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Predictors of Induced Abortion Among Female Youth Center Users in Port-Au-Prince, Haiti

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Title Page
Master of Public Health Research Project

Predictors Of Induced Abortion Among Female Youth Center Users In Port-Au-Prince, Haiti

by

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Department of Epidemiology and Community Health
Master of Public Health Program
MPH Research Project: EPID 691

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Submission Statement

Master of Public Health Research Project

This MPH Research Project report is submitted in partial fulfillment of the requirements for a Master of Public Health degree from Virginia Commonwealth University's School of Medicine. I agree that this research project report be made available for circulation in accordance with the program's policies and regulations pertaining to documents of this type. I also understand that I must receive approval from my Faculty Advisor in order to copy from or publish this document, or submit to a funding agency. I understand that any copying from or publication of this document for potential financial gain is not allowed unless permission is granted by my Faculty Advisor or (in the absence of my Faculty Advisor) the Director of the MPH Program.

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Student Signature

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Date

Master of Public Health
Research Project Agreement Form
Department of Epidemiology and Community Health

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Number of semester hours (3-6): 3 Semester: Summer Year: 2005

Please complete the following outline. **Do not exceed 2 pages (A-H).**

A. PROJECT TITLE: Predictors of induced abortion among female Haitian youth center users in Port-au-Prince, Haiti.

B. PURPOSE (state research question): What are the sociodemographic and behavioral predictors associated with ever having had an induced abortion among female Haitian youth center users?

C. SPECIFIC OBJECTIVES (list major aims of the study):

1. Determine the prevalence of ever having had an induced abortion among female Haitian youth.
2. Using logistic regression analysis to determine what sociodemographic and behavioral factors are associated with ever having had an induced abortion among ever-pregnant female Haitian youth.

D. DESCRIPTION OF METHODS

D.1. Identify source(s) of data (eg, existing data set, data collection plans, etc): April 1, 2005 Secondary Data from: Client Profile and Satisfaction among voluntary counseling and testing (VCT) and Reproductive Health Clients (RH) at Foundation for Reproductive Health and Family Education (FOSREF) Clinics in Haiti; POLICY Project Adolescent Working Group.

D.2. State the type of study design (e.g., cross-sectional, cohort, case-control, intervention, etc): Cross-sectional study design.

D.3. Describe the study population and sample size: All young women and men ages 15-24 visiting the sites for VCT or RH services during the September – December, 2004 study period were asked to participate in the survey. Of those approached, a total of 478 young adult men and n=807 young adult women completed the survey. For the purpose of this research only female subjects were used. Ninety percent of all female respondents were sexually exposed (n=719), of the female youth who had ever had sex 58 percent have ever been pregnant (n=417), and of those

who had ever been pregnant 71.4 percent did not want their last pregnancy (n=119) and 23.9 percent ever had an abortion (n=100). The outcome of the pregnancy will focus on the intentionality of all pregnancies grouped into two categories: "Yes"= abortion and "no"= never had an abortion.

D.4. List variables to be included (If a qualitative study, describe types of information to be collected) Dependent Variables: Female Haitian youth who have ever had an induced abortion Independent Variables: *demographics*-Age (15-16/17-18/19-20/21-22/23-24), SES (types of electronics in the home i.e. TV, telephone, refrigerator, radio, computer, car, bicycle, mobilette, VCR), religion (Catholic, Protestant/Meth/Advent/Jehovah, Voodooism, Atheist, Other), where live (Petion-Ville, Delmas, Carrefour, Centre Ville, Lalue, Carrefour Feuille, Plaine duCul de Sac, Canape Vert, Other) highest education level received (primary, secondary, higher), marital status (married, engaged, living with a man, not in a union), highest level of education of mother (primary, secondary, higher) *behavioral risk factors*- contraceptive use first time had sex, contraception use at last intercourse, contraception use prior last pregnancy, age at first pregnancy ever received gifts or money in exchange for sex.

*There will be recodes of the variables after looking at trends.

D.5. Describe methods to be used for data analysis (If a qualitative study, describe general approach to compiling the information collected) SPSS will be used to analyze frequencies, cross-tabulations, logistic regression to determine what factors are associated with the outcomes of interest.

E. ANTICIPATED RESULTS: Based on a literature review and a basic understanding of the sociodemographics of populations similar to this study population, female Haitian youth clinic users, I anticipate the results to show a positive correlation between known predictors and behavioral risk taking behaviors and ever having had an induced abortion.

F. SIGNIFICANCE OF PROJECT TO PUBLIC HEALTH:

The prevention induced abortions is significant from a public health prospective because many of these induced abortions are preformed in countries with highly restrictive law regarding abortion. In countries, like Haiti, abortion is illegal and often unsafe. These unsafe abortions are a major contributor to maternal morbidity and mortality especially for youth. Unsafe abortion is one of the great neglected problems of health care in developing countries and a serious concern to women during their reproductive lives. In all parts of the world, particularly in urban areas, an increasing proportion of those having abortions are unmarried adolescents; in some urban centers, they represent the majority of all abortion seekers[1]. In recent studies it has been found that women aged 22-23 with four children who have already had multiple abortions. Since abortion is illegal in Haiti, they turn to charlatans. Every year, thousands of women die from botched abortions." [2]

Understanding the determinates of induced abortions are essential to public health practitioners in preventing unwanted childbearing and to help promote a women's ability to determine whether and when to have a child. The significance of this project is to compare pregnancy intentions with demographic and behavioral risk factors for female Haitian youth, which will aid

in understanding and designing family planning programs in an attempt to prevent induced abortions.

Many of the youth surveyed are considered at risk and a hard to reach population as a product of their physical, cultural, economic, or social separation. Reaching such a group of youth with family planning and other health services will have tremendous public health implications by providing these youth with services to improve their health but may also increase their integration into the broader socio-economic context of the general Haitian population.

[1]Department of Reproductive Health and Research (RHR), World Health Organization Unsafe abortion: Global and regional estimates of incidence of mortality due to unsafe abortion with a listing of available country data - Third edition WHO/RHT/MSM/97.16 – 1997
http://www.who.int/reproductive-health/publications/MSM_97_16/MSM_97_16_abstract.en.html

[2] Sex Education Spreads as Haiti Targets AIDS among Young People. *Population, Family Planning, & Ecology News Digest* . Retrieved April, 17 2005 at www.overpopulation.org/archivesJan-Apr2001.html

G. IRB Status:

1) Do you plan to collect data through direct intervention or interaction with human subjects? ___yes __X__no

2) Will you have access to any existing identifiable private information? ___yes __X_no

If you answered "no" to both of the questions above, IRB review is not required.

H. PROPOSED SCHEDULE: Start Date: _April 2005__Anticipated End Date: August 2005

I. INDICATE WHICH OF THE FOLLOWING AREAS OF PUBLIC HEALTH KNOWLEDGE WILL BE DEMONSTRATED:

1. Biostatistics – collection, storage, retrieval, analysis and interpretation of health data; design and analysis of health-related surveys and experiments; and concepts and practice of statistical data analysis. __X_yes ___no (i.e. recoding, multivariate and bivairate analysis)

2. Epidemiology – distributions and determinants of disease, disabilities and death in human populations; the characteristics and dynamics of human populations; and the natural history of disease and the biologic basis of health. __X_yes ___no

3. Environmental Health Sciences – environmental factors including biological, physical and chemical factors which affect the health of a community. ___yes __X_no (if yes, briefly describe):

4. Health Services Administration – planning, organization, administration, management, evaluation and policy analysis of health programs. ___yes __X_no (if yes, briefly describe):

5. Social/Behavioral Sciences – concepts and methods of social and behavioral sciences relevant to the identification and the solution of public health problems. __X__yes ___no (sexual risk taking behaviors and pregnancy outcomes)

Dedication

I dedicate this paper to Marilyn C. Batan, Anike N. Clark, Thuy Quynh N. Do, and Amanda B. Wattenmaker. Thank you for your friendship and support throughout this journey.

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Acknowledgment

I would like to thank Dr. Ilene Speizer for her help working through the material and statistical interpretations. I would also like to thank Dr. Tilahun Adera for his work in putting this all together on time. Finally, I would like to thank Dr. Theodore Fuller for reviewing and providing editorial advice.

The data for this paper was collected by the following: The Foundation for Reproductive Health and Family Education (FOSREF) with the help of Harry Beauvais and Tania Viala, Futures Group with help from Nancy Murray, Leanne Dougherty, and Kathy Buek, and Family Health International with help from Heidi Reynolds.

Abstract

Objective: Induced abortions occur in every country in the world. However sixty percent of the world's women live in countries where abortion is illegal. 19 million pregnancies end in unsafe and/or illegal abortions. Annually, 68,000 women die from unsafe abortions. Legal or not, unsafe abortion is one of the great neglected problems of health care in developing countries like Haiti and is a serious concern to women during their reproductive lives.

Methods: The data for this study was collected from youth centers (ages 15-24) and used to estimate percentage distributions of abortion ratios by selected characteristics of women, particularly age at first pregnancy, education levels, relationship status with partner and history of contraception use.

Results: 23.9 abortions were reported for every 100 pregnancies. Females with higher education and/or currently students were 3 times more likely to have had an abortion than less educated or non-student females. Decreases in relationship stability, specifically single females, increased the risk for abortion. Increased number of pregnancies significantly increased the risk of ever having had an abortion (three or more pregnancies increases risk 10 fold). Only 12.7% reported use of modern contraception prior to last pregnancy with 71.4% stating that their last pregnancy was not wanted.

Conclusion: Prevalence of induced abortion is relatively high in this population specifically occurring among women who are single, more educated, and students. Increased number of pregnancies dramatically increases the risk for abortions. This implies that these females are using abortion as a way to control fertility.

Introduction

Every year approximately 500,000 women are estimated to die from pregnancy related causes, the majority of these deaths are in the developing world and many of these deaths are a consequence of unsafe abortions. Twenty-five percent of maternal deaths occur in Asia and thirty to fifty percent of maternal deaths occur in Africa and Latin America as a result of unsafe abortions[1]. The data on morbidity related to abortions is less reliable but it has been suggested that for every maternal death from an induced abortion there are 10-15 women suffering from morbidity related to an abortion. Morbidity associated with unsafe abortions may lead to complications such as severe hemorrhage, sepsis, chronic pelvic inflammatory diseases, ectopic pregnancies, and secondary infertility.[2]

Induced abortions occur in every country in the world but only forty percent of the world's women live in countries where abortion is legal. The World Health Organization (WHO) estimates that of the 211 million pregnancies that occur each year, about 46 million or 22% of pregnancies end in induced abortion and of those 19 million are believed to be unsafe and or illegal[2, 3]. The developing areas of the world where 79% of the world's population live, account for 64% of the legal and 95% of the illegal abortions.[4] WHO reports that up to 13 percent of pregnancy-related deaths, world-wide, are due to unsafe abortions, resulting in an estimated 68,000 women dieing annually.[5] In developing countries, the risk of death following complications of unsafe abortion procedures is several hundred times higher than that of an abortion performed professionally under safe conditions. Legal or not, unsafe abortion is one of the great neglected problems of health care in developing countries and is a serious concern to

women during their reproductive lives. WHO defines unsafe abortion as a procedure for terminating an unwanted pregnancy either by persons lacking the necessary skills or in an environment lacking the minimal medical standards or both.[5] It is necessary to address risk factors for unsafe abortions as indicated by the declaration at the United Nations conference on population in Cairo, 1994, which stated that At the 1994 International Conference on Population and Development (ICPD) in Cairo, Egypt, governments agreed that: "In no case should abortion be promoted as a method of family planning. All Governments and relevant intergovernmental and non-governmental organizations are urged to strengthen their commitment to women's health, to deal with the health aspect of unsafe abortion as a major public health concern and to reduce the recourse to abortion through expanded and improved family-planning services.[6,7]

Legal abortions are authorized medical procedures, and therefore more often reported and recorded by health facilities and government agencies. However, the tracking and recording of illegal abortions are usually an estimate based on a number of techniques from a variety of measurements. To estimate the frequency of induced abortions in countries were it is illegal, information has been gathered from sources such as illegal provider surveys, anonymous third party reports, complications statistics from women hospitalized for treatment from complications due to an abortions, mortality statistics, community based third party surveys and self-reports.[4,8] The different measures offer estimates that are valuable for researchers as well as policy makers to understand the frequency and characteristics of unsafe abortions and the women who are seeking them.

In all parts of the world, particularly in urban areas, an increasing proportion of those women having abortions are unmarried adolescents; in some urban centers, they represent the majority of all abortion seekers.[9] Since one billion of the world's population is between ages 15-24, a good and preventative means of reducing unsafe abortions would be to reduce the incidence rates of females seeking to induce an abortion among this cohort.[10] There are a number of predictive factors seen around the world regarding adolescent induced abortions such as lack of access to contraceptives, education level, media exposure, age at sexual debut, marital/union status with a trend toward later age at marriage, perceived lack of need for birth control measures especially among sexually active non-married youth particularly in urban areas, parity, religion or cultural beliefs, and sexual selection.[11,12]

Globally it is estimated that 123 million women of childbearing age (17%) still have an unmet need for family planning.[4] Failure in family planning education is attributed to poor knowledge of effective use of modern contraceptive methods. For example the perceived lack of need for contraceptive may be attributed to lack of education regarding pregnancy prevention and family planning counseling.[3] Likewise, in many countries failure of withdrawal and inconsistent condom and pill use are the most common reasons for abortion.[13]

The overall level of education attained by the youth is also a predictor of pregnancy intentions.[9] An improvement in education among women living in urban areas (a development that has been shown worldwide) is associated with a preference for fewer children and delaying pregnancies. In studies on the reasons females from Chile,

Colombia, and Honduras seek abortions all found 15% of women reporting that they did not want to disrupt education by having a child.[7]

A study by the Alan Guttmacher Institute found that there is a high prevalence of consensual unions in Latin America. These unions tend to have higher dissolution rates than formal marriages and usually imply less commitment by the cohabitating partners. In deciding whether to have an abortion, women often referred to the level of commitment they could depend on from their partner as a deciding factor.[14] Therefore, the more committed the relationship a female is in at the time of conception significantly correlated with the decision to induce an abortion. Studies have shown that in both developed and developing countries reasons for not wanting to be a single mother include: being too young and unable to support a child without support from partner, and fearing rejection from family and community.[9]

Religious and cultural regulation of female sexuality is remarkably consistent around the world. Females face constraints on personal autonomy and mobility when negotiating their premarital relationships. Religious beliefs often exert an influence on civil authorities in the field of reproduction such as prevention or procreation and termination of pregnancies. For example, In 1995 Pope John Paul II, in an Encyclical letter to all Catholics warned of the rise of a 'culture of death' in modern society, using his strongest language to condemn abortion, which he claimed is a crime which no human law can claim to legitimize.[15]

The prevention of induced abortions is significant from a public health perspective because many of these induced abortions are performed in countries with highly restrictive laws regarding abortion. The most restrictive laws regarding abortion

are those that either ban abortion entirely or permit it only to save the life of the pregnant woman. Such laws define abortion as a criminal offense with penalties for the provider and often for the woman as well. Twenty-five percent of the world's population lives in countries that abide by the aforementioned restrictive abortion laws.[16] Haiti is one of those countries. Haitian laws are highly restrictive regarding abortion which is governed by the French Penal Code of 1810, which makes no explicit exceptions to the prohibition of abortion, except to save the life the mother.[17]

Over the last two decades the use of modern contraception (pill, IUD, injectibles, implants, condoms, and sterilization) has increased as compared to the use of traditional methods (periodic abstinence, lactation amenorrhea and withdrawal).[18] Haiti continues to have the lowest rate of modern contraceptive use in the Western hemisphere. In Haiti, only 10% of sexually active single female youths age 15-19 used modern methods of contraception, in 2000. Compare Haiti's low percentage of youth using contraceptives to that of the United Kingdom who reported 50% and the Dominican Republic (a country which shares the island of Hispaniola with Haiti), who reported 42%.[19]

In countries, like Haiti, where abortion is illegal, abortion is a major contributor to maternal morbidity and mortality. According to the Population Reference Bureau, the lifetime chance of dying from any maternal causes for Haitian women is 1 in 29; which is the highest in the Caribbean. By comparison, in neighboring Dominican Republic women have a 1 in 200 chance of dying from maternal causes. The average risk of dying from an unsafe abortion in Latin America is one in 800 for women[19]. Adolescents in Haiti account for 15% of birth-related deaths, and nearly 4% of them had induced abortions with rates higher in the cities than rural areas.[20] One study also revealed that

(worldwide) many illegal abortion service providers in urban areas were untrained and therefore lacked knowledge about dangerous, unhygienic and sometimes fatal practices.[21] Every year, thousands of women die from botched and unsafe abortions. Currently 65% of Haiti's population is below the age of 25.[22] Therefore, it is pertinent for the researchers to understand the particular risk factors and predictors influencing the rates of pregnancies and abortions among female Haitian youth as one measure to reduce maternal mortality rates.

The legal status of induced abortions is not the only factor influencing women's ability to access safe abortion services. Income level also separates those who can privately afford from those who can not afford them. In Haiti access to abortion is restricted by law therefore, medically trained practitioners are usually less willing to provide the service.[9] Therefore, the services are usually performed in private settings or facilities limiting lower income females access to the safe medical care which is only available to them through public hospitals.

Haiti the poorest country in the Western hemisphere with seventy percent of Haitians live below the poverty level making.[14] Intense population pressures, extreme poverty, along with rampant mismanagement of the country's natural resources and political turmoil have left resources are in short supply. Due to generalized deviation of Haiti the limited resources must be allocated efficiently. Resource appropriations for reproductive health will be more resourcefully allocated if at risk populations are targeted. Since unsafe, induced abortions are a major contributor to maternal mortality and morbidity in Haiti it is essential to understand the predictors of induced abortion as a means of preventing unsafe abortions and therefore, ultimately improve reproductive

health. This information will shed light on the unmet needs and give direction for future policy as a means to improve the overall quality of life for Haitians females and in turn help lift all Haitians out of the abyss of poverty.

The sample population surveyed for this study comes from Foundation for Reproductive Health and Family Education (FOSREF) sponsored youth centers in Port-Au-Prince. We wish to see if previously determined risk factors for abortions worldwide are also predictors for FOSREF youth center females. We wish to identify the prevalence of pregnancy among these females and determine the sociodemographic and risk taking factors associated with choosing to carry a pregnancy to term or to terminate a pregnancy.

Methods

The data for this study were collected between September and December, 2004 from four Foundation for Reproductive Health and Family Education (FOSREF) youth centers and a FOSREF reproductive health clinic for women of all ages. All of the participants in this survey were visiting the sites for voluntary counseling and testing or reproductive health were approached and asked to participate in the survey. The participants were included only if they were between the ages of 15-24.

The questionnaire was administered by a project interviewer to clients as they were leaving the clinic after their visit; the interview was conducted in Creole (results from the survey were later translated into English). The interviewer read a consent statement and the respondents signed his/her consent. A total of 478 young males and 807 females completed the survey. All study methods were approved by the Institutional Review Board at Family Health International.

For the purpose of this project only the response for females were included and analyzed. Ninety percent female respondents were sexually experienced (n=719); of the female youth who had ever had sex, 58 percent have ever been pregnant (n=417); and of those who had ever been pregnant 28.6 percent did not want their last pregnancy (n=119) and 65.5 percent ever had an abortion (n=273).

The analysis examines whether ever-pregnant women have ever terminated a pregnancy. The outcome variable (dependent) is coded one if the young woman has ever been pregnant and has ever terminated a pregnancy and coded zero if the young woman has ever been pregnant and never terminated a pregnancy. The independent variables included demographics such as age (15-16; 17-18; 19-20; 21-22; 23-24), SES (types of electronics in the home i.e. TV, telephone, refrigerator, radio, computer, car, bicycle, motorbike, VCR: these were all coded as "yes" or "no" for existence in the home), religion (Catholic, Protestant/Meth/Advent/Jehovah, Voodooism, Atheist, Other), residence (Petion-Ville, Delmas, Carrefour, Centre Ville, Lalue, Carrefour Feuille, Plaine du Cul de Sac, Canape Vert, Other), highest education level attained (primary, secondary, higher), marital status (married, engaged, living with a man, not in a union), highest level of education of mother (primary, secondary, higher), media exposure (expressed by how often they watch TV), and occupation (unemployed, student, employed). Behavioral risk factors such as age at first pregnancy, contraception use at first intercourse, contraceptive use last pregnancy, ever received gifts or money in exchange for sex, and overall number of pregnancies.

Analysis was completed using SPSS version 12.0 and 13.0. Cross tabs of dependent and independent variables were analyzed to determine significance of

differences among characteristics using the chi-square test to assess the strength of the association. Logistic regression analyses are used to examine the main sociodemographic and behavioral determinants of induced abortion. Odds ratios with 95% confidence intervals were determined for each regression.

Results

The summary of the sociodemographic and behavioral characteristics of the female respondents is presented in Table 1. The total number of females interviewed is 807. The median age of the females interviewed is 21. Forty-nine percent (389) of the females were Catholic and 37% (297) were other denominations of Christianity. The highest percentage (26.9) of females lived in the Delmas suburb of Port-au-Prince. Seventy-two percent (575) of the females had completed a grade between 7 and 13 which, in Haitian school system, is labeled secondary. Fifty-three percent (420) of the females had a mother with only a primary or less education. Sixty-one percent (490) of the females reported "student" as their occupation and 39% (280) identified themselves as single. The level of media exposure was addressed by the number of times a week one watches T.V. For the females 72% (578) stated that they watch the television every day. Only 30% (239) of the females have transportation (bike, or motorbike, or car) at their home, 28% (224) have an oven, and only 45% (363) have a refrigerator. However, 89% (714) have television in their home.

Table 2 shows the sociodemographic characteristic and behavioral risks by those females who have ever had an induced abortion. There were a total of 418 women, who had ever been pregnant. Of those 418 women 100 of them had ever had an induced abortion. Therefore, 23.9% of the ever-pregnant women have ever had an induced

abortion. There was no statistical difference in age, religion, or mother's education among the women who had ever had an induced abortion. The percentages of females having had an induced abortion increased the higher the level of education attained. The increases were statistically significant with 58.8% of the women who had more than a secondary education, 28.5% of females with only a secondary level, and 20.7% of the females had a primary or less education. Likewise, the results were statistically significant when the occupation of the females was asked –40.9% of those who identified as students and 13% of those unemployed and 12.8% employed reported having had an abortion. The results were also statistically significant among the differences in relationship status for the females who had at one time had an induced abortion–7.0% of the married, 16.1 of engaged women, 29.5% of those living with a partner, and 33.3% of the females who were single. Among the items found in the home, only the presence of an oven had statistical significance with 31.7 of the women with and oven compared to 21.3 percent of those without having had an induced abortion. Neither the amount of media exposure from watching the television nor the age of sexual debut were statistically significant. Those females who admitted to having received gifts in exchange for sex were statistically more likely to have had an induced abortion (62.5%) than those who have not had sex in exchange for gifts (23.3%). The use of a condom or any contraceptive use during first sexual intercourse was not a statistically significant determinant of induced abortions but, the use of contraceptives when a female last became pregnant was. The females who had had and abortion were more likely to have used contraceptives when they last became pregnant was higher (35.8%) than those who were not (22.4%). The age of first pregnancy also showed statistical significance with

the younger the age the higher the percentages of induced abortions– 21.1% of females who were ages 13 thru 16 and 15% of females ages 21 thru 24. The more pregnancies reported the increased percentages of females who had had an induced abortion– one pregnancy 18.7%, two pregnancies 28.6%, three pregnancies 41.9 and four or more pregnancies 41.7%. Among the females who had ever been pregnant there was a statistical significance among the females who stated that they did not want their last pregnancies 29.2% compared to those who wanted their last pregnancy 10.2%.

Table 3 shows the logistic regression model predicting the relative risk based on adjusted odds ratios with a 95% confidence interval for having an induced abortion. Age remained a non-significant predictor for ever having had an abortion for this study population. Increased education levels showed statistically significant increases in relative risk of ever having had an abortion. Females with a secondary or higher education are 3.2 times more likely than less educated females to have had an abortion. The better-educated females remain 2.9 times more likely to have an abortion compared to females with a primary education or less after being adjusted for the age and other known predictors.

Being classified as a student versus employed or unemployed showed increased relative risk for abortion. Female students are 4.6 times more likely than others to have had an abortion and, when adjusted for covariates the risk remained statistically significant at close to 3 times that of the other groups.

Females who are married/engaged or are living with a partner have a relative risk of an induced abortion less than for those females who are single. Married or engaged females have a statistically significant lower risk (0.30 times as likely) of ever having an

abortion than those females who are single. For these females, being married or engaged is a protective factor.

The increase in number of pregnancies increased the relative risk of ever having had an abortion among females who have ever been pregnant. For females who have had two pregnancies they are 1.7 times more likely to have had an abortion. For females who have had three or more pregnancies the risk increased even more (3.1 times more likely). When each of these increases in number of pregnancies was adjusted for other known variables, such as age, the relative risk increased substantially. For females who have had two and three or more pregnancies the adjusted relative risk is 3.9 and 10.8 times higher (respectively) than the females who have had only one pregnancy.

Items in the home such as computers or VCR and an oven were statistically significant predictors of induced abortions showing that a female without these items were less likely to have ever had an induced abortion. However, when these items (separately) were adjusted for other variables, they were no longer statistically significant.

The relative risk for ever having had and induced abortion among those who had ever received gifts in exchange for sex. Females who have received gifts for sex were 5.5 time more likely to have had an induced abortion. However, when this variable was adjusted for other known variables the risk decreased slightly from the unadjusted to 3.5 times more likely, but is no longer statistically significant.

The age at first pregnancy is only statistically significant for those females who were 17 to 20 years old their first pregnancy (2.2 times more likely) compared to females who were older at the time of their first pregnancy. When age at first pregnancy was

adjusted for other known variables such as age at time of interview and total number of pregnancies, the age at which a female first becomes pregnant is no longer a statistically significant predictor of ever having had an induced abortion.

Discussion

The primary objective of this study was to estimate the prevalence of induced abortion among ever-pregnant female Haitians using the FOSREF youth centers in Port-au-Prince. Several important results emerged from this study. First, the research revealed that of the 418 ever pregnant females, 23.9% have ever had an abortion. This high percentage of abortions is striking considering that the study population includes females between the ages of 15-24 with a median age of 21. In a context where the practice of modern contraception remains low and close to 25 percent of the females have had at least one induced abortion it is therefore reasonable to assume that abortion plays a major role in the postponement and regulation of childbearing among these youth.

The percentage distribution of induced abortions according to education indicates that females at all education levels obtain abortions. However, with increasing levels of educational attainment, the percentage of females having ever had an abortion increases, suggesting that there is a stronger motivation to maintain smaller family size and prevent unplanned births.

Differences in age were not shown to have a significant impact on the percentages of females who have ever had an induced abortion. This is not congruent with other literature when looking at this specific cohort of 15-24. Most literature shows an increase in the prevalence of abortion in older cohorts, however, this study only surveyed youth and within this age group (15-24) relative risk was not different among the age groups.

Differences in religion were not shown to have a significant impact on the percentages of females who have ever had an induced abortion. While there was no statistical difference between Catholics, other Christians and the other (atheist and Voodooist) categories, the females who classified themselves as "other" were slightly more likely to have ever had an induced abortion. Suggesting that religion may have some influence as shown in other research but, for these females it is not a significant predictor of induced abortion.

Likewise, in conformance with the a priori hypotheses, pregnancies occurring to young women who are still in school are three times more likely to be terminated through abortion than are those of women who are not in school. These results parallel those found elsewhere in countries were abortion is illegal. Of the sociodemographic variables, higher education and/or being a student as well as being without a stable partner have been detected in most studies as contributing to increased relative risk for induced abortions in developing countries.[23,24] The observed relationship between education and employment of women and the likelihood of experiencing an induced abortion may be related to better educated women being more likely to have stronger motivation to space their children or delay the onset of a first birth.

The status of a female's relationship shows an effect on ever having had an abortion. The relative risk for having had an abortion is highest among the females in the single group, with 33% of those females who were single having had at least one abortion. The relative risk of abortion for females adjusted for other variables based on relationship characteristics is much the same as found in other studies[6, 25]. As seen in

both developing and developed countries, pregnancies among unmarried females are more likely to be resolved by abortion than are those among married females.

While parity, the number of children borne by one woman, was not investigated for this study, the number of pregnancies was explored as a predictive factor for ever having had an induced abortion. Other studies have shown increased risk for abortion among women the more children she has given birth to[26]. The increase seen in the number of pregnancies as a risk factor is congruent with these other studies suggesting that women, especially youth, induce abortions as means of reducing or limiting the number of children they give birth to. Females with three or more pregnancies are close to 11 times more likely than a female who has had one pregnancy for ever having had an abortion.

While slightly higher than similar findings from other Latin American countries such as Bolivia in which only 7% of the study population reported using modern clinical contraceptive methods in the month prior to conception only 53 (12.7%) of the ever-pregnant females used contraception prior to their last pregnancy[27]. Conventional literature has found the lack of use of contraception prior to pregnancies a risk factor for induced abortions. However, in this study the females who were not using contraceptive when they last became pregnant were less likely (48%) to have ever had an abortion. It is important to remember that the outcome variable for this study is ever had an induced abortion. Therefore, it is possible that once a female has ever had an abortion she is more likely to use contraception than females who have not ever had an induced abortion. Another explanation may be linked to improper use of or poor education regarding usage of effective contraceptive practices.[28] A strikingly large percentage of women (71%) did not want their last pregnancy and yet, 87.2% of female stated that they did not use

contraceptives prior to that pregnancy. Poor knowledge of fertility and contraception, low contraceptive use rates and/or irregular and ineffective use of contraceptive methods signify an underutilization of family planning services and knowledge with a significant percentage of females is replacing it with induced abortion as a means to control parity.

In conclusion, the prevalence of induced abortion is relatively high in this population specifically occurring among women who are single, more educated, and students. Increased number of pregnancies dramatically increases the risk for abortions. This implies that these females are using abortion as a way to control fertility.

Limitations of the study includes the reliance on self-reporting especially with regard to sensitive issues (i.e. use of contraceptive last pregnancy and receiving gifts for sex), which could result in social desirability response bias. Respondents may have been reluctant to admit to an illegal act of inducing and abortion or payment for sex. Underreporting might occur with the sensitive subject of induced abortions because even those who feel they made the right decision by having an abortion are aware of the negative social connotations of the practice. Likewise, based on other literature regarding predictors of induced abortions future studies may wish to include factors (not represented in this study) such as history of sexual and/or physical abuse.[5, 29-30]

These finding must be interpreted carefully. They are not generalizable to the entire country, as this sample population is from urban female youths whom attend the FOSREF youth centers. Even so, the findings provide evidence that the prevalence of induced abortions is high among this cohort and brings policy makers a step closer to identifying and helping those females who are seeking abortions, which are often unsafe and pose a threat to their lives.

Whether abortions take place or not is much less determined by legal conditions rather than by social and personal and health systems-related factors. Apart from the position one takes on the different moral and ethical approaches regarding abortion, there is universal agreement that every effort should be made to prevent unsafe abortion. Experiences show that extremely restrictive laws and policies against abortion frequently fail to prevent and are often counterproductive by increasing the incidence of unsafe abortions. However, liberal abortion access can also be counterproductive if it is used as a substitute for consistent and effective contraceptives in the prevention of pregnancy.[31]

Studies like this one allow for an improved understanding of determinants such as being single, increased number of pregnancies, in school and/or educated beyond primary school increases a female's risk of seeking an abortion as mean to control parity. From this insight government or other agencies are provided with the ability to target educational and reproductive services toward a more specific group. The increased knowledge will help to better utilize the already limited resources in hope that females will no longer be faced with the need to use abortion as a resource to control fertility and therefore reduce the amount of women who have to endure an unsafe abortion.

Tables

Table 1. Sociodemographic characteristics of Female Haitian Youth center user ages 15-24 from Port-Au-Prince

	Female(N)	%
Age		
15-16	70	8.7
17- 18	138	17.1
19 - 20	190	23.5
21- 22	195	24.2
23 - 24	214	26.5
Total	807	
Religion		
Catholic	389	48.9
Other Christian	297	37.3
Other*	110	13.8
Total	796	
Live		
Delmas	216	26.9
Carrefour	100	12.5
Centre Ville	117	14.6
Lalue	95	11.8
Carrefour Feuille	81	10.1
Other	194	24.2
Total	803	
Highest Grade		
None	27	3.4
Primary	140	17.6
Secondary	575	72.2
Higher	54	6.8
Total	796	
Occupation		
Unemployed	166	20.7
Student	490	61.0
Employed	147	18.3
Total	803	
Mother's Ed		
None	209	26.3
Primary	211	26.5
Secondary	274	34.4
Higher	102	12.8
Total	796	
Living in Union		
Married	45	6.4
Engaged	117	16.5
Living w/partner	265	37.5
Single	280	39.6
Total		707

*Includes: Atheist and Voodooist

Table 1 cont.	Female(N)	%
Watch TV		
Total	802	
Every Day	578	72.1
1X Week	135	16.8
< 1X Week	89	11.1
Items in Home		
Oven		
Total	805	
No	581	72.2
Yes	224	27.8
Television		
Total	806	
No	92	11.4
Yes	714	88.6
Telephone		
Total	806	
No	400	49.6
Yes	406	50.3
Refrigerator		
Total	804	
No	441	54.9
Yes	363	45.1
Radio		
Total	805	
No	45	5.6
Yes	760	94.4
Car/ Motorbike/Bike		
Total	802	
No	563	70.2
Yes	239	29.8
Computer/VCR		
Total	803	
No	380	47.3
Yes	423	52.7

Table 2. Prevalence of induced abortions among ever-pregnant Female Haitian youth center users ages 15-24 from Port-au-Prince

Variable	Total Preg.	# Abortion	% Ever Abortion	X^2
Age				0.707
15 – 18	56	13	23.2	
19 – 22	211	54	25.6	
23+	151	33	21.9	
Total	418	100	23.9	
Religion				0.454
Catholic	236	56	23.7	
Other Christian	122	25	20.5	
Other*	55	16	29.1	
Total	413	97	23.5	
Highest Grade Completed				**≤0.001**
None	25	2	8.00	
Primary	110	14	12.7	
Secondary	260	74	28.5	
≥ 14	17	10	58.8	
Total	412	100	24.3	
Occupation				**≤0.001**
Unemployed	123	16	13.0	
Student	159	65	40.9	
Employed	133	17	12.8	
Total	415	98	23.6	
Mother's Ed				0.113
None	127	28	22.0	
Primary	103	32	31.1	
Secondary	116	29	25.0	
Higher	66	10	15.2	
Total	412	99	24.0	
Relationship Status				**≤0.001**
Married	43	3	7.0	
Engaged	112	18	16.1	
Living w/partner	129	38	29.5	
Single	96	32	33.3	
Total	380	91	23.9	

*Includes: Atheist and Voodooist

Note: Dependant variable "ever had induced abortion" is codes a "Yes"= abortion and "no"= never had an abortion.

Table 2 cont.

Variable	Total Preg.	# Abortion	% Ever Abortion	X^2
Items in Home				
Oven				**0.032**
No	315	67	21.3	
Yes	101	32	31.7	
Total	416	99	23.8	
Television				0.600
No	74	16	21.6	
Yes	343	84	24.5	
Total	417	100	24.0	
Telephone				0.195
No	236	51	21.6	
Yes	181	49	27.1	
Total	417	100	24.0	
Refrigerator				0.092
No	255	54	21.2	
Yes	162	46	28.4	
Total	417	100	24.0	
Radio				0.790
No	36	8	22.2	
Yes	380	92	24.2	
Total	416	100	24.0	
Car/Motorbike/Bike				0.056
No	312	68	21.8	
Yes	103	32	31.1	
Total	415	100	24.1	
Car				0.056
No	363	82	22.6	
Yes	52	18	34.6	
Total	415	100	24.1	
Computer/VCR				**0.019**
No	225	44	19.6	
Yes	190	56	29.5	
Total	415	100	24.1	
Watch TV				0.077
Every Day	292	70	24.0	
Once Week	60	20	33.3	
< 1X Week	63	10	15.9	
Total	415	100	24.1	

Note: Dependant variable "ever had induced abortion" is codes a "Yes"= abortion and "no"= never had an abortion.

Table 2 cont.

Variable	Total Preg.	# of Abortion	% Ever Abortion	X^2
Age 1st Sex				0.454
<18	300	77	25.7	
≥18	96	21	21.9	
Total	396	98	24.7	
Received Gift for Sex				**0.010**
No	407	95	23.3	
Yes	8	5	62.5	
Total	415	100	24.1	
Use Condom First Sex				0.415
No	365	84	23.0	
Yes	23	7	30.4	
Total	388	91	23.5	
Use Contraceptive First Sex				0.167
No	373	86	23.1	
Yes	43	14	32.6	
Total	416	100	24	
Age 1st Preg.				**0.046**
13 - 16	95	20	21.1	
17- 20	239	67	28.0	
21 - 24	80	12	15.0	
Total	414	99	23.9	
Used Contraceptive Last Preg.				**0.032**
No	362	81	22.4	
Yes	53	19	35.8	
Total	415	100	24.1	
Times Preg.				**0.005**
One	251	47	18.7	
Two	119	34	28.6	
Three	31	13	41.9	
Four or More	12	5	41.7	
Total	413	99	24.0	
Wanted Last Preg.				**≤0.001**
No	295	86	29.2	
Yes	118	12	10.2	
Total	413	98	23.7	

Note: Dependant variable "ever had induced abortion" is codes a "Yes"= abortion and "no"= never had an abortion.

Table 3. Logistic Regression Odds Ratios of factors associated with ever having had an abortion among ever-pregnant Haitian Female ages 15-24 youth center users

Variable	Crude OR(95% CI)	Adjusted OR(95% CI)
Age		
15 - 18	1.00	1.00
19 - 22	1.14(0.57 , 2.28)	1.16(0.46 , 2.91)
23+	0.93(0.45 , 1.92)	1.07(0.37 , 5.91)
Highest Education Level		
None to Primary	1.00	1.00
Secondary or Higher	3.24(1.81 , 5.79)***	2.85(1.38 , 5.91)**
Occupation		
Unemployed	1.00	1.00
Student	4.62(2.51 , 8.54)***	2.92(1.24 , 6.91)*
Employed	0.98(0.47 , 2.04)	0.89(0.37, 2.05)
Relationship Status		
Married/Engaged	0.31(0.17 , 0.59)***	0.30(0.13 , 0.71)**
Living w/partner	0.84(0.47 , 1.48)	0.74(0.37 , 1.49)
Single	1.00	1.00
Items at the Home Computer/VCR		
No	0.58(0.37 , 0.92)*	0.77(0.41 , 1.43)
Yes	1.00	1.00
Oven		
No	0.58(0.35 , 0.96)*	0.88(0.43 , 1.81)
Yes	1.00	1.00
Received Gifts for Sex		
No	1.00	1.00
Yes	5.47(1.28 , 23.33)*	3.49(0.62 , 19.68)
Age at First Pregnancy		
13 - 16	1.51(0.69 , 3.32)	1.00(0.34 , 2.95)
17 - 20	2.21(1.23 , 4.34)*	1.44(0.59 , 3.50)
21 - 24	1.00	1.00
Used Contraception Last Pregnancy		
No	0.52(0.28 , 0.95)*	0.54(0.24 , 1.20)
Yes	1.00	1.00
How Many Times Pregnant		
One	1.00	1.00
Two	1.74(1.04 , 2.89)*	3.91(1.84 , 8.35)***
Three or More	3.13(1.58 , 6.19)***	10.78(3.59 , 32.38)***
Wanted Last Pregnancy		
No	3.64(1.90 , 6.95)***	2.43(1.11 , 5.29)*
Yes	1.00	1.00

Note: Dependant variable "ever had induced abortion" is coded as "Yes"= abortion or "no"= never had an abortion

*p≤ 0.05, ** p≤ 0.01, *** p≤ 0.001

Appendix A

Questions selected for analysis in this study from:
Voluntary Counseling for Youth Programmatic Research Final Interview Questionnaire

No.	Question	Answer Options
A1	Sex	M/F
A2	What is your religion	Catholic; other Christian; Voodooism; other
A3	Where do you live	listing of Colonials in and around Port-au-Prince*
A5	How old were you on your last birthday	Agé in years
A6	Have you ever been to school	Yes/No
A8	What is the highest level of education that you have attained	Primary; Secondary; Higher
A9	What was the last grade that you completed at this level	Grade
A10	What is your occupation right now	Unemployed; Student; Apprentice; Public/Private sector; Salaried; Self-employed; Prostitute; Paid housekeeper
A12	What is the highest level of education that your mother has attained	primary; secondary; higher; none; don't know mother
A13	Are you currently married, engaged, or living with a man as though a married couple	Married; Engaged; Living w/man; not in a Union
A14	Please tell me if you have any of these items at you residence	Yes/No Oven; TV; Telephone; Refrigerator; Radio; Computer Car; Bicycle; Motorbike; VCR
A16	How often do you watch television	Virtually every day; At least once a week; Less than once a week; Not at all
B1	Have you ever had sexual intercourse	Yes/No
B2	How old were you when you first had sexual Intercourse	Age in years
B5	Did you use a form of contraception during your first sexual encounter	Yes/No
B7	Did you use a condom the first time you had sex	Yes/No
B24	Finding difficulty in providing for routine spending needs certain people have received money, favors, gifts or Other compensation in exchange for sexual relations. Have you ever received money, favors, gifts or other compensation in exchange for sex	Yes/No
C1	Have you ever been pregnant	Yes/No
C2	How many pregnancies have you had	Number
C3†	How old were you at the time of each pregnancy How did the pregnancy terminate	Age in years Live baby; Stillborn; Interrupted pregnancy; Miscarriage; Pregnant right now
C4	At the time that you last became pregnant, were you Using contraception	Yes/No
C5	Was your last pregnancy wanted	Yes/No

Note: Most questions also contained the following options for response: Too personal; n/a; Does not know
*Petion-Ville, Delmas, Carrefour, Centre Ville, Lalue, Carrefour Feuille, Plaine du Cul de Sac, Canape Vert, Other
†*age and how the pregnancy terminated was asked for each pregnancy separately

Appendix B

```
*****************************************
*Rachel M. Barker
*Thesis
*****************************************

Title "Predictors of induced abortion".
*File name: FOSREF.DATA.0807.sav.

GET
  FILE='F:\Thesis\DATA\FOSREF.DATA..REVISED.sav'.


Select if (A1=2 ).

Compute Abortrate = 0.
IF (How.End.1Preg = 3 OR How.End.2Preg = 3 OR How.End.3Preg = 3 OR How.End.4Preg = 3)
Abortrate = 1.

Select if (ever.preg1=1).
Compute Abortratio = 0.
IF (How.End.1Preg = 3 OR How.End.2Preg = 3 OR How.End.3Preg = 3 OR How.End.4Preg = 3)
Abortratio = 1.

VARIABLE LABLES
A1 'Gender'
A2 'Religion'
A3 'Where Live'
A5 'Age at Last Birthday'
A9 'Highest Grade Completed'
A10 'Occupation'
A12 'Highest Education of Mother'
A13 'Currently Living with as Though a Married Couple'
A14_1 'Oven in Home'
A14_2 'TV in Home'
A14_3 'Telephone in Home'
A14_4 'Refridgerator in Home'
A14_5 'Radio in Home'
A14_6 'Computer in Home'
A14_7 'Car at Home'
A14_8 'Bicycle'
A14_9 'Mobilette'
A14_10 'VCR in Home'
A16 'How Often Watch TV'
B1 'Ever Had Sexual Intercourse'
B2 'Age of First Sexual Intercourse'
B4 'Who was First Partner'
B5 'Used Contraception First Sexual Intercourse'
B6_1 'Used Pill First Sexual Intercourse'
B6_2 'Used Injection First Sexual Intercourse'
B6_3 'Used Condom First Sexual Intercourse'
B6_4 'Used Female Condom First Sexual Intercourse'
B6_5 'Used IUD First Sexual Intercourse'
B6_6 'Used Implant First Sexual Intercourse'
B6_7 'Used Traditional Method First Sexual Intercourse'
```

```
B6_8 'Used Withdrawal First Sexual Intercourse'
B6_9 'Used Other First Sexual Intercourse'
B7 'Used Condom First Sexual Intercourse With Current Partner'
B9 'Relation with Last Sexual Partner'
B10 'Contraceptive Use During Last Sexual Encounter'
B11_1 'Used Pill During Last Sexual Encounter'
B11_2 'Used Injection During Last Sexual Encounter'
B11_3 'Used Condom During Last Sexual Encounter'
B11_4 'Used Female Condom During Last Sexual Encounter'
B11_5 'Used IUD During Last Sexual Encounter'
B11_6 'Used Implant During Last Sexual Encounter'
B11_7 'Used Tradtional Methods During Last Sexual Encounter'
B11_8 'Used Withdrawal During Last Sexual Encounter'
B11_9 'Used Other During Last Sexual Encounter'
B12 'Used Condom During Last Sexual Encounter'
B14 'Where Obtained Condom'
B15 'Reason for NOT using Condom Last Sexual Encounter'
B17 'Number of Sexual Partners in Last 12 Months'
B18 'How Many over Last 12 Months Regular Partner(s)'
B18A 'How Often Used a Condom with Regular Partner Over Last 12 Months'
B19 'How Many over Lasat 12 Months Casual Partner(s)'
B20 'How Often Used a Condom with Casual Partner Over Last 12 Months'
B21 'In Next 6 Months Likely to Refuse Sexul WITHOUT Condom'
B24 'Received Money,Favors or Gifts for Sex'
C1 'Ever Pregnant'
C2 'Number of Pregnancies'
C3A_1 'How Old At First Pregnancy'
C3A_2 'How Did First Pregnancy Terminate'
C3B_1 'How Old At Second Pregnancy'
C3B_2 'How Did Second Pregnancy Terminate'
C3C_1 'How Old At Third Pregnancy'
C3C_2 'How Did Third Pregnancy Terminate'
C3D_1 'How Old At Fourth Pregnancy'
C3D_2 'How Did Fourth Pregnancy Terminate'
C4 'Used Contracpetive Last Became Pregnante'
C5 'Last Pregnancy Wanted'
Abortratio 'induced abortions'
Abortrate 'induced abortions'.
.
Value labels
abortratio 0 'no' 1 'yes'
/abortrate 0 'no' 1 'yes'.

**********Recodes_and_Variable_Lables**********

**********AGE**********

RECODE
  A5
  (15=1) (16=1) (17=2) (18=2) (19=3) (20=3) (21=4) (22=4) (23=5) (24=5) INTO Age.1 .
EXECUTE .

*Define Variable Properties.
*Age.1.
VALUE LABELS  Age.1
    1  '15 thru 16'
```

```
   2 '17 thru 18'
   3 '19 thru 20'
   4 '21 thru 22'
   5 '23 thru 24' .
EXECUTE.

RECODE
 A5
 (15 thru 18=1) (19 thru 22=2) (23 thru 24=3) INTO Age.2 .
EXECUTE .

*Define Variable Properties.
*Age.2.
VALUE LABELS Age.2
   1 '15 thru 18'
   2 '19 thry 22'
   3 '23 to 24' .
EXECUTE.

RECODE
 A5
 (15 thru 17=1) (18 thru 20=2) (21 thru 24=3) INTO Age.Legal .
EXECUTE .

*Define Variable Properties.
*Age.Legal.
VALUE LABELS Age.Legal
   1 'Less than 18'
   2 '18 - 20'
   3 'GE 21' .
EXECUTE.

**********RELIGION**********
RECODE
A2 (1=Catholique) (2=Protestante/Methodiste/Adventiste/TemoindeJ) (3 4 5=Autre).

RECODE
 A2
 (77=SYSMIS) (ELSE=Copy) INTO Religon1 .
EXECUTE .

RECODE
 Religon1 (1=1) (2=2) (3=3) (4=3) (5=3) .
EXECUTE .

*Define Variable Properties.
*Religon1.
VALUE LABELS Religon1
   1 'Catholic'
   2 'Other Christian'
   3 'Other' .
EXECUTE.

**********RESIDENCE**********
RECODE
 A3
```

```
 (77=SYSMIS) (88=SYSMIS) (99=SYSMIS) (ELSE=Copy) INTO Where.Live1 .
EXECUTE .

RECODE
 A3
 (2=1) (3=2) (4=3) (5=4) (6=5) (1=6) (7=6) (8=6) (9=6) (10=6) INTO Where.Live2 .
EXECUTE .

*Define Variable Properties.
*Where.Live2.
VALUE LABELS Where.Live2
   1 'Delmas'
   2 'Carrefour'
   3 'Centre Ville'
   4 'Lalue'
   5 'Carrefour Feuille'
   6 'Other' .
EXECUTE.


**********HIGHEST*LEEVEL*EDUCATION**********
RECODE
 A8
 (ELSE=Copy) INTO Highest.Ed.Level .
EXECUTE .

*Define Variable Properties.
*Highest.Ed.Level.
VALUE LABELS Highest.Ed.Level
   1 'Pirmary'
   2 'Secondary'
   3 'Higher' .
EXECUTE.

RECODE
 A6
 (0=0) INTO Highest.Grade1 .
EXECUTE .

RECODE
 A9
 (1 thru 6=1) (7 thru 13=2) (14 thru 20=3) INTO Highest.Grade1 .
EXECUTE .

*Define Variable Properties.
*Highest.Grade1.
VALUE LABELS Highest.Grade1
   0 'None'
   1 '1 thru 6'
   2 '7 thru 13'
   3 'GE 14' .
EXECUTE.

RECODE
 Highest.Grade1
 (0=1) (ELSE=Copy) INTO Highest.Grade2 .
```

```
EXECUTE .

*Define Variable Properties.
*Highest.Grade2.
VALUE LABELS  Highest.Grade2
    1  'Primary or Less'
    2  'Secondary'
    3  'Higher'  .
EXECUTE.


RECODE
  Highest.Grade2
  (3=2)  (ELSE=Copy)  INTO  Highest.Grade3 .
EXECUTE .


*Define Variable Properties.
*Highest.Grade3.
VALUE LABELS  Highest.Grade3
    1  'Primary or Less'
    2  'Secondary or More'  .
EXECUTE.


**********OCCUPATION************************************
*Define Variable Properties.
*Occupation1.
VALUE LABELS  Occupation1
    1  'Unemployed'
    2  'Student'
    3  'Other'  .
EXECUTE.

**************MOTHERS*EDUCATION*LEVEL***********

RECODE
  A12
  (77=SYSMIS)  (88=SYSMIS)  (99=SYSMIS)  (1=Copy)  (2=Copy)  (3=Copy)  (4=Copy)
(5=Copy)  INTO  MotherEd .
EXECUTE .

*Define Variable Properties.
*MotherEd.
VALUE LABELS  MotherEd
    1  'Primary'
    2  'Secondary'
    3  'Higher'
    4  'None'
    5  'Don"t Know Mother'  .
EXECUTE.

RECODE
  A12
  (77=SYSMIS)  (88=SYSMIS)  (99=SYSMIS)  (1=Copy)  (2=Copy)  (3=Copy)  (4=Copy)
(5=SYSMIS)  INTO  MotherEd1 .
```

```
EXECUTE .

*Define Variable Properties.
*MotherEd1.
VALUE LABELS  MotherEd1
    1  'Primary'
    2  'Secondary'
    3  'Higher'
    4  'None'  .
EXECUTE.

************UNION*STATUS**********************************
RECODE
  A13
  (77=SYSMIS)  (88=SYSMIS)  (99=SYSMIS)  (ELSE=Copy)  INTO  Living.In.Union .
EXECUTE .

RECODE
  A13
  (3=2)  (4=3)  (1 thru 2=1)  (77 thru 99=SYSMIS)  INTO  Union.Status .
EXECUTE .

*Define Variable Properties.
*Union.Status.
VALUE LABELS  Union.Status
    1  'Married/Engaged'
    2  'Living w/partner'
    3  'Not in Union'  .
EXECUTE.

RECODE
  A13
  (77 thru 99=SYSMIS)  (ELSE=Copy)  INTO  Union.Status1 .
EXECUTE .

*Define Variable Properties.
*Union.Status1.
VALUE LABELS  Union.Status1
    1  'Married'
    2  'Engaged'
    3  'Living w/Partner'
    4  'Single'  .
EXECUTE.

********ITEMS*IN*HOME**********************************

COMPUTE transportation = A14_7 + A14_8 + A14_9 .
EXECUTE .
RECODE
  transportation
  (0=0)  (1=1)  (2=1)  (3=1)  INTO  transport1 .
EXECUTE .

COMPUTE compVCR = A14_6 + A14_10 .
EXECUTE .
```

```
RECODE
 compVCR
 (0=0) (1=1) (2=1) INTO compVCR1 .
EXECUTE .

RECODE
 A14_1 A14_2 A14_3 A14_4 A14_5 (99=SYSMIS) (ELSE=Copy).

*Define Variable Properties.
*transport1 compVCR1 A14_1 A14_2 A14_3 A14_4 A14_5 A14_7.
VALUE LABELS transport1 compVCR1 A14_1 A14_2 A14_3 A14_4 A14_5 A14_7
    0 'No'
    1 'Yes' .
EXECUTE.

**********WATCH*TV**********
RECODE
 A16
 (77=SYSMIS) (88=SYSMIS) (99=SYSMIS) (ELSE=Copy) INTO WatchTV .
EXECUTE .

RECODE
 WatchTV
 (4=3) (ELSE=Copy) INTO WatchTV.1 .
EXECUTE .

*Define Variable Properties.
*WatchTV.1.
VALUE LABELS WatchTV.1
    1 'Every Day'
    2 'Once a week'
    3 'LE 1X week' .
EXECUTE.

**********AGE*FIRST*SEX**********

RECODE
 B2
 (77=SYSMIS) (88=SYSMIS) (99=SYSMIS) (ELSE=Copy) INTO Age.1Sex .
EXECUTE .

 B2
 (4 thru 15=1) (16 thru 23=2) INTO Age.1Sex2 .
EXECUTE .

*Define Variable Properties.
*Age.1Sex2.
VALUE LABELS Age.1Sex2
    1 'LE 15'
    2 'G 15' .
EXECUTE.

RECODE
 B2
 (9 thru 17=1) (18 thru 24=2) (77 thru 99=SYSMIS) INTO age1sex2 .
EXECUTE .
```

```
*Define Variable Properties.
*age1sex2.
VALUE LABELS  age1sex2
    1  'Less than 18'
    2  'GE 18'  .
EXECUTE.

**************FIRST*PARTNER************************************

RECODE
  B4
  (77=SYSMIS)  (88=SYSMIS)  (99=SYSMIS)  (ELSE=Copy)  INTO  First.Partner .
EXECUTE .

RECODE
  First.Partner
  (3 thru 4=3)  (5 thru 6=5)  (ELSE=Copy)  INTO  First.Partner1 .
EXECUTE .

*Define Variable Properties.
*First.Partner1.
VALUE LABELS  First.Partner1
    1  'Spouse'
    2  'Boyfriend'
    3  'Aquaintance'
    5  'Other'  .
EXECUTE.

*************USED*CANTRACEPTIVE*1ST*SEX**********************

RECODE
  B1
  (77=SYSMIS)  (88=SYSMIS)  (99=SYSMIS)  (ELSE=Copy)  INTO  Ever.Had.Sex .
EXECUTE .

RECODE
  B5
  (77=SYSMIS)  (88=SYSMIS)  (99=SYSMIS)  (ELSE=Copy)  INTO  Used.Contra.1Sex .
EXECUTE .


RECODE
  B7
  (77=SYSMIS)  (88=SYSMIS)  (99=SYSMIS)  (ELSE=Copy)  INTO  B7.Condon.1Sex.
EXECUTE .


RECODE
B24
  (77=SYSMIS)  (88=SYSMIS)  (99=SYSMIS)  (ELSE=Copy)  INTO  Received.Gift.Sex.
EXECUTE .

RECODE
  C1
  (77=SYSMIS)  (88=SYSMIS)  (99=SYSMIS)  (ELSE=Copy)  INTO  Ever.Preg1
```

```
RECODE
  C4
  (77 thru 99=SYSMIS)  (ELSE=Copy)  INTO  Used.Contra.Last.Preg .
EXECUTE .


RECODE
  C5
  (77 thru 99=SYSMIS)  (ELSE=Copy)  INTO  Wanted.Last.Preg1 .
EXECUTE .

*Define Variable Properties.
*Ever.Had.Sex  Used.Contra.1Sex  B7.Condon.1Sex Received.Gift.Sex Ever.Preg1
Used.Contra.Last.Preg Wanted.Last.Preg1.
VALUE LABELS  Ever.Had.Sex  Used.Contra.1Sex  B7.Condon.1Sex Received.Gift.Sex
Ever.Preg1 Used.Contra.Last.Preg Wanted.Last.Preg1
    0  'No'
    1  'Yes'  .
EXECUTE.

RECODE
  C3A_1 C3A_2 C3B_1 C3B_2 C3C_1 C3C_2 C3D_1 C3D_2 C4 C5
  (77=SYSMIS)  (88=SYSMIS)  (99=SYSMIS)  (ELSE=Copy)  INTO  Age.1Preg  How.End.1Preg
Age.2Preg
  How.End.2Preg  Age.3Preg  How.End.3Preg  Age.4Preg  How.End.4Preg.
EXECUTE .

************************AGE*1ST*PREGNANCY**********************
RECODE
  Age.1Preg
  (13 thru 16=1)  (17 thru 20=2)  (21 thru 24=3)  INTO  Age.1Preg1 .
EXECUTE .

*Define Variable Properties.
*Age.1Preg1.
VALUE LABELS  Age.1Preg1
    1  '13 thru 16'
    2  '17 thru 20'
    3  '21 thru 24'  .
EXECUTE.

************************TIMES*PREGNAT**********************************
RECODE
  Times.Preg
  (5 thru 20=5)  (ELSE=Copy)  INTO  Times.Preg1 .
EXECUTE .

RECODE
  Times.Preg1
  (4 thru 20=4)  (ELSE=Copy)  INTO  Times.Preg2 .
EXECUTE .

*Define Variable Properties.
*Times.Preg2.
VALUE LABELS  Times.Preg2
```

```
   0 'Never'
   1 'One'
   2 'Two'
   3 'Three'
   4 'Four or More' .
EXECUTE.

RECODE
 Ever.Preg1
 (1=0) INTO Ever.Abor .
EXECUTE .

RECODE
 Times.Preg2
 (3 thru 20=3) (ELSE=Copy) INTO Times.Preg3 .
EXECUTE .

*Define Variable Properties.
*Times.Preg3.
VALUE LABELS Times.Preg3
   1 'One'
   2 'Two'
   3 'Three or More' .
EXECUTE.


**********Ever Abortion Variables*************** .

RECODE
 How.End.1Preg
 (3=1) INTO Ever.Abor .
EXECUTE .

RECODE
 How.End.2Preg
 (3=1) INTO Ever.Abor .
EXECUTE .

RECODE
 How.End.3Preg
 (3=1) INTO Ever.Abor .
EXECUTE .

RECODE
 How.End.4Preg
 (3=1) INTO Ever.Abor .
EXECUTE .

*Define Variable Properties.
*Ever.Abor.
VALUE LABELS Ever.Abor
   0 'No'
   1 'Yes' .
EXECUTE.

Temporary.
```

```
Selec if (A1=2).
Compute Abort = 0.
IF (How.End.1Preg = 3 OR How.End.2Preg = 3 OR How.End.3Preg = 3 OR How.End.4Preg = 3)
Abort = 1.



**********this selects females only
USE ALL.
COMPUTE filter_$=(A1 = 2).
VARIABLE LABEL filter_$ 'A1 = 2 (FILTER)'.
VALUE LABELS filter_$  0 'Not Selected' 1 'Selected'.
FORMAT filter_$ (f1.0).
FILTER BY filter_$.
EXECUTE .

FILTER OFF.
USE ALL.
EXECUTE .


******************CROSSTABS*GENDER*****************************
CROSSTABS
  /TABLES=Age.1 Religon1 Where.Live2 Highest.Grade1 Occupation1 MotherEd.1 Union.Status1
A14_1 A14_2 A14_3 A14_4 A14_5 A14_7
  transport1 compVCR1 WatchTV.1  BY A1
  /FORMAT= AVALUE TABLES
  /CELLS= COUNT COLUMN
  /COUNT ROUND CELL .

******************CROSSTABS*ABORTION*****************************

CROSSTABS
  /TABLES=Age.2 Religon1 Occupation1 MotherEd Union.Status transport1 compVCR1 A14_1
A14_2 A14_3 A14_4 A14_5 A14_7
  WatchTV.1 age1sex2 B7.Condon.1Sex Used.Contra.1Sex Received.Gift.Sex Age.1Preg1
First.Partner1 Times.Preg2
  Union.Status1 Highest.Grade1  BY Abortratio
  /FORMAT= AVALUE TABLES
  /STATISTIC=CHISQ
  /CELLS= COUNT ROW
  /COUNT ROUND CELL .

CROSSTABS
  /TABLES=Age.2 Religon1 Highest.Ed.Level Occupation1 MotherEd Union.Status transport1
compVCR1 A14_1 A14_2 A14_3 A14_4 A14_5 A14_7
  WatchTV.1 Age.1Sex2 B7.Condon.1Sex Used.Contra.1Sex Received.Gift.Sex Age.1Preg1
First.Partner1 Times.Preg2
  Union.Status1 Highest.Grade1  BY Abortrate
  /FORMAT= AVALUE TABLES
  /STATISTIC=CHISQ
  /CELLS= COUNT ROW
  /COUNT ROUND CELL .

***************CRUDE*OR************************************************
```

```
LOGISTIC REGRESSION  Abortrate abortratio
  /SELECT = A1 EQ 2
  /METHOD = ENTER Highest.Grade2
  /CONTRAST (Highest.Grade2)=Indicator(1)
  /PRINT = CI(95)
  /CRITERIA = PIN(.05) POUT(.10) ITERATE(20) CUT(.5) .

LOGISTIC REGRESSION  Abortrate abortratio
  /SELECT = A1 EQ 2
  /METHOD = ENTER Occupation1
  /CONTRAST (Occupation1)=Indicator(1)
  /PRINT = CI(95)
  /CRITERIA = PIN(.05) POUT(.10) ITERATE(20) CUT(.5) .


LOGISTIC REGRESSION  Abortrate abortratio
  /SELECT = A1 EQ 2
  /METHOD = ENTER Union.Status
  /CONTRAST (Union.Status)=Indicator
  /PRINT = CI(95)
  /CRITERIA = PIN(.05) POUT(.10) ITERATE(20) CUT(.5) .


******Oven******

LOGISTIC REGRESSION  Abortrate abortratio
  /SELECT = A1 EQ 2
  /METHOD = ENTER A14_1
  /CONTRAST (A14_1)=Indicator
  /PRINT = CI(95)
  /CRITERIA = PIN(.05) POUT(.10) ITERATE(20) CUT(.5) .

LOGISTIC REGRESSION  Abortrate abortratio
  /SELECT = A1 EQ 2
  /METHOD = ENTER compVCR1
  /CONTRAST (compVCR1)=Indicator
  /PRINT = CI(95)
  /CRITERIA = PIN(.05) POUT(.10) ITERATE(20) CUT(.5) .


LOGISTIC REGRESSION  Abortrate abortratio
  /SELECT = A1 EQ 2
  /METHOD = ENTER Received.Gift.Sex
  /CONTRAST (Received.Gift.Sex)=Indicator(1)
  /PRINT = CI(95)
  /CRITERIA = PIN(.05) POUT(.10) ITERATE(20) CUT(.5) .

LOGISTIC REGRESSION  Abortrate abortratio
  /SELECT = A1 EQ 2
  /METHOD = ENTER Age.1Preg1
  /CONTRAST (Age.1Preg1)=Indicator
  /PRINT = CI(95)
  /CRITERIA = PIN(.05) POUT(.10) ITERATE(20) CUT(.5) .


LOGISTIC REGRESSION  Abortrate abortratio
```

```
 /SELECT = A1 EQ 2
 /METHOD = ENTER Used.Contra.Last.Preg
 /CONTRAST (Used.Contra.Last.Preg)=Indicator
 /PRINT = CI(95)
 /CRITERIA = PIN(.05) POUT(.10) ITERATE(20) CUT(.5) .

LOGISTIC REGRESSION  Abortrate abortratio
 /SELECT = A1 EQ 2
 /METHOD = ENTER Times.Preg3
 /CONTRAST (Times.Preg3 )=Indicator(1)
 /PRINT = CI(95)
 /CRITERIA = PIN(.05) POUT(.10) ITERATE(20) CUT(.5) .


LOGISTIC REGRESSION  abortrate abortratio
 /SELECT = A1 EQ 2
 /METHOD = ENTER Wanted.Last.Preg1
 /CONTRAST (Wanted.Last.Preg1)=Indicator
 /PRINT = CI(95)
 /CRITERIA = PIN(.05) POUT(.10) ITERATE(20) CUT(.5) .


**********ADJUSTED*OR**********


LOGISTIC REGRESSION  abortrate
 /SELECT = A1 EQ 2
 /METHOD = ENTER Age.2 Highest.Grade3 Occupation1 Union.Status compVCR1
Received.Gift.Sex Age.1Preg1 Times.Preg3 Used.Contra.Last.Preg A14_1
 Wanted.Last.Preg1
  /CONTRAST (Age.2)=Indicator(1)  /CONTRAST (Highest.Grade2 )=Indicator(1)  /CONTRAST
(Occupation1)=Indicator(1)  /CONTRAST (Union.Status)=Indicator  /CONTRAST
 (compVCR1)=Indicator  /CONTRAST (A14_1)=Indicator /CONTRAST
(Received.Gift.Sex)=Indicator(1)  /CONTRAST (Age.1Preg1)=Indicator  /CONTRAST
 (Times.Preg3 )=Indicator(1)  /CONTRAST (Used.Contra.Last.Preg)=Indicator  /CONTRAST
(Wanted.Last.Preg1)=Indicator
 /PRINT = CI(95)
 /CRITERIA = PIN(.05) POUT(.10) ITERATE(20) CUT(.5) .


LOGISTIC REGRESSION  abortratio
 /SELECT = A1 EQ 2
 /METHOD = ENTER Age.2 Highest.Grade3 Occupation1 Union.Status compVCR1
Received.Gift.Sex Age.1Preg1 Times.Preg3 Used.Contra.Last.Preg A14_1
 Wanted.Last.Preg1
 /CONTRAST (Age.Legal )=Indicator(1)  /CONTRAST (Highest.Grade3 )=Indicator(1)
/CONTRAST (Occupation1)=Indicator(1)  /CONTRAST (Union.Status)=Indicator  /CONTRAST
 (compVCR1)=Indicator  /CONTRAST (A14_1)=Indicator /CONTRAST
(Received.Gift.Sex)=Indicator(1)  /CONTRAST (Age.1Preg1)=Indicator  /CONTRAST
 (Times.Preg3 )=Indicator(1)  /CONTRAST (Used.Contra.Last.Preg)=Indicator  /CONTRAST
(Wanted.Last.Preg1)=Indicator
 /PRINT = CI(95)
 /CRITERIA = PIN(.05) POUT(.10) ITERATE(20) CUT(.5) .

**********LOGREG*****for****ContAge**********
```

```
LOGISTIC REGRESSION  abortratio
  /SELECT = A1 EQ 2
  /METHOD = ENTER A5 Highest.Grade3 Occupation1 Union.Status compVCR1
Received.Gift.Sex Age.1Preg1 Times.Preg3 Used.Contra.Last.Preg A14_1
  Wanted.Last.Preg1
 /CONTRAST (Highest.Grade3 )=Indicator(1)  /CONTRAST (Occupation1)=Indicator(1)
/CONTRAST (Union.Status)=Indicator  /CONTRAST
  (compVCR1)=Indicator  /CONTRAST (A14_1)=Indicator /CONTRAST
(Received.Gift.Sex)=Indicator(1)  /CONTRAST (Age.1Preg1)=Indicator  /CONTRAST
  (Times.Preg3 )=Indicator(1)  /CONTRAST (Used.Contra.Last.Preg)=Indicator  /CONTRAST
(Wanted.Last.Preg1)=Indicator
  /PRINT = CI(95)
  /CRITERIA = PIN(.05) POUT(.10) ITERATE(20) CUT(.5) .

**********LOGREG*********for*******LegalAge***************


LOGISTIC REGRESSION  abortratio
  /SELECT = A1 EQ 2
  /METHOD = ENTER Age.Legal Highest.Grade3 Occupation1 Union.Status compVCR1
Received.Gift.Sex Age.1Preg1 Times.Preg3 Used.Contra.Last.Preg A14_1
  Wanted.Last.Preg1
  /CONTRAST (Age.Legal )=Indicator(1)  /CONTRAST (Highest.Grade3 )=Indicator(1)
/CONTRAST (Occupation1)=Indicator(1)  /CONTRAST (Union.Status)=Indicator  /CONTRAST
  (compVCR1)=Indicator  /CONTRAST (A14_1)=Indicator /CONTRAST
(Received.Gift.Sex)=Indicator(1)  /CONTRAST (Age.1Preg1)=Indicator  /CONTRAST
  (Times.Preg3 )=Indicator(1)  /CONTRAST (Used.Contra.Last.Preg)=Indicator  /CONTRAST
(Wanted.Last.Preg1)=Indicator
  /PRINT = CI(95)
  /CRITERIA = PIN(.05) POUT(.10) ITERATE(20) CUT(.5) .
```

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