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The Relationship Between Parental Leave Policies and Infant Mortality: Global Policies, Local Practices

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The University of Southern Mississippi

The Relationship Between Parental Leave Policies and

Infant Mortality: Global Policies, Local Practices

by

Jennifer Balcazar

A Thesis

Submitted to the Honors College of
The University of Southern Mississippi
in Partial Fulfillment
of the Requirements for the Degree of
Bachelor of Science
in the Department of Public Health

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Approved by:

A handwritten signature in purple ink that reads "Danielle Fastring".

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Abstract

Study objective: Increased maternity leave has been shown to have a positive impact on maternal and child health, and increases the length of time that mothers breastfeed their infants. After childbirth, working women must decide if/when they will return to the workforce. These decisions are based on many factors. The purpose of this project is to determine the impact of current United States' (US) family leave policies on Mississippi mothers' decisions to return to work after the birth of their first child.

Study Design and Methods: A comprehensive survey was developed to collect information about mothers' decisions to return to work after the birth of their first child. The survey consisted of 100 questions, collected eligibility information, demographics, education and income level, length of maternity leave taken, breastfeeding practices, and household composition from participants. Additionally, the attitudes toward US family leave policies and their impacts were assessed. The survey was distributed online via Qualtrics (Qualtrics, Provo, UT). Participants were recruited via an informational card containing a link to the survey that was distributed at local major retailers, child-care facilities, and Women, Infant, and Children (WIC) Distribution Centers.

Results of the study: Mississippi mothers were negatively impacted financially by their first pregnancies. The majority of women's maternity leave was limited by the amount of paid time off they had accrued on their jobs. Most would have taken longer maternity leave if they had been financially able to do so. Results may be used to promote maternity leave awareness and educate policy makers about the need for paid maternity leave in the United States.

Keywords: US maternity leave, parental leave, family leave, Mississippi working mothers.

DEDICATION

I would like to dedicate this thesis to my family. A special feeling of gratitude goes to my loving husband, Anthony Terry, who has always taken the time to be my rock and the inspiration to do more while being Active Duty in the United States Air Force. In addition to my husband, I would like to thank my parents, Jaime Alberto Balcazar & Maria Yasmith Balcazar-Romero, and my grandparents, Armenjo Romero Romero and Rosalba Moreno de Romero, whose words of encouragement and immeasurable support along this journey have strengthened me. Since I was five, my parents and grandparents have given me words of wisdom, “pónete las pilas”, “pa’ lante por que pa’ tras asustan,” and the famous quote my mother always tells me, “education is something no one can take away from you, succeed Gordita!”

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Chapter One: Infant Mortality in the United States (US) and Other Developed Countries

1.1 Introduction

Pregnancy is a time when many families focus on prenatal care and financial preparedness. It is a time when family members must make lifestyle decisions about returning to the workforce after giving birth. Families with two incomes must budget for wages lost while the mother is on maternity leave. According to Johnson (2008), it is estimated that 67% of American mothers worked during their first pregnancy; of this group, 87% worked into their last trimester, and the majority of women worked full time (as cited in Guendalman et al., 2009, p. 30). The burden is greater for single mothers who may be providing all the income for the family.

In today's society, more women are participating in the workforce, a trend that began during the middle of the 20th century (Aiken et al., 2015, p.32). There are many reasons for the increase of women participants in the workforce. Various factors such as education level, career experience, job security, and level of income all influence a woman's decision to return to the workforce after having a child (Johnson, 2008, p.70-71). These factors also impact the length of maternity leave taken. Working women who plan to have a family must decide whether or not they will work during their pregnancy, and if they will return to the workforce after delivery. Depending on the employer-provided benefits and government benefits eligibility, some working women are eligible for maternity leave after delivery, while some are not. Some women decide to resign from their jobs after the birth of a child to invest time with the infant. Glass (2004) states when a mother has the demand of employment and family care, she must make a decision and carefully plan out her future, since it may potentially hinder her career path

(as cited in Aitken et al., 2015, p. 33). Mothers will need to take time off from work to be available to attend prenatal appointments and postpartum follow-ups. This is important to the health of the mother and the infant.

Zhang et al. (2015) state that after delivery, the health of the infant can provide an assessment of the level of access to prenatal care that the mother had during her pregnancy (as cited in Azevedo, 2015, p.288). Having proper care during their pregnancy and postpartum is essential for the health of the mother and the infant. Maternity leave affects the mother's decision to breastfeed, the duration of breastfeeding, time invested to bond with the infant, and has been found to be associated with lower rates of infant mortality (Gault et al., 2014, p. 14). Breastfeeding provides nutrients that only the mother can provide to the infant and is not found in formula milk. Breastfeeding provides health benefits to both the mother and the infant. Women who take maternity leave are more likely to breastfeed. Infants who are breastfed for at least six months are known to have fewer health problems, a stronger immune system, receive vaccinations as recommended, and have a neurological and psycho-social development that is more advanced than infants that are not breastfed (Gault et al., 2014, p. 14). A recent cohort study showed that mothers who took maternity leave that lasted longer than 12 weeks had a decreased number of reports of severe depression regardless of whether the leave was paid or unpaid. Mothers who received paid maternity leave had better overall physical and mental health than those who did not receive paid leave (Aitken et al., 2015; Gault et al., 2014).

One of the health determinants that is used to measure the development and well-being of a country overall is the Infant Mortality Rate (IMR). The United States has the highest IMR in the world when compared to other equally developed countries. The IMR of the US is almost double that of other developed countries. The purpose of this research was to investigate the

relationship between IMRs and policies of parental leave in several developed countries, and to determine on a local level how mothers have been impacted by family leave policies in the United States.

1.2 Problem Statement: The US is the developed country with the highest infant mortality rate, and does not currently offer nationally sponsored paid parental leave to expectant parents.

Nationally, the only government sponsored leave related to pregnancy or adoption comes in the form of The Family and Medical Leave Act (FMLA) that was passed in 1993. This Act allows mothers and fathers to take up to 12 weeks of unpaid, job-protected leave around the birth of a child, or to provide family care if they meet all the requirements such as having worked at least 1,250 hours as a full-time employee within the past 12 months in a business that has 50 or more employees in a 75-mile radius. However, less than half of American employees meet all of these requirements (Guendelman et al., 2009, p. 30). This means before 1993, Americans were not guaranteed time off from work after giving birth or after an adoption unless they had accrued personal vacation time or sick leave. A few states offer paid maternity leave to eligible residents, but as a nation, the United States is the only (highly) developed country that does not mandate paid maternity leave as a national requirement (Gault et al., 2014, p.2). The amount allotted for maternity leave plays an important role in maternal and child health. According to McGovern et al. (1997), it was concluded that poor health was associated with shorter lengths of maternity leave; however, longer absences from work greater than 20 weeks have been shown to improve the postpartum health of the mother to include mental health, vitality, and role function (as cited in Ruhm, 2000, p.953). Offering and presenting paid maternity leave as an option to citizens is beneficial for both the

family, employer, and the nation. A study conducted by Winegarden and Bracy (1995) on the 17 OECD (Organization for Economic Co-operation and Development) countries, 35 countries worldwide including the US and 18 European countries, concluded that an extra week of paid maternity leave is found to decrease a nation's IMR by 2% to 3% (as cited in Ruhm, 2000, p.932).

The United States is a world leader. According to the World Fact Book, "The US has the most technologically powerful economy in the world...US firms are at or near the forefront in technological advances, especially in computers, pharmaceuticals and medical, aerospace, and military equipment..." (Central Intelligence Agency, 2017). With a gross domestic product of \$18.56 trillion, it is a country with state-of-the-art health care. The nation is known for its "American Dream" lifestyle and for-profit healthcare system, but many do not realize that the US has one of the highest infant mortality rates of any highly-developed country in the world.

1.3 Research Hypothesis

This thesis examined five developed countries that consistently have the lowest IMRs internationally. The Human Development Index is a metric that is "composed of three indicators reflecting longevity, knowledge, and purchasing power" (Lee et al., 1997, p. 430). The countries selected for comparison are similar to the US with regard to the Human Development Index (HDI). The countries' family leave policies are compared to the policies of the US. The hypothesis that directed this project was that countries that offer parental leave policies that encourage family bonding with the new baby, provide health and wellness benefits, education, and paid leave for one or both parents, would also be the countries that have the lowest national IMRs.

On a local level, it is likely that mothers will have made decisions to return to work after

the birth of an infant largely due to reasons related to economic hardship and lack of job security. Factors that influence a mother's decision to return to work after an infant will be explored.

1.4 Research Method

To put the current family leave policies of the US in a global context, countries with an HDI similar to the US were explored to determine how IMRs and family leave policies compare to those in the US. The national infant mortality rate is compiled from the IMRs of all the 50 states in the US. The state of Mississippi is consistently found to have the highest infant mortality rate in the nation. To provide a more local context, female Mississippi residents who have at least one biological child at home will be surveyed to determine demographic information, education level, income level, number of children in their home, and attitudes towards breastfeeding. Additionally, their attitudes toward current US family leave policies and their impacts will be assessed along with factors that influenced the length of maternity leave taken, and whether or not they returned to work after having a child.

Chapter Two: Literature Review

2.1 Definition of Infant Mortality Rate

The definition of Infant Mortality Rate (IMR) is “the number of infants who die before their first birthday per 1,000 live births, and it is tracked at local, state, and national levels due to its relevance to the overall health of a population” (as cited in Azevedo, 2015, p. 288). The infant mortality rate of a country is an important indicator that captures the overall health of a nation. According to Zhang et al., “studies upon studies in public health and education have demonstrated that health of an infant is an indication of the health status of a population” (as cited by Azevedo, 2015, p. 288). In the United States, the infant mortality rate is considerably higher than the rate of other developed countries. According to MacDorman and Mathews (2010), “in 2000, the [IMR] rate [in the United States] was 6.89 infant deaths per 1,000 births” (p.1). Since 2000, the IMR has declined in the United States. According to the *World Fact Book*, in 2016 the infant mortality rate was 5.80 deaths per 1,000 live births (2017). There is not a country whose IMR is zero because that is not statistically possible, but every country’s goal is to reduce the infant mortality rate as much as possible. Infant mortality may be attributed to both direct and indirect determinants.

2.2 Direct Determinants of Infant Mortality

Direct determinants of infant mortality range from prematurity, congenital diseases and malformations, unsafe sleep environments, SUID (Sudden Unexpected/Unexplained Infant Deaths), SIDs (Sudden Infant Death Syndrome), and negligence. Premature birth is defined as a birth occurring before the thirty-seventh week of gestation. As time of gestation decreases, infant mortality increases. Complications include an underdeveloped respiratory system,

muscular system, neurological system, digestive system complications, and / or undeveloped body extremities.

Birth defects are conditions that are identified at birth that interfere with human development and physiology, and result in congenital malformation. The leading birth defects that cause infant deaths are congenital heart defects and chromosomal abnormalities (Mississippi Department of Health, 2017, p. 3). Co-sleeping, suffocation, overlaying, and accumulation of toys in cribs are all examples of unsafe sleeping habits for infants. Unsafe sleeping habits can increase the risk of SUIDS and SIDS. According to the American Academy of Pediatrics, infants are recommended to sleep on their backs in the same bedroom as the parent, but not in the same bed, be breastfed, and not be exposed to drugs and tobacco. When these guidelines are followed, the rate of SUID's can be greatly reduced (as cited in Hirai et al., 2014, p. 225).

2.3 Indirect Determinants of Infant Mortality

Indirect determinants of infant mortality are identified from the status of the mother's health before, during, and after pregnancy. Smoking during pregnancy, high stress levels, and alcohol consumption by the mother during pregnancy indirectly affect the fetus during gestation. Regardless of which of these factors are present, they are associated with low birth weight and pre-term labor. Many studies have shown an association between maternal health and the infant health (Avendano et al., 2015; Gault et al., 2014; Guendelman et al., 2009; Heymann et al., 2011; Nandi et al., 2016; Raabe et al., 2015; Ruhm, 2000). According to the Mississippi State Department of Health's Infant Mortality Report 2016 (2017), "[a] mother's health and medical care before and during the pregnancy can directly impact infant health and the risk of infant mortality" (p. 2).

Breast-feeding is known to help provide essential nutrients to the infant. Many studies report that breast-feeding is beneficial for the infant, and some suggest an indirect link between breast-feeding and infant mortality risk reduction (Heymann et al., 2011; Lewis et al., 2014; Mississippi State Department of Health, 2017; Raabe et al., 2015). Prenatal care is highly recommended as fewer prenatal care visits is associated with higher rates of infant mortality.

One factor that may increase the stress experienced by American mothers is that in the United States, many women work until they go into labor so they can maximize their earnings up to and until the baby arrives. Low-income families experience the greatest stress, and the financial burden takes a bigger toll after delivery. Challenges such as balancing work with the physical demands of a pregnancy can also lead to stress during pregnancy. Guendelman et al. (2009) and Nandi et al. (2016) agree that paid parental leave improves the family lifestyle by providing financial stability and job protection while improving the health of the mother by allotting more time for prenatal care, rest, stress reduction and breastfeeding postpartum, which leads to fewer maternal complications during and after labor.

2.4 Parental Leave Programs

Paid parental leave is another form of income provided by either the employer or government to replace and compensate the employee during leave around the birth and is available to the female employee who gave birth to a child, or to either parent that is responsible to care for a child (Mariskind, 2017, p. 15). Parental leave is commonly referred to as maternal leave, family leave, and pregnancy leave. Many studies report the benefits of parental leave. Parental leave is, as analyzed by Christopher Ruhm, “likely to primarily affect [the] child[’s] health by making more time available to parents” (2000, p.935). Each country identifies their parental leave interchangeably with these terms. A report by Raabe and Theall (2016) outlined

the definitions of the various types of family leave

[m]aternity leave is taken to sustain the health of the women before and after childbirth and to enable the care of newborns. Paternity leave is taken by fathers soon after the birth of a child to care for his partner, newborn child, and other children. Parental leave is the leave that can be used by both mothers and fathers to care for young children.

(p.488)

These types of leave are used internationally and commonly understood as leave taken around the birth and or care of a child. U.S. mothers eligible to receive paid family leave, currently offered to varying degrees in California, New Jersey, and Rhode Island were found to have longer breastfeeding duration, have stronger mother and infant bonds, have an increased employment commitment, and an increase in wages than mothers that did not have paid maternity leave (Raabe & Theall, 2016, p. 492). Maternity leave during the last trimester has also shown to be associated with reduction in cesarean deliveries and pre-term birth (Guendelman et al., 2009, p. 30). These are both complications that can negatively affect the mother's and infant's health. Studies have shown a correlation between prenatal care and postpartum care to the mother and infant (Heymann et al., 2011; Ruhm 2000,). As stated by Heymann et al., "parental leave may affect neonatal mortality [infant death within first 28 days of life], as women lacking [maternity] leave in the poorest setting [low-income individuals] may return to work within one or two weeks of delivery, jeopardizing infant care as well as nutrition" (2011, p. 128). In addition to maternal and infant health benefits, paid family leave is associated with improvements in the economy including labor market attachment, economic security, health and welfare of families and children, helps businesses thrive, reducing the spending on public benefit programs, and at the same time it promotes economic competitiveness and growth (Gault et al., 2014, p.1). Employers also noticed additional benefits

to having paid parental leave in the work place. In 2011, Appelbaum and Milkman reported that participants that used the California Paid Leave program, which is funded by an employee-paid payroll tax, noticed an increase in productivity, morale, and performance of employees in firms (as cited in Lewis et al., 2014, p. 47). One quote by Wall Street Journal author, Susan Wojcick, a Google Employee on maternity leave states:

A quarter of all women in the U.S. return to work fewer than 10 days after giving birth, leaving them less time to bond with their children, making breast-feeding more difficult and increasing their risk of postpartum depression. According to the American Academy of Pediatrics, suboptimal breast-feeding causes higher rates of infant illness and hospitalization that cost billions of dollars annually. (2014)

Many researchers have reported the benefits of paid parental leave to families, workforce, and the nation. The paid portion during parental leave is known as wage rate, which is calculated at a percent of what the mother's wage is prior to giving birth. Offering paid parental leave creates a more positive atmosphere in the workforce along with other positive outcomes. Rossin-Slater, Ruhm, and Waldfogel (2011) states "[p]aid family leave has a modest positive effect on work outcomes post-birth too...[which] increases the number of hours that a woman works after returning to work by 2 to 3 hours per week...[and] increases wage income" (as cited Gault et al., 2014, p. 9). Paternity and parental paid leave for expecting families helps fathers to have equal gender roles at home by caring for the infant and participating in the workforce (Kenjoh, 2015; Gault et al., 2014). It has been reported that although men are less likely to take paternity leave after a newborn, homes with fathers who do take advantage of the benefit, have reduced family stress levels, and greater infant bonding (Gault et al., 2014, p. 16). Each country may have its individual paid family leave policies, however, the US as a whole does not part take in paid family leave. As quoted by Gault et al. "[o]f the 186 countries examined by Heymann and

McNeill's (2013) analysis of the World Policy Analysis Centre Adult Labour Database, 96 percent [of these countries] provide some pay to women during maternity leave [the United States does not offer paid maternity leave] (2014, p. 2). Gault et al. (2014), Heymann et al. (2011), Nandi et al. (2016), Raabe and Theall (2016), Ray et al. (2010), and Ruhm (1998), all have acknowledged the benefits of paid parental leave to the mother, infant, and family. Providing parents with paid parental leave, may decrease overall government spending. In the words of Gault et al. (2014):

Research further suggests that expanding paid leave is likely to have economy-wide benefits such as reduced government spending on public assistance and increased labor force participation, which would bring concomitant economic gains, generating a larger tax base and increased consumer spending. (p. 6)

2.5 Human Development Index (HDI)

The Human Development Index (HDI) is defined by Pediatr (1997) as “a composite index of life expectancy, literacy, and per capita gross domestic product that measures the socioeconomic development of a country” (as cited in Lee et al., 1997, p. 430). Each sub-category averages multiple factors into a nation's index number. As defined by the United Nations Development Programme:

The Human Development Index (HDI), is a summary measure of average achievement in key dimensions of human development: a long and healthy life, being knowledgeable and having a decent standard of living. The HDI is the geometric mean of normalized indices for each of the three dimensions. (Figure 1) (2015, p.1)

Figure 1 provides a schematic which shows the three dimensions and their indicators which make up the Human Development Index.

Figure 1

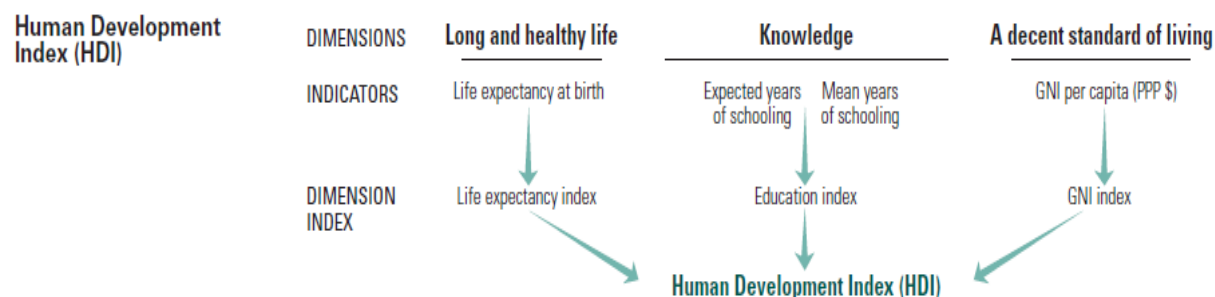
Calculating the Human Development Index of a Country

Figure 1 provides a schematic which shows the three dimensions, indicators, and dimension index that makes up the Human Development Index number from the United Nations Development Programme. (2015). [Diagram illustration of how the Human Development Reports]. Figure 1: Human Development Index. Retrieved February 28, 2017, from <http://hdr.undp.org/en/content/human-development-index-hdi>

2.6 International Parental Leave Policies

Japan, Norway, Sweden, Finland, and Germany all share the same Human Development Index category, Very High (Developed), with the United States. For a country to be ranked and identified as a Very High (Developed) country, the Human Development Index (HDI) number is calculated, then ranked among 225 countries around the world. When countries have similar HDIs, they should have similar capacities to achieve health outcomes of importance to society. By comparing the HDI of these six countries, all of which are designated as countries with high human development, inferences can be made about the presence and absence of family parental leave policies and how those policies may impact the IMRs of the country.

Chapter Three: Methodology

3.1 Global Context: Country selection

The criteria used for the countries selected for this research are based on the category of Human Development Index (HDI) of the nation and the national rate of infant mortality. The United States is categorized as a Very High (Developed) country on the HDI. The countries selected for comparison to the US are also categorized as Very High (Developed) in accordance to the HDI. By only including countries with this HDI designation, the comparison of US practices to lesser-developed countries can be avoided. The second criteria for inclusion was to identify the five Very High (Developed) countries with the lowest infant mortality rate. “HDI is a powerful predictor of both infant and maternal mortality rates. It accounts for 85% to 92% of the variation in infant mortality rates, and 82% to 85% of the variation in maternal mortality rates among countries” (Lee et al., 1997, p. 430).

For each of the five countries and the US, the family leave name will be identified, and benefits provided (such as length of maternity leave, and percent of wages), eligibility, and any additional incentives will be described. This provides a global context in which to view the parental leave policies of the US and ways in which they may impact infant mortality.

3.2 Local Context: Survey Methodology

In order to determine the impact of current US family leave policies on a mother’s decision to return to work after the birth of their first child, locally, a comprehensive survey was developed. The survey consisted of one hundred questions and collected eligibility information, demographic information, education and income level, length of time to return to work after first child was born, breastfeeding practices, and household composition from participants. Additionally, the attitudes toward US family leave polices and their impacts were assessed. The

survey was distributed online via Qualtrics (Qualtrics, Provo, UT). Qualtrics was accessible through a computer or on a smartphone with internet access. The survey took respondents approximately 20 minutes to complete.

Approval of the Institutional Review Board at The University of Southern Mississippi was granted prior to survey dissemination. In order to be eligible to participate, respondents had to be women between 18-60 years old, have at least one biological child at home, and reside in Mississippi. Informed consent was obtained from all participants prior to the beginning of the survey. Anyone who did not meet eligibility requirements, or who did not provide consent was removed from the data set prior to analysis. Access to a computer or use of a smartphone with internet availability was required for the survey. Participants who did not have internet access or who did not read English were not eligible to participate in the survey.

Potential participants were recruited via an informational card containing a link to the survey. The card was distributed to local major retailers, child-care facilities, and WIC Distribution Centers. Upon completion of the survey, participants were given an opportunity to be entered in a random drawing to win one of two \$25 gift certificates as an incentive for participating in the survey. Participants were given an email address to contact study staff directly if any questions arose during the survey, or if clarification was needed.

Chapter 4: Results

4.1 Global Context: Comparison of Very Highly (Developed) Countries' Parental Leave Benefits and Infant Mortality Rates

Six countries whose Human Development Index ranking is highly developed, to include Japan, Norway, Sweden, Finland, Germany, and the US were researched. The family leave program, requirements, and any additional incentives were described for each country.

4.1.1 Japan

As reported by the *World FactBook*, Japan's infant mortality rate for 2016 was 2.00 infant deaths per 1,000 live births, and Japan is ranks 224th (second lowest internationally) of the 225 countries studied (2017). In Japan, 14 weeks of paid maternity leave is offered at a 60% wage rate which begins six weeks prior to giving birth and extends to eight weeks after birth (Ray et al., 2010, p. 214). Although the fathers aren't entitled to paternity leave at the same time as the maternity leave, paternal leave is offered. Japan offers up to 12 months paid leave with two additional months if this leave is shared between the father and mother (Lewis et al., 2014, p. 79). In order to be eligible for this type of leave a legal agreement is needed. According to Allaart et al. (1987), "parental leave requires an indefinite employment contract and 1-year tenure with the current employer for a mother or father to take leave up to the time when the child reaches the age of 1" (as cited in Kenjoh, 2005, p. 13). Japan's social healthcare system is connected with the government, and these benefits are funded from the Employee's Health Insurance system, financed by contributions from employees, employers, and the State (Lewis, 2014, p. 79). In addition to paid parental leave, Japan offers additional child support. Japan offers child care leave for one of the parents with a 30% wage rate until the child is one year old (Ray et al., 2010, p. 214).

4.1.2 Norway

As reported by the *World FactBook*, Norway's infant mortality rate for 2016 was 2.50 infant deaths per 1,000 live births and ranks 221st (fourth lowest internationally) of the 225 countries studied (2017). In Norway, for the mother to be eligible for the parental leave program, the Norwegian Leave Program, she must accumulate a certain number of working hours prior to giving birth; however, for non-eligible mothers, a one-time tax-free cash transfer takes place at the time of the birth of the infant. For the parent to be eligible for compensation (calculated wage rate) the parent must have been employed for the last 10 months to receive the maximum compensation of a 100% wage (Rosen & Sundstrom 2000, p. 125). In addition to paid Norwegian Leave, parents are offered additional support and breastfeeding incentives. Each parent has the right to extra unpaid leave for one year, and mothers who breastfeed are eligible to reduce daily working times by two hours with full pay when employed in the public sector, and by one hour when employed in the private sector (Rosen & Sundstrom, 2000, p. 125). According to Lewis et al. (2014), the paternal leave program is funded from general taxations. The mother is eligible to have three weeks of paid leave prior to giving birth and six weeks leave postpartum, with a total of nine weeks of leave. Most fathers are eligible to take a maximum of two weeks of leave (p. 79).

4.1.3 Sweden

As reported by the *World FactBook*, Sweden's infant mortality rate for 2016 was 2.60 deaths per 1,000 live births and ranks 218th of the 225 countries studied (2017). Sweden is known as the first nation to offer paternity leave for an infant's father and is known for allowing the use of saved paternal leave up to the child's eighth birthday (Rosen & Sundstrom, 2000, p.124-125). According to Kenjoh, (2005) "Sweden is the only country who has equal roles for

men and women as the prime guiding principle for its family policies since the 1970s” (p.7).

As reported by Lewis et al. (2014) certain regulations are in place for the family leave to include:

[paid maternity leave] take two weeks before or after birth...[father leave] paternity leave maximum length of 2 weeks...36 months of maximum parental leave...13 months are paid at 80% of earnings and the remaining 3 months at a flat rate...each parent has two months reserved in the parental leave, and it can't be transferred to the other parent. Funded by the Swedish Social Insurance Agency; 31.42% is financed by employers, and the shortfall is paid by the government. (Lewis et al., 2014, p. 80)

To be eligible for this family leave families must meet certain requirements. Ruhm (2000) states the eligibility requirements for parental leave are that the employee must have worked for at least 240 days prior to giving birth, and a flat rate tax is put on the paid leave wage rate (p. 125). Sweden allows for expectant parents to invest time in their children through job-protected time off until the child turns eight years old without any negative consequences. Mothers that do not meet the eligibility requirements are still given a low taxable flat rate payment during maternity leave time (Rosen & Sundstrom, 2000, p.124).

4.1.4 Finland

As reported by the *World FactBook*, Finland's infant mortality rate for 2016 was 2.50 infant deaths per 1,000 live births and has an IMR that ranks 220th (2017). According to Ruhm (2000), to be eligible for paid parental leave, one only needs to be a resident of the country (p. 938). Finland parental leave is funded by the government through general taxation and the health insurance portion is funded 73% by the employers' contributions and 27% by the employee. The maximum length of maternity leave in Finland is 18 weeks (105 working days).

The first 56 working days are paid at a 90% wage rate, and the remaining days are paid at a 70-75% wage rate. Fathers are also entitled to up to nine weeks of paternity leave (Lewis, 2014, p. 80). Mothers who do not meet the requirements still receive support from the government. A low taxable flat rate payment is given to the mother while she is on leave to help her financially (Rosen & Sundstrom, 2000, p. 124).

4.1.5 Germany

As calculated by the *World FactBook*, Germany's infant mortality rate for 2016 was 3.40 infant deaths per 1,000 live births and it ranks 205th with regard to global IMRs (2017). In Germany, the maximum length for maternity leave is the same as Japan. Germany's 14-week maternity leave starts six weeks before giving birth and continues for eight weeks following birth. The wage rate is 100% without any ceiling on payments. The leave benefits are funded by social security up to a ceiling price, and the remaining benefit is funded by the employer. The mother's health insurance pays a flat rate of 13 euros (\$15) per day, and the employer covers the remaining amount. As for the father, there aren't any statutory entitlements for paternity leave, but sometimes collective agreements provide one to two days of paternity leave. The maximum parental leave is 36 months, with 12 months being paid, and a bonus of 2 more months if both parents take at least 2 months of leave. (Lewis, 2014, p.80). The paid parental leave is structured differently; the mothers receive a monthly cash transfer of 307 Euros (\$335) for the first six months if the married family's annual income is less than 51,130 Euros (\$99,900), and the seventh month to the twenty-fourth month the cash transfer is lowered. Sharing the parental leave also allows one parent to reduce the weekly hours of work to 30 hours while the other parent is taking parental leave (Kenjoh, 2005, p. 10).

4.1.6 United States

The United States ranks 169th out of 225 countries with regard to the infant mortality rate (IMR) rankings list. Referring to *World FactBook* data, the United States' IMR for 2016 was 5.80 per 1,000 live births (2017). As mentioned by the Institute for Women's Policy Research:

A number of experts, advocates, and policy makers are calling for a federal paid family and medical leave insurance [federal] law that would allow the United States to catch up to other developed nations and to address today's workforce realities, characterized by families with two parents who work outside the home or an employed single mother.

(2014, p. 1)

The average American is entitled to five paid sick days in a 12-month calendar year; American women are entitled to 12 unpaid weeks of maternity leave, and American men are not entitled to parental leave. In the words of Heymann & McNeill, "The United States is the only high-income country in the world that does not mandate paid maternity leave, and only a small portion of employers provide paid parental leave to both mothers and father voluntarily (as cited in Gault et. al., 2014, p. 1).

4.2 Local Context: Factors Influencing Mississippi Mothers' Decision to Return to Work After the Birth of Their First Child

The state that consistently has the highest rate of infant mortality rate in the US is Mississippi. In 2016, the rate of infant mortality in Mississippi was 9.2 deaths per 1,000 live births. The Mississippi State Department of Health (2017) points out that prematurity, or birth before the 37 weeks of pregnancy, is the leading cause of infant mortality in Mississippi. The

second leading cause of infant mortality is unsafe sleep environments and SIDS, and the third leading cause of infant mortality is congenital malformations (p. 3). Results from a survey of Mississippi mothers (n=309) are shown in the sections below.

4.2.1 Demographics of Participants

Three hundred and nine adult mothers in Mississippi who had at least one biological child at home participated in the study (Table One). The majority of women who participated in the survey were married (77%, n=238). The age of participants ranged from 18 to 60 years old. The majority of women in the study were between the age of 25-34 years old (48.2%, n=149) with a mean age of 33.50 (\pm 8.036). The most frequently reported level of education achieved was a Bachelor's Degree (28.2%, n=87). The majority of women who participated were Caucasian (88.0%, n=272). The employment status reported most frequently was full-time (50.2%, n=155). The survey was open to residents in all Mississippi counties, and the largest pool of applicants resided in Harrison county, (35.3%, n=109). Of this cohort, only (18.4%, n=57) stated they were currently enrolled in school or a training or vocational program.

Table One: Demographic Characteristics of Participants (n=309)

Demographic Characteristics	n (percent)
Marital Status	n (percent)
Single, never married	24 (7.8)
Living with partner	19 (6.1)
Married	238 (77.0)
Widowed	2 (0.6)
Divorced	21 (6.8)
Separated	5 (1.6)
Total	309

Age	n (percent)
18-24	41 (13.3)
25-29	77 (24.9)
30-34	72 (23.3)
35-39	59 (19.1)
40-44	28 (9.1)
45-49	19 (6.1)
50-55	10 (3.2)
56+	3 (1.0)
Total	309 (100)
Mean \pm SD	33.50 \pm 8.036
Highest Level of Education	n (percent)
No school completed	1 (0.3)
Some high school, no diploma	5 (1.6)
High school graduate	21 (6.8)
GED	9 (2.9)
Some College credits, no degree	64 (20.7)
Trade, technical, vocational training	16 (5.2)
Associates degree	53 (17.2)
Bachelor's Degree	87 (28.2)
Master's Degree	47 (15.2)
Doctoral Degree	6 (1.9)
Total	309 (100)
Race/Ethnicity	n (percent)
White or Caucasian	272 (88.0)
Black or African American	25 (8.1)
Native American or American Indian	2 (0.6)
Asian or Pacific Islander	4 (1.3)
Other (please list)	6 (2.2)
Total	309 (100)

Employment Status	n (percent)
Part-time	40 (12.9)
Full-time	155 (50.2)
Self-employed	24 (7.8)
Out of work & actively looking	17 (5.5)
Active Duty Military	1 (0.3)
Retired	1 (0.3)
Unable to work	10 (3.2)
Other	61 (19.7)
Total	309 (100.0)
Mississippi County	n (percent)
Alcorn	1 (0.3)
Calhoun	2 (0.6)
Copiah	1 (0.3)
Desoto	2 (0.6)
Forrest	15 (4.9)
George	13 (4.2)
Greene	1 (0.3)
Hancock	10 (3.2)
Harrison	109 (35.3)
Hinds	7 (2.3)
Itawamba	1 (0.3)
Jackson	61 (19.7)
Jones	6 (1.9)
Lafayette	7 (2.3)
Lamar	9 (2.9)
Lauderdale	5 (1.6)
Lowndes	1 (0.3)
Madison	4 (1.3)
Marion	1 (0.3)

Marshall	2 (0.6)
Newton	1 (0.3)
Panola	1 (0.3)
Pearl River	5 (1.6)
Perry	4 (1.3)
Pontotoc	1 (0.3)
Rankin	12 (3.9)
Scott	1 (0.3)
Stone	4 (1.3)
Walthall	1 (0.3)
Warren	20 (6.5)
Wayne	1 (0.3)
Total	309 (100.0)
Enrolled in school or a training/vocational program	n (percent)
Yes	57 (18.4)
No	252 (81.6)
Total	309 (100)

4.2.2 Participants' Employment Characteristics at the Time of First Child

Data from participants' responses pertaining to work history prior to first pregnancy can be found in Table Two. As reported by respondents, 69.9% of participants were full-time employees just prior to their first pregnancy (n=216), and 23.9% (n=74) of participants answered that they were employed in their job less than a year. This would automatically disqualify them from FMLA eligibility. Two hundred and sixteen participants answered that they were employed part-time prior to their first pregnancy (17.3%). Seven participants were 'Active Duty Military' (2.3%), and eight participants answered that they 'were not able to work'

(2.6%). Lastly, 20 participants chose not to work prior to their first pregnancy (6.5%).

Table Two: Employment Questions Pertaining to Time Before First Pregnancy

Think back to the time BEFORE you become pregnant with your first live biological child. Were you employed:	n	Percent
Part-time employment	53	17.3
Full-time employed	216	70.4
Out of work & actively looking	3	1.0
Active Duty Military	7	2.3
Unable to work	8	2.6
Chose not to work	20	6.5
Total	307	100.0
Thinking back to just before your FIRST pregnancy, when you consider all the locations where your employer operated, what was the total number of persons who work there?	n	Percent
2 to 9	20	7.2
10 to 24	45	16.3
25 to 49	18	6.5
50+ employees	193	69.9
Total	276	100.0
How long had you been in that job prior to becoming pregnant with your first child?	n	Percent
1 to 3 months	31	11.2
4 to 6 months	20	7.2
7 to 11 months	23	8.3
1 year	46	16.7
2 years	54	19.6
3 to 5 years	78	28.3
6 to 9 years	20	7.2
10 years or more	4	1.4

Maternity Leave is commonly referred as Family Leave. Responses related to maternity leave can be found in Table Three. Women were asked if they had stopped working or had taken time off to have their first child. In this study, 74.1% (n=229) answered ‘Yes’, while

10.7% (n = 33) answered ‘No’. The time at which pregnant women stopped work varied among respondents. For example, 43.4% (n=134) of participants reported that they stopped working when they went into labor, while 6.5% (n=20) of women reported that they stopped working during their first trimester. A total of 65 mothers (21%) answered that they did not return to work after having their first child, while 11.3% (n=35) answered they took 12 weeks of maternity leave. Almost half of mothers (46.0%, n=142) who took maternity leave in their first pregnancy reported that their benefits impacted the amount of time they had taken off, and that they would have taken more time off if possible. Although 24.8% (n=65) of participants answered that they did not return to work after having the baby, 75.8% (n=194) stated they did return to the workforce after maternity leave for their first child. Due to financial reasons, 62.7% (n=158) of women returned to work earlier than they would have liked to. Most women reported returned to work when their child was either 6 weeks old (16.8%, n=42) or more than 1 year old (15.2%, n=38).

Table Three: Work Behaviors at the Time of First Child

Did you stop work (take time off) to have your first child?	n	Percent
Yes	229	87.4
No	33	12.6
Total	262	100.0
How long into your pregnancy did you work during your FIRST pregnancy?	n	Percent
I stopped working during my first trimester	20	7.7
I stopped working during my second trimester	24	9.2
I stopped working during my third trimester	83	31.8
I stopped working when I went into labor	134	51.3
Total	261	100.0
How much maternity/family leave did you take before returning to work after the birth of your first biological child?	n	Percent
I did not return to work after having the baby	65	24.8

Less than a week	5	1.9
1 week to 13 days	9	3.4
2 weeks to 20 days	8	3.1
3 weeks to 27 days	5	1.9
4 weeks to 34 days	12	4.6
5 weeks to 41 days	7	2.7
6 weeks to 48 days	46	17.6
7 weeks to 55 days	9	3.4
8 weeks to 62 days	22	8.4
9 weeks to 69 days	7	2.7
10 weeks to 76 days	8	3.1
11 weeks to 83 days	1	.4
12 weeks to 90 days	35	13.4
13 weeks to 98 days	2	0.8
14 weeks to 104 days	1	0.4
15 weeks to 111 days	1	0.4
16 weeks or more	19	7.3
Total	262	100.0
If you took maternity/family leave around the time of your first pregnancy, did your benefits impact the amount of time you took off?	n	Percent
Yes, I would have taken more time off	142	60.7
Yes, I would have taken less time	7	3.0
No, I took off the right amount of time for me and my child	85	36.3
Total	234	100.0
Did you return to the workforce after maternity leave for your first child?	n	Percent
Yes	194	75.8
No	62	24.2
Total	256	100.0
Did you return to work earlier than you would have liked due to financial reasons?	n	Percent
Yes	158	62.7
No	94	37.3
Total	252	100.0
How old was your first child when you returned to work?	n	Percent
1 week old	10	4.0
2 weeks old	9	3.6
3 weeks old	5	2.0
4 weeks old	11	4.4
5 weeks old	5	2.0

6 weeks old	42	16.8
7 - 8 weeks old	36	14.4
9 - 11 weeks old	23	9.2
3 months old	35	14.0
4- 6 months old	14	5.6
7-9 months old	7	2.8
10-11 months old	7	2.8
1 year	8	3.2
More than 1 year old	38	15.2
Total	250	100.0

4.2.3 Participants' Breastfeeding Practices

Table Four presents the responses related to breastfeeding during the respondents' first pregnancy. The percentage of mothers who attempted to breastfeed their infant was 72.2% (n=223). From this response, 32.4% (n=100) of women stated they stopped breastfeeding before they returned to work, while 31.7% (n=98) stopped breastfeeding after they had returned to work. The percentage of women who stopped breastfeeding due to the difficulty of breastfeeding while working was 19.7% (n=61), however 47.6% (n=147) answered they did not find any difficulty breastfeeding while working. The remaining 15.8% (n=39) answered that they did not breastfeed. From this cohort, 75.0% (n=180) believed that there wasn't anything that would have made it possible or easier to continue breastfeeding.

Table Four: Breastfeeding Practices During First Pregnancy

For your first child, did you try to breastfeed at all?	n	Percent
Yes	223	84.4
No	40	15.2
Total	263	100.0
For your first child, if you started breastfeeding, when did you stop?	n	Percent
Before I returned to work	100	41.3
After I returned to work	98	40.5

Not applicable, I did not try to breastfeed	44	18.2
Total	242	100.0
Did you stop breastfeeding because of the difficulty of breastfeeding while working?	n	Percent
Yes	61	24.7
No	147	59.5
Not applicable, I did not try to breastfeed	39	15.8
Total	247	100.0
Is there anything that would have made it possible/easier for you to continue breastfeeding/pumping?	n	Percent
Yes:	60	25.0
No	180	75.0
Total	240	100.0

4.2.4 Participants' Report of Maternity Leave Practices and Partners' Paternity Leave Practices

As a benefit of FMLA, fathers, if eligible, have the opportunity to take unpaid paternity leave after the birth of the child. Table Five displays responses related to maternity, family, and paternity leave taken during the mother's first pregnancy. Approximately one-fourth (25.2%, n=78) of mothers met all the eligibility requirements to use the benefits of the Family Medical Leave Act. However, 23.0% (n=71) stated they did not return to work after having the baby. From this cohort 13.9% (n=43) mothers responded that they had taken personal paid leave from accumulated sick leave and other paid leave saved. Among participants who were eligible to take maternity leave, 25.9% (n=80), stated that they were worried that their job would not be available after they returned from maternity leave. Mothers were also asked about paternity leave (time off from employment taken by the father). A total of 61.8% (n=191) responded that the father did take paternity leave and returned to work after the mother had the baby. Only 10.7% (n=33) stated that the father was not working during the time of their pregnancy. Approximately 1% (n=3) of fathers took paternity leave and did not return to work after their baby was born. Most fathers that did take paternity leave, 59% (n=115), took 1 to 3 days off

from work. Respondents described paternal leave to be unpaid leave through the FMLA, (n= 78, 30.1%), this was followed by a combination of paid and unpaid leave such as vacation time, sick time off, or unpaid leave (19.3%, n=50). The majority of participants (26%, n=66) answered that their household income before taxes around the birth of their first child was less than \$25,000.

Table Five: Parental Leave During the First Pregnancy

If you took maternity/family leave around the time of your first pregnancy, how would you best describe that leave?	n	Percent
Unpaid leave through the Family Medical Leave Act (this is leave that you are eligible for if you work for a company with more than 50 employees. It provides up to 12 weeks of unpaid leave)	78	30.1
Personal paid leave: This would be paid leave that you were eligible to take because you had saved up paid sick time or paid personal time.	43	16.6
Company paid leave: Your company offered paid time off as a benefit of employment.	17	6.6
A combination of paid and unpaid leave	50	19.3
Not applicable: I did not return to work after having the baby	71	27.4
Total	259	100.0
If you took maternity/family leave around the time of your first pregnancy, were you worried that your job might not be available after you returned from maternity leave?	n	Percent
Yes	80	32.1
No	169	67.9
Total	249	100.0
Did the father of your first child take paternity leave from work around the time of your first pregnancy?	n	Percent
Yes, and he returned to work after I had the baby	191	75.2
No, he was not working then	33	13.0
Not applicable; father is not in the family	27	10.6
Yes, but he did not return to work after I had the baby	3	1.2
Total	254	100.0

How much paternity/family leave did the father of your first child take before returning to work after the birth of your first biological child?	n	Percent
1 to 3 days	115	59.0
4 to 6 weeks	5	2.6
1 week to 13 days	51	26.2
2 weeks to 20 days	15	7.7
3 weeks to 27 days	2	1.0
4 weeks to 34 days	3	1.5
5 weeks to 41 days	2	1.0
6 weeks to 48 days	1	0.5
14 weeks to 104 days	1	0.5
Total	195	100.0
What was your total household income before taxes around the time your first child was born?	n	Percent
Less than \$25,000	66	26.0
\$25,000 to \$34,999	45	17.7
\$35,000 to \$49,999	41	16.1
\$50,000 to \$74,999	56	22.0
\$75,000 to \$99,999	26	10.2
\$100,000 to \$149,999	16	6.3
\$150,000 or more	4	1.6
Total	254	100.0

Chapter Five: Discussion

From a global context, though it is true that countries that offer paid paternal leave benefits have lower infant mortality rates, it is difficult to conclude, based on results from a select few countries that these benefits alone cause a reduction in infant mortality. It is more likely that in addition to providing paid parental leave benefits, the country prioritizes women and children's health and has national policies that reflect that prioritization.

From a local context, the main finding of this study was that Mississippi mothers were negatively affected financially by their first pregnancies, and most would have taken more maternity leave, if offered, had they been financially able to do so. Some limitations of the study include selection bias, in that only women who received the survey card were able to get the link to participate. Though every effort was made to distribute the survey information cards widely, women who did not frequent areas that were canvassed would not have had an opportunity to participate. Another limitation was that the survey and survey information card were only printed in English. This meant that non-English speaking individuals were excluded.

Chapter Six: Conclusion

Globally, a trend is evident in that countries with paid parental leave generally have lower overall infant mortality rates. As stated by Ruhm, “a 10-week increase in paid leave is predicted to reduce infant mortality rates by between 2.5% and 3.4%” (2000, p. 947). Infant mortality is an important indicator of the health of a nation, and the recent stagnation (since 2000) in the U.S. infant mortality rate has generated concern among researchers and policymakers (Macdorman, 2010, p. 577). In comparison to other highly developed countries around the world, the United States’ IMR has been considerably higher. The relationship between how much maternal paid leave is provided influences the countries’ IMR. A nation’s IMR has shown to be lowered when paid parental leave policies are offered. Work absence provides parents with additional time to invest in the infant and family, which may be increasingly crucial given the upward trend in female labor force participation rate (Ruhm, 2000, p. 955). If American parents, more specifically Mississippi families, were eligible for paid parental leave, the IMR could be reduced at a local and national level.

Paid parental leave benefits the economy and is shown to lower infant mortality rates. Heymann et al.’s (2011) determined “an increase of 10 full-time equivalent weeks of paid maternal leave was associated with a 10% lower neonatal and infant mortality rate (p. 127). U.S. mothers that are eligible to receive paid maternity leave, currently offered to varying degrees in California, New Jersey, and New York, were found to have an increase in job protection and commitment, home stability, and number of months breastfeeding. (Raabe et al., 2016, p. 490). Locally, the findings of our study indicate that women and their families would benefit from paid parental leave benefits. These benefits would allow the mother and/or father to stay home with their infant longer without losing accrued personal time off.

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IRB Approval Letter



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NOTICE OF COMMITTEE ACTION

The project has been reviewed by The University of Southern Mississippi Institutional Review Board in accordance with Federal Drug Administration regulations (21 CFR 26, 111), Department of Health and Human Services (45 CFR Part 46), and university guidelines to ensure adherence to the following criteria:

- The risks to subjects are minimized.
- The risks to subjects are reasonable in relation to the anticipated benefits.
- The selection of subjects is equitable.
- Informed consent is adequate and appropriately documented.
- Where appropriate, the research plan makes adequate provisions for monitoring the data collected to ensure the safety of the subjects.
- Where appropriate, there are adequate provisions to protect the privacy of subjects and to maintain the confidentiality of all data.
- Appropriate additional safeguards have been included to protect vulnerable subjects.
- Any unanticipated, serious, or continuing problems encountered regarding risks to subjects must be reported immediately, but not later than 10 days following the event. This should be reported to the IRB Office via the "Adverse Effect Report Form".
- If approved, the maximum period of approval is limited to twelve months.
Projects that exceed this period must submit an application for renewal or continuation.

PROTOCOL NUMBER: 17051804

PROJECT TITLE: The Relationship between Maternal Leave Policies and Infant Mortality: Global Policies, Local Practices

PROJECT TYPE: New Project

RESEARCHER(S): Jennifer Balcazar

COLLEGE/DIVISION: College of Health

DEPARTMENT: Public Health

FUNDING AGENCY/SPONSOR: N/A

IRB COMMITTEE ACTION: Exempt Review Approval

PERIOD OF APPROVAL: 05/22/2017 to 05/21/2018

Lawrence A. Hosman, Ph.D.

Institutional Review Board