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A Health Empowerment Theory Approach to Pregnant Adolescents 18 and 19 Years of Age in The Bahamas

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UNIVERSITY OF MIAMI

A HEALTH EMPOWERMENT THEORY APPROACH TO PREGNANT
ADOLESCENTS 18 AND 19 YEARS OF AGE IN THE BAHAMAS

By

Shirley E. Curtis

A DISSERTATION

Submitted to the Faculty
of the University of Miami
in partial fulfillment of the requirements for
the degree of Doctor of Philosophy

Coral Gables, Florida

August 2011

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A Health Empowerment Theory Approach to
Pregnant Adolescents 18 and 19 Years of Age
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In The Bahamas between the years 2,000 to 2007, the percentage of single mothers under the age of 20 years accounted for 11.3 – 12.7% of all births in the country. Mothers between the ages of 10 -14 years accounted for 0.1 – 0.4 % of all births and mothers age 15 -19 years accounted for 11.2 – 12.6% of all births during the same time period.

Purpose: The purpose of this study was to investigate the level of empowerment among pregnant adolescents living in The Bahamas aged 18-19 years by testing the levels of autonomy, environmental mastery, personal growth, relationship with others, purpose in life and religiosity. The findings of the study may well be used to highlight areas for future research in pregnancy prevention programs for adolescents in The Bahamas.

Sample: The sample for this study was 105 pregnant adolescent females 18 and 19 years of age attending ante-natal clinics in The Bahamas. *Measures:* The self- administered questionnaires included demographic information, obstetric history, Ryff's Scales of Psychological Well-Being and Santa Clara Strength of Religious Faith. *Analyses:* Data collected from the questionnaires were entered into SPSS for analysis. Descriptive statistics was obtained. Correlation analysis was performed to determine the significance among demographic data and levels autonomy, environmental mastery, personal growth,

relationship with others, purpose in life and religiosity. Multiple regression analysis was performed to determine the variance explained between the number of pregnancies and level of health empowerment. *Results:* The Pearson's correlation was calculated to answer the research questions of the relationship of level of autonomy, environmental mastery, personal growth, relationship with others, purpose in life, self acceptance, religiosity and overall health empowerment with number of pregnancies of 18 and 19 year old pregnant females. Number of pregnancies was negatively correlated with all dimensions of psychological well-being, religiosity and overall empowerment. Due to the small number in the sample with repeated pregnancy (19 of 105) the correlations were not statistically significant, except personal growth. Number of pregnancies was negatively correlated but not statistically significant with personal growth. Number of pregnancies was negatively correlated and statistically significant with current enrollment in school. Pregnancy outcome and delivery type were positively correlated and statistically significant with number of pregnancies. Overall health empowerment levels was negatively correlated with history of depression and positively correlated with religiosity. Level of education and religiosity were positively correlated and statistically significant to the level of health empowerment for the adolescents in this study.

Conclusions: Based on the results of this study, level of education and religiosity are predictors of levels of health empowerment and type of delivery and the outcome of the pregnancy are predictors to the number of pregnancies in pregnant adolescents 18 and 19 years old in The Bahamas.

Dedication

This dissertation is dedicated to:

- 1. God, my rock and strong tower. The only constant in my life.*
- 2. My parents, George and Vera Curtis for their support and encouragement throughout all my educational pursuits.*
- 3. The memory of my mother Vera L. Curtis who urged me to take this last step in my educational quest.*

Love Shirley

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CHAPTER I

Introduction

Statement of the problem

Adolescent pregnancy is a serious public health concern that is associated with maternal high school dropout rates and receipt of late or no prenatal care, infant prematurity, low birth weight, and child abuse and neglect (US Department of Health & Human Services (USDHHS), 2000). This public health issue is worldwide with close to 16 million adolescents becoming pregnant each year accounting for 11% of all births globally (Watt, 2001; WHO, 2008). Complications from pregnancy and childbirth are the leading causes of death in young women 15-19 years of age in developing countries. An estimated 70,000 adolescent mothers under 20 years of age die each year because they have children before they are physically ready for child bearing and parenthood (Mayor, 2004).

Published articles vary in the definition of adolescence depending on the psychosocial, biological, personal or environmental factors under review. In the WHO report on young people (1986), adolescence was defined as 10 -19 years, youth as 15-24 years and young people as 10 -24 years. Studies will also vary according to cultural and legislative factors in the country. For the purpose of this study the researcher will investigate pregnant females in late adolescence, 18 – 19 years of age.

Fifty percent of all adolescent births occur in seven countries: Bangladesh, Brazil, the Democratic Republic of the Congo, Ethiopia, India, Nigeria and the United States, (WHO, 2008). The teenage pregnancy rate in the United States is the highest among industrialized countries (Singh & Darroch, 2003). The rates of births for teenagers 15 -17 years and 18-19 years in the United States are 22 and 73 per 1000 females, respectively.

The rates of births for 18-19 year old teens, who are already parenting, is 55.4 per 1,000 for second births and 14.8 per 1,000 for third births (USDHHS, 2009). Schelar, Franzetta, and Manlove, (2007) reported that non-Hispanic Black and Hispanic adolescents are at increased risk for repeated pregnancies and the birth rate for Black adolescents is more than double the rates for non-Hispanic White teenagers.

In 2006, young people between the ages of 10-19 years in Latin America and the Caribbean (LAC) comprised 20% of the total population, (Pan American Health Organization, [PAHO], 2007). Twenty-five percent of females became mothers before 20 years of age (Economic Commission for Latin America and the Caribbean, 2008). In English-speaking Caribbean countries, adolescents 10-19 years comprise 11-24% of the population (PAHO, 2007). Half of the countries in the Americas have adolescent fertility rates > 72 per 1,000 live births.

In The Bahamas, the total population in 2007 was 334,000. Adolescents 15-19 years accounted for 11.3% of the population. The percentage of single mothers under the age of 20 years accounted for 11.3-12.7% of all births in the country between the years 2000 to 2007. Mothers between the ages of 10-14 years accounted for 0.1 – 0.4 % of all births and mothers aged 15 -19 years accounted for 11.2 – 12.6% of all births during the same time period. Births among teenagers 15-19 years were 45.5 per 1,000 live births (Health Information & Research Unit, 2008), which almost doubled the rate (23 per 1,000 females) reported in 2003 for the same age group (PAHO, 2007).

Blum, Halcon, Beuhring, Pate, Campbell-Forrester, and Venema (2003) and Halcon and colleagues (2003) conducted a survey in 9 of the 19 English speaking Caribbean countries to investigate the health of adolescents 10-19 years of age. The

Bahamas was included in the sample population. Halcon and colleagues, (2003) reported that 65.9% (n = 15,695) of the adolescents stated that they never had sexual intercourse. One quarter of the female adolescents who were sexually active stated that the age of first intercourse was 10 years or younger. One quarter of the adolescents (males & females) always used some form of birth control and 10% of the adolescents had a history of being pregnant. Blum and colleagues, (2003) also reported that connectedness to parents (OR = 0.76, $p < .01$) was strongly protective against pregnancy among teenagers younger than 16 years. Teenagers older than 13 years, attending religious services (OR = 0.90, $p < .01$) was associated with a lower rate of ever having had intercourse. Results showed a strong association between early initiation of sexual activity and skipping school (OR = 1.47 to 1.59, $p < .01$ for all age groups). Blum and colleagues used a random sample of adolescents attending school in the 9 Caribbean countries; therefore the results are representative of adolescents who attend school and not those who may have dropped out of school. The questionnaire was revised after it was reviewed by maternal and child health directors in the various countries and pilot tested before the survey was conducted. The questionnaire was self-administered and collected by educational officers, which may have affected the adolescents' responses.

Significance of the problem

Adolescent pregnancy can result in economic, psycho-social and health problems for the adolescent and her child. Women who begin childbearing in adolescence face numerous problems during pregnancy and later in life (Klerman, 2004). These mothers are less likely to complete high school, which may result in poverty and dependence on government assistance. Infants born to adolescent mothers are at risk for low-birth

weight, neglect, abuse and frequent emergency room visits (Corcoran & Pillai, 2007).

The issues surrounding adolescent pregnancy and childbearing have serious repercussions for the adolescent family and society. Second and subsequent births may make it almost impossible to break the cycle of poverty (Klerman, 2004). Delaying subsequent childbearing may be an important factor promoting success in an adolescent mother's later life (Koniak-Griffin et al., 2002).

Over the past 20 years, dramatic social, political and economic shifts, together with medical and public health interventions, have radically altered the landscape of adolescent health globally (Blum & Nelson-Mmari, 2004). The importance of empowerment strategies for adolescents was recognized by the United Nations Population Fund's (UNFPA) in the State of the World Population Report (2003). Authors of the report acknowledged that investing in adolescent information and services will empower adolescents to make responsible and healthy choices that will yield benefits for generations to come. To ensure continued improvement of the plight of the underserved and at risk members of the population, the United Nations Assembly adopted eight Millennium Development Goals following agreement of the Millennium Declaration (UN, 2000). These goals were adopted by world leaders in 2000 and are set for final evaluation in 2015 (Appendix A). The empowerment needs of women were addressed in MDG 3 and MDG 5. Gender equality and empowerment of women are promoted in MDG 3, and in MDG 5 the improvement of maternal health in the nations of the world is promoted. The target of MDG 3 is to eliminate gender disparity in primary and secondary education worldwide; this is a strategy that relates to the empowerment of female adolescents. The target of MDG 5 is to reduce the maternal mortality rate by three-

quarters, by 2015 (UN Millennium Project, 2005). To meet MDG 5, women require social support and acceptance during and after pregnancy, access to education and information, and skills on how to prevent further pregnancies (MDG, 2005).

The 2007 State of World Population report (UNFPA, 2007) reads that the empowerment and well-being of women are the pillars of sustainable cities. Better access to education and health care, and the power of voice through social and governmental involvement were cited as means to improve the empowerment of women. The report goes on to support the involvement of young people in the decision making process of the community. Use of the naturally resourceful, creative nature of young people toward community improvement was encouraged. The Centers for Disease Control and Prevention (CDC) went a step further and sponsored a Youth Empowerment Strategies (YES!) project (Wilson, Minkler, Dasho, Wallerstein, & Martin, 2008) designed for elementary and middle school youth to promote problem-solving skills, social action and civic participation to decrease the use of drugs alcohol and other risky behaviors such as unprotected sex.

Researchers have not adequately addressed health empowerment levels of female adolescents to delay adolescent births and subsequent births, which could improve their economic, social, and health status (Arnold, Smith, Harrison, & Springer, 2000; Cabezon, Vigil, Rojasc, & Leivad, 2005; & Martyn, Darling-Fisher, Smirtka, Fernandez, & Martyn, 2006). Pregnancy prevention programs have had mixed results. Programs that contain a focus on enhancing life skills and increasing life options have shown the most promise (Harris & Allgood, 2009). There are no published studies addressing adolescent pregnancy or the level of health empowerment of adolescents in The Bahamas. The

literature reviewed presented in this study highlights the significance of the problem in other populations and adds to the knowledge gained from The Bahamian sample.

Purpose of the study

The purpose of this study was to examine the characteristics of pregnant adolescents and an identification of the level of personal resources for health empowerment. Health empowerment was measured using Ryff's (1989) Scales of Psychological Well-Being that tests levels of autonomy, environmental mastery, personal growth, relationship with others, and purpose in life. Religiosity was measured using the Santa Clara Strength of Religious Faith – short form (Plante, Vallaeys, Sherman, & Wallston, 2002). The findings of the study hopefully can be used to guide future research on health empowerment with pregnant adolescents in The Bahamas.

Definitions of terms

Adolescents

Conceptual definition: Adolescents 10-19 years old, early adolescence 10-14 years old and late adolescence 15-19 years old (WHO, 1986)

Operational definition: Pregnant female adolescents 18-19 years old.

Bahamian

Conceptual definition: Females born in The Bahamas who possess a valid birth certificate or papers of naturalization.

Operational definition: Females born in The Bahamas or who have lived in The Bahamas within the last 10 years.

Health Empowerment

Conceptual definition: Purposefully participating in the process of changing ones behaviors and one's environment, recognizing patterns and engaging inner resources for well-being (Shearer & Reed, 2004).

Operational definition: The sum of scores on the Ryff's Scale of Psychological Well-Being (Ryff, 1989).

Religiosity

Conceptual definition: The degree to which individuals exhibit the characteristic of believing in and worshipping a superhuman controlling power (The New Oxford American Dictionary, 2005).

Operational definition: The sum of scores on the Santa Clara Strength of Religious Faith Questionnaire – Short Form (SCSRFQ-SF), (Plante et al., 2002).

Research Questions

The research questions for this study were:

1. What is the relationship among the levels of autonomy, environmental mastery, personal growth, relationship with others, purpose in life, self acceptance and religiosity and the number of pregnancies of 18 and 19 year old adolescents in The Bahamas?
2. What is the relationship between the level of Health Empowerment and the number of pregnancies of 18 and 19 year old pregnant adolescent females in The Bahamas?

Chapter II

Literature Review

Effects of pregnancy on adolescents

Health / physical effects

Adolescent pregnancy is a serious public health concern, given its association with receipt of late or no prenatal care, infant prematurity, low birth weight, child abuse and neglect (US Department of Health and Human Services, 2000). Between 14 and 15 million adolescent girls 15 -19 years of age give birth each year, accounting for more than 10% of births worldwide. Adolescent girls account for 15% of the global burden of disease for maternal conditions and 13% of all maternal deaths (WHO, 2000). Safe Motherhood Inter-Agency Group (2002) reported for every young mother who dies in childbirth, 30-50 others are left with an injury, infection or disease. Child and infant mortality are highest among children of adolescent mothers. Young mothers are more likely to have low birth-weight babies and infants at risk of malnourishment, delayed development, or death (WHO, 2006).

Blum & Nelson-Mmari (2004) examined the chief causes and influences of morbidity and mortality among young people (10 -24 years) throughout the world by conducting a literature search from numerous sources to compile the data for this report. The sources included published and unpublished reports from WHO, UNICEF, UNFPA, United Nations and Population Reference Bureau. The sample included adolescents (10 - 19 years) and youth (15 -24 years) and the terms were used interchangeably throughout the report. There were times when it was unclear the exact age groups being referred to in the report. The report does give an indication to the seriousness of the problem from a

global prospective. Given these limitations the authors found, a higher risk of maternal death exists among teenage girls compared with women aged 20-34 years. Young women who have not reached full physical and physiological maturity were three times more likely to die from complications in childbirth as older women. Complications from pregnancy and childbirth are the leading cause of death in women 15 -19 years of age in developing countries (Blum & Nelson-Mmari, 2004).

Mayor (2004), in analyzing of the most recent data available at the time from government statistics for different countries or from international surveys reported that an estimated 70,000 adolescent mothers died each year because they had children before they were physically ready for delivery and child birth. The complications from pregnancy and childbirth were the leading cause of death for girls 15 - 19 years of age in poorer countries and girls in this age group were twice as likely as older women to die from causes related to pregnancy and childbirth. These findings were similar to those of Blum and Nelson-Mmari (2004). The babies of adolescents were 50% more likely to die than children born to women in their 20s. The youngest mothers, those 14 years of age and under, faced the greatest risks. Obstructed labor was found to be common in teenage girls, resulting in increased risk of infant death and of maternal death or disability. Mayor (2004) also found that young mothers and their babies were at greater risk of contracting HIV.

Partington, Steer, Blair, and Cisler (2009) conducted a 10- year retrospective review of records for all adolescent pregnancies in Milwaukee from 1993-2002 to determine if the risk of low-birth-weight babies was due to maternal age or other identifying predictors. The researchers found 22,660 births were among 18,050 teenagers.

Adolescents with one birth only accounted for 14,451, second births accounted for 3,782 births, 602 were third births and 62 were fourth or fifth births. The analysis of the data revealed that second births were more likely to be preterm than first birth (15% vs. 12%), and the prevalence of low-birth weight was the same for first and second births (12%). After controlling for pregnancy behavioral characteristics of the mothers, the odds of having a low-birth-weight infant or a preterm infant in the second pregnancy increased if the mother (a) smoked during pregnancy ($OR = 2.2$ and 1.9 ; $p < .001$), (b) had inadequate prenatal weight gain ($OR = 1.8$ and 1.4 ; $p < .01$), (c) had an inter-pregnancy interval of less than 18 months ($OR = 1.6$ and 2.3 , $p < .001$), (d) was Black ($OR = 2.7$ and 1.7 ; $p < .001$), or (e) younger than 16 years ($OR = 2.7$ and 2.05 ; $p < .01$). The researchers concluded that the predictors of poor birth outcomes in teenage mothers included modifiable behaviors that could be addressed by healthcare workers in prenatal interventions. Partington and colleagues (2009) used birth certificate data to identify repeat births. The actual data could possibly be higher than reported when you take into consideration errors in data entry and adolescents who might have had their first infant in another State. The data collected were congruent with the national average of repeated pregnancies in adolescents (19%) and the researchers were able to demonstrate the significance of the low birth weight infants among adolescents with repeated pregnancies.

Ickovics, Niccolai, Lewis, Kershaw, and Ethier (2003) in a longitudinal study of pregnant and non-pregnant teenage girls ages 14 – 19 years reported that the pregnant teens ($n = 203$) were twice as likely to have an STI compared to nulliparous sexually active peers ($n = 203$). After a 6 month follow-up there was higher risk taking behaviors in parenting female adolescents (95% CI [0.97 – 3.89], $p = 0.06$).

Mead and Ickovics (2004) conducted a systematic review of 51 studies to identify and document the rates of sexually transmitted infection (STI), repeat pregnancy, condom use, and other contraceptive use among adolescent mothers in the United States. The authors did not indicate the region of the country where the study was conducted. Across samples of 19 studies, 10 -51% of the pregnant or mothering teens reported a history of STIs (weighted mean of 28%; 95% CI [21.6%, 26.0%]). Authors from 16 studies documented 12-44 % repeat pregnancies within 12 months (weighted $M=19.0%$, 95% CI [17.6%, 20.4%]), 28-63% within 18 months (weighted $M=39.2%$; 95% CI [36.5%, 41.9%]). Four authors in the review reported 20-37% repeat adolescent birth within 24 months (weighted $M=24.8%$, 95% CI [23.5%, 26.1%]). Mead and Ickovics (2004) noted that studies and interventions are required that address the needs and risk factors for mothering teens with the purpose of understanding what type of program works for specific problems faced by adolescents. This systematic review by Mead and Ickovics had very clear and stringent inclusion criteria which included the age of the participants, the minimum sample size, the variables that were to be addressed in the study and the percentage of retention in longitudinal studies.

Although statistics exist related to deleterious outcomes of adolescent pregnancy, age may not be the primary factor associated with the health risks experienced by pregnant adolescents. Maternal mortality in developed and developing countries is associated with low rates of prenatal and obstetric care, lower social and economic status, and low levels of education. These characteristics are 4-6 times higher in rural areas (WHO, 2006). Research noted above conducted within the United States supports the fact that there are adverse health effects, such as low birth weight in babies of adolescent

mothers, but they are due to modifiable behaviors not the age of the mother. The authors stop short of giving us the solution to the problem.

Psychological and social effects

The psychological and social problems of adolescent pregnancy are well documented in literature. Carter and Spear (2002), conducted a cross-sectional pilot study of 52 ninth-grade students 14 - 16 years of age (boys and girls) in a rural community in the southern United States, to examine knowledge, attitudes and behavior related to pregnancy in the teenage population. The researchers found 28.9% of the students ($n=15$) had at least one teenage friend with a baby, and 17% ($n=9$) had three or more friends with a baby. Eighty-four percent of these students ($n=44$) stated that mostly peers influence their sexual behavior. Thirty-one percent ($n=16$) of the students were sexually active, 14 of these were girls. Ten (67%) of the girls had their first intercourse between 13 and 14 years of age. Two girls reported having intercourse at 10 years or younger. Three boys and two girls reported having at least one child. The researchers concluded that although the sample size was inadequate to conduct further analysis, there is need for further research to address the unique issues of adolescent pregnancy in each community. The sample size for this study was small (52) and represented only 21% of the accessible students at the school. Eligibility to participate in the study depended on parental consent and assent from the students. Seventy-one parents consented but only 52 of the students assented to participate in the study. There may be sampling bias because the students and parents who were willing to participate in the study may not have been representative of the other 14 and 16 year olds in the school.

Using data from the United States National Longitudinal Survey of the Labor Market Experience of Youth ($n = 4,480$) and the Panel Study of Income Dynamics ($n = 8,500$ families), Hofferth and Reid (2002) compared the children of older women with the children of women who had their first birth during their teen years. Findings indicated that teenage childbearing was a barrier to educational attainment of the mothers as well as their children. Children of women who became mothers as teenagers scored lower on achievement tests and higher on behavioral problems. Hofferth, Reid, and Mott (2001) using the same data set, reported that adolescent mothers completed 1.9 -2.2 fewer years of high school than older mothers. The researchers cautioned to take time trends, for example economic and educational trends, of all scores into consideration when interpreting the effects of early motherhood on their children.

The literature gives supports that adolescent pregnancy does have direct social effects on the adolescent and her family. There is lowered academic achievement of the mother and her child which can potentially affect the earning power of the household for years to come. The psychological effect may not directly relate to the adolescent pregnancy. Problems such as intimate partner violence may be a product of the environment. Here again the authors have not addressed factors internal to the adolescent that are also predictors of their behavior.

Repeated pregnancies in adolescence

Adolescence is the second decade of life, a period of great physical and psychological changes. This period of development brings changes in social interactions and relationships. This stage of development provides an opportunity for a healthy and productive adulthood and the reduction of the risk of health problems in the years to

come (WHO, 2010). In this transitional period from childhood to adulthood, adolescents might consider themselves grown up and mature enough to engage in sexual intercourse (Nyanzi, Pool, & Kinsman, 2001). However, the adolescent often lacks knowledge about consequences of unprotected sex, such as unwanted pregnancy and sexually transmitted infections including HIV infection (Lema, Mpanga, & Makanani, 2002).

In 2001, approximately 900,000 teenagers became pregnant in the United States (Kirby, 2001), and more than 4 in 10 adolescent girls were pregnant at least once before 20 years of age (Klein, 2005). In 2003, of the 421241 pre-adolescent and adolescent births in the United States, 84,570 were second or higher order births (Martin et al., 2005). Adolescent pregnancy affects minority groups 2-3 times more than their White counter-parts. African Americans account for 32% of adolescent births, followed by 24% among Hispanics and 11% among Non- Hispanic Whites (Martin et al., 2009). One quarter of the teenagers giving birth will bear another child within 2 years (Schelar, Franzetta, & Manlove, 2007).

In a longitudinal study at a Medical Center in the United States, Coard, Nitz and Felice (2000) examined socio-demographic, family and health factors related to repeat pregnancy of predominantly African American (92.5%) adolescent mothers 13 – 17 years of age at 12 and 24 months postpartum ($n=80$). At 12 months ($n=80$), contraceptive method used was associated with repeat pregnancy ($\chi^2 = 12.66, p < .05$) and at 24 months ($n=66$) contraceptive method used, ($\chi^2 = 7.79, p < .05$) frequency of contraceptive use ($\chi^2 = 7.81, p < .05$), age ($r = .26, p < .05$) and history of miscarriages were associated with repeat pregnancy ($r = .26, p < .05$). Family factors and educational levels were not associated with repeat pregnancy ($p > .05$). The researchers concluded

that further research be conducted to examine how the social context influences the adolescents perception of their adult roles and how these factors are associated with repeat pregnancy. In this study, the repeat pregnancy was determined by medical records and the adolescents were not re-interviewed to determine if there was a change in family factors, educational status, contraceptive use or method. The socio-demographic, family and health factors are based on information obtained from the first interview, which could have changed.

Raneri and Wiemann, (2007), authors of the social-ecological predictors of repeat pregnancy, assessed Black, Mexican American and White mothers ages 12-18 years at a Medical Center in Texas, 48 months after the first pregnancy ($n = 581$). The findings revealed 42% ($n=245$) adolescent mothers experienced a repeat pregnancy within 24 months. Predictors identified were: (a) not using long-term contraceptives ($OR = 2.8$, 95% CI [1.61-3.52], $p < .001$), (b) not being in relationship with the father of the first child ($OR = 2.04$, 95% CI [1.34-3.05], $p < .001$), (c) being more than three years younger than the first child's father ($OR = 1.60$, 95% CI [1.10-2.35]), (d) experiencing intimate partner violence ($OR = 1.85$, 95% CI [1.18-2.88], $p < .01$), (e) not returning to school after the postpartum period, ($OR = 1.75$, 95% CI [1.20-2.55], $p < .01$) and (f) having many friends who were adolescent parents ($OR = 1.52$, 95% CI [1.03-2.26], $p < .05$). Raneri and Wiemann recommended future research and interventions to address the multifaceted aspects of adolescent mothers to prevent repeat pregnancy. The sample for this study included White, Black and adolescent mothers but the data were collected from the labor unit of one hospital in Texas. The socio-ecological predictors identified could be reflecting the population of persons that utilize that particular facility.

This section establishes the prevalence of repeated pregnancies in adolescents. The use of long term contraceptives is the only factor that has been significantly associated with repeated pregnancies. More emphasis needs to be put on the adolescent themselves to make responsible choices for their lives.

Pregnancy prevention programs

Because of the psychosocial and health factors associated with adolescent pregnancy, millions of dollars a year have been spent on programs in the United States to prevent initial pregnancy and delay initiation of sexual activity (Stephens, 2006). Franklin and Corcoran (2000) reviewed primary prevention programs and practices in the United States aimed at preventing adolescent pregnancies. They reported that programs offering a comprehensive approach of contraception knowledge, sex education, and skills training were successful in reducing sexual risk taking behaviors.

Carrera and The Children's Aid Society (1984) developed a holistic program model in the United States aimed to empower youth and prevent adolescent pregnancy. The Carrera Adolescent Pregnancy Prevention Program (CAPP) is an "above the waist approach to primary pregnancy prevention". The focus of the program is success in school, meaningful employment, access to quality health services, and interaction with adult role models. This program has been integrated into many in-class and after school programs throughout the United States.

In the United Kingdom, Carter (2008) evaluated a Teen and Toddlers primary prevention program. Vulnerable teenagers in the program were given the responsibility to be positive role models to toddlers. The focus of the intervention was neither contraception nor abstinence, instead the teens were encouraged to think through the

implications of unprotected sex and make their own decisions. The result of a retrospective study (McDowell, 2004) on graduates from the program ($n = 83$; 62 females & 21 males) showed a pregnancy rate below the national average and no pregnancies under the age of 16 years. There were five major findings from the survey; (a) 87% of the participants said the right time to become a parent is over 20 years old; (b) 88% agreed that the program taught them about sexual health issues; (c) 92% said that the program helped them understand the importance of financial stability before having a child, (d) 90% thought the program was necessary to help young people make good decisions and (e) 79% said the program made them feel more confident about themselves. The limitations of this study is 203 surveys were distributed and 83 (40%) were returned. The results may reflect those who had a positive response from the program.

The focus of prevention of secondary pregnancies has been providing support services for pregnant and parenting adolescents (Franklin & Corcoran, 2000). In a study of the efficacy of secondary adolescent pregnancy prevention programs Key, O'Rourke, Judy, and McKinnon, (2005) found a decrease in repeat teen births during the intervention period with a rebound after the intervention was discontinued. There is a lack of information in the literature concerning the reason for this rebound after the program ends.

Boardman, Allsworth, Phipps, and Lapane (2006), using the National Survey of Family Growth ($n = 1117$), found adolescents who intended to have the first pregnancy ($AOR = 3.27$, 95% CI [1.87 – 5.70]), those with prior poor obstetrical outcome ($AOR = 2.36$, 95% CI: 1.10-2.62) and those with partners who wanted a pregnancy ($AOR = 2.46$, 95% CI [1.45-4.18]) were more likely to have a rapid repeat pregnancy within two years.

The authors concluded that knowing if the pregnancy was intended or not could help to generate effective programs appropriate to meet the needs of the adolescents. The researchers in this study collected data from women 20 – 30 years of aged who had a history of adolescent pregnancy. The researchers relied on the memory of the woman for data input. The women are more mature and might give answers that are socially acceptable.

Sangalang, Barth, and Painter (2006) conducted a retrospective study to examine a case management intervention for first-time pregnant and parenting mothers in the Adolescent Parenting Program (APP) in North Carolina. The researchers compared 1,260 adolescent mothers who participated in an Adolescent Parenting Program to 1,260 adolescent mothers who did not. The findings indicated that the odds of the intervention group giving birth to a normal weight infant were 1.67 times that of the non-intervention group ($OR = 1.67$; $CI: 1.29-2.16$; $p < .001$). Maternal age ($p < .05$) and smoking were also significantly associated with low birth weight ($p < .01$). The adolescents age 12-16 years in the intervention group ($n = 875$) delayed second births significantly longer than the non-intervention group ($n = 719$, $p = .006$). The researchers concluded that a combination of case management and direct services provided by a multidisciplinary team helped the adolescent mothers postpone subsequent births in adolescence. A limitation of this study was that the participation in the APP program was voluntary, indicating the participants probably had some level of self motivation before entering the program.

Black and colleagues (2006) conducted a randomized controlled trial of home-based mentoring intervention programs in preventing second births within 2 years of the adolescent mother's first delivery. The sample ($n = 181$) consisted of African American adolescents < 18 years of age from low – income homes in Baltimore. Eighty-seven adolescents were assigned to the intervention group and 94 to the control group. All participants received information on the resources available to young mothers in the community at the beginning of the study. The intervention group received additional home visits every other week until the infant's first birthday. Both groups were evaluated when their infants were 6, 13, and 24 months old. At the 2-year evaluation, 27 (18%) had given birth to a second child. Mothers in the control group were 2.5 times more likely to have given birth to a second child than mothers in the intervention group (24% vs. 11%; $OR = 2.45$; $CI [1.003-6.03]$, $p = .05$). The researchers recommended future pregnancy prevention interventions for African American adolescent mothers include mentoring programs with components of interpersonal negotiation skills.

Schaffer, Jost, Pederson, and Lair, (2008), evaluated a school-based Pregnancy Free Club (PFC), implemented by public health nurses to prevent repeat adolescent pregnancy in Minnesota. The strategies included daily presence of the public health nurses in the school, health counseling, referral, health education classes and day-care for participants. Over a 9-year period, 20 pregnancies occurred among the 276 participants, an overall repeat pregnancy rate of 7.2%. The participants agreed that the presence of the Public Health Nurse, along with the availability of birth control and supportive non-judgmental environment assisted in their choice to remain pregnancy-free.

Barnet and colleagues (2009) conducted a randomized trial of three groups to determine the effectiveness of a computer-assisted motivational intervention (CAMI) in the prevention of rapid subsequent birth in adolescent mothers ages 12-18 years in a low-income, predominately African American community in Maryland, ($n = 235$). Of the three groups, one group received CAMI only ($n = 87$), another group received CAMI plus home-visits ($n = 80$) and the control group received the standard usual follow-up care ($n = 60$). Forty-three (18%) participants experienced repeat pregnancies by 24 months postpartum. Compared to the control group, participants in the CAMI plus home visits group showed a trend toward lower repeat birth rates (25.0% vs. 13.8%; $p = .08$); those in the CAMI only group did not (25.0% vs. 17.2%; $p = .32$). After controlling for group differences, the findings indicated the hazard ratio (HR) for repeat birth was significantly lower for the CAMI plus home visits group (HR = 0.45; 95% CI [0.21-0.98]). Time of repeat birth did not differ among the groups overall. The mean time to subsequent birth ranged from 22.6 – 23.0 months ($p = .10$). The researchers recommended that behavior change technologies with tailored feedbacks be integrated into clinic and community based pregnancy prevention programs for pregnant adolescents. One limitation of the study was that the researchers could not control the delivery of the interventions in the community setting. There were standardized instruments but the home environment was unpredictable and could have affected the quality and delivery of the intervention.

Programs evaluated in the literature where one-on-one intervention or group sessions geared to the adolescent having a feeling of belonging, were successful in preventing repeated adolescent pregnancy. There were no programs that incorporated family members or persons familiar with participants who can continue to act as support

persons when the interventions are discontinued. This family/ support person inclusion might address the problem of rebound pregnancies (Key et al., 2005).

The literature supports the harmful psycho-social and biological sequelae that can occur as a result of adolescent pregnancy. Programs that render social support have been proven to be most successful. The programs stopped short of addressing the characteristics of the adolescent which will be needed to sustain the effects of the program once it is discontinued.

Religiosity in adolescents

The link between spirituality and health is not well understood, but researchers have documented the positive influence that spirituality has on the health of women, and in particular African American women (Dailey & Stewart, 2007; Dessio et al., 2004; & Musgrave, Allen & Allen, 2002). Religion and spirituality are also important to adolescents and are considered protective factors against deleterious health outcomes (Ball, Armistead, and Austin, 2003; Cotton, Zebracki, Rosenthal, Tsevat, & Drotar, 2006; & Holder et al., 2000). Interest in the effects of religious/spiritual involvement with adolescents has increased in recent years (Harris et al., 2008).

Holder and colleagues (2000) used a convenience sample of 141 youth (46 male & 95 female) ages 11 -25years, from an urban adolescent primary health care practice to examine the relationship between dimensions of spirituality and voluntary sexual activity. The findings revealed that spiritual interconnectedness with friends ($OR = 0.92$, 95% CI [0.85, 0.99]) and age ($OR = 1.75$, 95% CI [1.34, 2.28]) were independent predictors of voluntary sexual activity. The researchers concluded that younger age and higher spirituality are associated with a lower likelihood of voluntary sexual activity. The

researchers admitted that the age of the participants and the sensitivity of the questions could have led to under reporting of sexual activity. The convenience sampling method may also introduce a level of bias.

McCree, Wingood, DiClemente, Davies, and Harrington (2003) examined the relationship between religiosity and risky behavior in African American adolescents ($n = 522$) ages 14 – 18 years. The participants were given a survey to examine religiosity and a structured interview to collect information regarding sexual behavior. The researchers found that adolescents who had higher religiosity scores were more likely to have higher self-efficacy in communicating with new, or steady male partners about sex, STIs and pregnancy prevention ($p = .001$). Some adolescents were also more likely to initiate sex at a later age ($p = .01$), use condoms in the past six months ($p = .04$), and possess more positive attitudes toward condom use ($p = .01$). Researchers concluded there is a positive relationship between religiosity and ability to negotiate safer sex. As in the study by Holder and colleagues (2000), the data obtained from this study were self-reported and may have been under or over reported. Interviewing adolescents on sexual behavior may have also affected the responses.

Nonnemaker, McNeely & Blum (2003) conducted a study using secondary data from the United States National Longitudinal Study on Adolescent Health ($n = 16,306$) to examine the public (frequency of attendance in religious services and frequency in participation in religious youth group activities) and private (frequency of prayer and importance of religion) domains of religiosity and adolescent health risk behaviors of 7 – 12 grade students. Higher levels of public and private religiosity were protective against cigarette smoking ($p < .001$), alcohol use ($p < .05$) and marijuana use ($p < .001$) and

lower probability of ever having sexual intercourse ($p < .001$). Higher levels of public religiosity had a significant effect on effective birth control at first intercourse ($p < .05$), females ever pregnant ($p < .01$), and lower emotional stress ($p < .01$). Private religiosity was associated with lower probability of having suicidal thoughts ($p < .01$) or having attempted suicide ($p < .05$). The researchers suggested further research be conducted to explain the mechanisms by which religiosity is protective of adolescents. The data were self-reported and adolescence may have responded along socially acceptable lines.

Ball and colleagues (2003) conducted a quantitative study as part of a larger randomized controlled trial using 492 African American females ages 12 – 19 years from the metro Atlanta region of the United States to explore the relationship among religiosity, self-esteem, sexuality and psychological functioning. The intervention group was shown a video on teen pregnancy and sexual transmitted infections (STI). The control group was shown a video on alcoholism. Both groups were given a pre-video survey and a follow-up survey 4 weeks later which included religiosity, self-esteem, sexuality and psychological functioning measures. The authors reported there was a main effect for church attendance on self-esteem ($F = 2.98, p < .05$). The highest level of self-esteem was reported among adolescents who reported themselves as “not really” or somewhat religious and the lowest self-esteem among those adolescents who were “unsure” of their religious level ($p < .01$). No main effect was found between self-religiosity and general psychological functioning, ($F = 0.52, p > .05$). There were no differences in sexual behavior found when compared to self-religiosity ($X^2 = 3.76, p > .05$), however, there was a significant difference for sexual activity on church attendance ($X^2 = 8.49, p < .05$). The authors concluded that by identifying how religion

exerts a positive effect on African American adolescents, healthcare professionals can design interventions to improve the adolescents' quality of life. The adolescents in the intervention may have given more socially acceptable responses after viewing the video.

Cotton et al., (2006), in a literature review of 17 peer-reviewed studies (1985 - 2004) on religion/spirituality and adolescent health outcomes, reported that spiritual connectedness, a strong relationship with God, and use of spiritual coping were inversely related to substance use and voluntary sexual activity, independent of other social support and across ethnic/ racial and age groups. Inclusion criteria and a conceptual framework were used for this review due to inconsistent measurements and limited quantitative data. The authors suggested further studies be conducted in the role of religion/spirituality on the health and wellbeing of adolescents.

Numerous research studies have been conducted related to adolescent sexual risk-taking behaviors (Cotton et al., 2006; McCree et al., 2003; & Nonnemaker et al., 2003); however researchers have not addressed the effects of spirituality on adolescent pregnancies.

Researchers consistently found that high spirituality/religiosity has correlates with decreased levels of sexual activity, delaying the age when sexual activity is initiated and increased level of self efficacy in relation to wearing of condoms and prevention of pregnancy among adolescents. Thus, religiosity was included as a dimension of empowerment in this study.

Health Empowerment in adolescents

Empowerment is a process influenced by external social forces and developmental person-environmental processes, is associated with self-esteem, self-

worth, inner-confidence, and facilitated by relational factors such as encouragement and mentoring (Nyatanga & Dann, 2002). Health empowerment is a relational process that emerges from the person's recognition of his or her own personal and social-contextual resources (Shearer, 2007). Factors that affect health empowerment are dynamic and cannot be predicted and are not experienced by everyone. Multiple synergistic factors influence empowerment (Hoden, Messeri, Evans, Crankshaw, & Ben-Davies, 2004).

According to Kvokkanen & Leino-Kilpi (2002), there are three categories of empowerment. The first category of empowerment is associated with Critical Theory (Freire, 1972) and Emancipatory Theory (Ward & Mullender, 1991) and involves improving the living conditions of oppressed groups. The second category is associated with organizational theories (Chandler, 1992; Laschinger, 1996) and involves delegating and taking power. The third category of empowerment is associated with social psychological theories (Hess, 1984; Rappaport, 1984) based on individual development and interaction with the environment. Menon (2002) introduced spiritual empowerment as another category of empowerment, which captures the influence of faith on empowerment.

The CAPP Program (1984) discussed earlier was evaluated by Philliber, Kaye, Herrling, and West (2002) in a multi-site 3-year randomized controlled longitudinal study in New York City. One hundred participants 13 – 15 years of age (males and females) were recruited from six agencies and randomly assigned to the control group (an ongoing after school program) or the intervention group (CAPP Program). At the end of the 3 years 79% of the participants were still involved in the study (243 males, 242 females). Females in the CAPP Program were more likely than the control group to resist being

pressured into sexual activity, (75% vs. 36%, $p < .05$). Females in the CAPP program were less likely than the controls to have ever had sex (54% vs. 66%, $p < .05$). Sexually experienced females in the CAPP program were more likely to use an effective contraceptive method with condoms (36% vs. 20%, $p < .05$). At the 3 year evaluation, the females in the program were less likely than the control group to be pregnant (10% vs. 22%, $p < .01$). The CAPP program is for non-pregnant, non-parenting adolescents and did not address repeat pregnancy; however, the CAPP Program outlines the importance of empowerment in pregnancy prevention.

Ssewamala and colleagues (2010), conducted a randomized controlled trial to determine the effects of economic empowerment on attitudes towards sexual risk taking behaviors using adolescents ($n = 277$) orphaned because of HIV infection in Uganda. The control group received the usual care for orphans; counseling, educational supplies, and the usual health education included in the school curriculum. The intervention group received the usual care for orphans plus an empowerment intervention that included 12 workshops lasting ½ hour each, on asset and financial planning, monthly peer mentor sessions focused on future planning and life options and a matched Child Savings Account to save money. At 10- months follow-up, the intervention group demonstrated a beneficial effect on attitudes toward sexual risk-taking behaviors ($F [1, 266] = 40.36, p < .05$). In the control group, both boys and girls demonstrated an increased approval of risky sexual behaviors. In the intervention group, the girls' scores remained unchanged and boys' scores showed a decrease in approval of sexual risk-taking behavior. The researchers concluded that additional research is needed to investigate the components required to increase the protective attitudes of females towards risky sexual behaviors.

Hsu, Lien, Lou, Chen, and Wang (2010) conducted a qualitative study to explore the effect of sexual empowerment on sexual decision making in female adolescents in Taiwan ($n = 29$). The participants for the study were selected from three private vocational high schools in Taiwan. The adolescents participated in a sexual empowerment course together and were then interviewed individually. The themes that emerged as perception of sexual empowerment were (a) being proactive in seeking knowledge related to sex, (b) reexamining current relationships, (c) having the right to say “no” and (d) expressing the need to change sexual attitudes and behaviors. The authors concluded that peer group interventions on sexual empowerment may positively impact health decision making in female adolescents. The authors admitted the need for a follow-up study to determine if the sentiments expressed in the interview actually translated into a change in sexual attitudes and behaviors. The participants were all from private vocational schools which might not reflect the attitudes and opinions of Taiwanese female adolescents.

Adolescent pregnancy and repeated adolescent pregnancy have been studied biologically, psychologically and demographically. Gaps exist in the literature between initial and subsequent pregnancies. Factors known to protect against risk taking behaviors included (a) close parent-child relationships, (b) high educational aspirations, (c) high self-esteem, (d) ties to a network of community supports and (e) aspects of adolescent spirituality (Holder et al., 2000).

There have been no studies identified where researchers determined what characteristics in the adolescents were being met in the interventions, making it difficult to evaluate effectiveness of the program. This research project was designed to study the

relationship among the components of health empowerment and the number of pregnancies in adolescents in The Bahamas. No published studies had been identified in The Bahamas that addressed the issue of adolescent pregnancy or the effectiveness or relevance of current interventions. It is important to study levels of health empowerment in order to facilitate interventions that are designed to empower these young mothers to participate in health-promoting lifestyles and decisions that will lead to optimal wellbeing for herself and her family (Shearer, 2004). In the past, researchers have addressed factors external to the adolescent that can impact the choices that she makes. This study was designed to investigate the psychological factors internal to the adolescent that can also impact the decisions that she makes.

Theoretical Framework

Shearer's Health Empowerment Theory

Theory of Health Empowerment (Shearer, 2007) was used as the theoretical framework for this study. This middle range theory was derived from Rogers' (1980) principle of integrality. The principle of integrality are a part of Rogers' (1970) Science of Unitary Human Beings. Unitary Human Beings are described as open systems, irreducible, indivisible energy fields identified by patterns and manifesting characteristics that are specific to the whole. As open systems, human beings are active and innovative, capable of self organizing and generating change out of ongoing events in life and the environment (Shearer & Reed, 2004).

Empowerment theory is not primarily a nursing theory; but rather is a theory that has been reformulated and adopted to the perspectives and purposes of nursing. The development of Health Empowerment Theory was based on a review of definitions,

historical perspectives and paradigmatic views from various disciplines to assist nurses to change their practice with patients (Shearer & Reed, 2004). Critical Social Theory (Freire, 1981) and Feminist theory (Caroselli, 1995) were used from the social paradigm and the developmental paradigm (Baltes, Lindenberger & Staudinger, 1998) to incorporate the unpredictable process influenced by personal and environmental contexts.

From a nursing perspective, the focus is on a paradigmatic shift from the totality paradigm to the simultaneity paradigm. In the totality paradigm, the nurse knows what is best for the patient. Alternately in the simultaneity paradigm (Parse, 1992) health involves the clients' purposeful participation in developing and choosing health patterns. The nurse's role is to facilitate, not dictate, this process. The shift to the simultaneity paradigm, in which human beings are seen as integral to the environment in which they live and to their health experiences, is supported by several nursing theories, such as Rogerian principles of hemodynamics (Rogers, 1992), Rogerian theory of power (Barrett, 1994) and Theory of Health as Expanding Consciousness (Newman, 1997).

Shearer's and Reed's (2004) reformulated view of empowerment is based on four assumptions synthesized from the various theories, but primarily is from Rogers' (1992) principle of integrality. Integrality is characterized by patterns, self-organization, diversity and innovative change. A person's experiences are manifested in his or her environment, and the pattern of the environment is manifested in the person's experiences (Reeder et al., 1984). The four assumptions of empowerment theory are: (a) empowerment is not external to the individual and cannot be given or forced upon a person, (b) empowerment is a mutual relationship between the individual and the environment, (c) empowerment in a continuous process is not a static outcome and (d)

empowerment is facilitated by nursing knowledge and evidence-based practice.

Empowered patients participate in health care and manifest patterns of well-being.

Health Empowerment Theory is an emphasis on one's ability to participate knowingly in health and healthcare decisions (Shearer, 2000). Health empowerment is a relational process that emerges from the person's recognition of her/his own personal and social contextual resources. The mediators of health empowerment are personal growth, self-acceptance, purpose in life, social support, and social service utilization.

Shearer (2004) conducted a quantitative study using a descriptive, correlational design to determine which contextual factors (personal characteristics) and relational factors (mutual interaction & social support) explained health empowerment (knowing participation and life style behaviors) in adult women, 21-45 years ($n = 133$). The sample was recruited from women visiting a community center in a southwestern city in the United States. This study was also used as a basis to test the theoretical model of health empowerment in women. Social support was measured using the Personal Resource Questionnaire-Part 2 (Weinert, 1987) and professional support was measured using the Nurse-Patient Interaction Tool (Krouse, Krouse & Roberts, 1988). Health Empowerment was measured using two tools: the Power as Knowing Participation in Change Tool Version II (Barrett, 1986) and the Health Promoting Lifestyle Profile II (Pender, 1996). When health empowerment was measured as knowing participation, social support was reported to be significant ($R^2=.38$; $F = 11.727$, $p < .01$). When health empowerment was measured as life style behaviors, education ($p \leq .005$) and social support ($p < .01$) were found to be significant. The author concluded that social support and education contributed to the variance explained in health empowerment and suggested that a more

comprehensive measurement of other relevant factors be used in the future. The study participants were all Caucasian, educated women already attending a clinic and might not reflect the contextual and relational factors of health empowerment in women of other ethnicities and socio-economic status.

Shearer (2007) again tested this theory in a qualitative study, guided by phenomenological methodology to interview homebound older women ($n = 14$) ages 69 to 94 years. Four themes emerged from this study;

1. Recognizing the potential and ability to change. This skill reinforced the women's place in the world, and attainment of personal and health goals. Potential and ability to change was a source of inner strength which gave them the power to confront the challenges of life experiences, role changes, and financial stressors. Staying positive encouraged and reinforced positive health decisions and assisted in overcoming life's obstacles.
2. Transcending boundaries was achieved by recognizing that choosing to ask for help is not a sign of weakness. Acknowledging that support is available and making choices about which resources to use was an important characteristic.
3. Engaging in life processes involves relationships with supportive family, friends, care givers and others with similar concerns. Staying connected to services that cater to persons with similar concerns was important.
4. Envisioning the future goals one wants to achieve, continuing to set goals and making preparation for the future was the final theme. Envisioning is an important part of health empowerment.

Shearer, Fleury and Belyea (2010) conducted a randomized controlled trial of a health empowerment intervention (HEI) to evaluate the feasibility of the HEI, and to explore the impact of the HEI on the theoretical mediating variables of health empowerment and purposeful participation in goal attainment with home bound older adults. Fifty-nine home-bound adults 60 years and older were randomly assigned to the control group or the intervention group. The HEI intervention group ($n = 32$) received six weekly home visits from a trained nurse intervener (NI) focused on personal resources, building capacity, building social networks, identifying and communicating with social service providers and reviewing goal attainment. The interventions were videotaped with the participants' permission to ensure validity and reliability of the intervention. The comparison group ($n = 27$) received a weekly news letter for six weeks that focused on home safety, medication safety, aging, skin care, dental care, and bone health. The participants were measured at base line, at 6 weeks and at 12 weeks. The measures used in the study were; Ryff's (1989, 1991) Psychological Well-Being Scales – to measure health empowerment, Power as Knowing Participation in Change Tool (Barrett & Caroselli, 1998), the Goal Attainment Scale (Kiresuk & Sherman, 1968) and the Well-being Picture Scale (Gueldner et al., 2005). Shearer and colleagues found significant difference over time in purposeful participation in goal attainment when the Goal Attainment Scale was used ($F(2, 83) = 3.71, p = .03$). No significant main effect between the intervention and the comparison groups were found for health empowerment using the total scores of the Psychological Well-being Scale, for purposeful goal attainment using the total scores from the Power as Knowing Participation in Change Tool and for the Well-being Picture Scale. Significance was obtained in the subscales of the measures.

In the Psychological Well-being Scale, the scores in the personal growth subscale increased significantly in the intervention when compared to the comparison group from baseline to Time 3 ($F(1, 83) = 3.88, p = .05$). There was a significant increase in the scores of the self-acceptance subscale in the intervention group as compared to the comparison group for persons with a high number of co-morbid conditions ($F(1, 79) = 5.13, p = .03$). The results provided beginning information for HEI in home-bound elderly populations.

Though Shearer used the theory of Health Empowerment to examine older persons, a population vulnerable to issues of empowerment, the results of these studies provided information that was used to explore the empowerment of adolescent mothers in The Bahamas. Shearer (2007) defined empowerment as purposefully participating in the change process of oneself and one's environment, recognizing and engaging inner resources for wellbeing. Shearer's theory was used to examine adolescent mothers' level of empowerment by testing their levels of autonomy, environmental mastery, personal growth, relationship with others and purpose in life. In this study, the theory of Health Empowerment was used to examine the contextual characteristics of pregnant adolescents who are also vulnerable to issues of empowerment and to identify the presence or absence of personal resources for Health Empowerment as illustrated in (Figure 1), using Ryff's (1989) psychological well being scales and Santa Clara Strength of Religious Faith Questionnaire (Plante et al., 2002). These variables are in keeping with Shearer's empowerment theory.

Health Empowerment Construct

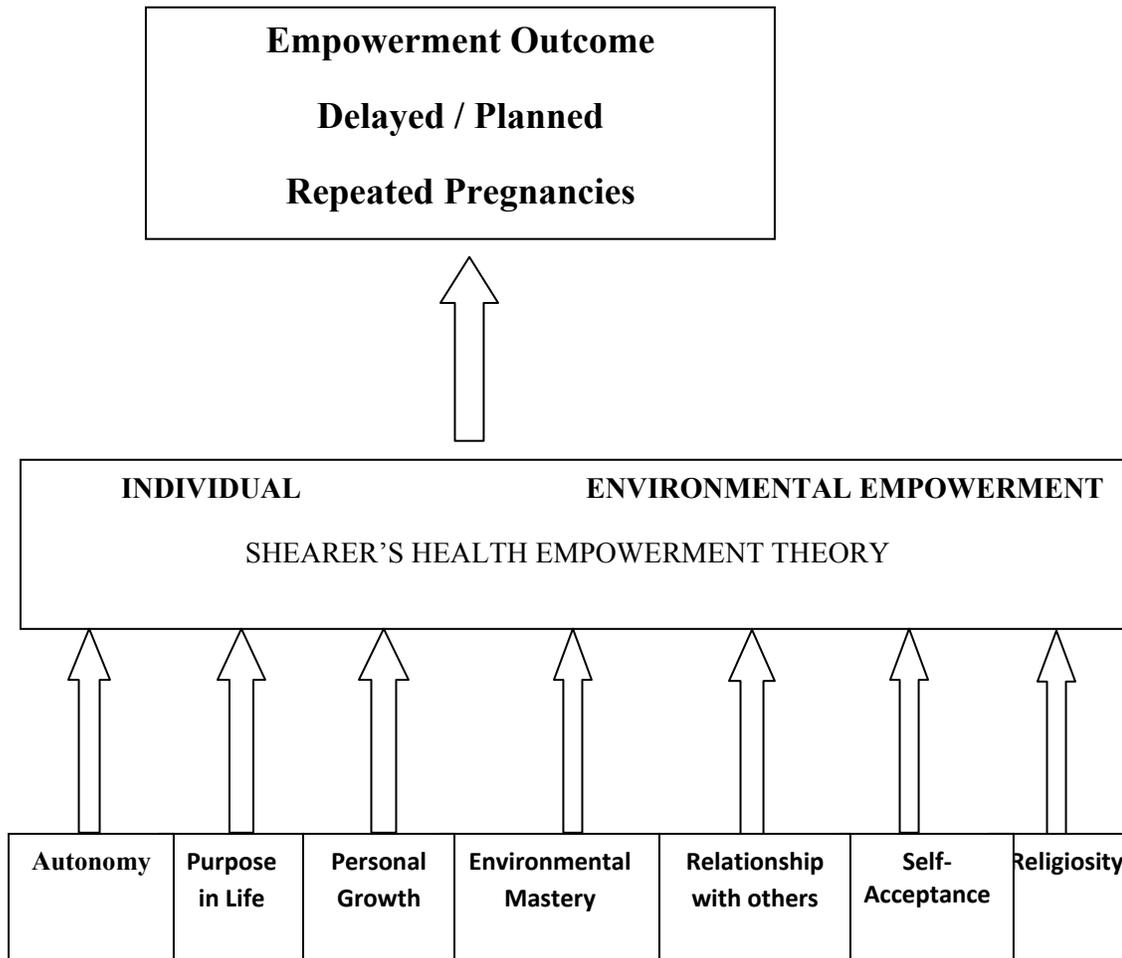


Figure 1. Diagram of Health Empowerment Construct

Chapter III

Methods

This chapter is a description of the methods and procedures that were implemented in this study. The research objectives, research questions, description of the study design, sample size, and sample criteria are outlined. The method of data collection and analysis, procedures to handle missing data and protection of human subjects are also addressed.

Purpose

The purpose of this study was to investigate the level of empowerment among pregnant adolescents living in The Bahamas aged 18-19 years by testing the levels of autonomy, environmental mastery, personal growth, relationship with others, purpose in life and religiosity. The findings of the study may well be used to highlight areas for future research in pregnancy prevention programs for adolescents in The Bahamas.

Research Questions

1. What is the relationship among levels of autonomy, environmental mastery, personal growth, relationship with others, purpose in life, self acceptance, and religiosity and the number of pregnancies of 18 and 19 year old adolescents in The Bahamas?
2. What is the relationship between the overall level health empowerment and the number of pregnancies of 18 and 19 year old pregnant adolescents in The Bahamas?

Study design

A cross-sectional, descriptive, correlational design was used to describe the relationship among the independent variables of health empowerment and the dependent variable, number of adolescent pregnancies.

Sampling procedure

A convenience sample of 105 pregnant adolescents ages 18 and 19 years attending any of the antenatal clinics in the Department of Public Health in The Bahamas December 2010 – March 2011 was used for the study. The clients were all required to have an antenatal passport as proof of clinic attendance and current pregnancy. Flyers were placed in the clinics with contact numbers for interested persons to contact the researcher for further information. The primary sites used for data collection were Nassau and Grand Bahama (The Bahamas).

Sample criteria

The primary criteria for study participants in this study included 18 and 19 year old females who were born in The Bahamas or who had spent the majority of their formative years in The Bahamas. Identity formation is one of the tasks of adolescence (Erikson, 1968). Cultural identity (national and ethnic identity) is developed through a sense of belonging and socialization, and school is an important part of this socialization (Phinney, 1992 & Sabatier, 2008). Adolescents who had lived in The Bahamas for at least 10 years were accepted to participate in the study. The late adolescent was used in this study because the age of consent is 18 years in The Bahamas. The process of obtaining parental consent could have limited the persons eligible to participate in the

study. The information gained from the 18 and 19 year olds was considered to possibly give insight into the needs of the younger adolescent mothers.

Participants had at least one visit at an antenatal clinic and possessed an Antenatal Passport. All trimesters of pregnancy were included. The adolescent was able to read and understand the English language.

Sample size

To assure adequate sample size, a review of literature was performed to determine the presence of the phenomenon in the population of interest. A similar study (Shearer et al., 2010) used a large effect size ($\mu/\sigma = 1.0$) in a randomized controlled trial, intervention study. The results from a sample size of 59 (comparison group $n = 27$, intervention group $n = 32$) did not yield a significant main effect for overall health empowerment using Ryff's (1989) Psychological scales. There was an increase in the personal growth subscale in the intervention group ($F(1, 83) = 3.88, p = .05$). In this study a more conservative approach was used for a moderate effect size. A larger sample of 105 pregnant adolescents was chosen in an attempt to determine an association between the health empowerment levels and number of pregnancies (Hulley, Cummings, Browner, Grady & Newman, 2007).

In order to determine an adequate sample size, a power analysis was performed to obtain a power level of .80. Power is the ability to detect differences in relationships that are significant and actually exists in the population of interest (Cohen, 1988). A power of .80 allows for a 20% tolerance of a type II error. The power is the probability that the test will reject a false null hypothesis. A moderate effect size of 0.15 was used to determine the size of the relationship between variables. The level of significance (α, σ) was set

at .05, which indicates a 5% chance of making a type I error (Wilson, 1993). The sample size was calculated using G* Power software calculator (Buchner, Erdfelder, & Faul, 1997) and taking into consideration the six subscales of the Ryff's SPWB and SCSRFQ instruments. The following parameters were entered: a power of .08, effect size of 0.15, and an alpha of .05. The power analysis revealed that a minimum of 103 participants would be needed for this study. The final number of pregnant adolescents who participated in this study was $N = 105$.

Measurement

The self-administered questionnaires were administered using a pencil and paper format for three tools: a demographic tool to obtain the characteristics of the sample, the medium form of Ryff's Scales of Psychological Well-Being (Ryff, 1989) and the Santa Clara Strength of Religious Faith Questionnaire (Plante & Boccaccini, 1997). The latter two tools were selected to determine levels of empowerment and religiosity respectively. The questionnaires were self-administered.

Demographics

The demographic questionnaire of 16 items (Appendix B) was used to determine the characteristics of the respondents. The tool was designed for this study based on review of previous literature on the topic. The age, education level, marital status, occupational status and the number of pregnancies were included as each of these can impact levels of empowerment and vulnerability to pregnancies in adolescence (Shearer, 2004; & Raneri & Wiemann, 2007) The participants were also asked to report their age, birth place, marital status, educational level, educational certificates, employment status,

religious affiliation, and obstetric history. Participants were asked to report on the source of emotional support and to report any previous history of depression.

Health empowerment measure

Health empowerment for each participant was measured with the medium form of Ryff's Scales of Psychological Well-Being (SPWB) (Ryff, 1989, Appendix B). Ryff's SPWB is a 54 item pencil and paper questionnaire. The questionnaire consists of six 9-item scales reflecting six areas of psychological wellbeing: autonomy, environmental mastery, personal growth, positive relations with others, purpose in life and self-acceptance. The items from each scale were mixed to form one continuous instrument. Each subscale has 9-items which include positively and negatively worded statements. The respondents rate each statement on a six-point Likert Scale, with 1 indicating strong disagreement and 6 indicating strong agreement. The negatively worded items were reverse scored for analysis. Each subscale has a score range of 9 to 54, totaled to measure each dimension of psychological well-being and the total of all scales were calculated to measure overall psychological well-being and level of empowerment (54 to 324).

A high score in self-acceptance indicates a positive attitude toward self; a low score indicates dissatisfaction and disappointment with one's life. A high score in the subscale positive relations with others indicates a trusting relationship with others and an understanding of the dynamics of human relationships; a low score is indicative of isolated, frustrated or distrusting relationships. High scores in the autonomy subscale are indicative of the ability to evaluate self from personal standards; low scores indicate conformity to social pressures when making decisions. High scores in environmental

mastery indicate an ability to make effective use of opportunities depending on individual needs and values; low scores indicate a lack of control over external environment. High scores in the purpose in life subscale indicate that there are goals and direction to one's life; a low score is indicative of lack of direction in life. A high score in the personal growth subscale indicates feelings of improvement in self and moving toward one's potential; a low score indicates a sense of personal stagnation.

The parent scale of 20-items per scale was tested by Ryff (1989) with a sample of 321 men and women from three age groups; young adults ($n = 133$, mean age = 19.53, $SD = 1.57$), middle aged adults ($n = 108$, mean age = 49.85, $SD = 9.35$) and older adults ($n = 80$, mean age = 74.96, $SD = 7.11$). The parent scale had an internal consistency coefficient ranging from .86 to .91. The test-retest reliability over a 6-week period ranged from .81 to .88. Each construct was derived from specific psychological theories in the literature and the items developed by experts in the field of psychology. The scales correlated positively with prior scales of positive functioning (life satisfaction and self-esteem, $r = .25$ to $.79$) and negatively with measures of depression and external control ($r = -.30$ to $-.70$). The 14-item scales were correlated with the parent scale and items were chosen based on the item-to-scale coefficients (.97 to .99) and the guidance of the theoretical definition.

Dierendonck (2005) conducted two studies on a Dutch population to examine the construct validity of the three versions of Ryff's Scales of Psychological Well-being and its extension with spiritual well-being; 14-item scales, 9-item scales and 3-item scales on a Dutch population. In the first study 233 first year college students (156 females & 77 males) completed the survey. The mean age was 22 years ($SD = 6$). The internal

consistency of the 9-item scales ranged from 0.65 – 0.83. In the second study the participants were 420 professionals from diverse occupations, mean age 36 years ($SD = 8$). The internal consistency was 0.61 to 0.77. Dierendonck concluded that a medium length version should be used and an additional spiritual well-being scale be added to complete the psychological assessment of the individual.

The 9-item version of the scale was also used in the Wisconsin Longitudinal Study. This was a 40-year study of a random sample of 10,317 men and women who graduated from Wisconsin high schools in 1957 focused primarily on work and occupational experience. In the 1992/93 survey there were 8,493 telephone respondents, of whom approximately 6,875 also completed a mail questionnaire. Articles published from the study contained reports of an internal consistency coefficient ranging from .70 to .78 (Carr & Friedman, 2005; Pudrovska, 2009 ; & Taylor, 2009).

Ryff's Scales of Psychological Well-being was used in this study because empowerment is best studied by focusing on the psychological state of the individual (Menon, 2001). The six scales of the instrument are congruent with the characteristics of empowerment proposed by Shearer (2004) and the instrument has been tested in the adolescent population with acceptable reliability and validity.

Religiosity measure

Religiosity for each participant was measured using the brief version of the Santa Clara Strength of Religious Faith Questionnaire (SCSRFQ) (Plante et al., 2002, Appendix B) to capture the influence of faith on empowerment (Menon, 2002). The brief version is a 5- item questionnaire. The respondents rate each statement on a 4-point Likert scale; 1 indicates strongly disagree and 4 indicates strongly agree. A score of 5 indicates low faith

and 20 indicates high faith. The SCSRFQ is designed for researchers or practitioners who wish to measure the strength of religious faith without assuming a specific religious denomination (Plante & Boccaccini, 1997).

The validity of the parent scale has been supported by strong correlations with the short form of the SCSRFQ and other measures of religiosity such as Age Universal Religious Orientation which measures both intrinsic and extrinsic religiousness ($r = .70$ to $.83, p < .05$) and the Intrinsic Religious Motivation Scale that measures religious motivation ($r = .69$ to $.82, p < 0.5$). The Duke Religious Index which measures self-religiousness, depression, and need for alliance correlates negatively with SCSRFQ ($r = -.71$ to $-.85, p < .05$; Plante et al., 1999). There is high internal consistency ($\sigma = .95$) and high split-half reliability ($r = .92$; Plante & Boccaccini, 1997) which confirms the reliability of the measure.

The brief form of the SCSRFQ was created by analyzing the 10-item scale for moderate means (below 2.89) and high standard deviations (above .95) to avoid ceiling or floor effects in the questionnaire. The data were analyzed using the results from 1,584 questionnaires administered to 4 different sample groups over a 3-year period. The mean age of the groups ranged from 19.47 years to 55.74 years. Five items that met the moderate means and high correlation with the overall scale were selected for the brief version of the SCSRFQ. There is a strong correlation between the brief version and the parent version of SCSRFQ ($r = .95$ to $.99, p < 0.01$). Factor analysis revealed that SCSRFQ is a one factor scale with high correlations between the factor and each item ($r = 0.68$ to $0.91, p < 0.05$). The SCSRFQ was chosen for this study because it has been tested with older adolescents and showed acceptable validity and reliability levels that

question the strength of religious faith without assuming a specific religious denomination and because of the brevity of tool.

Data Collection and Analysis

Procedure for data collection

The population for this study was pregnant adolescent females between the ages 18 and 19 years of age who attended an antenatal clinic in Nassau and Grand Bahama, Bahamas. Flyers (Appendix C) were posted in the clinics informing the clients of the study. As the clients registered for the clinic, they were approached by the investigator, who invited them to volunteer to participate in the study. The investigator explained the purpose of the study to adolescents who were willing to participate. The client was given a consent form (Appendix D) to read and sign. Once the participant was consented, she was given a questionnaire (Appendix B) to complete in a quiet area of the clinic. Upon completion of the consent and the questionnaire, the forms were reviewed by the investigator for completeness and a \$5.00 gift card was given to the participant along with business cards (Appendix E) to distribute to other persons who met the criteria for the study.

Protection of human subjects

Permission to conduct the study was obtained from the Ministry of Health's Department of Public Health Ethics Committee, Nassau, Bahamas (Appendix F) and the Institutional Review Board (IRB) of the University of Miami, Miami, Florida (Appendix G). The consent forms and questionnaires were coded to protect the identity of the participants. The consents and the questionnaires were stored separately in a locked filing cabinet in the office of the investigator at the University of Miami School of Nursing and

Health Studies. The data were entered on a password protected computer of the investigator and backed up on a password protected jump drive. The data from the research will be destroyed five years after the completion of the study.

Missing data

Participants were asked to give a response to each question to the best of their ability. The investigator was available to clarify any queries the participants may had while the questionnaire was being completed. Each questionnaire was browsed for completeness not content prior to the gift card being issued. Mean or mode substitution was applied to missing data within the Religiosity and Psychological wellbeing scales (Munro, 2001). Any questionnaire with greater than 30% missing data was discarded.

Data analysis

Data were entered into SPSS for analysis. Descriptive statistics were obtained on the demographic data. Correlation analyses were obtained to determine the significance between demographic data and the number of pregnancies. Correlation analysis was used to describe the relationship among the psychological and religiosity scales. Regression analyses were performed to determine the variance explained between the number of pregnancies and level of empowerment and religiosity after controlling for significant factors in the demographic data.

Chapter IV

Results

Overview

The purpose of this study was to investigate the level of empowerment among pregnant adolescents living in The Bahamas aged 18-19 years by testing the levels of autonomy, environmental mastery, personal growth, relationship with others, purpose in life and religiosity. The findings of the study may well be used to highlight areas for future research in pregnancy prevention programs for adolescents in The Bahamas.

Research questions

1. What is the relationship among the levels of autonomy, environmental mastery, personal growth, relationship with others, purpose in life, self acceptance and religiosity and the number of pregnancies of 18 and 19 year old adolescents in The Bahamas?
2. What is the relationship between the overall level of health empowerment and the number of pregnancies of 18 and 19 year old pregnant adolescent females in The Bahamas?

Description of the sample

Convenience and snowball sampling techniques were used to recruit 105 participants from the antepartum clinics in Nassau and Grand Bahama Island in The Bahamas. The data were collected over a two months period using an IRB approved questionnaires which included demographic information, Ryff's Psychological Well Being Scale (Ryff, 1989) and the short form of the Santa Clara Strength of Religious Faith Questionnaire (Plante & Boccaccini, 1997).

Flyers were posted in seven community health clinics in Nassau and three clinics in Grand Bahama. Clients who expressed interest in the study were contacted via telephone, eligibility was confirmed, and the study was explained. All persons who were contacted via telephone consented and were directed to come into the clinic to sign the consent form and complete the questionnaires. Other participants were approached at the time of their scheduled appointment at the clinic. All eligible persons who were approached agreed to participate in the survey. One hundred and ten (110) questionnaires were collected but five were not included in the data analysis because of incomplete survey or age ineligibility, leaving a sample of 105 participants. All participants were given a \$5.00 telephone card upon completion of the questionnaires.

Missing data from the demographic section of the questionnaire were indicated in the report. The mean score was calculated for the domain and a substitution applied to missing data from the SPWB and SCSRFQ.

Demographics

Age: Forty-five (42.9%) of the participants reported their ages as 18 years and 60 (57.1%) reported their age as 19 years.

Birth Place: One hundred (95.2%) of the participants were born in The Bahamas. Four (3.8%) were born in Haiti and one (1%) was born in Jamaica.

Marital status: Marital status was reported as single for 67 (63.8%), partnered for 36 (34%), separated for one (1%) and other for one (1%) of the participants.

Educational Achievements: Seventy-eight (74.3%) of the participants reported completing high school, 15 (14.3%) reported having some college education, seven (6.7%) reported attending some high school and 5 (4.8%) had less than high school

education. Eighty (76%) were not currently enrolled in any educational programs and 25 (23.8%) were enrolled. Eighty-six (81.9%) of the participants reported obtaining Bahamas Junior Certificate subjects (BJCs). BJCs are qualifying subject exams at junior high (9th grade) level. The number ranged from 0 - 9 subjects. Seventeen (16.2%) respondents reported having no subjects at the BJC level. Twenty-nine (27.6%) reported having 1-3 subjects, 47 (44.8%) reported having 4-6 subjects and 10 (9.6%) reported having 7-9 subjects. Two persons did not respond. Sixty-five (61.9%) of the participants reported having obtained Bahamas General Certificate of Secondary Education subjects (BGCSEs). BGCSEs are qualifying subject exams at high school (12th grade) level. The number obtained ranged from 0 - 7 subjects. Thirty-eight (36.2%) reported having no subjects at the BGCSE level. Fourteen (13.4%) of the respondents reported having 1 or 2 subjects, 25 (23.8%) reported having 3 or 4 subjects, and 26 (24.8%) reported having 5-7 subjects.

Employment Status: Seventy-eight (74.3%) of the respondents reported being unemployed and 27 (25.8%) were employed.

Religious Affiliation: Ninety-one (86.7%) of the respondents admitted being affiliated with a religious organization. Thirteen (12.4%) respondents did not respond to this question and one (1%) person said she had no religious affiliation.

History of Depression: Ninety (85.7%) of the respondents reported no history of depression. Thirteen (12.4%) admitted past history of depression and 2 (1.9%) did not respond to this question.

Source of advice: The respondents were asked to identify two sources of help and advice. Seventy-three (76.5%) persons indicated that their mother was a source of advice,

38 (42.9%) persons indicated other family members, 20 (11.8%) indicated friends. Other sources of advice were; siblings, 13 (7.6%), significant other 11 (6.5%), church, four (2.3%), teacher, three (1.8%), healthcare provider, one (0.6%) and six persons indicated other. Forty persons only indicated one source of advice and help.

Pregnancy: Eighty-six (81%) of the participants reported the current pregnancy as their first. Nineteen (18.1%) reported having a previous pregnancy. Of those with previous pregnancies, four (21.0%) ended in miscarriage and four (21.0%) in abortions. Ten (52.6%) were full term and one (5.3%) pre-term deliveries. There were 17 (89.5%) vaginal births and two (10.5%) cesarean sections. Of those participants with previous pregnancies 2(10.5%) did not report the year of the previous birth. Four (23.5%) reported giving birth one year ago, 3 (17.6%) reported births 2years ago, 5 (29.3%) reported births 3years ago, 2 (11.8%) reported births 4years ago, 2 (11.8%) reported having births 5years ago and 1 (5.9%) reported having a birth 7years ago.

Family Planning: Forty-four (41.9%) indicated they used no form of family planning, 29 (27.9%) used condoms, 16 (15.2%) used oral contraceptives, 15 (14.3%) used injections and 1(1%) indicated other. Of those who indicated they used some form of family planning 5(8.2%) indicated a second method.

Study ariables

Health Empowerment: This section of the analysis is a description of the results of the Ryff's Scales of Psychological Well-being (SPWB, 1989). Ryff's SPWB consists of six 9-item scales reflecting six areas of psychological wellbeing; autonomy, environmental mastery, personal growth, positive relations with others, purpose in life and self- acceptance. Each subscale has 9-items which include positively and negatively

worded statements. The total of all scales are summed resulting in possible total scores ranging from 54 to 324. For the purpose of this study the overall score of this measure was used to determine the level of health empowerment of the respondents. For the purpose of this analysis the subscales were divided into three categories: a score of 1-18 was considered low level of the dimension being measured, 19 -36 is indicative of some level of the dimension was demonstrated and 37-54 demonstrates a high level of that dimension. The analysis of the overall health empowerment was also subdivided using Ryff's SPWB; 1-108 indicating a low level of health empowerment, 109-216 some level of health empowerment and 217-324 a high level of health empowerment. The internal consistency of the measure was tested by using the Cronbach's Coefficient Alpha and resulted in $\alpha = .92$ and internal consistency coefficient ranging from .77 to .89 which is higher than the .61 to .83 reported by Carr and Friedman, 2005; Pudrovskaya, 2009 and Taylor, 2009.

All respondents scored between 109 and 324 on the overall health empowerment; 37 (35.2%) scored 109-216, indicating some level of health empowerment and 68 (64.2%) scored 217-324 indicating high levels of health empowerment. The sub-scales reflect a similar distribution of scores; self – acceptance was the only sub-scale to reflect scores in the low category (Table 1).

Religiosity: The brief form of the Santa Clara Strength of Religious Faith Questionnaire (SCSRFQ) (Plante et al., 2002) was used to measure the strength of religious faith, without assuming a specific religious denomination. The respondents rated 5 statements on a 4-point Likert scale; 1 indicates strongly disagree and 4 indicates strongly agree. A score of 5 indicates low faith and 20 indicates high faith. For the

purpose of this analysis the results were divided into 4 categories: a score of 1-5 indicates very low religious faith, 6-10 indicates low religious faith, 11-15 indicates some religious faith and 16-20 indicates high religious faith.

Fifty-nine (56.2%) respondents reported high religious faith, 41% (43) some religious faith, 1.9% (2) low religious faith and 1% (1) very low religious faith.

Cronbach's Alpha = .76 which falls within the range of correlations reported by Plante and colleagues, 2002 ($r = .68$ to $.91$).

Table 1
Descriptive Statistics of the Subscales of the SPWB and Overall Health Empowerment for Pregnant Adolescents (N = 105)

Subscale	Low Level <i>n</i> (%)	Some Level <i>n</i> (%)	High Level <i>n</i> (%)	<i>M</i>	<i>SD</i>
Autonomy	-	21(20%)	84(84%)	42.7	7.2
Environmental Mastery	-	32(30.5%)	73(69.5%)	40.3	7.9
Personal Growth	-	24(22.9%)	81(77.1%)	41.9	7.3
Positive Relationship With Others	-	34(32.4%)	71(67.6%)	41.3	8.1
Purpose in Live	-	19(18.1%)	86(81.9%)	44.8	7.4
Self-Acceptance	1(1%)	25(23.8%)	79(75.2%)	41.3	8.5
Psychological Well-being	-	37(35.2%)	68(64.2%)	252.2	37.1

Correlations

The correlations between overall health empowerment that, for the purpose of this study, is equated to Ryff's Overall Psychological Well-Being score, religiosity and demographic variables can be found in Table 2. Overall health empowerment and

educational level earned, number of BJCs and BGCSEs, were positive and statistically significant ($p < .01$). History of depression was negatively correlated ($p < .01$). The correlation between religiosity and history of depression was negative and statistically significant ($p < .01$). History of Depression was also negatively correlated with educational level earned ($p = .002$). The correlation between overall health empowerment and religious faith was positive and statistically significant, $p < .01$.

Table 2

Correlations Among Total Health Empowerment, Religiosity and Demographic Variables of Pregnant Adolescents (N= 105)

	EMPLOY	DEPRESS	AGE	MARITAL	EDU	BJC	BGCSE	ENROLL	RELIG
1. Empower	-.02	-.31**	.13	.01	.44**	.43**	.41**	.10	.36**
2. Employ	-	.01	.10	.06	.10	.06	.16	-.05	-.04
3. Depres		-	-.14	.17	-.30*	-.23*	-.15	-.002	-.26**
4. Age			-	-.07	.18	.05	.05	-.04	.11
5. Marita				-	-.07	.16	.12	-.001	.12
6. EDU					-	.34*	.34**	.32**	.10
7. BJC						-	.63**	.05	.11
8. BGCE							-	.10	.01
9. Enroll								-	.06

*. Correlation is significant at the 0.05 level (2-tailed)

** . Correlation is significant at the 0.01 level (2-tailed)

The correlation of overall empowerment and religious faith to the five dimensions of psychological well-being are found in Table 3. All dimensions of SPWB were positively correlated to overall empowerment and statistically significant ($p < .01$). The correlations between religiosity and autonomy with personal growth were not statistically

significant ($p > .01$). The correlation between religiosity and the all dimensions of SPWB were weak to moderate ($r = .09 - .47$).

Table 3

Correlations Between Empowerment, Religious Faith and the Dimensions of Psychological Well-Being Scale of Pregnant Adolescent (N=105)

	Health Empowerment (Psychological Well-Being)	Religiosity
Autonomy	.81**	.16
Environmental Mastery	.83**	.29**
Personal Growth	.72**	.09
Positive Relations With Others	.78**	.39**
Purpose in Life	.81**	.31**
Self Acceptance	.85**	.47**

** $p < .01$.

Number of pregnancies was negatively correlated with overall health empowerment, religiosity and all dimensions of the SPWB. The correlations were statistically insignificant ($p > .05$) except personal growth ($p < .05$). The effect size was calculated using the coefficient of determination to determine what proportion of variance in the number of pregnancies is explained by overall empowerment, religiosity and the dimensions of SPWB (Table 4). The relationships among the number of pregnancies and the variables were small, ranging from 0.68% - 3.8%. Number of pregnancies was negatively correlated with current educational enrollment ($p < .05$), type of delivery and delivery outcome ($p < .001$).

Table 4

Correlation and Effect Size of Number of Pregnancies with Dimensions of Psychological Well-Being and Religiosity of Pregnant Adolescents (N=105)

	Number of Pregnancies	
	Correlation(<i>r</i>)	Effect size(<i>r</i> ²)
Autonomy	-0.182	0.033
Environmental Mastery	-0.098	0.009
Personal Growth	-0.196	0.038
Positive Relations with Others	-0.160	0.026
Self Acceptance	-0.125	0.016
Purpose in Life	-0.083	0.007
Religiosity	-0.130	0.017
Overall Health Empowerment	-.174	0.348

Regression analysis

Regression analysis was conducted to examine the association between the number of pregnancies (dependent variable) and personal growth, pregnancy outcome, delivery type, and current educational enrollment, (the independent variables that were found to be significantly correlated with the number of pregnancies). The variables accounted for 93% of the variance in the number of pregnancies. The omnibus test was statistically significant, $R^2 = .929$, $F(4,100) = 328.80$, $p < .001$. Personal growth and current educational enrollment did not account for a statistically significant change ($p > .05$) in the number of pregnancies after controlling for pregnancy outcome and type of delivery. There was a change in the number of pregnancies given a 1-unit change in pregnancy outcome after controlling for personal growth, delivery type and current

school enrollment, $p < .001$. There was a change in the number of pregnancies given a 1-unit change in the type of delivery after controlling for personal growth, pregnancy outcome and current school enrollment, $p < .001$.

Regression analysis was conducted to examine the association between empowerment (dependent variable) and the statistically significant demographic variables, history of depression, number of BJs, number of BGCSEs, level of education and religiosity. The variables accounted for 40.0% of the variance in the level of empowerment. The omnibus test was statistically significant, $R^2 = .404$, $F(5,95) = 12.86$, $p < .001$. Depression, number of BJs, and BGCSEs did not account for a statistically significant change in overall empowerment after controlling for religiosity and education level completed. There was a change in level of empowerment given a 1-unit change in religiosity after controlling for level of depression, earned education level and numbers of BJs and BGCSE's, $p = .001$. There was change in empowerment level given a 1-unit increase in earned education after controlling for religiosity, history of depression, and numbers of BJs and BGCSEs, $p = .003$.

Summary

The Pearson's correlation was calculated to answer the research questions of the relationship of level of autonomy, environmental mastery, personal growth, relationship with others, purpose in life, self acceptance, religiosity and overall health empowerment with number of pregnancies of 18 and 19 year old pregnant females. Number of pregnancies was negatively correlated with all dimensions of psychological well-being, religiosity and overall health empowerment. Due to the small number in the sample with repeated pregnancy (19 of 105) the correlations were not statistically significant, except

personal growth. The higher number of pregnancies are associated with lower levels of overall health empowerment, autonomy, environmental mastery, purpose in life, positive relations with others, self acceptance, personal growth and religiosity.

Number of pregnancies was negatively correlated but not statistically significant with personal growth, which measured the individual feeling of improvement in self and moving toward one's goals. Number of pregnancies was negatively correlated and statistically significant with current enrollment in school, which measured whether the adolescent was currently enrolled in a formal educational program. Pregnancy outcome and delivery type were positively correlated and statistically significant with number of pregnancies. Pregnancy outcome indicated how the first pregnancy ended whether in abortion, miscarriage, pre-term or full term and delivery type indicated the mode of delivery, whether vaginally or cesarean section. These findings suggests that the likelihood of repeated pregnancies increases when there is an adverse outcome in the first pregnancy such as an abortion, miscarriage, pre-term birth or if the delivery was by cesarean section.

Overall health empowerment levels were negatively and significantly correlated with history of depression, which indicated adolescents who had a previous diagnosis of depression. Overall health empowerment was positively and significantly correlated with religiosity, which measured the strength of the adolescent's religious faith and level of education. Overall health empowerment was also positively and significantly correlated with earned education and the number of BJs and BGCSEs, which determined the highest level of earned education which indicated the number and level of subjects successfully completed in the national exams respectively.

Level of education and religiosity were positively correlated and statistically significant to the level of health empowerment for the adolescents in this study. These findings indicate that the pregnant adolescents in this study with high levels of religiosity and those who were still enrolled in formal educational programs showed higher levels of health empowerment.

Chapter V

Discussion and Conclusions

Overview

This chapter is a summary of the study. The discussion of the findings is presented in relation to the research questions. Study limitations and the implications for nursing practice, education and future research are also included.

Summary of the Study

Adolescent pregnancy accounts for 11% of all births globally (WHO, 2008). Teenage pregnancy rate in the United States is the highest in industrialized countries (Singh & Darroch, 2003). In Latin America and the Caribbean (LAC), 25% of the females become pregnant before the age of 20 years (Economic Commission for LAC, 2008). In The Bahamas, single mothers accounted for 11.3% - 12.7% of all births in the country between the years 2000 -2007. Adolescent pregnancy can result in economic, social and health problems in the adolescent and her child (Klerman, 2004). Delaying subsequent childbearing may be an important factor promoting success in adolescent mother's later life (Koniak-Griffin et al., 2002).

A review of the literature supports the presence of physical and social effects of adolescent pregnancy and subsequent pregnancies on the adolescent and her family (Blum & Nelson-Mmari, 2004; Raneri & Wiemann, 2007; & Partington et al., 2009). Pregnancy prevention programs evaluated in the literature were most successful when there was one-on-one intervention or group sessions geared towards enhancing the participants' feeling of belonging (Barnet et al., 2009; Boardman et al., 2006; & Carter, 2008). High religiosity and spirituality were correlated with a delay in initiation of sexual

activity, increase self efficacy in wearing of condoms and decrease in sexual activity among adolescents (Ball et al., 2003, McCree et al., 2003, Nonnemaker et al., 2003).

Empowerment is influenced by multiple synergic factors which include self esteem, inner confidence, external and social forces (Nyatanga & Dann, 2002). The importance of the empowerment of adolescents has been recognized by the UN in the Millennium Development Goals (UN, 2000; UNFPA 2003; 2007) and the CDC in its Youth Empowerment Strategy (YES) program (Wilson et al., 2008). The importance of empowerment in pregnancy prevention is supported in literature but researchers have not investigated the levels of empowerment in pregnant adolescents.

Shearer's (2007) Theory of Health Empowerment was the theoretical framework used to examine levels of health empowerment in adolescent pregnant females in this study. Shearer's theory has emphasis on the importance of a person engaging inner resources while interacting with the environment to effect change. From this theoretical framework, two research questions were generated and tested:

1. What is the relationship among the levels of autonomy, environmental mastery, personal growth, relationship with others, purpose in life, self acceptance and religiosity and the number of pregnancies of 18 and 19 year old adolescents in The Bahamas?
2. What is the relationship between the overall level of health empowerment and the number of pregnancies of 18 and 19 year old pregnant adolescent females in The Bahamas?

A cross-sectional, descriptive, correlation design was used with a convenience sample ($N = 105$) of pregnant 18 and 19 year old adolescents attending antenatal clinics

in Nassau and Freeport, The Bahamas. All participants were born in The Bahamas or had been living in The Bahamas for at least 10 years. Data were collected via self-reported questionnaires over a two month period – February and March, 2011. Data were analyzed using SPSS 18.0. The questions were tested using Pearson's correlation coefficients (r) and multiple regressions.

Discussion

The focus of this study was to investigate the level of health empowerment among pregnant adolescents living in The Bahamas aged 18-19 years by testing the levels of autonomy, environmental mastery, personal growth, relationship with others, purpose in life, and religiosity. Psychological well-being (used as a proxy for health empowerment) and religiosity along with demographic information were used to study these variables. Shearer's Health Empowerment theory is about the ability of one to participate in healthcare decisions by taking into account one's own social and personal resources (Shearer, 2000).

Research Question 1

What is the relationship among the levels of autonomy, environmental mastery, personal growth, relationship with others, purpose in life, self acceptance and religiosity and the number of pregnancies of 18 and 19 year old adolescents in The Bahamas?

In this study, the adolescents scored moderate to high in all dimensions of the SPWB scale: autonomy, environmental mastery, personal growth, positive relationship with others and purpose in life. Only one participant earned a low score in the self acceptance domain. No similar study was identified in the literature in which to compare

the health empowerment levels of pregnant adolescents. In previous studies, high levels of empowerment were measured in non-pregnant adolescents after interventions, such as a sexual empowerment course and mentoring programs (Philliber et al., 2002; & Hsu et al., 2010). The adolescents in this study might be highly empowered for a number of reasons; more than 75% of them have at least a high school education and 81% of them are just experiencing their first pregnancy at 18 and 19 years of age. These adolescents probably feel as if they are in control of their life situation.

Research Question 2

What is the relationship between the overall level of health empowerment and the number of pregnancies of 18 and 19 year old pregnant adolescent females in The Bahamas?

In this study, overall level of health empowerment was moderate to high, (Table 1) in the pregnant adolescents. Overall level of health empowerment was negatively associated with number of pregnancies in this population but not statistically significant due to disproportion of first time vs. repeated pregnancies in the study. The moderate effect size (Table 4) indicates there is a relationship between health empowerment and number of adolescent pregnancies. The negative correlation indicates that the number of pregnancies does have a moderate effect on the level of empowerment in these adolescents. Further research with a larger sample size and/or a younger population may establish the direction and strength of the relationship. In this study, 41.1% of the adolescents who had repeated pregnancies became pregnant within 2 years of the first birth which exceeds the 25% reported by Schelar and colleagues (2007).

Culturally, adolescent pregnancy has become acceptable in The Bahamas, particularly if the adolescent has completed high school or has a job. The religious community has taken a posture of love as opposed to ostracizing the adolescent. The adolescent's level of autonomy, relations with others, purpose in life, environmental mastery, and religiosity might not be affected if the pregnancy is accepted by those in her environment. Personal growth was statistically significant, which indicates that even though the adolescent is empowered she recognizes that pregnancy might slow her personal growth.

Additional Findings

In this Bahamian population, pregnancy outcome and type of delivery were contributing factors to the number of adolescent pregnancies. Those adolescents who had adverse outcomes, such as miscarriage, abortion or cesarean section in their first pregnancy were more likely to have a repeat pregnancy in adolescence. The adolescents in this study with high levels of religiosity and higher levels of education had higher levels of empowerment. These findings are consistent with previous studies. Coard and colleagues (2000) and Boardman and colleagues (2006) reported that adolescents with a history of miscarriages and previous poor outcomes were more likely to have a repeated pregnancy in adolescence. Hofferth and Reid (2002) also found that adolescent mothers who completed fewer years of high school and those who did not return to school after the first child were more likely to have a rapid repeat pregnancy.

The significance of religiosity to empowerment is consistent with studies by Ball and colleagues (2003), McCree and colleagues (2003), and Nonnemaker and colleagues (2003) who found high levels of religiosity/spirituality are associated with components of

empowerment such as self-esteem, self-efficacy and autonomy. This sample of Bahamian pregnant adolescents was highly empowered. Health empowerment was greater in those who were religious and educated, which is consistent with Shearer's (2007) definition of health empowerment as those who are purposefully participating in the change process of oneself and one's environment. Even though higher education and higher religiosity were associated with higher levels of health empowerment these adolescents did not use their teachers (1.8%) or churches (2.3%) as a primary source of advice. This factor should be further investigated and researched.

There is some evidence that higher levels of health empowerment may lead to fewer pregnancies. There is a chance that this group of adolescents may be empowered independent of the number of pregnancies due to their age and level of education. Further studies with a larger population of adolescents with multiple births and younger age group should be undertaken.

Implications for Nursing

Implications for Education

Nurses come into contact with pregnant adolescents at several areas of practice such as primary health care clinics, community health, school health, labor and delivery, antepartum and postpartum care, yet adolescent health is not a significant part of the nursing curriculum (Lee et al, 2006). Adolescent health is normally nested in the pediatric or maternal and child health course. In advanced practice curricula more emphasis is given to adolescent health in the community health, family nurse practitioner and the midwifery programs. Adolescent health is an important component of the pediatric nurse practitioners program. The needs of the pregnant adolescent should be

stressed at all levels of nursing education. The physical, as well as, the psychological needs should be emphasized. There should be a more defined focus on providing nursing students with tools necessary to encourage adolescents in the areas of continuing educational pursuits, support after a perinatal loss or adverse outcome. Nurses becoming sensitized to the importance of religious support and counseling for this population might be beneficial.

Implications for research

In this study, the researcher used a convenience sample to determine the health empowerment levels of Bahamian born pregnant adolescents related to the number of pregnancies. Future researchers may want to conduct further studies ensuring adequate sample size with multiple pregnancies to compare with a sample size of adolescents with one pregnancy to increase the chances of detecting significance in the relationship..

The Bahamian 18 and 19 year olds in this study demonstrated a high level of health empowerment as measured by Ryff's SPWB. Researchers may wish to investigate health empowerment levels in other cultures in the same age group or among a young adolescent group. Researchers may also wish to investigate health empowerment using another instrument to compare the levels of health empowerment. If low levels of health empowerment are identified, a longitudinal study can be undertaken involving an appropriate health empowerment intervention, and a follow-up health empowerment evaluation.

Implications for Theory

Researchers have documented the role of religiosity (Ball et al., 2003, Nonnemaker et al., 2003) and continuing education (Hofferth & Reid, 2002) in the decision making process of adolescents. Using data from previous research, a theory could be developed useful for indentifying the importance of religiosity and education in the health empowerment process and the psychological well-being of adolescents. This theory might be used to guide the development of future programs and research in the area of adolescent decision- making and health empowerment.

Shearer's health empowerment theory may also be utilized to explore how a person's experiences and the environment work together to determine the health care decisions made by adolescents. Other theories of empowerment may also be tested in this population.

Implications for Practice

Nurses are in a position to ensure holistic management of pregnant adolescent females. Nurses are able to coordinate and collaborate with other healthcare workers and professionals to ensure that the needs of pregnant adolescents are being met. At the school health level, nurses can communicate with the educators. At the community health level, nurses can collaborate with civic and religious leaders to ensure that programs do not isolate or ostracize pregnant adolescents.

Nurses can encourage pregnant adolescent to adhere to antepartum management and clinic appointments as; adherence will foster early detection and proper management of problems and improve prenatal outcomes in this population of clients. Nurses can also

ensure that the care given to pregnant adolescents is sensitive and fosters confidence in the adolescents' capabilities.

Study Limitations

The statistically significant relationships which emerged from this study must be examined while considering the limitations. The sample size for adolescents with multiple births was small and significant findings may not have been detected. The information obtained from the study was based on a self-report survey that could be linked to potential biases toward reporting more socially desirable outcomes. The study was a cross-sectional design using a convenience sample. The study was limited to 18 and 19 year olds, so the findings cannot necessarily be generalized to adolescents of other ages. The sample was drawn from a convenience sample of Bahamian adolescents who were attending antepartum clinic; the results may not be generalized to pregnant adolescents of other populations. The empowerment levels may not necessarily reflect the levels of defaulters or those with no antepartum care. The design of the study was cross-sectional so the results from the analysis of the data cannot be said to be causal, but the findings and patterns are consistent with previous findings related to repeated pregnancies.

Conclusions

Based on the findings of this study, the number of pregnancies was negatively correlated with all dimensions of psychological well-being, religiosity and overall health empowerment. The correlations were not statistically significant in environmental mastery, autonomy, purpose in life, relations with others and religiosity. The correlation was statistically significant with personal growth. These adolescents are concerned about

their personal growth in their current situation. Number of pregnancies was negatively correlated and statistically significant with current enrollment in school. The adolescents who were currently enrolled in school were less likely to have repeated pregnancies. This finding suggests a need for more emphasis on tertiary or technical education after high school. Pregnancy outcome and delivery type were positively correlated and statistically significant with number of pregnancies. The likelihood of repeated pregnancies in adolescence increases when there are adverse outcomes in the first pregnancy such as an abortion, miscarriage, pre-term birth or if the delivery was by cesarean section.

Education and religiosity had a significant effect on overall health empowerment levels of the 18 and 19 year old pregnant adolescents in Nassau and Grand Bahama in The Bahamas. Here again the importance of educational programs for adolescents after high school is highlighted. The importance and relevance of religious influence in the life of adolescence is highlighted.

These findings indicate that the pregnant adolescents in this study with high levels of religiosity and those who were still enrolled in formal education programs showed higher levels of health empowerment. However these findings are not related to the number of pregnancies.

Further studies should be conducted to validate these findings with a larger group of adolescents with multiple births. Having a larger sample may also establish direction and significance to the negative correlation between the number of pregnancies and health empowerment levels.

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Appendix A

Millennium Development Goals

What are the Millennium Development Goals?

The Millennium Development Goals (MDGs) are the most broadly supported, comprehensive and specific development goals the world has ever agreed upon. These eight time-bound goals provide concrete, numerical benchmarks for tackling extreme poverty in its many dimensions. They include goals and targets on income poverty, hunger, maternal and child mortality, disease, inadequate shelter, gender inequality, environmental degradation and the Global Partnership for Development.

Adopted by world leaders in the year 2000 and set to be achieved by 2015, the MDGs are both global and local, tailored by each country to suit specific development needs. They provide a framework for the entire international community to work together towards a common end – making sure that human development reaches everyone, everywhere. If these goals are achieved, world poverty will be cut by half, tens of millions of lives will be saved, and billions more people will have the opportunity to benefit from the global economy.

The eight MDGs break down into **21 quantifiable targets** that are measured by **60 indicators**.



Goal 1: Eradicate extreme poverty and hunger



Goal 2: Achieve universal primary education



Goal 3: Promote gender equality and empower women



Goal 4: Reduce child mortality



Goal 5: Improve maternal health



Goal 6: Combat HIV/AIDS, malaria and other diseases



Goal 7: Ensure environmental sustainability



Goal 8: Develop a Global Partnership for Development

Implementation of the MDGs

At the midpoint in MDG timeline, great progress has already been made. Reducing absolute poverty by half is within reach for the world as a whole. With the exception of Sub-Saharan Africa and South Asia, primary school enrolment is at least 90 percent. Malaria prevention is expanding, with widespread increases in insecticide-treated bed-net use among children under five in sub-Saharan Africa. In 16 out of 20 countries, use has at least tripled since around 2000. One point six billion people have gained access to safe drinking water since 1990.

Alongside the successes are an array of goals and targets that are likely to be missed unless more action is taken urgently: about one quarter of all children in developing countries are considered to be underweight and are at risk of long-term effects of undernourishment; more than 500,000 prospective mothers in developing countries die annually in childbirth or of complications from pregnancy; in Sub-Saharan Africa, the proportion of people living on just over a dollar a day is unlikely to be cut in half. Additionally, in middle income countries like Mexico, Brazil, Romania, Macedonia, and Indonesia, inequality has also led to 'pockets of poverty' – socially-excluded groups that will need specific attention if their countries are to reach the MDGs.

The global economic crisis also threatens to destabilize progress, as a better future for the world's most vulnerable people could fall victim to contraction of trade, remittances, capital flows and donor support. At a time when investing in development is more vital than ever to ensure social stability, security and prosperity, donor governments are called upon to renew rather than revoke their commitment to reaching the MDGs.

At the international level, UNDP works with the UN family to advance the Global Partnership for Development. At the national level, UNDP works in close collaboration with UN organizations to:

1. • Raise awareness of MDGs and advocate for countries and sub-national regions to adopt and adapt MDGs.
2. • Provide leadership and UN coordination to develop capacity in countries to assess what is needed to achieve the MDGs, to conceptualize policies and to design strategies and plans. For this purpose, UNDP organizes consultations and training, conducts research, develops planning and information management tools.
3. • Provide hands-on support to countries to scale up implementation of initiatives to achieve the MDGs, in areas such as procurement, human resources and financial management.
4. • Assist countries to report on their progress.

Appendix B
Participant Questionnaire

Questionnaire

Thank you for consenting to participate in this important study.

Part 1. Instructions: Please complete this section that gives us some information about you

A. What is your date of birth ____Date ____Month____Year.

B. How old are you? _____ Years.

C. Where were you born? (Island, Country)

D. What is your marital status?

- | | |
|--|------------------------------------|
| <input type="checkbox"/> Single | <input type="checkbox"/> Married |
| <input type="checkbox"/> Partnered | <input type="checkbox"/> Separated |
| <input type="checkbox"/> Divorced | <input type="checkbox"/> Widow |
| <input type="checkbox"/> Other (specify) _____ | |

E. What is the highest education you have earned?

- | | |
|--|---|
| <input type="checkbox"/> Less than high school | <input type="checkbox"/> Some high school |
| <input type="checkbox"/> High school graduate | <input type="checkbox"/> Some college |
| <input type="checkbox"/> College graduate | <input type="checkbox"/> Master's degree |

F. How many Bahamas Junior Certificates (BJCs) did you obtain?

G. How many General Certificate of Education (GCEs) or Bahamas General Certificate of Secondary Education (BGCSEs) did you obtain?

H. Are you currently enrolled in an educational programme? YES NO

I. Are you employed? YES NO If yes, state occupation _____

J. Who do you turn to for help and advice?

- | | |
|--|--|
| <input type="checkbox"/> Mother | <input type="checkbox"/> Siblings |
| <input type="checkbox"/> Other Family members | <input type="checkbox"/> Friends |
| <input type="checkbox"/> Teacher | <input type="checkbox"/> Healthcare provider |
| <input type="checkbox"/> Church | <input type="checkbox"/> Significant other |
| <input type="checkbox"/> Other (specify) _____ | |

K. What is your religious affiliation? (Specify) _____

L. Do you have any previous history of depression?

- yes No

M. How many times have you been pregnant? (Include this one) _____

N. What was the outcome of each pregnancy? (Tick all that are appropriate and state which year it occurred)

Abortions

state year(s):

Miscarriages

state year(s):

Preterm (before 8 months)

state year(s):

Term (9 months)

state year(s):

O. What type of delivery did you have? (State the amount in each box)

Vaginal C-Section

P. What method of birth control (family planning) have you used in the past? (Tick all that are appropriate)

None Injections Condoms Oral (pill) Other (Specify) _____

PART 2. The following set of questions deals with how you feel about yourself and your life. Circle the number that best describes your present agreement or disagreement with each statement. Please remember that there are no right or wrong answers.

Ryff's Scales of Psychological Wellbeing (1989)

	Statements	Strongly Disagree	Disagree Somewhat	Disagree Slightly	Agree Slightly	Agree Somewhat	Strongly Agree
1	I am not afraid to voice my opinions, even when they are in opposition to the opinions of most people.	1	2	3	4	5	6
2	In general, I feel I am in charge of the situation in which I live.	1	2	3	4	5	6
3	I am not interested in activities that will expand my horizons.	1	2	3	4	5	6
4	Most people see me as loving and affectionate	1	2	3	4	5	6
5	I live life one day at a time and don't really think about the future.	1	2	3	4	5	6
6	When I look at the story of my life, I am pleased with how things have turned out.	1	2	3	4	5	6
7	My decisions are not usually influenced by what everyone else is doing.	1	2	3	4	5	6
8	The demands of everyday life often get me down.	1	2	3	4	5	6
9	I don't want to try new ways of doing things--my life is fine the way it is.	1	2	3	4	5	6
10	Maintaining close relationships has been difficult and frustrating for me	1	2	3	4	5	6
11	I tend to focus on the present, because the future nearly always brings me problems.	1	2	3	4	5	6
12	In general, I feel confident and positive about myself.	1	2	3	4	5	6
13	I tend to worry about what other people think of me	1	2	3	4	5	6

	Statements	Strongly Disagree	Disagree Somewhat	Disagree Slightly	Agree Slightly	Agree Somewhat	Strongly Agree
42	My attitude about myself is probably not as positive as most people feel about themselves.	1	2	3	4	5	6
43	I often change my mind about decisions if my friends or family disagree.	1	2	3	4	5	6
44	I have difficulty arranging my life in a way that is satisfying to me.	1	2	3	4	5	6
45	I gave up trying to make big improvements or changes in my life a long time ago	1	2	3	4	5	6
46	I have not experienced many warm and trusting relationships with others.	1	2	3	4	5	6
47	Some people wander aimlessly through life, but I am not one of them.	1	2	3	4	5	6
48	The past had its ups and downs, but in general, I wouldn't want to change it.	1	2	3	4	5	6
49	I judge myself by what I think is important, not by the values of what others think is important.	1	2	3	4	5	6
50	I have been able to build a home and a lifestyle for myself that is much to my liking.	1	2	3	4	5	6
51	There is truth to the saying you can't teach an old dog new tricks.	1	2	3	4	5	6
52	I know that I can trust my friends, and they know they can trust me.	1	2	3	4	5	6
53	es feel as if I've done s to do in life.	1	2	3	4	5	6
54	When I compare myself to friends and acquaintances, it makes me feel good about who I am.	1	2	3	4	5	6

PART 3. The following set of questions deals with your religious faith. Indicate your level of agreement or disagreement to each statement. There are no right or wrong answers.

Santa Clara Strength of Religious Faith Questionnaire (1997)

	Statements	Strongly Disagree	Disagree	Agree	Strongly Agree
1	I pray daily	1	2	3	4
2	I look to my faith as providing meaning and purpose in my life	1	2	3	4
3	I consider myself active in my faith or church	1	2	3	4
4	I enjoy being around others who share my faith	1	2	3	4
5	My faith impacts many of my decisions	1	2	3	4

Research Flyer

PURPOSE IN LIFE

EMPOWERED

PERSONAL GROWTH

**Are You Pregnant?
18 or 19 Years Old?**

**Lived in The Bahamas
For at least 10 years?**

Attending Antenatal Clinic?

**Interested In Filling Out
a 20 Minute Questionnaire
On “Health Empowerment”
In young mothers?**

**INFORM THE RECEPTIONIST
& GET MORE INFORMATION**

RELIGIOSITY

AUTONOMY

ENVIRONMENTAL MASTERY

RELATIONSHIP WITH OTHERS

SELF ACCEPTANCE

Appendix D

Consent Form

RESEARCH SUBJECT INFORMATION AND CONSENT FORM EMPOWERMENT IN ADOLESCENT PREGNANCY

You are being asked to volunteer to participate in a research study about feelings and needs of adolescent mothers. Before you agree to participate in this research study, please read the following and ask as many questions as you need to understand the study and what we are asking you to do.

The purpose of the study is to collect information to determine the level of empowerment in young mothers. A total of 75 -100 adolescent mothers are expected to participate in this initial study.

You will be invited to answer questions on a questionnaire that should take 20 – 30 minutes. The questions ask you about your relationship with self, others and your environment, as well as how you feel about your life. If you feel uncomfortable answering any of the questions, you can choose not to answer them.

No direct benefits can be promised to you for taking part in this study; however, it is hoped that the information obtained will be used to give direction to future studies as well as programs to assist adolescents in the future.

Each questionnaire will be allocated a code number that will be used to identify all your information. All information will be maintained in locked cabinets. Only the study researchers will have access to this information. When we report the results of this study, we will be reporting group results. Your records and results will not be identified as belonging to you without your expressed permission. Your questionnaire may be reviewed for audit purposes by authorized University of Miami employees who will be bound by the same provisions of confidentiality as the researcher.

Your responses will be kept confidential to the extent permitted by law. The only exception is if information is revealed concerning harm to yourself or others, child abuse and/or neglect, or other forms of abuse that are required by law to be reported to the appropriate authorities

Your participation in this study is voluntary. You may decide not to participate in this study. If you do participate, you may freely withdraw from the study at any time. Your

decision will not result in any penalty or loss of benefits to which you are entitled. The care you receive at Antenatal Clinic will not be affected.

PI CONTACT INFORMATION: Shirley Curtis, University of Miami 305-284-4099

If you have any questions relating to your rights as a research subject, please contact the University of Miami's HUMAN SUBJECTS RESEARCH OFFICE (HRSO), at 305-243-3195.

I have read (or have had read to me) the information in this consent form and associated information.

I have been given the opportunity to ask questions about this study. I freely agree to participate.

By signing this consent form, I have not waived any of the legal rights which I otherwise would have as a subject in a research study.

CONSENT SIGNATURE:

Name of Participant	Signature	of	Participant
	Date		

(Typed or printed)

Name of Person Obtaining	Signature of Person Obtaining
Informed Consent	Informed Consent
	Date _____

Appendix E

Sample of the e Business Card



Appendix F

Application to the Ethics Committee (Bahamas)

MINISTRY OF HEALTH

NASSAU BAHAMAS

ETHICS COMMITTEE

APPLICATION TO CONDUCT RESEARCH

EC ID # _____

SECTION A

1. Name: **Shirley E. Curtis**

Address **15 00 Venera Ave** _____

City /State **Coral Gables , Florida** _____

Phone: (day time) **1-305-812-6162 (C) 1-305-284-4099 (W)** _____

Phone: (evening) **1-305-456-8328** _____

Fax **1-305-284-4221** _____

E-mail Address **s.curtis1@umiami.edu** _____

Title **MS** _____

2. Project Review:

New Project (ID No. will be assigned) _____

Revised Project (enter EC ID #) _____

Renewal (enter EC ID #) _____

3. Data Collection Dates: From **Nov / / 2010** to **FEB / / 2011**

4. Project Period from November 2010 to June 2011
5. Project Title An Empowerment Theory Approach to Repeated Pregnancies In Adolescents, In The Bahamas.
6. Description of Participants (Enter approx. no. of participants and categories that apply)
 Number 110 Gender: Female Male
- Prisoners Children (16yrs or younger) Patients in institutions
 Pregnant Women College Students
- Other _____
7. Funding Source NONE
8. Where will this study be conducted In the antenatal clinics in Nassau, & Grand Bahama. Other islands will be used if necessary to acquire an adequate sample
9. How far is the nearest emergency facility from the research site N/A
10. Does this project utilize an **investigational drug, device or procedure**?
 Yes No (If yes attach copy of protocols for administration of drug type or dosage).
11. Does this project involve the use of **materials of human origin** (e.g. human blood or tissue?) Yes No

SECTION B: Please provide information as requested under the following headings, additional sheets of paper may be used to respond fully.

1. Project Description

Provide a brief description of the research project, objectives of your research, hypothesis study population, methodology and, data collection procedures, data analysis, any other procedures or special conditions or locations.

2. Participant Recruitment

Describe in detail the sources of potential participants, how will they be selected and recruited (attach copies of letters or announcements), how and where will you contact them. Describe age, ethnic background, gender, institutional affiliation and general mental and physical health.

What inducement is offered if any? **\$5.00 phone card or gift certificate**

Could the Participants incur additional financial costs as a result of their participation in this study? Yes No **X**

If a cooperating institution (school, hospital prison etc.) is involved, prior written permission must be obtained. (Submit approval letter).

- **IRB at the University of Miami would like to see approval (at least in principle) from the participating country or institution before final approval is given**

3. Confidentiality of Data

Describe procedures that will be used to safeguard identifiable records and insure confidentiality and anonymity of participants and related information.

- **No names will be placed on the questionnaires only a number that will be used for data coding. Names will only be requested for the consent forms. Consent forms and questionnaires will not be kept together. Once collected they will be placed in separate envelopes. Upon completion, the questionnaires and consent forms will be kept by the researcher in a secured satchel and transported back to the United States in carry-on luggage. Once in the United States the questionnaires will be secured in a locked filing cabinet in the researchers locked**

office at the School of Nursing at the University of Miami. The data will be entered in a password protected computer and backed up on a password protected UBS drive. No names will be used in the analysis or the discussion of the findings.

4. Risks and Benefits

Describe any actual or anticipated risks (psychological, social, legal or economic risks, side effects, risk of placebo, normal treatment etc) whether immediate or long term to the participants. Indicate any precautions that will be taken to minimize these risks. Describe any benefits to the participant and to society from the knowledge gained from this study.

- **There are no actual or anticipated psychological, social, legal or economic risks to the participants from participating in this study.**

The benefits to the participants are not direct, although the questions might encourage them to think about the meaning and direction in their lives.

5. Informed Consent

Informed consent can be either in written or oral format. If oral consent is planned a copy of the statement must be submitted. The consent should include: (include copy of consent form)

Identification of researcher(s)

Explanation of the nature and purpose of the study and research method

Duration of research participation

Description of how confidentiality/anonymity will be maintained

The right to refuse to answer any specific question that may be asked

Participants' right to withdraw anytime they wish without penalty

The voluntary nature of the study

Information about potential or anticipated risks or lack thereof

Contact person regarding questions about rights or injuries

➤ **Consent form attached**

6. Debriefing Statement

This is required if deception was used to obtain results from the participants.

State why deception justified and how participants will be debriefed about your project.

➤ **Not Applicable**

SECTION C

1. The researcher /investigator is required to notify the EC if there are any substantive changes to research protocol, any unexpected adverse events experienced by participants during the research..

NOTE

When the research project is nearing completion, the researcher/investigator must submit a **Notice of Project Ending** to the NEC. If the research project lasts longer than one year, the researcher/investigator must submit a **Request for Continuation** at the end of each year. Failure to do so may result in disciplinary actions. Copies of informed consent forms and data must be kept for at least three years.

➤ **Noted**

2. Compliance Agreement

I agree to follow the procedures outline in the summary descriptions and any attachments to ensure the rights and welfare of human participants in my projects. I

understand that the study will not commence until I have received approval from the EC. I have complied with any required modification in connection with that approval. Any additions or changes in the procedures involving human participants or any problems with the rights or welfare of the human participants must promptly be reported to the EC. **I also understand that if the project continues for more than one year from the approval date, it must be resubmitted as a renewal application.**

I acknowledge that the information contained in this application is accurate and I accept responsibility for the conduct of this research, supervision of human participants and the maintenance of informed consent documents as required by the EC.

Shirley Curtis _____ s.curtis1@umiami.edu 1st October, 2010

Signature of Principal Investigator E - mail address Date

Signature of Co- Investigators (s) E – mail address
Date

SECTION D: OFFICIAL USE ONLY

Date received: _____

EC ID# _____

EC Action: Approved Disapproved Modification required

Chief Medical Officer

Date

Chairperson EC

Date

Secretary EC

Date

Before submitting your Application please review the check list on the following page