the questions on IPV.

Procedure

The ZDHS is comprised of three questionnaires: a household questionnaire, a women's questionnaire, and a men's questionnaire. Demographic information was collected on each person in the household. The household questionnaire was used to identify women and men who were eligible to complete the individual interview. The women's questionnaire was used to solicit information from all women in the sample age 15-49. The survey included questions about demographic information; birth history and child mortality; family planning methods; fertility preferences; antenatal and delivery care; breastfeeding and infant feeding practices; vaccinations and childhood illnesses; marriage and sexual activity; women's work and husband's background characteristics; women's and children's nutritional status; malaria prevention and treatment; domestic violence; awareness and behavior regarding human immunodeficiency virus (HIV) and other sexually transmitted infections; and adult mortality. One woman in each household was randomly selected to answer the questions on domestic violence.

Analysis

This study involves a secondary analysis of the 2007 ZDHS data from the women's questionnaires. The dependent variable in this study is the reporting of intimate partner violence. The independent variable in this study is fertility status. Two separate analyses are conducted using SPSS 16.0. In the first analysis, three models are run to examine the impact of primary fertility on intimate partner violence. In the second analysis, three models are run to explore the relationship secondary infertility when the woman has no living sons and intimate partner violence. From the cultural theory used in the theoretical model in this study, the woman's attitude about intimate partner violence serves as a mediator variable. From the demographic theory used in this model, education level, whether the participant has experienced the death of a son, type of marriage (monogamous or polygamous), area of residence (urban or rural), and work status will be moderator variables since previous research has shown that these variables influence the likelihood of experiencing IPV in Africa. Descriptive statistics will be performed to identify the percentages of women experiencing IPV by fertility status. Logistic regression analyses will be performed to examine the relationship between the independent, mediator, moderator, and dependent variables.

Dependent Variable

The dependent variable, intimate partner violence (IPV), was measured using four items on the survey. The first question asked the respondent was related to emotional violence; it was "Does/did your (last) husband ever: say or do something to humiliate you in front of others? threaten to hurt or harm you or someone close to you? insult you or make you feel bad about yourself?" If the respondent answered "no" to all of these, the question was coded as "0" and if she answered "yes" to one or more of these items, the question was coded as "1." The second question was in regards to less severe physical violence. Respondents were asked "Does/did your (last) husband ever do any of the following things to you: slap you? twist your arm or pull your hair? push you, shake you, or throw something at you? If the woman answered "yes" to at least one of these items, the item was coded as "1" but is she answered "no" to all items, the question was coded as "0." The third question related to severe physical violence and asked the respondent "Does/did your (last) husband ever do any of the following things to you: punch you with his fist or with something that could hurt you? kick you, drag you or beat you up? try to choke you or burn you on purpose? threaten or attack you with a knife, gun, or any other weapon? If all responses were "no" the item was coded as "0" but if the respondent replied "yes" to one or more items, the question was coded as "1." The fourth and final item had to do with sexual violence. Respondents were asked "Does/did your

38

(last) husband ever do any of the following things to you: physically force you to have sexual intercourse with him even when you did not want to? force you to perform any sexual acts you did not want to?" If the woman answered "yes" to at least one of these items, the item was coded as "1" and if she responded "no" to both items, it was recorded as "0."

These four items were combined for the dependent variable, intimate partner violence (IPV). When the four items were treated as a scale, a reliability test resulted in a Chronbach's Alpha of 0.692 and could not be improved by deleting any of the four items. The four combined items were recoded as a dichotomous variable in which "0" meant the respondent had not experienced any of the four types of IPV and "1" meant she had experienced one or more types of IPV.

Table 1a shows the frequency distributions for intimate partner violence and for primary infertility used in the analysis for primary infertility. For this analysis, a subsample was used including women who had been married for at least one year and had answered the questions on IPV. In this subsample, about 54 percent (n = 2,189) of the respondents reported experiencing some type of IPV while approximately 46 percent (n = 1861) had not experienced any form of IPV.

Table 1a. Frequencies of Intimate Partner Violence and Primary Infertility Used in the Analysis for Primary Infertility, Zambian Adult Women Married 1 year or more, 2007 ZDHS

Variable	Frequency	Valid Percent
Dependent Variable		
Intimate Partner Violence		
No (0)	1861	46.0
Yes (1)	2189	54.0
Missing	19	
Independent Variable		
Primary Infertility		
No (0)	3970	97.6
Yes (1)	99	2.4

The frequency distributions for intimate partner violence and secondary infertility used in the analysis for secondary infertility with no living sons can be found in Table 1b. For the models on secondary infertility, a subsample was used including women who had answered the questions on IPV and had been married for at least two years. In this subsample (N = 3,888), approximately 55 percent

Table 1b. Frequencies of Intimate Partner Violence and Secondary Infertility Used in the Analysis of Secondary Infertility, Zambian Adult Women Married 2 years or more, 2007 ZDHS

Variable	Frequency	Valid Percent
Dependent Variable		
Intimate Partner Violence		
No (0)	1760	45.4
Yes (1)	2113	54.6
Missing	15	
Independent Variable		
Secondary Infertility		
No (0)	3594	92.4
Yes (1)	294	7.6

(n = 2,113) of the respondents reported experiencing some type of IPV while approximately 45 percent (n = 1760) had not experienced any form of IPV.

Independent Variables

The variable of "primary infertility" was created by identifying respondents within the subsample: (1) who had never given birth, and (2) who were not currently pregnant, and (3) who were not using any contraception. Respondents

41

who fit these criteria for primary infertility were coded as "1" while those who did not fit these criteria were coded as "0."

To determine the number of children ever born to the respondent, the interviewer stated "Now I would like to record the names of all your births, whether still alive or not, starting with the first one you had." The name, sex, month and year of birth of each child born to the respondent was recorded and the interviewer summed and recorded the number of children born. To determine whether the respondent was currently pregnant she was asked "Are you pregnant now?" A response of "yes" was coded as "1," "no" was coded as "2," and a response of "unsure" was coded as "8." Only those who answered "no" were included in definitions of infertility in an effort to avoid including women who may potentially be pregnant. The respondent was asked "Are you currently doing something or using any method to delay or avoid getting pregnant" to determine whether she was using contraception. A response of "yes" was coded as "1," and "no" was coded as "2." Ninety-nine women, almost two and a half percent (2.4), had experienced primary infertility while the remaining 97.6 percent (3970) of the women had not.

The second independent variable, secondary infertility with no living sons, was measured in a separate subsample of women who had answered the IPV questions and had been married two years or more. Two of the items used to measure primary infertility, described above, were also used to measure

42

secondary infertility: (1) those women who were not currently pregnant, and (2) who were not using any contraception. In addition, other pieces of information were used from the respondent's answer to the item "Now I would like to record the names of all your births, whether still alive or not, starting with the first one you had." Information regarding the sex of the child, whether the child was still living, and how many months prior to the interview it had been since the woman had last given birth were used.

Respondents who met the criteria of secondary infertility with no living sons were identified as those women who had one or more children but no living sons, who had not given birth in the 24 months prior to the interview, and who were not currently pregnant or using contraception. Respondents who did not fit the criteria for secondary infertility were coded as "0" and those who fit the criteria were coded as "1." Over seven percent (7.6%, n = 294) of the respondents had experienced secondary infertility and had no living sons while the remaining 92 percent (n = 3594) had not.

Mediator and Moderator Variables

Table 2 shows the frequencies for the mediator and moderator variables for the entire sample. Table 2a shows the frequencies for these variables in the subsample of women who had been married one or more years and Table 2b shows the frequencies for these variables in the subsample of women who had

Table 2. Frequencies of Mediator and Moderator Variables Used in the Analysis, Zambian Adult Women, 2007 ZDHS

Variable	Frequency	Percent
Attitude about IPV		
Acceptable in 0 situations	1979	39.2
Acceptable in 1 or more situations	3070	60.8
Other wives		
No (0)	3110	86.7
Yes (1)	477	13.3
Years of education		
0	758	10.6
1-6	2461	34.4
7-12	3592	50.3
13-18	335	4.7
Wealth Index		
Poorest	928	17.7
Poorer	1029	19.7
Middle	1111	21.2
Richer	1220	23.3
Richest	948	18.1
Area of Residence		
Rural	3166	60.5
Urban	2070	39.5
Employed		
No	2610	49.9
Yes	2621	50.1
Number of sons who have died		
None	4207	80.3
1 or more	1029	19.7

Table 2a. Frequencies of Mediator and Moderator Variables Used in the Analysis, Zambian Adult Women Married One or More Years, 2007 ZDHS

Variable	Frequency	Percent
Attitude about IPV		
Acceptable in 0 situations	1531	38.2
Acceptable in 1 or more situations	2473	61.8
Other wives		
No (0)	2955	86.4
Yes (1)	465	13.6
Years of Education		
0	584	14.4
1-6	1637	40.2
7-12	1720	42.3
13-18	128	3.1
Wealth Index		
Poorest	798	19.6
Poorer	853	21.0
Middle	915	22.5
Richer	910	22.4
Richest	593	14.6
Area of Residence		
Rural	2627	64.6
Urban	1442	35.4
Employed		
No	1828	45.0
Yes	2237	55.0
Number of sons who have died		
None	3072	75.5
1 or more	997	24.5

Table 2b. Frequencies of Mediator and Moderator Variables Used in the Analysis, Zambian Adult Women Married Two or More Years, 2007 ZDHS

Variable	Frequency	Percent
Attitude about IPV		
Acceptable in 0 situations	1464	38.2
Acceptable in 1 or more situations	2368	61.8
Other wives		
No (0)	2798	85.9
Yes (1)	459	14.1
Years of Education		
0	571	14.7
1-6	1577	40.5
7-12	1621	41.7
13-18	119	3.1
Wealth Index		
Poorest	777	20.0
Poorer	814	20.9
Middle	881	22.7
Richer	862	22.2
Richest	554	14.2
Area of Residence		
Rural	2529	65.0
Urban	1359	35.0
Employed		
No	1726	44.4
Yes	2158	55.6
Number of sons who have died		
None	2901	74.6
1 or more	987	25.4

been married two or more years. Table 3 shows the items used to create each mediator and moderator variable. The respondent's attitude about IPV was used as a mediator variable. This was measured by the item "Sometimes a husband is annoyed or angered by things that his wife does. In your opinion, is a husband justified in hitting or beating his wife in the following situations: If she goes out without telling him? If she neglects the children? If she argues with him? If she refuses to have sex with him? If she burns the food?" These items were used to create and index and each was coded as "1" for "yes" and "2" for "no." A reliability test was run on these five items measuring IPV and the result was a Chronbach's Alpha of .862. The decision was made to remove the item on whether wife beating was justified if the wife refuses to have sex with the husband because doing so increased Chronbach's Alpha to .875. Thus, four items (In your opinion, is a husband justified in hitting or beating his wife in the following situations: If she goes out without telling him? If she neglects the children? If she argues with him? If she burns the food?") were used to measure attitude about IPV. This variable was recoded into a dichotomous variable in which 0 = "does not perceive IPV as acceptable," and 1 = "perceives IPV as acceptable in one or more situations." A total of 1,979 respondents (39.2 percent) did not perceive IPV as acceptable in any of the situations presented while 3,070 (60.8%) agreed that IPV was acceptable in one or more situations.

47

Table 3. Survey Items Used to Create Mediator and Moderator Variables

1. Variable: Respondent's attitude about intimate partner violence

Created with the following items:

"Sometimes a husband is annoyed or angered by things that his wife does. In your opinion, is a husband justified in hitting or beating his wife in the following situations:"

     If she goes out without telling him?
     If she neglects the children?
     If she argues with him?
     If she burns the food?

2. Variable: Type of marriage (monogamous or polygamous)

Created with the following item:

"Does your husband/partner have other wives or does he live with other women as if married."

3. Variable: Years of education

Created with the following items:

"Have you ever attended school?"
"How many years of school did you attend?"

4. Variable: Wealth Index

Created using: items from the household's ownership of consumer goods; dwelling characteristics; type of drinking water source; toilet facilities; and other characteristics that are related to a household's socioeconomic status

5. Variable: Area of residence (urban or rural)

Created by: The answer to this item was determined by the interviewer.

6. Variable: Work status (employed or not employed)

Created with the following item:
"Aside from your own housework, have you done any work in the last seven days?"

7. Variable: death of a son

Created with the following items:

"Have you ever given birth to a boy or girl who was born alive but later died?"
"How many boys have died?"

One of the moderator variables, whether the woman was living in a monogamous or polygamous marriage, was measured by asking the respondent "Does your husband/partner have other wives or does he live with other women as if married?" A response of "yes" was coded as "1," "no" was coded as "0," and "don't know" was coded as "8." In this study, "don't know" was treated as missing. Of the married respondents, 3,110 (87.7 percent) said there were no other wives while the remaining 497 (13.3%) said there were one or more other wives.

Several questions in the survey addressed the participant's education. First, the respondent was asked "Have you ever attended school?" If the answer was "no," no further questions were asked regarding education. Respondents who answered "yes" were also asked "What is the highest level of school you attended: primary, secondary, or higher?" The answers for this "highest education level" variable were coded as follows: primary = 1, secondary = 2, and higher = 3. If the respondent had never attended school, the answer was recorded as "0." Next, respondents were asked a question regarding educational attainment, "What is the highest grade you completed at that level?" Responses were coded based on whether or not the level had been completed. Codes were as follows: 0 = No education, 1 = Incomplete primary, 2 = Complete primary, 3 = Incomplete secondary, 4 = Complete secondary, 5 = Higher. Respondents were also asked about their education level in single years, "How many years of school did you attend?" If the respondent had not attended school, the answer

49

was coded as "0" and for all other responses, the number of years (ranging from 1-18) was recorded. Frequencies were run on each of these three variables.

For this analysis, the decision was made to use the interval variable, education level in single years, in order to obtain more detailed information about the effects of education of IPV. The mean score for education in single years was 6.46 years with a standard deviation of 3.658. The mode was seven years of education; 19.5 percent (1395) of the respondents reported seven years of education. The second most frequently occurring score was nine years of education (12.6 percent) and the third was zero years of education (10.6 percent).

Socioeconomic status (SES), another moderator variable, was assessed in various ways on the ZDHS. To determine their wealth index, respondents were asked questions about the characteristics of their dwelling, toilet facilities, their ownership of consumer goods, and other characteristics that are related to a household's socioeconomic status (Central Statistical Office et al. 2009). The index was constructed by assigning a weight (factor score) generated through principal component analysis and then standardizing the resulting asset scores in relation to a standard normal distribution with a mean of zero and a standard deviation of one. Next, a score for each asset was assigned to each household and the asset scores were summed. Next, each respondent was ranked according to the score for the household in which they resided. Finally, the

sample was divided into quintiles from lowest to highest. These quintiles were coded as follows: "1" = poorest, "2" = poorer, "3" = middle, "4" = richer, and "5" = richest. Data from the entire country sample was used to develop the single asset index (Central Statistical Office et al. 2009). Items that can be used in Zambia as an indicator of SES include the presence of electricity in the home and whether the person has access to television, magazines and/or newspapers. These items were among the items used to form the quintiles above. Correlations were run between these various measures of SES. The items were all significantly correlated at the .01 level (two-tailed). The decision was made to use the wealth index to indicate SES because common indicators of SES in Zambia were used to construct this index. Of the 5,236 respondents, 928 (17.7 percent) were in the "poorest" category of the wealth index; 1,029 (19.7 percent) were in the "poorer" category; 1,111 (21.2 percent) were classified in the "middle category; 1,220 (23.3 percent) in the "richer" category; and 948 (18.1 percent) were in the "richest" category.

Another moderator variable, whether the respondent's area of residence was urban or rural, was determined by the interviewer and coded as "1" for urban and "0" for rural. There were 3,166 (60.5 percent) respondents recorded as living in rural areas and 2,070 (39.5 percent) in urban areas. The woman's work status also served as a moderator variable. The item measuring work status in the ZDHS asked "Aside from your own housework, have you done any work in the

last seven days?" An answer of "yes" was coded as "1" and "no" was coded as "0." Approximately half of the respondents (49.9 percent) were not employed and half (50.1 percent) were employed.

The final moderator variable, whether the respondent had experienced the death of a son, was measured by first asking "Have you ever given birth to a boy or girl who was born alive but later died?" If the respondent answered "yes," she was also asked "How many boys have died?" and "How many girls have died?" and the numbers were recorded. Since some categories had low valid percents (for example, the percentage of women who had experienced the death of four sons was only 0.2 percent), the number of sons who have died was recoded and the categories collapsed so that 0 = "none" and 1 = "1 or more." About 80 percent (4,207) of the respondents had not experienced the death of a son while approximately 20 percent (1,029) had experienced the death of one or more sons.

Conclusion

This chapter has described the data and methods used in this study. First, a description of the sampling procedures and participants was provided. Next, the procedure for data collection and the methods used to analyze the dataset were described. The dependent variable, independent variables, mediator variable, and moderator variables were identified and their operational definitions were provided. Finally, the study's limitations were discussed. In the next

chapter, the results of this study are discussed. The chapter begins with descriptive statistics. Next, the results of crosstabulations and correlations are discussed. Finally, the regression models for primary infertility and secondary infertility are presented.

CHAPTER V

RESULTS

The results of this study are presented in this chapter. First, descriptive statistics are presented including the results of crosstabulations between intimate partner violence and primary infertility and between IPV and secondary infertility. Next, correlation matrices are presented. Finally, the results of two analyses are described. The first analysis involves three regression models of primary infertility and the second includes three regression models of secondary infertility.

Descriptive Statistics

The results of crosstabulations between the dependent variable, IPV, and independent variables, primary and secondary infertility, are shown in Table 4. Within the subsample of 4,050 women who had been married one or more years, 97 (2.4%) experienced primary infertility. Crosstabulations indicated that about half (n=49) of the women who experienced primary infertility also experienced IPV while the remaining half (n=48) did not. Within the subsample of 3,873 women who had been married for two or more years, over seven percent (N=291) of the women experienced secondary infertility and had no living sons. Of these, about 56 percent (n=164) of them experienced IPV while about 44 percent (n=127) of them did not experience IPV.

Table 4. Crosstabulations of Intimate Partner Violence with Primary and Secondary Infertility, Zambian Adult Women Married One Year or More (Primary Infertility) and Married Two Years or More (Secondary Infertility), 2007 ZDHS

		Intimate Partner Violence		
		No	Yes	Total
Primary Infertility	No	1813	2140	3953
	Yes	48	49	97
	Total	1861	2189	4050
Secondary Infertility	No	1633	1949	3582
	Yes	127	164	291
	Total	1760	2113	3873

Correlation Matrices

A bivariate correlational analysis was run using all of the variables in order to examine potential relationships between them in each subsample. The results are in Tables 5a (subsample of women married one year or more) and 5b

Table 5a. Correlation Matrix for Variables Used in the Analysis, Zambian Adult Women Married 1 Year or More, 2007

	IPV	Primary Infertility	Type of Marriage	Years of Education	Wealth Index	Area of Residence	Currently Employed	Number of Sons Who Died	Attitude About IPV
IPV	1.00								
Primary Infertility	-.011	1.00							
Type of Marriage	-.011	-.003	1.00						
Years of Education	.031*	-.022	-.141***	1.00					
Wealth Index	.067***	-.035*	-.159***	.496***	1.00				
Area of Residence	.079***	.036*	-.160***	.410***	.720***	1.00			
Currently Employed	.052***	.040**	.021	.064***	.000	.005	1.00		
Number of Sons who died	.032*	-.009***	.059***	-.128***	-.080***	-.058***	.020	1.00	
Attitude about IPV	.083***	-.002	.027	-.116***	-.088***	-.082***	-.017	.013	1.00

* $p \leq .05$ ** $p \leq .01$ *** $p \leq .001$
Source: The 2007 Zambia Demographic Health Survey

Table 5b. Correlation Matrix for Variables Used in the Analysis, Zambian Adult Women Married 2 Years or More, 2007

	IPV	Secondary Infertility	Type of Marriage	Years of Education	Wealth Index	Area of Residence	Currently Employed	Number of Sons Who Died	Attitude About IPV
IPV	1.00								
Secondary Infertility	.010	1.00							
Type of Marriage	-.015	.060***	1.00						
Years of Education	.037*	-.050**	-.139***	1.00					
Wealth Index	.075***	-.038*	-.157***	.489***	1.00				
Area of Residence	.079***	-.032*	-.158***	.405***	.720***	1.00			
Currently Employed	.049**	.051**	.018	.075***	.008	.012	1.00		
Number of Sons who died	.030	.490***	.054**	-.127***	-.078***	-.057***	.016	1.00	
Attitude about IPV	.080***	-.007	.026	-.111***	-.082***	-.079***	-.015	.012	1.00

* p ≤ .05 ** p ≤ .01   *** p ≤ .001
Source: The 2007 Zambia Demographic Health Survey

(subsample of women married two years or more). In the subsample of women who had been married for one year or more, consistent with previous findings, the woman's level of wealth, area of residence (urban or rural), current employment status, and attitude about IPV were positively and significantly correlated with IPV ($p \leq .001$) but in all cases, the relationship was weak ($r = .067, .079, .052, \& .083$, respectively). Consistent with previous research in Zambia, experiencing the death of a son was also significantly and positively correlated with IPV ($p \leq .05$); this relationship was weak as well ($r = .032$). Finally, years of education was positively and significantly correlated with IPV at the .05 level. As with the other relationships, this one was also weak ($r = .031$).

Area of residence was significantly and positively correlated with wealth index ($p \leq .001$); the decision was made to exclude area of residence from the regression analyses and to include only the wealth index because the correlation between the two variables was strong ($r = .720$). Wealth index was also significantly and negatively correlated with number of sons who died and attitude about IPV; both were significant at the .001 level. The decision was made to leave both variables in the regression analyses because each of these correlations were weak ($r = -.080 \& -.088$ respectively. Area of residence was also significantly and negatively correlated with attitude about IPV ($p \leq .001$) but the relationship was weak ($r = -.082$) and the decision was made to keep both variables in the analyses.

58

In the subsample of women who had been married for two years or more, the woman's level of wealth, area of residence, and attitude about IPV were all significantly and positively correlated with IPV at the .001 level, but all three relationships were weak (r = .075, .079, & .080, respectively). Secondary infertility and employment status were also positively and significantly (p = .01) with IPV but once again, the relationships were weak; in both cases r = .049. Lastly, years of education was positively correlated with IPV (p = .05) but this relationship was weak as well (r = .037).

As in the first subsample, some of the mediator and moderator variables were significantly correlated with each other. Once again, the decision was made to exclude area of residence from the regression analyses and to include only the wealth index because the correlation between the two variables was strong (r = .720). The remaining significant correlations were weak and no other variables were removed from the analyses.

Multivariate Analyses

Two analyses were performed; the first analysis was conducted with the subsample of women who had been married for one or more years and the second with the subsample of women who had been married two or more years. In the first analysis, three models were tested using the independent variable of primary infertility. In the second analysis, three models were tested using the independent variable of secondary infertility with no living sons. Following the

theoretical model proposed in this study, in each analysis the first model included only the independent variable of fertility (either primary or secondary). In the second model, the mediator variable, woman's attitude about intimate partner violence, was added to the equation. In the third model, the moderator variables were added to the equation including: years of education, type of marriage (monogamous or polygamous), employment status, number of sons who have died, and wealth index.

In the first analysis, binary logistic regression analyses were performed including the independent variable of primary infertility. Results of the analyses are shown in Table 6. The first model tested the independent variable primary infertility. The first model was not significant (X^2 = .498, 1 df) and did not explain any of the variance in IPV (Nagelkerke R^2 = .000). In this model, primary infertility was not a significant predictor of IPV.

In the second model, the mediator variable, woman's attitude about IPV, was added to the equation. The second model was significant at the .001 level (X^2 = 27.68, 2 df) and explained a fraction of the variance (Nagelkerke R^2 = .009). Attitude about IPV was a significant predictor of IPV at the .001 level. Compared to those who perceive IPV as acceptable in zero situations, those that find IPV acceptable in one or more situations had a 1.478 greater odds of experiencing IPV. Primary infertility was not a significant predictor of IPV.

Table 6. Logistic Regression Estimates Predicting Intimate Partner Violence[a], Zambian Adult Women Married 1 Year or More, 2007 ZDHS

Predictor	Model 1			Model 2			Model 3		
	b	S.E.	Odds Ratio	b	S.E.	Odds Ratio	b	S.E.	Odds Ratio
No Primary Infertility[b]	-.145	.206	.865	-.151	.211	.860	-.235	.240	.791
Does not agree that IPV is acceptable in any situations[b]				.341***	.066	1.407	.390***	.073	1.478
Education in Single Years							.009	.012	1.009
No Other Wives[b]							-.030	.104	.971
Not Working[b]							.154*	.070	1.167
No sons who have died[b]							.131	.083	1.140
Wealth Index[c]									
Poorest							-.188	.138	.829
Poorer							-.044	.136	.957
Middle							.002	.131	1.002
Richer							.331*	.125	1.392
Constant	.166***	.032	1.180	-.040	.052	.961	-.325*	.155	.723
Model X^2		.498			27.677***			64.314***	
Degrees of freedom	1			2			10		
Pseudo R^2		.000			.009			.025	
N	4,069			4,069			4,069		

*$p \leq 0.05$ ** $p \leq 0.01$ *** $p \leq 0.001$ (two-tailed test)
[a] Intimate Partner Violence is coded 1 for "experiences one or more types" and 0 otherwise
[b] 1 is the reference category
[c] 5 ("Richest") is the reference category

The moderator variables were added to the equation in the third model; they included: years of education, type of marriage (monogamous or polygamous), employment status (not working or working), number of sons who have died, and wealth index. The model was significant at the .001 level (X^2 = 64.31, 10 df) and explained variance increased slightly over model two, with model three explaining over two percent of the variance in IPV (Nagelkerke R^2 = .025). Wealth index was a significant predictor of IPV; compared to those in the

richest category, the odds of those in the richer category experiencing IPV were 1.392 greater (p ≤ .05). The woman's attitude about IPV was a significant predictor of IPV at the .001 level. Respondents who agreed that IPV was acceptable in one or more situations had a 1.478 greater odds of experiencing IPV compared with respondents who did not perceive IPV as acceptable in any of the situations presented to them. Years of education, type of marriage, and the number of sons who had died were not significant predictors of IPV.

Table 7 shows the results of binary logistic regression analyses performed including the independent variable of secondary infertility with no living sons. The first regression model, containing only secondary infertility, was not statistically significant and did not explain any of the variance in intimate partner violence (Nagelkerke R^2 = .000). Secondary infertility with no living sons was not a significant predictor of IPV.

In the second model, woman's attitude about intimate partner violence, the mediator variable, was added to the equation. The second model was significant at the .001 level (X^2 = 24.49, 2 df); explained variance was less than one percent (Nagelkerke R^2 = .009). Secondary infertility with no living sons was not a significant predictor of IPV. Attitude about IPV was a significant predictor of intimate partner violence at the .001 level with respondents who agreed that IPV was acceptable in one or more situations having a 1.390 greater odds of

Table 7. Logistic Regression Estimates Predicting Intimate Partner Violence[a], Zambian Adult Women Married 2 Years or More, 2007 ZDHS

Predictor	Model 1			Model 2			Model 3		
	b	S.E.	Odds Ratio	b	S.E.	Odds Ratio	b	S.E.	Odds Ratio
No Secondary Infertility[b]	.079	.123	1.082	.065	.124	1.067	-.014	.169	.986
Does not agree that IPV is acceptable in any situations[b]				.329***	.067	1.390	.383***	.075	1.466
Education in Single Years							.009	.012	1.009
No Other Wives[b]							-.039	.105	.962
Not Working[b]							.128	.072	1.136
No sons who have died[b]							.135	.092	1.145
Wealth Index[c]									
Poorest							-.242	.141	.785
Poorer							-.097	.140	.908
Middle							-.052	.135	.949
Richer							.281*	.129	1.325
Constant	.177***	.034	1.194	-.024	.053	.976	-.245*	.158	.783
Model X^2		.412			24.489***			58.145***	
Degrees of freedom	1			2			10		
Pseudo R^2		.000			.009			.024	
N	3,888			3,888			3,888		

*p≤0.05   ** p≤0.01   *** p≤0.001 (two-tailed test)
[a] Intimate Partner Violence is coded 1 for "experiences one or more types" and 0 otherwise
[b] 1 is the reference category
[c] 5 ("Richest") is the reference category

experiencing IPV compared with respondents who did not perceive IPV as

acceptable in any of the situations presented to them.

In the third model, the moderator variables were added to the equation

including: years of education, type of marriage (monogamous or polygamous),

employment status (not working or working), number of sons who have died, and

wealth index. The model was significant at the .001 level (X^2 = 58.15, 10 df) and

explained variance increased slightly over model two, with model three explaining over two percent of the variance in IPV (Nagelkerke R^2 = .024).

In the third model, attitude about IPV remained a significant predictor of IPV ($p \leq .001$). Respondents who agreed that IPV was acceptable in one or more situations had a 1.466 greater odds of experiencing IPV compared with respondents who did not perceive IPV as acceptable in any of the situations presented to them. Wealth index was also a significant predictor of IPV ($p \leq .05$). Compared to those in the richest category, those who were in the richer category had a 1.325 greater odds of experiencing IPV. In the third model, secondary infertility, years of education, type of marriage, employment status, and number of sons who have died were not significant predictors of IPV. For the models including secondary infertility, the third model provided the best fit as it explained the most variance in IPV (Nagelkerke R^2 = .024).

Conclusion

In this chapter the results of the study were discussed. The chapter began with descriptive statistics and correlation matrices. Next, three models using primary infertility to predict IPV and three models using secondary infertility to predict IPV were presented. The next chapter will discuss whether the results of this study support the hypotheses. In addition, the theoretical model and research question will be discussed in light of the current findings. Finally, suggestions for future research will be identified.

CHAPTER VI

DISCUSSION

This chapter will examine the findings of this study as they relate to the two hypotheses presented. In addition, the chapter includes a discussion of the relationship between the current findings and the theoretical model and research question proposed. Finally, suggestions for future research and concluding remarks are made.

Hypotheses

Two hypotheses were tested in order to explore the question "What is the relationship between a woman's fertility status and intimate partner violence?" The first hypothesis, that women who experience primary infertility are more likely to experience IPV than women with children was not supported. Women who experience primary infertility are just as likely to experience IPV as they are not to experience IPV. Primary infertility was not correlated with IPV and was not a significant predictor of IPV.

One potential explanation for why primary infertility was not a significant predictor of IPV in this study is related to under-reporting of primary infertility. It has been proposed that the prevalence of primary infertility among women in Zambia has been underestimated because having children is highly valued in Zambia and barren women have a tendency to hide their infertility from

65

interviewers as well as from people in the community (Larsen 2000). The tendency to hide infertility is a potential problem in this study. There may be women in the subsample of women married one or more years who met the definition of primary infertility but were not included in the measurement of this variable because they hid their status from the interviewer.

There was no support for the second hypothesis "Women who experience secondary infertility and have no living sons are more likely to experience IPV than women who experience secondary infertility but have one or more living sons." Secondary infertility was not significantly correlated with IPV. In the regression models, secondary infertility was not a significant predictor of IPV. As with primary infertility, underreporting is a potential problem with secondary infertility. There may have been respondents who met the definition of secondary infertility but who were not included because their status was hidden from the interviewer.

Theoretical Model

The findings in this study do not lend much support for the proposed theoretical model (See Figure 1). Although two of the models in each analysis were statistically significant, the explained variance was less than three percent and thus, practical significance is lacking. Previous research has revealed many factors that are associated with intimate partner violence (Jewkes 2002; Krishnan 2005; Malcoe, Duran, & Montgomery 2004). The current study included many of

66

these variables yet failed to explain a large proportion of the variance in IPV. Limitations of the study such as the small percentage of women meeting the definition of infertility in each subsample, as well as underreporting, may be factors.

Since the relationship between infertility and intimate partner violence was not significant, woman's attitude about IPV could not serve as a mediator between infertility and IPV. However, it should be noted that in both subsamples, women who perceived IPV as acceptable in one or more situations were more likely than women who did not perceive IPV as acceptable in any situations to experience IPV. This is consistent with the theoretical model used in this study. In Zambian culture, IPV is considered acceptable. It may be that women who believe IPV is acceptable in one or more situations are more likely to tolerate violent behavior from their spouses.

Little support was found for education as a moderator variable. Although the respondent's total years of education was positively and significantly correlated with IPV at the .05 level, the relationship was weak. Education was not a significant predictor of IPV in any of the regression models. The findings in this study did not support the role of type of marriage (monogamous or polygamous) as a moderator variable as it was not correlated with IPV nor was it a significant predictor of IPV in any of the regression models. Some support was found for the moderating role of employment status; it was significantly correlated with IPV and

67

was a significant predictor of IPV in the final regression model for primary infertility. Finally, support was not found for the moderating role of death of a son; it was significantly correlated with IPV at the .05 level in one of the two subsamples (the subsample of women married one or more years), but was not a significant predictor of IPV in any of the regression models.

Research Question

The purpose of the current study was to investigate the research question "What is the relationship between a woman's fertility status and intimate partner violence?" This is certainly a complex question. The results of this study indicate that women who report primary infertility, as well as those who report secondary infertility and have no living sons, are no more likely than women who do not report infertility to experience IPV in Zambia. The role of infertility in IPV remains unknown. While the results of this study did not indicate that infertility plays a significant role in IPV, this may be due to limitations in the data such as underreporting of infertility and other factors as discussed in the next section.

Limitations

There are limitations of the ZDHS dataset. One limitation of concern to this study is the likelihood that the incidence of domestic violence is underestimated due to underreporting of this sensitive topic. A second limitation of the dataset is the validity of the attitude toward IPV measure. It could be challenged considering that the questions used to measure this attitude are limited in scope

68

to adequately capture women's normative domestic roles. In addition, infertility is also a sensitive topic and may have been underreported as well. Also, the ZDHS module on domestic violence does not address the length of time the victim has been in an abusive relationship, leaving no way to assess the potential impact of this variable. Another limitation of this study, are the small percentages of women in each subsample that met the definitions of infertility; this limits the ability to detect potential relationships between infertility and IPV. Only 2.4 percent of the respondents met the definition of primary infertility and only 7.6 percent met the definition of secondary infertility.

Future Directions

Since infertile women in African cultures sometimes try to hide their fertility status, the relationship between primary infertility and IPV should be further explored with other African samples. Larger sample sizes may facilitate the discovery of the role played by primary infertility, if any, in IPV. This study could be replicated by combining the dataset from the Zambian Demographic and Health Survey (DHS) with DHS datasets from other countries in Africa. It would also be beneficial to further examine the relationships between educational status, type of marriage, and the experience of death of a son to IPV. While these variables have been found to be related to IPV in previous studies (e.g. Jewkes 2002; Lawoko 2006) with African samples, they were not found to be

significantly related to IPV in this study. Further study may reveal whether or not the current findings were due to limitations of the sample.

African societies are not alone in the importance they place on women's fertility and their role as mothers. The relationship between infertility and intimate partner violence should be explored in other regions that place importance on women's fertility such as Egypt and other Muslim societies, as well as South Asia, and others. Much could also be learned about infertility and intimate partner violence from qualitative studies. For example, in-depth interviews could be used to explore women's perceptions of factors that precipitate IPV. Women could also be asked to describe how their husbands have reacted to their infertility and how, if at all, infertility has affected their relationships with their spouses.

Conclusion

The findings of this study do not lend much support to the theoretical model proposing that Zambian culture and the climate it creates, leads to infertility playing a role in IPV. A woman's attitude about IPV is a significant predictor of IPV. The results of the current study add to the available literature by examining the relationship of infertility to IPV; a relationship that has been largely ignored. While the results did not indicate that infertility increases the likelihood of IPV, this may be due to limitations of the study. Future research on the relationship between infertility and IPV may shed additional light on the whether a

70

relationship exists between infertility and intimate partner violence as well as the potential effect of mediator and moderator variables.

REFERENCES

Agha, Sohail. 1998. Sexual activity and condom use in Lusaka, Zambia. *International Family Planning Perspectives* 24:32-37.

Armstrong, Alice. 1998. *Culture and choice: Lessons from survivors of gender violence in Zimbabwe.* Harare, Zimbabwe: Violence Against Women in Zimbabwe Research Project.

Atinmo, Morayo. 2000. Sociocultural implications of wife beating among the Yoruba in Ibadan, Nigeria. In Felicia Oyekanmi (Ed.), *Men, Women and Violence.* Senegal: Codesria, pp. 80-111.

Bensley, L., J. V. Eenwyk, and K. W. Simmons. 2003. Childhood family violence history and women's risk for intimate partner violence and poor health. *American Journal of Preventive Medicine* 25:38-44.

Blanc, A., B. Wolff, A.G. Gage, A.C. Ezeh, S. Neema, and J. Ssekamatte-Ssebuliba. 1996. *Negotiating reproductive outcomes in Uganda.* Kampala, Uganda and Calverton, MD: Institute of Statistics and Applied Economics and Macro International.

Boerma, J. Ties and Zaida Mgalla. 1999. *Women and Infertility in Sub-Saharan Africa.* Amsterdam: KIT Press.

Boivin, Jacky, Laura Bunting, John A. Collins, and Karl G. Nygren. 2007.

    International estimates of infertility prevalence and treatment-seeking:

    potential need and demand for infertility medical care. *Human*

    Reproduction 22:1506-1512.

Bowman, Cynthia G. 2003. Theories of domestic violence in the African context.

    American University Journal of Gender, Social Policy and the Law 11:847-

    859.

Campbell, Jacquelyn C. 2002. Health consequences of intimate partner violence.

    The Lancet 359:1331-1336.

Central Statistical Office (CSO), Ministry of Health (MOH), Tropical Diseases

    Research Centre (TDRC), University of Zambia, and Macro International

    Inc. 2009. *Zambia Demographic and Health Survey 2007.* Calverton,

    Maryland, USA: CSO and Macro International Inc.

Chonya, Linda Nyangu and Mildred Sapeyo Tolosi. 2009. "Domestic Violence." In

    Central Statistical Office (CSO), Ministry of Health (MOH), Tropical

    Diseases Research Centre (TDRC), University of Zambia, and Macro

    International Inc. *Zambia Demographic and Health Survey 2007.*

    Calverton, Maryland, USA: CSO and Macro International Inc.

Coker, A.L. and D.L. Richter. 1998. Violence against women in Sierra Leone:

    Frequency and Correlates of Intimate Partner Violence and Forced Sexual

    Intercourse. *African Journal of Reproductive Health* 2:61-72.

73

de Bruyn, Maria. 2003. *Violence, pregnancy and abortion: Issues of women's rights and public health,* 2nd edition. Chapel Hill, NC: Ipas.

Ellsberg, Mary, Henrica A.F.M. Jansen, Lori Heise, Charlotte H. Watts, Claudia Garcia-Moreno. 2008. Intimate partner violence and women's physical and mental health in the WHO multi-country study on women's health and domestic violence: an observational study. *The Lancet* 371:1165-1172.

Ellsberg, M., R. Pena, A. Herrera, J. Liljestrand, and A. Winkvist. 2000. Candies in hell: Women's experience of violence in Nicaragua. *Social Science and Medicine* 51:1592-1610.

Feyisetan, Bamikale and John B. Casterline. 2000. Fertility preferences and contraceptive change in developing countries. *Family Planning Perspectives* 26:1-22.

Fischbach, Ruth L. and Barbara Herbert. 1997. Domestic violence and mental health: Correlates and conundrums within and across cultures. *Social Science and Medicine* 45:1161-1176.

Gage, A.J. 2005. Women's experience of intimate partner violence in Haiti. *Social Science and Medicine* 61:343-364.

Garenne, Michel and Veronique Jospeh. 2002. The timing of the fertility transition in sub-Saharan Africa. *World Development* 30:1835-1843.

González-Brenes, Melissa. 2004. Domestic violence and household decision-making: Evidence from East Africa. Unpublished manuscript.

Harwood-Lejeune, Audrey. 2000. Rising age at marriage and fertility in southern and eastern Africa. *European Journal of Population* 17:261-280.

Heise L.L, J. Pitanguy and A. Germaine. 1994 *Violence against Women. The Hidden Health Burden.* Discussion papers No 225 Washington DC: The World Bank, p.46.

Hoffman, K. L., D. H. Demo, and J.N. Edwards. 1994. Physical wife abuse in a non-Western society: An integrated theoretical approach. *Journal of Marriage and Family* 56:131-146.

Hollos, Marida and Ulla Larsen. 2008. Motherhood in sub-Saharan Africa: The social consequences of infertility in an urban population in northern Tanzania. *Culture, Health, and Sexuality* 10:159-173.

Holmes, Timothy and Winnie Wong. 2009. *Zambia.* Tarrytown, NY: Marshall Cavendish Benchmark.

Inhorn, Marcia C. 2003. Global infertility and the globalization of new reproductive technologies: illustrations from Egypt. *Social Science & Medicine* 56:1837-1851.

Jewkes, R. 2002. Intimate partner violence: Causes and prevention. *The Lancet* 359:1423-1429.

Jewkes, R., J. Levin, and L. Penn-Kekana. 2002. Risk factors for domestic violence: Findings from a South African cross-sectional study. *Social Science and Medicine* 55:1603-1617.

Jewkes, R., L. Penn-Kekana, J. Levin, M. Ratsaka, and M. Schrieber. 2001. Prevalence of emotional, physical, and sexual abuse of women in three South African Provinces. *South African Medical Journal* 91:421-428.

Jeyaseelan, L., L. S. Sadowski, S. Kumar, F. Hassan, L. Ramiro, and B. Vizcarra. 2004. World studies of abuse in the family environment: Fisk factors for physical intimate partner violence. *Injury Control Safety Promotion* II:117-124.

Kishor, S., & Johnson, K. 2004. Profiling domestic violence: A multi-country study. Calverton, MD: ORC Macro.

Koenig, Michael A., Tom Lutalo, Feng Zhao, Fred Nalugoda, Fred Wabwird-Mangen, Noah Kiwanuka, Jenniver Wagman, David Serwadda, Maria Wawer, and Ron Gray. 2003(a). Domestic violence in rural Uganda: Evidence from a community-based sample. *Bulletin of the World Health Organization* 81:53-60.

Koenig, Michael A., Saifuddin Ahmed, Mian Bazle Hossain, and A.B.M. Khorshed Alam Mozumder. 2003(b). Women's status and domestic violence in rural Bangladesh: Individual- and community-level effects. *Demography* 40:269-288.

Kokole, Omari H. 1994. The politics of fertility in Africa. *Population and Development Review* 20:73-88.

Krishnan, S. (2005). Gender, caste and economic inequalities and marital violence in rural south India. *Health Care for Women International* 26:87-99.

Larsen, Ulla. 2005. Research on infertility: Which definition should we use? *Fertility and Sterility* 83:846-852.

Larsen, Ulla. 2000. Primary and secondary infertility in sub-Saharan Africa. *International Journal of Epidemiology* 29:285-291.

Lawoko, Stephen. 2006. Factors Associated with Attitudes Toward Intimate Partner Violence: A Study of Women in Zambia. *Violence and Victims* 21(5):645-656.

Letamo, Gobopamang and Halima N. Letamo. 2001-2002. The role of proximate determinants in fertility transition: A comparative study of Botswana, Zambia and Zimbabwe. *SA Journal of Demography* 8:29-35.

Levinson, D. 1989. *Violence in cross-cultural perspective.* Newburg Park, CA: Sage.

Lipsky, S., R. Caetano, C. A. Field, and G. L. Larkin. 2005. Psychosocial and substance use risk factors for intimate partner violence. *Drug and Alcohol Dependence* 78:39-47.

Malcoe, L. H., B. M. Duran, and J. M. Montgomery. 2004. Socioeconomic disparities in intimate partner violence against native American women: A cross-sectional study. *BMC Medicine* 2:1-14.

Marchbanks, Polly A., Herbert B. Peterson, Geogre L. Rubin, Phyllis A. Wingo, and The Cancer and Steroid Hormone Study Group. 1989). Research on infertility: Definition makes a difference. *American Journal of Epidemiology* 2:259-267.

Mwenesi, B.K., R.C.B. Buluma, R.U. Kong'ani, and V.M. Nyarunda. 2004. Gender violence. In Calverton, MD *Central Bureau of Statistics (CBS) [Kenya], Ministry of Health (MOH) [Kenya], and ORC Macro, Kenya demographic and health survey 2003.*

Ntozi, James P.M. 2002. Impact of HIV/AIDS on fertility in sub-Saharan Africa. *African Population Studies* 17:103-124.

Ratner, P. A. 1993. The incidence of wife abuse and mental health status in abused wives in Edmonton, Alberta. *Canadian Journal of Public Health* 83:246-249.

Rothman, Emily F., Alexander Butchart, and Magdalena Cerdá. 2003. *Intervening with perpetrators of intimate partner violence: A global perspective.* Geneva: World Health Organization.

Sciarra, J. 1994. Infertility: An international health problem. *International Journal of Gynecology and Obstetrics* 46:155-163.

Sunil, T.S. and V.K. Pillai. 2002. Sterility in Zambia. *Annals of Human Biology* 29(4):414-21.

78

Taylor, Scott D. 2006. *Culture and Customs of Zambia.* Westport, CT: Greenwood Press.

Thonneau, P. and A. Spira. 1990. Prevalence of infertility: international data and problems of measurement. *European Journal of Obstetrics and Gynecology and Reproductive Biology* 38:43-52.

Tilson, D., and U. Larsen. 2000. Divorce in Ethiopia: The impact of early marriage and childlessness. *Journal of Biosocial Science* 32:355-372.

United Nations Children's Fund. 2000. *Domestic Violence Against Women and Girls.* Florence, Italy: Innocenti Research Centre.

Walker, Lenore E. 1999. Psychology and domestic violence around the world. *American Psychologist* 54(1):21-29.

Wallace, Harvey. 2008. *Family Violence: Legal, Medical, and Social Perspectives,* 5th Ed. Boston, MA: Pearson Education.

Watts, C., E. Keough, M. Ndlovu, and R. Kwaramba. 1998. Withholding of sex and forced sex: Dimensions of violence against Zimbabwean women. *Reproductive Health Matters* 6:57-65.

Wilt, Susan and Sarah Olson.1996. Prevalence of domestic violence in the United States. *Journal of the American Medical Women's Association* 51(3): 77-82.

Wood, Katharine and Rachel Jewkes. 1997. Violence, rape, and sexual coercion: Everyday love in a South African township. *Gender and Development* 5:41-46.

World Bank. 2004. *Zambia: Public Expenditure Management and Financial Accountability Review.* Washington, D.C.: The International Bank for Reconstruction and Development.

World Development Report. 2004. Making Services Work for Poor People. Washington, DC: World Bank.

World Health Organization. 1997. Violence against women. Geneva, WHO.

Yoder, Kevin. 2008. Personal communication.