THE RELATIONSHIP BETWEEN PRENATAL SELF- CARE PRACTICES DURING PREGNANCY AND BIRTH OUTCOMES AMONG YOUNG MOTHERS AGED 16 TO 24 YEARS DELIVERING AT GWERU MATERNITY HOSPITAL

BY

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ABSTRACT

Youth pregnancy is an important public health problem since it occurs in the context of poor social support and maternal wellbeing. Age at which child bearing begins has an impact on the health and welfare of the mother and her children, with young mothers being more likely to experience adverse birth outcomes. Highest pregnancy rates in the world are in sub – Saharan Africa where maternal deaths in the 16 – 24 years age group is twice as high as their older counterparts. In Zimbabwe 21% of women aged 16 – 24 years have begun child bearing with rural youths and those with less education tending to start earlier (Ministry of Health and Child Welfare, 2009).

The purpose of the study was to examine the relationship between Prenatal Self-Care Practices during pregnancy and Birth Outcomes among young mothers aged 16 – 24 years delivering at Gweru Maternity Hospital. Orem's Self-Care model was used to guide the study focusing on the Self-Care, Self-Care Deficit and Supportive Educative Nursing System concepts. A descriptive correlation research design was used. A sample of 80 participants was selected through systematic random sampling, a probability sampling procedure. An interview schedule was used to collect data on self-care practices and birth outcomes. Data was analysed using the Statistical Package for Social Sciences (SPSS). Descriptive and inferential statistics was used to analyse data. Pearson coefficient correlation test was used to analyse the relationship between the two variables, which revealed a significant moderate positive relationship of (r.340 p<0.01) this explained that as self-care practices during pregnancy increases, birth outcomes improved. Midwifery practice should adapt protocols to support individualised self-care practices to maximise improvement in birth outcomes. Further research and inquiry is needed to explore other factors and variables that could have attributed to the high rates of adverse birth outcomes in young women.

ACKNOWLEDGEMENTS

DEDICATION

To my late father Takavada Gomora, you will always be my undisputed hero .Rest in eternal
peace, I will always love you.

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CHAPTER 1

BACKGROUND AND ORGANIZING FRAME WORK

Birth outcomes refer to the end result of a pregnancy, (Baker, 2003). They are a category of measures that describe the health of babies at birth and mother's health. Birth outcomes represent a child's current and future morbidity as well as premature mortality risk, (Gupta, 2010). The most common adverse birth related outcomes of interest are low birth weight, low Apgar scoring, still birth, small for gestational age, intrauterine deaths, fetal loss and an increased risk for mortality and intrauterine growth retardation. Birth outcomes that affect the young mothers are, post partum haemorrhage, pregnancy induced hypertension, anaemia and infections including HIV/AIDS, (Myles, 2008). Low birth weight is unique as a birth outcome because it represents maternal exposure to health risks and it serves as a predictor of premature mortality and morbidity over the life course (Myles, 2008). Low birth weight babies have greater rate of respiratory conditions. In a systematic review, Wincup, (2009), found out that low birth weight was associated with an elevated risk of developing type 2 diabetes mellitus, cognitive development problem, higher rates of sensorineural impairments such as cerebral palsy, visual, auditory and intellectual impairments. Preterm birth, defined as delivery before 37 weeks of gestation, may result in major problems including neurological damage from brain haemorrhage or respiratory distress from immature lungs,(Sellers,2009). Very preterm infants pose a substantial burden on special care services, on families and caretakers of the infants. They may develop lower median intelligent quotient and may have learning deficits compared to their peers causing a substantial burden on educational and social services (Ronsmans & Campbel, 2009). Intrauterine growth retardation is a subtype of LBW of extra ordinary importance to developing countries. It is a condition where fetal growth has

been constrained in utero. Gestational age which is correlated to birth weight can result as small for gestational age birth outcome, (Shawky & Milaat, 2006). Apgar score is an index used to evaluate the condition of a new born infant based on a rating for each characteristic including colour, heart rate, response to stimuli, muscle tone and respiration with 7-   10 being the perfect score and scores less than 7 at five minutes after birth are indicative of poor adaptation to extra uterine life, (Fraser & Cooper, 2006). Low Apgar score is thus an adverse birth outcome that contributes to neonatal and infant mortality. Low Apgar score birth outcome is as a result of mainly low birth weight, (Smith & Pell, 2001). Low birth weight and prematurity births combined are the leading cause of illness for all United States of America infants and a leading cause of deaths for African infants. These are the major determinants of child survival, (Towsend, 2006). In Sub-Saharan Africa infants born with these adverse birth outcomes may die in their first year of life. In Zimbabwe more than 20% of deaths in neonates are due to LBW-these children who do survive are more likely to need extra neonatal care, suffer subsequent illnesses and are prone to suffer cognitive and neurological impairments during childhood and into adulthood, (Alderman & Behrman, 2007).

 Zimbabwe like any other Sub-Saharan African country bears a heavy burden of neonatal mortality when compared to other countries in other regions of the world. Neonatal mortality levels play an important role in child mortality. The proportion of child deaths which occur in the neonatal period has increased worldwide. Neonatal deaths make up 60% of United Kingdom's relatively high infant mortality rate. In Africa, an alarming rate of 341 neonatal deaths per 1000 live births has been reported in 2011, (United Nation Children Education Fund, 2011). Zimbabwe neonatal deaths are at 29, 5 deaths per 1000 live births, (Kanyowa, 2009). Pregnancy induced

hypertension is estimated to affect 7-10% of all youth pregnancies in the United States, (Myles, 2003). In developing countries it is the main cause of deaths. Pregnancy induced hypertension is also known as pre-eclampsia, if left untreated can lead to serious even fatal complications for the mother and baby. Iron deficiency anaemia affects about half of all pregnant women in developing countries. Young mothers with severe anaemia are at increased risk of maternal death as they succumb to post-partum haemorrhage and increased susceptibility to infections. Pregnant young mothers are more prone to post-partum haemorrhage (PPH) because if the young woman's uterus is not yet fully developed, it becomes over distended by pregnancy. Over distended uterus does not contract as readily as of older women's uterus this will lead to post-partum haemorrhage, (Pilliteri, 2006).The same author cited that the PPH is compounded by anaemia during pregnancy.

Self care practices refer to decisions and actions that an individual can take to cope with a health problem or to improve health, (Orem, 2001). The same author states that the benefits of self care include lower cost for the health care system, increased individual satisfaction and improved perception of one's health condition. Many pregnant young mothers are subjected to nutritional deficiencies from poor eating habits. Pregnancy of a still growing girl means an increase in nutritional requirements not only for the growth of the fetus but also for the mother. Young people face unprecedented challenges among them, STI, including HIV because of lack of self awareness, (UNFPA, 2011). The pregnant young women may shun disclosure of pregnancy for fear of stigma and parental discovery. These actions may delay interventions to help the pregnant women to initiate self care practices. In a study done by Mancini and Witter, (2003), on pregnant African-American young mothers to assess self care practices, results showed that a higher percentage reported history of

cigarette smoking and it was a significant predictor of decreased infant birth weight. Youth is a time of experimenting and testing the boundaries. This may result in increased incidence of risk behaviours including inadequate prenatal care, use of illicit drugs, unprotected sexual activities and this may affect the health of both the baby and mother, (UNAIDS, 2010).

Problem Statement

The health, social and psychological wellbeing of young women are likely to be disadvantaged by pregnancy and child birth (Friedman, Fisher & Khashan, 2006). Young fertility is a global population concern. More than 15 million female youths world wide experience child birth each year. Most of these births occur among young women in developing countries, (Dryfoos, 2005). Early marriage and child bearing are of concern due to the adverse health effects of child bearing at young age and lack of access to, or unavailability of reproductive services (United Nations, 2007).

Youth motherhood adversely affects birth outcomes (UNFPA, UNICEF & WHO, 2009). The investigator was prompted to conduct the study because of the rates of adverse birth outcomes in young women which are high despite other medical interventions being instituted. Figures from the delivery registers, (Unpublished statistics, 2010), at Gweru maternity hospital, revealed that for the year 2010 annual deliveries were 3984 and 70% of the deliveries were youths, (2788), 16.7% resulted in adverse birth outcomes. These included low Apgar score, still births, prematurity and low birth weight. For the period January to November 2011, the institution recorded 2043 young mothers' deliveries with 20% resulting in adverse birth outcomes. The maternal outcomes recorded included post-partum haemorrhage, hypotension,

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significant anaemia, placenta praevia, pregnancy induced hypertension and infections among them HIV/AIDS.

About 16 million young girls aged 16-24 give birth each year, roughly 11% of all births worldwide and 95% of these births occur in the developing countries. The United Kingdom has the highest rates of adolescent conception in Europe, of over one million youth pregnancies a year. The rate of these pregnancies for the United States of America is 52, 1 per 1000, the highest in the developed world and about 4 times the European Union average. Pregnant youths in the United States of America are at high risk of adverse birth out comes; these include prematurity, low birth weight and increased perinatal mortality. The risks are thought to be associated with low socio-economic factors as young mothers are often poor, have lower educational levels and may receive sub-optimal prenatal care. In Niger, 87% of women surveyed were married and 53% had given birth to a child before age 18. The highest number of youth pregnancies in the world is in the Sub-Saharan Africa where women marry at an early age. An analysis of survey data from 51 developing countries showed that almost 10% of the girls were mothers by age 16, with the highest rates in Sub-Saharan Africa, (UNFPA,2011).

In Zimbabwe, in a study done by Mitra, (2005), findings revealed that about 60% of young women were married by the time they were 18 years of age and those with less education tending to start child bearing earlier.   These mothers are about 2 years behind their age group in completing their education and they are likely to have a second child within 2 years after the first child. According to UNAIDS (2005) report, education plays an important role in predicting how well an individual is able to incorporate current life messages into their sexual behaviour. Maternal conditions in adolescents cause 13% of all deaths and 23% of all disability adjusted life years.

Factors contributing to youth pregnancy are many and varied. Early marriage which leads to a higher rate of child bearing and an increased risk of illness to mothers and their babies are some of the factors. Ignorance of sexuality leads to unwanted pregnancies (WHO, 2007). Ignorance, and the erratic and non-use of contraceptives by youths leads to pregnancy. Youths may lack knowledge of access to conventional methods of preventing pregnancy, as they may be too embarrassed or frightened to seek such information. Sellers, (2009), cited experimentation as a means to establish a sense of individuality and sex oriented mass media expose youths to a more sexually oriented environment. In some African countries, Zimbabwe included, cultural and religious practices like early and forced marriages contribute to youth pregnancy. Early onset of puberty combined with more peer pressure and less parental supervision result in youths being faced with making premature sexual decisions, (Farber, Rodriquez & Moore, 2003). Variety of factors place young mothers at risk of HIV/AIDS exposure, predominantly those from vulnerable ethnic/racial groups and living in poverty. Many of these mothers have been engaging in unprotected sexual activity and have had more than one sexual partner, have a history of sexually transmitted infection and have experienced sexual abuse, (Ventura, 2003). In developing countries, youths pregnancies are associated with many social issues including low educational level, higher rates of poverty and substance abuse. Studies from South Africa have found out that 11-20% of pregnancies in youths are a direct result of rape while about 60% of young mothers had unwanted sexual experiences preceding their pregnancies. The same author acknowledged that premarital sexual relation is being condoned by many but the social acceptance of the unwed mother and of cohabitation denotes the change of social attitude to sexuality. The notion that abortion is needed for so many school going youths is a disturbing outcome of social pressures regarding sex in that immature group. Multiple studies have indicated a

strong link between early childhood sexual abuse and subsequent youths pregnancy in industrialised countries (Ventura, 2003).

Many pregnant youths are subjected to nutritional deficiencies from poor eating habits, including attempts to lose weight through dieting, skipping meals, food faddism, snacking and consumption of fast foods, (Wallis, 2009). Inadequate nutrition during pregnancy is an even more marked problem among youths in developing countries, (WHO, 2007). The nutritional needs of pregnant youths are the greatest at a time when it is most difficult to meet them, as trying unconventional diets are common eating behaviours among young mothers which relate to their changing life styles at increased independence, busy schedules, search for self-identity, peer influences, group conformity and body image dissatisfaction, (Zabin, 2009). Pregnant youths are not aware of danger signs of pregnancy complications. They are ashamed or afraid to seek care, not seeking care or delaying seeking care in the presence of danger signs results in maternal mortality due to complications of pregnancy, (WHO, 2007). Delayed entry into prenatal care may be the result of late recognition of pregnancy, or lack of knowledge about services available and lack of financial resources as Phiri (2010) posited that the majority of Zimbabwean women are not gainfully employed and depend on the benevolence of their husbands or male partners. Wong (2006) argued that even young women at work outside the home have changed the domestic and nutritional way of life and may be deprived of sufficient nutrition and rest which can have a detrimental effect on fetal and maternal welfare.` Fear of stigma and discrimination may lead to failing to disclose the pregnancy. Early entry into ANC is important for early detection and treatment of possible complications, this includes blood pressure monitoring, weighing among many interventions, (Moore, 2003). Elfenbein & Felice (2011) in his study stated that lack

of prenatal care may subject the young woman to illness and death for both the mother and baby. The birth outcomes the young woman may succumb to are intra-uterine growth retardation, intra-uterine death, prematurity, low birth weight, low apgar and still birth. Risks for medical complications are also great such as obstructed labour, eclampsia, and obstetric fistula. The woman may also succumb to placenta praevia, pregnancy induced hypertension, significant anaemia and a host of infections. Youth motherhood adversely affects psychologically, and the woman may experience feelings of guilt, denial and anger. This coupled by delay in seeking prenatal care, puts the life of pregnant youth and the unborn baby in danger. Few studies have been done about the contribution of youths prenatal self-care practices during pregnancy to prenatal birth outcomes. Knowledge obtained from the study will assist youths to avoid practices that put them at risk of adverse birth outcomes. The study will form the basis that will guide maternal and child health and midwifery practice in determining self-care requisites and therapeutic self care demands that each individual pregnant adolescent is faced with, enabling the midwife to act, support and teach the pregnant youths and significant others. Nevertheless, youth reproductive behaviour has received considerable less attention in Zimbabwe than it deserves. A massive maternal-child health services and programmes have been functioning all over the country for the past thirty years. The programme did not place much emphasis on young women sexuality and an unsatisfactory situation still prevails regarding maternal service delivery to these women. The situation suggests various strategies for preventing adverse birth outcomes through information dissemination to young girls. The midwife provides advice, counselling and care to youths in relation to danger of adverse birth outcomes as a result of poor self care practices, (UNFPA, 2007). There are gaps of knowledge to explain an association of prenatal self care

practices during pregnancy and birth outcomes among young mothers which was the focus of this study.

Purpose of the Study

The purpose of the study is to examine the relationship between prenatal self care practices during pregnancy and birth outcomes among young mothers aged 16-24years delivering at Gweru Maternity hospital.

Theoretical Framework

The organizing framework to guide this study was Orem's self care theory. It has 3 major concepts namely self-care, self-care deficit and nursing systems. These concepts are discussed in the context of the nursing metaparadigm concepts of person, environment, health and nursing. Orem (1991) described the person as a human being, a unity that can be viewed as functioning biologically, symbolically and socially. Orem's assumption is that a person should be self-reliant and responsible for their own care and others in their family needing care. According to Orem (1991) self-care constitutes those activities performed to maintain life and health.

Self-care requisites are the actions or measures used to provide self-care. These are grouped into universal self-care requisites, developmental self-care requisites and health deviation self-care requisites. Self-care agency is the person's ability to perform self-care activities. Internal and external factors influence the person's ability to perform self-care as well as the kind and amount of self-care that is required. These factors include the person's age, gender, developmental state, health state, family system factors, resource availability and adequacy as well as socio-cultural orientation and health care system factors (Orem, 1991). In youth's pregnancy, the person's age,

developmental state and family system factors greatly influence their self-care practices. In this study self-care agency is the ability of the pregnant youth to perform self-care activities that promote their own health and the health, development and growth of the baby in utero, such as good nutrition, early prenatal care, avoiding alcohol, unprotected sexual activities and smoking cigarettes. The environment is described by Orem (1991) in terms of physical, chemical, biological and social features. Relevant social features include family factors like roles and responsibilities of its members, nature of relationship, the resources and cultural elements regarding patterns of self-care and selection and use of self-care measures. Lack of family system support in young mothers interferes with their self-care practices such as early entry into prenatal care which may result in adverse birth outcomes.

Orem (1991) defined health as the state of the person that is characterized by soundness or wholeness of developed human structures and of bodily and mental functioning. This integrated functioning, according to Orem, requires continuous self-care that has therapeutic quality. Orem states that persons will request for nursing only when they experience a lack in performing particular self-care activities. Thus self-care deficit arises when the pregnant woman cannot meet the self-care requisites such as early entry into prenatal care.

Nursing is literally defined by Orem (1991) as attending to and providing close care of a person, unable to care for self, with the goal of helping the person become sound in health and self-sufficient. The theory of nursing systems refers to a series of actions nurses take to meet a patient/client's self-care requisites. It is composed of three systems which are wholly compensatory, partly compensatory and supportive educative. Nursing may only be rendered to the pregnant young women who seek antenatal care as a self-care practice.

This study will focus on Orem's concepts of self-care, self-care deficit and the supportive educative nursing system. The goal of the supportive educative nursing system is to help the person become sound in health and be self-sufficient. The study is based on the premise that as self-care practices during pregnancy improves; birth outcomes improve (See Figure 1).

| SELF-CARE DEFICIT | | SUPPORTIVE EDUCATIVE | | EFFECTIVE SELF-CARE |

ADVERSE BIRTH OUTCOMES		SELF-CARE PRACTICES		IMPROVED BIRTH OUTCOMES
Low birth weight.	→	Prenatal care.	→	Birth weight of above 2500g.
Low Apgar.		Good nutrition.		Live births.
Still births.		Avoid substance abuse.		No post-partum haemorrhage.
Post-partum haemorrhage.		Safer sex practices.		
		Self –awareness of being		
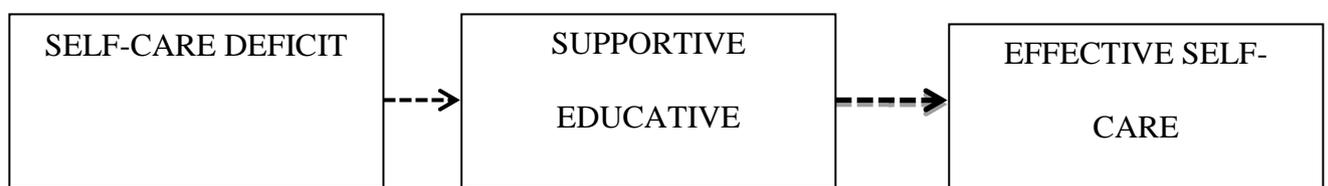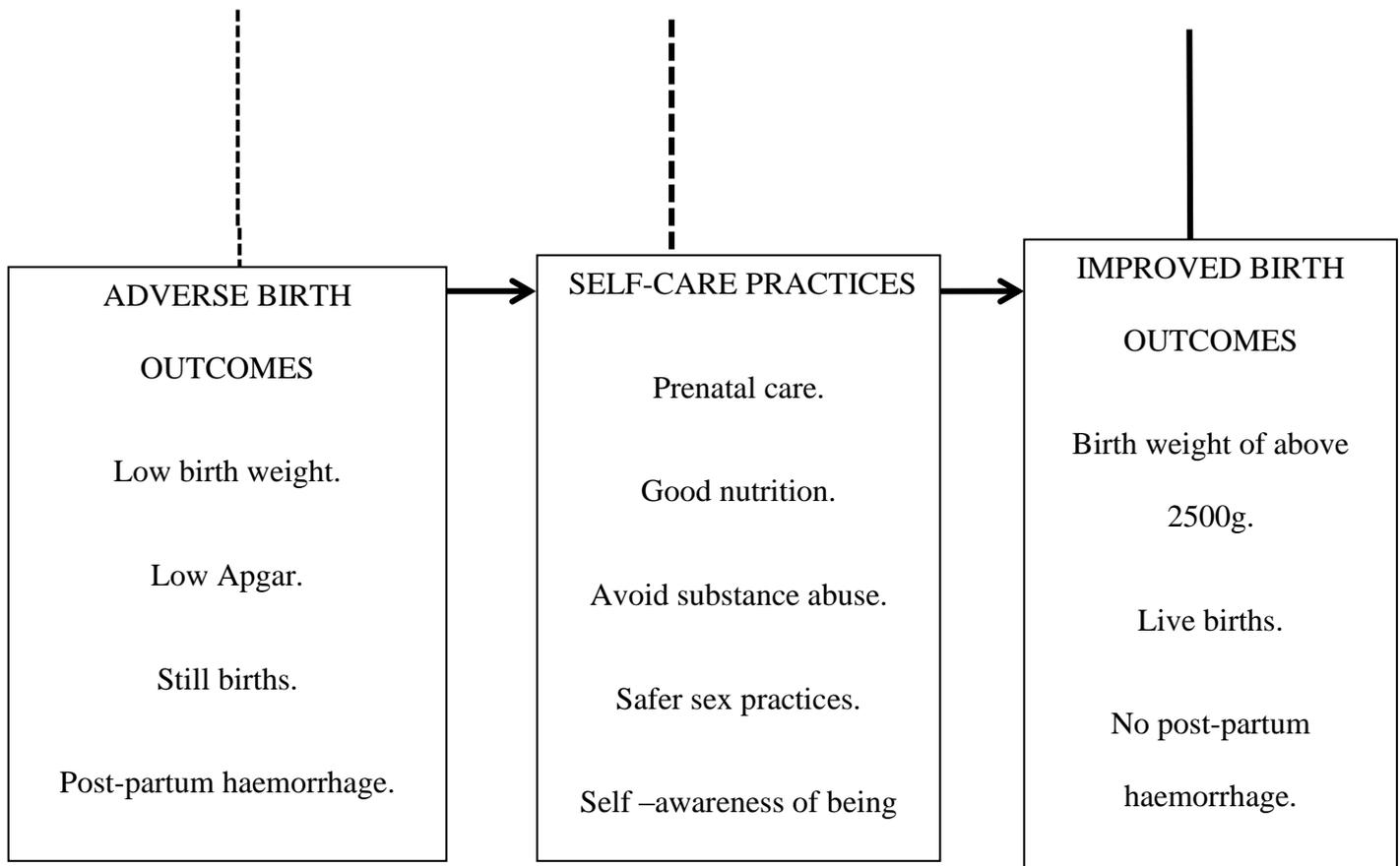
Figure 1: Adapted from Orem's self-care model (1991)

Conceptual Definition of Terms

Self-care is defined by Orem (1991) as behaviour that exists in concrete life situations directed by persons to self or to the environment to regulate factors that affect their own development and functioning in the interests of life, health or well-being.

Self-care practices are a key concept in health promotion that involves decisions and actions that an individual can take to cope with a health problem or to improve his or her health, (Woods, 2010). The same source states that the benefits of self-care include lower cost for the health care system, increased individual satisfaction and an improved perception of one's health condition. In this study self-care practices will refer to awareness of being pregnant and disclosure of pregnancy, prenatal care, eating habits and nutrition as well as avoiding substance (drug and alcohol) abuse and unprotected sexual activities.

Birth-outcomes: Birth outcomes are a category of measures that describe the health of babies and mothers at birth. Birth outcomes represent a child's current and future morbidity and future mortality as well as the mother's morbidity, (Gupta, 2010).In this study adverse birth outcomes will mean , low birth weight, prematurity, low Apgar score, still births, small for gestational age, intra-uterine deaths, and increased mortality among others. Birth outcomes that affect the young women are, post-partum haemorrhage, pregnancy induced hypertension, anaemia and infections including HIV/AIDS, (Myles, 2008).

Youth is defined as a person aged 15-24 years (UNICEF, UNFPA&WHO,2012) .In this study a young mother refers to a young girl aged 16 through 24 years, in a state of development between puberty and maturity.

Pregnancy: A period from conception to delivery of the fetus, normal duration is 40 weeks, (Tiran, 2008).

Research Objectives

- To determine the adverse birth outcomes in young women aged 16-24 years at Gweru Maternity Hospital.

- To assess the prenatal self care practices during pregnancy of young women aged 16-24 years at Gweru Maternity Hospital.

- To examine the relationship between prenatal self care practices during pregnancy and birth outcomes in young women aged 16-24years at Gweru Maternity Hospital.

Research Questions

- What are the adverse birth outcomes in young mothers aged 16-24years at Gweru Maternity Hospital?

- What are the prenatal self care practices during pregnancy of young mothers aged 16-24 years at Gweru Maternity Hospital?

- What is the relationship between self care practices during pregnancy and birth outcomes in young   mothers aged 16-24 years at Gweru Maternity Hospital?

Significance of the Study to Nursing

The goal of nursing is to render the patient or members of the family capable of meeting the patient's self-care needs (Orem, 1991). The findings of the study may

help the pregnant young mothers strengthen her ability to engage in self-care thereby promoting positive prenatal outcomes. Knowledge obtained from the study may assist clients to avoid those practices that lead to adverse outcomes. Findings from the study may add to the body of knowledge on youth pregnancy. The study findings may also form a basis that will guide Maternal and Child Health & Midwifery practice in determining self-care requisites and therapeutic self-care demands that each individual pregnant youth is faced with, enabling the midwife to devise appropriate interventions as they act for, do for, support and teach the pregnant youths and significant others. As nursing is concerned with assisting individuals or groups in society to attain, maintain and restore health, the findings may assist in formulation of strategies to address issues pertaining to MCH/Midwifery in the province. Lastly, the findings of the study may form a basis for further research on youths pregnancy.

CHAPTER 2

LITERATURE REVIEW

Literature review is a critical summary of research on a topic, often prepared to put a research problem in context or to summarise existing evidence, (Polit & Beck, 2010). In this study literature related to self care practices during pregnancy and birth outcomes in young mothers, their relationship and the utilisation of Orem's self care theory were discussed.

Birth Outcomes of Pregnancy.

Birth outcomes refer to the end result of a pregnancy, (Baker, & Hanglund, 2010). They are a category of measures that describe the health of babies at birth and mother's health. Birth outcomes represent a child's current and future morbidity as well as increased mortality risk, for the mothers, (Gupta, 2010). The most common adverse birth outcomes of interest are low birth weight, low Apgar scoring, still birth, small for gestational age, intrauterine deaths, fetal loss and an increased risk for mortality. Maternal outcomes are post-partum haemorrhage; pregnancy induced hypertension, anaemia and increased risk for maternal infections among them HIV/AIDS.

Prematurity is the term used for infants born before 37 weeks of gestation. Most but not all premature infants weigh less than 2500 grams, (Myles, 2009).Preterm birth may result in major problems including neurological damage from brain haemorrhage or respiratory distress from immature lungs. A premature infant has organs that are not fully grown and will require special care until the organ systems have developed enough to sustain life without medical support, (Bennet &Brown, 2007). Very

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preterm infants have lower median IQ scores and they have global learning deficits in later life than their peers. Therefore, preterm birth may impose a substantial burden on special education and social services on families and caretakers of infants and on society generally,(Wincup,2009). Khashan, Kenny & Baker, (2010) in their study on preterm births in young mothers, concluded that increase in risk of poor pregnancy outcomes such as preterm delivery is related to the biological immaturity of the mother. However the increased risk in third and fourth pregnancies according to the authors is related to maternal depletion syndrome. The results might highlight the importance of ensuring that young mothers have appropriate prenatal care, (Khashan, Baker & Kenny, 2010). Findings from a study carried out by the American college of obstetricians and gynaecologists, (2003) on determinants of poor pregnancy outcomes among young mothers in Sweden were that, compared with women above 24 years, these young mothers were at a higher risk for preterm births. These results according to the report suggest that young maternal age may be a biological risk factor for preterm delivery. Whether maternal age alone predisposes to preterm delivery or other factors like self care practices during pregnancy among young mothers, still needs to be examined. Pregnant youths are more likely to have preterm babies compared to older women as their uteruses are not fully grown. Furthermore, African-American youths are as twice to deliver babies that are preterm than white mothers, (Mancini & Witter, 2003).

Low birth weight is defined as weight less than 2500grams at birth, (CDC, 2010). Low birth weight infants are likely to have organs that are not fully developed which can result in complications such as bleeding in the brain, respiratory distress syndrome and intestinal problems. According to Chiweshe, (2010), babies born to young mothers are more likely to be premature due to the biological immaturity of the

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women. Phiri, (2009), carried out a study in Bindura, Zimbabwe on risk factors associated with low birth weight. Findings were that maternal risk factors for low birth weight were higher in women aged less than 24 years .The study also concluded that most of the risk factors can be modified to reduce low birth weight. More research is therefore necessary on whether self-care practices among young mothers play a role in modifying the maternal risk factors for low birth weight. Birth weight is a powerful predictor of infant growth and survival. Infants born with a low birth weight begin life immediately disadvantaged and face extremely poor survival rates. Approximately, every ten seconds an infant from a developing country dies from a disease/infection that can be attributed to low birth weight, (Moore, 2003). Each year approximately 17 million infants are born with low birth weight in developing countries. Many of these infants who survive suffer cognitive and neurological impairment. Moreover a child born with low birth weight has in later life a greater risk of illness and premature death from cardiac diseases, hypertension and diabetes mellitus compared to others with adequate birth weight. Low birth weight is an intergenerational problem in which low birth weight infants grow up to be undernourished and stunted children and adolescents and ultimately undernourished women of child bearing age and pregnant women who themselves deliver low birth weight infants, (Baker, 2003). It is estimated that in Bangladesh almost half of the infants' death from pneumonia or diarrhoea could be prevented if low birth weight were eliminated, (WHO, 2005). It is therefore encouraging that the international public health community has began to increase its attention towards these LBW infants who die each year and the many more who survive with a diminished quality of life, (Wong, 2006). The same author cited that LBW is a reasonably well defined problem caused by factors that are potentially modifiable. Little progress has been made in recent years in reducing the prevalence of LBW and many maternal

reproductive risk factors are associated with maternal age and probably self care practices during pregnancy, (Zhu, 2006). These infants are usually associated with infant mortality, serious childhood illness and mental and physical disabilities. Various studies have also shown that along with socio-economic conditions, malnutrition and age are considered as significant factors in giving birth to underweight babies. The incidence of LBW is more than double the rate for adult pregnancy, and the neonatal death rate is almost 3 times higher. Low birth weight raises the probability of a number of adverse conditions, including infant death, blindness, mental retardation and cerebral palsy (Ventura, 2003). Health risks are greater for very low birth weight babies. Although gestational age may be a better measure than LBW as it better accounts for a child's neurological and physical development at birth, gestational age may be difficult to ascertain, whereas birth weight is easily measured and reported, (Bailely & Bergsjo,2007).From the perspective of maternal health outcomes, LBW indicates maternal exposure to health risks in all categories of health factors, including her health behaviours, access to health care, the social and economic environment the mother inhabits and environmental risks she is exposed to, (Bailey & Bergsjo, 2007).The same authors found out that modifiable maternal health behaviours including weight gain ,smoking, alcohol and substance abuse, account for more than 10% of the variation in birth weight.

Intrauterine growth retardation is a subtype of LBW of extra ordinary importance to developing countries. It is a condition where fetal growth has been constrained in utero .The authors concluded that behavioural change communication strategies including those that defer pregnancy until after adolescents might be of vital importance to prevent adverse birth related outcome, arguing that women who give

birth when they are too young or have babies too closely spaced place their new born to increased risk of complications like intra uterine growth retardation (IUGR), (Wong,2006). However, Sellers (2009) disputed with the above authors proposing that high gestational weight gain in the mother does not always yield improved infant weight.

Apgar score is an index used to evaluate the condition of a new born infant based on a rating for each characteristic including colour, heart rate, response to stimuli, muscle tone and respiration with 7- 10 being the perfect score and scores less than 7 at five minutes after birth are indicative of poor adaptation to extra uterine life, (Fraser & Cooper, 2006). Low Apgar score is thus an adverse birth outcome that contributes to neonatal and infant mortality. Chen & Fleming, (2007) carried out a study on young mothers and adverse birth outcomes. Findings were   that infants born to young mothers had a high risk for low Apgar score at five minutes. The authors recommended further research on other causes of low Apgar score other than maternal age.

Still birth is one of the worse adverse infant related birth outcomes to befall an expecting mother, family or society. A still birth is defined by Fraser and Cooper (2003) as   delivery of a baby after 28 weeks of gestation who shows no sign of life. Baker and Haglund (2010), in their study on youth pregnancy and risk for early fetal death concluded that the increased risk for still birth is associated with maternal age with young mother being at increased risk. This observation is supported by Santhya, Ram, Achaya, Jejebhoy and Sigh, (2010), who carried out a study to examine the association between early marriage (age <24 years and late marriages age >24years and their reproductive outcomes. Findings were that young women who had married early were more likely than others to have had a miscarriage or stillbirth (17% vs.

9%). The authors recommended further study on whether the association reflects an elevated risk for adverse outcomes among women who become pregnant at a young age or difference between early and late marrying women in the adoption of preventive care practices and utilization of health care services during pregnancy.

According to Williams, (2005), maternal age reflects the risk of death of a child. Children born to mothers under 24 years are more likely to die before their first birthday. In this study findings were that the risk of dying for infants born to young mothers were elevated by about 30% compared to infants born to mothers aged above 24years.These infants have increased incidence of prematurity and low birth weight which is found to be the major determinant of child survival. Malawian demographic health survey in 2004 showed that children born to young mothers had higher mortality than their older counterparts (68% versus 38%). However, Pagnini, (2006), echoed that, the seemingly poorer birth outcomes of young mothers appear to result largely from their adverse socio-economic circumstances, not from young maternal age per se.

The WHO estimates that each year there are 4 million still births and of these deaths an estimated 98% occur in developing countries. The rate of stillbirth constantly increases with decreasing maternal age and birth intervals, (WHO, 2007). Youth fertility is related to child mortality in part because young mothers' bodies often have not yet fully developed. A pregnant young woman who is still growing maybe competing for nutrients with the fetus .Youths have poor information about reproduction and little access to family planning and reproductive health services (WHO, 2007). Infant mortality rate, a measure of child survival is considered to be one of the strongest indicators of a country's well being as it reflects, social, economic and environmental conditions in which mothers live and their health. In contrast,

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Ronsmans & Campbell, (2009), cited that, less is known about how biological and self care practices; for example, women vary in their capacity to conceive or carry a pregnancy to term. The mother's health and nutritional status at the start of pregnancy may affect the fetus in utero.

Iron deficiency anaemia affects about half of all pregnant women in developing countries. Young mothers want to watch their weight and so they will not eat and this will lead to iron deficiency anaemia. Deficit is increased because of haemodilution associated with pregnancy and growth demands of the fetus. Incidence of nutritional anaemia in pregnancy in developing countries is significantly high, (Dangal, 2005). Nutritional status of adolescents even long before pregnancy leads to nutritional anaemia. Young mothers with severe anaemia are at increased risk of maternal death as they succumb to post-partum haemorrhage and increased susceptibility to infections. Anaemia is still more common among young women than it ought to be and an active campaign for its prevention is long overdue. Young women with severe anaemia are at increased risk of maternal death, still births, early neonatal deaths and or cognitive impairments, (WHO, 2005). The author has the opinion that supplementation with iron may ease the effects of anaemia. As if the girl's body has identified a mineral lack, iron deficiency anaemia is associated with pica and ingestion of inedible substances. According to Baker (2003) the relationship between anaemia and adverse birth outcomes have been inconsistent, some studies have found anaemia to significantly increase the risk of adverse birth outcomes, but at the end of the spectrum elevated haemoglobin concentrations during pregnancy have been found to increase the risk of prematurity, low birth weight, intra-uterine growth restriction and fetal deaths. The same author cited results of a retrospective study undertaken on prenatal self-care practices of young women at an inner city maternity clinic, showed

that inadequate prenatal and low haemoglobin levels were significantly associated with adverse birth out comes like low birth weight, prematurity and intra-uterine growth restriction. However, Alderman and Berhman (2005) cited that the prevalence of anaemia among young women has not been studied much in Africa, Zimbabwe included.

Globally, 40% of HIV infections occur in youths, the prevalence rate of HIV infections among pregnant youths attending prenatal care in Zimbabwe is 13.1%. Many youths suffer from infections during pregnancy, and if not treated may also be passed to their babies in utero. Youths are prone to HIV infections that can be passed to the fetus, some infections like syphilis lead to blindness or congenital anomalies, (Fraser & Cooper, 2003).

Youth pregnancy is associated with higher rates of illness and deaths for the mother. In some African societies, death from violence was observed in pregnant youths, (Elfenbein & Felice, 2011). Despite heightened efforts to reduce maternal deaths in Zimbabwe over the past decade, the country lags behind in achieving both the national and international agreed targets of achieving Millennium Development Goal 5 (reduce maternal mortality). Maternal mortality remains high at about 728/100 000 live births, (Smith & Mafa, 2011). Recent estimates show that in Africa, young women who are at risk of dying from maternal causes are 1:19. Young women may die from obstructed labour, and asphyxia which may go unrecognized and untreated because only about half of adolescent women in less developed countries delay prenatal care, (UNICEF, 2006). Accounting for about 11% of all births worldwide, maternal conditions cause 13% of all deaths and 23% of all disability adjusted life years. According to Dangal, (2005), in developed countries, the mortality rate for mothers, although low, is twice that for adult pregnant women. Youth pregnancy has

been associated with other medical problems, including poor maternal weight gain; pregnancy induced hypertension, anaemia and sexually transmitted infections.

Pregnancy induced hypertension is estimated to affect 7-10% of all youth pregnancies in the United States, (Myles, 2003). In developing countries it is the main cause of deaths. Pregnancy induced hypertension is also known as pre-eclampsia, if left untreated can lead to serious even fatal complications for the mother and baby. The actual causes are not known but thought to be an auto-immune rejection in women of age less than 20 years and new marriages, (Sellers, 2009).The same author cited that young women who develop pre-eclampsia may experience dangerously high blood pressure and the disease can eventually lead to organ damage, seizures, coma and death if left untreated. Treatment may include bed rest or hospitalisation, blood pressure lowering medication or early delivery of the baby. According to Myles, (2003), diet plays an important part as high protein is recommended to resolve the problem. The same author posited that pregnancy induced hypertension is the most commonly encountered disorder in which fetal growth may be impaired due to placental insufficiency and infarcts worsens the condition of both the mother and baby.

Post-partum haemorrhage (PPH) is an obstetrical emergency that can follow vaginal delivery. It is a major cause of maternal morbidity and one of the top causes of maternal mortality in low capita income countries. It is best defined and diagnosed clinically as excessive bleeding that makes the patient symptomatic for example tiredness and or weakness of the body including estimated blood loss of 500millilitres and more after vaginal delivery. Pregnant youths are more prone to post-partum haemorrhage because if the young woman's uterus is not yet fully developed, it becomes over distended by pregnancy, over distended uterus does not contract as

readily as of older women's uterus this will lead to post-partum haemorrhage, (Pilliteri, 2006). The same author cited that the PPH is compounded by anaemia during pregnancy. However, Sellers

2009) posited that PPH is linked to those having delivered five or more babies (grand -multiparty)

Self- Care Practices During Pregnancy

Self-care- includes all health decisions and actions people make for themselves and families to stay healthy. It is any activity of an individual or family with the intention of improving or restoring health, treating and preventing disease. It may include eating well, good hygiene and avoiding health hazards such as smoking and drinking to prevent ill health. Self-care support and practices has a crucial enabling value and considerable scope in developing countries with an already over -burdened health care system. It has also an essential role to play in affluent countries where people are becoming more conscious about their health and want to have a greater role in taking care of themselves, (Woods, 2011). Self-care in health refers to the activities, individuals or families undertake with the intention of enhancing health, preventing disease, limiting illness and restoring health. These activities are derived from knowledge and skills from the pool of both professional and lay experience, (WHO, 2001). Self-care practices which are going to be discussed in this study will be nutritional practices, prenatal care, substance abuse, sexual practices, and self-awareness of being pregnant.

Many pregnant youths are subjected to nutritional deficiencies from poor eating habits, including attempts to lose weight through dieting, skipping meals, food faddism and consumption of fast foods. Inadequate nutrition during pregnancy is an

even more marked problem among young mothers in developing countries (Kapoor, 2006). Pregnancy in a still growing girl means an increase in nutritional requirement not only for the growth of the fetus but also for the mother herself which inevitably throws the young mother to the jaws of malnutrition. Nutrition is of paramount importance as lack of adequate nutrition during pregnancy may lead to the young mother suffering from various pregnant complications like obstructed labour, retardation of fetal growth,/and prematurity. Study done by Gupta, (2005), found out that the total nutritional needs of pregnant youths who are at least 2 years post-menarche are similar to those of pregnant adults. The author cited that, because of their poor dietary habits, they usually enter pregnancy period with reduced nutrient stores and increased risk of nutritional deficiencies to the mother and her baby. A study done in Zimbabwe, (2006), on maternal mortality sponsored by WHO & Ministry of Health and Child welfare, revealed that the maternal haemoglobin was low, and over 21% of maternal deaths were due to severe nutritional anaemia in Zimbabwe. Observational studies done of iron-deficient pregnant youths who were not clinically anaemic showed an increased risk of associated complications during pregnancy like pyelonephritis and pre-ecampsia. Deficiencies of nutrients other than iron have also been associated with fetal malformations and fetal growth retardation, (WHO, 2006). Youths are most likely to continue unhealthy activities such as not eating nutritious foods, therefore they are likely to give birth to LBW babies due to competition for nutrients of the maternal body and the growing baby, growth of youths continues even during pregnancy. Micronutrient deficiency also influences both maternal and neonatal health. A girl in this country suffers from malnutrition and starts her reproductive life with a negative balance which further deteriorates during pregnancy. Appropriate nutrient intake and weight gain during pregnancy are considered the most modifiable behaviours for improved maternal and infant

outcomes. In contrast Ventura (2003) cited that however adolescents had shown to be at increased risk of excessive gestational weight gain and there is increasing evidence that higher weight gain during pregnancy do not improve infant weight. The role of good nutrition extends beyond the pregnancy; hence youths need a varied diet with all nutrients, (UNICEF, 2005).

Prenatal care is of paramount importance. Racial/ethnic disparities persist across socio-economic categories, but within the prenatal period, such disparities are thought to be mediated by inadequate prenatal care access and utilization, (Jackson, 2009). The study showed that increased access and utilization to prenatal care of youths are necessary components to improving prenatal outcomes. Pregnant young mothers are less likely to receive adequate prenatal care, and are more likely to experience poor birth outcomes compared to older pregnant women, (Klima, 2003). Jackson, (2009), concurred with Klima, (2003), as he also cited that young mothers are as twice to deliver babies of low birth weight and preterm than their older counterparts, hence the need for access of prenatal care by pregnant young mothers. Prenatal care has been recognised as the cornerstone of the health-care system for the pregnant youths since the beginning of the 20th century. In Boston, prenatal services were initiated in which pregnant women were urged to report early in pregnancy and be instructed on self care. The study found out that dystocia, toxaemia of pregnancy and prematurity could be reduced if prenatal care included instruction on personal hygiene, rest and diet along with a competent midwife examination, (Baker, 2005). The emphasis in the delivery of prenatal care services has continued to change from focusing on conditions of the mother only to conditions of both as disparities in birth weight and infant mortality have remained high in developed countries and increased in the developing countries like Zimbabwe, (WHO, 2010) A number of studies have

indicated a relationship between the use of prenatal care services and birth outcomes. Adequate use of prenatal care has been associated with improved birth weights and the amelioration of the risk of premature infants. However (Baker, 2003), cited that the more children a woman has had, the more likely she is to obtain insufficient care or none at all. (Kanani, 2005), concurred with Baker that young women are at a high risk of obtaining late or no prenatal care with the greatest risk being among below 18 years of age. The centre for diseases control, (2010) highlighted that adolescents with high level of education began prenatal care early compared with 53% of mothers who had less education. The probability that a pregnant young mother will obtain prenatal care late or not at all decreases steadily as her educational level increases. CDC, (2010), posited low income as one of the most important predictor of insufficient prenatal care. Women with low income, consistently show higher rates of late or no prenatal care than women with high incomes. In a study done in Uganda on prenatal care of youths, the results showed that mothers 18 years and below and un married were the least likely to obtain care in the third trimester or not at all, citing low income as a predictor of poor prenatal adherence. In contrast, a study done in Michigan showed that prenatal adherence was related to fear that certain habits may be discovered and criticised for example smoking, eating disorders or sexually transmitted diseases. Youths tend to book late due to late recognition of pregnancy, denial of pregnancy, emotional stress, and strain associated with child birth or poor family relationships and confusion about available services. Due to delayed booking, inadequate time is left for care before giving birth, (Myles, 2003).According to Abma (2010),young mothers are more likely to have unhealthy habits that place the infant at greater risk for inadequate growth, infection and substance dependence. The younger the mother, the greater the risk of her infant dying during the first year of life. Therefore it is very important for pregnant youths to have early and adequate prenatal

care. A study done by Trinh & Rubin (2006) to assess the prevalence of women who entered ante-natal care late and to identify factors related to the late entry to ANC in New South Wales (entering ANC after 12 weeks of gestation was classified as late),results found out that 41% of women commenced ANC after 12 weeks of gestation. The groups of women with highest risk were adolescents, migrants from developing countries and heavy smokers. Early entry to ANC is important for early detection and treatment of adverse birth outcomes. The WHO recommends that pregnant women in developing countries should seek ANC within the first 4 months of pregnancy, and even ideally before conception in order to identify and treat health conditions that could affect the fetus (WHO, 2006). Prenatal services are concerned with improving the quality of fetal life, preventing complications and lowering the perinatal death rate. This can only be accomplished when pregnant women can be persuaded to collaborate by carrying out the measures advocated in a programme of health education which includes good nutrition, adequate rest and avoidance of teratogenic agents, early booking and regular attendance at the perinatal clinic, aiming at about 6 visits should be advocated by midwives and the young mothers and encouraged to co-operate (WHO, 2010). According to Murphy (2003) the adequacy of prenatal care consists of timing of initiation, number of visits and adherence to care.

Awareness of being pregnant and subsequent disclosure lays the basis to preventive and supportive care that promotes positive birth outcomes. Youths' failure to promptly recognise that they are pregnant reflects a general lack of awareness that a missed period may indicate pregnancy, (Kalyanwala, Zavier, Jejeebhoy & Kumar, 2010). Sellers, (2009), adds that calculating the period of gestation from the last

menstrual period is often a problem as the adolescent often does not remember when she last menstruated.

Even if aware of the pregnancy, the pregnant youth may not reveal the pregnancy to parents/guardians for fear of rejection and expulsion from home, (Sellers, 2009). The pregnant youths may be afraid that if she disclosed her pregnancy her family, peers and society would ostracize her and in some instances the youths may be in a state of denial, (Friedman, Fisher & Schanberg, 2008). Pilliteri (1999) however differs on the issue of disclosure. The author is of the opinion that not disclosing may be a way of protecting the pregnancy. The belief, according to the author, is that if the youth does not tell anyone, no one can suggest that she terminate the pregnancy. Murphy (2003) has the opinion that the pregnant youths may shun disclosure of pregnancy for fear of stigma and parental discovery. This will affect social support by the family and peers. The pregnant youth may view the pregnancy negatively and if unplanned this may lead to concealment, denial or apathy by the woman. These actions may delay interventions to help the pregnant young women to initiate self-care practices. Romero, Gomez & Chaiworapongsa acknowledged that the signs of pregnancy may not be known or recognised and this will delay to assist them with preparing for birthing and birth related emergencies, therefore youth pregnancy continues to be a complex and challenging issue for families and youths themselves.

A study done by Mancini& Witter, (2003), on pregnant African-American young mothers to assess self care practices, showed that a higher percentage of pregnant young mothers reported history of cigarette smoking and it was a significant predictor of decreased infant birth weight. There is growing evidence of the adverse impact of exposures to ambient and indoor air pollutants on fetal growth and early fetal neuro-development, (Perera, 2001). Human and experimental studies showed that the fetus

is more sensitive to environmental toxicants including cigarette smoke. Smoking exposes the mother and fetus to a variety of chemicals, the most important is nicotine which causes reduced blood flow to the fetus leading to decreased fetal heart rate,(Rough,2004).The same author assessed the impact of prenatal exposure to smoking, and found out that prenatal exposure negatively affects infant outcomes. The most adverse outcomes being low birth weight, prematurity and intra-uterine growth restriction. Perera, (2001), posited that carbon monoxide released from the smoke causes placental vaso-constriction and resulting in hypoxia to the fetus leading to still births. Youths who smoke usually have poor diets and eating habits leading to LBW and IUGR birth outcomes. Therefore tobacco use is an important modifiable risk factor for LBW and prematurity births. Strong evidence suggests that heavy use of alcohol causes adverse birth outcomes like IUGR to the infants. According to Moore & Pursaud, (1993), alcohol is the second most common substance young mothers succumb to during pregnancy, leading to fetal alcohol syndrome and alcohol related neurodevelopment disorders. The same authors cited that there is no safe taking of alcohol during pregnancy even at low levels of consumption, the effects are deleterious. Due to the teratogenic effects of alcohol during pregnancy on the fetus, counselling of adolescents should start in the pre-conceptual period, (Pursaud & Moore, 1993). Use of illicit drugs like marijuana has been observed more frequently among populations from larger metropolitan cities in North America. Pregnant youths observed in a study, found out that, women who used marijuana on a regular basis had higher frequency of precipitous labour. Little evidence was found on marijuana use among African youths, including Zimbabwe, and also little is documented on its association with LBW, (Murphy, 2003). Some drugs were found to be teratogenic for example warfarin, steroids, thalidomide among others; they cause a great deal of malformations and IUGR, (Moore & Pursaud, 1993). The youths should be

counselled on the use of over the counter and self prescription of drugs. Environment pollutants for example high frequency noise can actually precipitate labour leading to preterm birth and minor congenital malformations have been identified in adolescents who frequently visit noisy places, infested by high frequency music. A study done in a noisy slum in Nigeria, found these results, (Romero, 2003).

A study done in Malawi on sexual practices among pregnant youths found out that fear , stigma and discrimination discouraged them to visit the voluntary counselling and testing services and hence this also affects their uptake of Prevention of Mother to Child Transmission of HIV services. The babies of the above scenario may be infected by human immune-deficient virus and this will lead to adverse outcomes like congenital anomalies, LBW and prematurity, (UNAIDS, 2006). Shame associated with HIV/AIDS prevents youths from seeking support, care and treatment of opportunistic infections. This may lead to depression and self imposed isolation, (CDC, 2011). The same authors posited that reduced and delayed disclosure in time affects timely seeking of preventive behaviours such as condom use and PMTCT services. In Zimbabwe, HIV prevalence is almost 3 times higher among youths and is fuelled by intergenerational sex, (UNFPA, 2011). The same source echoed that, becoming infected during pregnancy heightens the risk of transmitting the virus to the unborn baby. Young women are particularly vulnerable because they are less informed about how to prevent the infection, due to social norms and values that makes it a taboo to discuss sexual issues openly, hence are at high risk of contracting the HIV infection,(UNAIDS,2006).

Relationship between Self Care Practices and Birth Outcomes

Reviewed literature reviewed relationships between self-care practices and birth related outcomes in young women. A study done in Northern America by Rice &Bernard, (2011), on birth outcomes in youths; found out that inadequate prenatal, history of self-reported cigarette use and repeated infections including sexually transmitted infections were significantly linked to a host of adverse birth related outcomes. The infant outcomes were, low birth weight and prematurity. Significant anaemia, post-partum haemorrhage and pregnancy induced hypertension were observed as maternal outcomes. Olausson, Cnattingius &, Hanglund, (2005), conducted a study in Liverpool on youths smoking in pregnancy and birth outcomes to compare birth outcomes of youths who smoke during pregnancy with those who do not smoke and construct the birth weight- for-gestational age- curves. Almost half of the 534 pregnant youths analysed smoked during pregnancy. Birth weight for gestational age curves of smoking youths showed a marked fall-off in weight from 36weeks of gestation. At least 10% of youth smokers showed fetal growth restriction from before 32 weeks of gestation. A significant difference on frequency of low Apgar scores between babies of smokers and non-smokers was found. These findings were consistent with findings from similar studies in Sweden and Canada, (Delpisheh, Attia, Drummond & Brabin, 2006).

In a survey done in Malawi, (2005), three fold differences in risk was observed between children of young women, (73 per 1000) and those above 24 years (26 per 1000). The Yemenian demographic maternal and child health survey in 2007 showed that infant mortality decreased from 124 per 1000 to 35 to 55 per 1000 live birth as maternal age increases, (YDMS, 2007). Having children too young has long been associated with increased risk of various adverse births related outcomes. Young mothers' self-care practices which include mistimed or unintended pregnancy and

inadequate utilization of health services were cited as related factors to adverse birth outcomes, (Wallis, 2008).

Theoretical Framework

The self-care framework focuses on the person's ability to perform self-care. Self-care is defined by Orem (1991) as behaviour that exists in concrete life situations directed by persons to self or to the environment to regulate factors that affect their own development and functioning in the interests of life, health or well-being. In this study self-care practices that will be addressed include awareness of being pregnant and disclosure of pregnancy, prenatal care, eating habits and nutrition as well as substance abuse. The above self-care practices influence functioning and development of pregnant young women in the interests of their own life and health as well as that of their infants.

Several studies have utilised Orem's self-care theory. Marcella & Hart, (2005), conducted a study to examine the relationship between self care practices and pregnancy out comes. This cross sectional, correlation study used Orem's SCT and self-care agency was significantly and directly related to basic prenatal care actions and foundations for dependant agency which in turn were directly related to infant's birth weight. Findings lend support to Orem's theory and offer implications for maternal nursing practice and research.

The SCT was also utilised by Lee and Grubbs (1993) in their study that compared the self- reported self- care activities of pregnant teenagers who sought care during the first trimester of their pregnancy and those pregnant teenagers who delayed prenatal care until the third trimester. Findings were that all pregnant teenagers practice similar self-care behaviours regardless of when they enter prenatal care. This study, however,

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seeks to examine relationships between such self-care practices during pregnancy and the birth related outcomes in adolescents' pregnancy.

A study was done by Rew, (2003), on homeless adolescents who were vulnerable to poor health outcomes owing to dangerous and stressful environment in which they live. The study was to explore self care attitudes and behaviours of homeless adolescents. The findings revealed a basic social process of taking care of oneself in high risk environments. Findings supported Orem's self conceptualization of self care and self-care agency and suggest the need for programs to support further healthy growth and development among homeless youths.

Summary

This chapter reviewed literature on self-care practices during pregnancy, birth related outcomes and the relationship between the two variables. Studies that utilised Orem's Self-Care Theory were reviewed. The reviewed literature shows that young women are exposed to different types of self-care practices of which they do not know if they will pose a health related risk during and after pregnancy, leading to adverse birth outcomes. Programmes targeting the youths' sexuality are few; there is a wide gap between adolescents' intentions and behaviour on sexuality. The youth generation have missed many opportunities to get medically accurate and correct information. Anecdotal evidence that behaviour is safe is sometimes more convincing for young adults than the recommendations of the health professionals. Few studies have been documented in Zimbabwe about the contribution of youth prenatal self care practices during pregnancy and birth outcomes. There is a death of documented evidence to explain an association between self-care practices during pregnancy and birth out comes among young women. There is a substantial gap between words and deeds. Review of related literature revealed paucity in studies that address self-care practices during pregnancy and the birth outcomes among youths both regionally and locally, hence the need to carry out this study.

CHAPTER 3

METHODS

Introduction

This chapter addresses methods which include the research design, sampling plan, sample size, sampling procedure, study variables, instruments, data collection plan, human rights consideration, data collection procedure and data analysis.

Research Design

A descriptive correlational design, which examines variables as they naturally occur, was utilized in this study. This design, according to Polit and Hungler, (1997), examines relationships among variables without inferring any cause and effect relationships. Burns and Grove, (2005), refer to the study design as the blueprint for conducting a study that maximises control over factors that could interfere with the validity of the study findings. The research design is the overall plan for obtaining answers to the questions being studied and for handling various challenges to the worth of the study evidence, (Polit & Beck, 2010). In this study, the variables are birth related outcomes as the dependent variable and self-care practices during pregnancy as the independent variable.

Sampling Plan

A sampling plan defines the process of selecting subjects for the study. Probability or non-probability sampling plans can be utilised to obtain the study sample. In this study, probability sampling plan was used. In probability sampling, each subject has an equal chance of being selected, increasing representativeness, the validity of the

study and generalizability of the findings. It is one of the assumptions for inferential statistics.

A sample is a portion of the population that represents the entire population. It is a subset of the population that is selected for the study, (Burns & Grove, 2005), and thus should be as representative as possible. According to Polit and Beck, (2010), researchers work with samples rather than with entire populations because it is more economical and practical to do so.

Study Site

The study was conducted in the maternity department at Gweru provincial hospital, a major referral centre in the Midlands. The centre caters for clients from various district hospitals and clinics. The maternity department comprises of Ante-natal clinic, labour ward, post-natal ward and special care baby unit unit. It operates 24 hours catering for referred cases and unreferred cases from the local clinics. The maternity department has a staff allocation of three sisters in charge and thirty state certified maternity nurses, who rotate day and night duties. Services offered at Gweru Maternity Hospital includes diagnostic, curative, preventive, restorative, maternal and child health services, and family planning services. The wide catchment area from which the population was drawn enhanced generalizability of the study results.

A feasibility study revealed that an average of 400 young women aged sixteen to twenty four years deliver at Gweru Maternity Hospital monthly. This assured the investigator of the probability of an adequate study sample. The target population is an aggregate of cases about which the researcher would like to make some generalizations, (Polit & Hungler, 1997). The target population in this study were postnatal young mothers. The accessible population is the pool of subjects one can get

access to and also meets the sampling criteria, (Polit & Hungler, 1997). Findings from the accessible population can be generalised to the target population. In this study the accessible population were young women delivering at Gweru Maternity Hospital during the period of data collection.

Sampling Criteria

Sampling criteria list the essential characteristics of the target population, (Burns & Grove, 2005). Sampling criteria which refers to the inclusion and exclusion criteria ensure a homogenous sample, helps to control extraneous variables and provide a guideline for sample recruitment. Extraneous variables may interfere with measurement of study variables and will thus be controlled so that findings are credible.

Inclusion criteria refer to the specific characteristics the investigator wishes to include in a study, while exclusion criteria refers to characteristics the investigator does not want in the study. To be included in the study, participants should be aged 16 to 24 years at time of delivery. According to Rice and Bernard, (2011), certain emancipated minors may give their own consent to participate in research. Pregnant youths and those who have children were some of the given examples of emancipated minors. The participants were Shona or English speaking and were able to participate in a verbal interview. Parity was open but it was assumed that the higher the parity the more informed one becomes of issues of pregnancy and may contribute to variations in self care practices. In addition, defining criteria too broadly may make interpreting the results difficult. Pregnancy gestational age was 28 weeks and above at delivery. World Health Organisation (WHO) (2010) put fetal viability to be at 28 weeks of

which expulsion of the products of conception before 28 weeks will be considered an abortion not a delivery.

Exclusion criteria in this study include those young mothers who turn 24 years of age before delivery. Young mothers delivering at less than 28 weeks of gestation did not take part in the study since one of the variables under study, still birth, is defined as delivery of a baby after 28 weeks of gestation showing no sign of life. In addition, the final sample excluded those individuals who participated in the pre-test of the instrument. The individuals on whom the instrument was pretested would be a source of bias because they would have been exposed to the items in the instruments.

Sample Size

Polit and Beck, (2010), define sample size as the number of subjects in a sample and is regarded as a major issue in conducting and evaluating quantitative research. Large samples are needed in quantitative studies. The larger the sample, the more representative it is likely to be and the smaller the sampling error. Estimation of the sample size was based on significance level, statistical power and effect size.

The significance level (also known as the p value or alpha) of 0.05 will be used in this study. This is the conventionally accepted significance level for social science research. This level indicates that 95 times out of 100 or 95%, the results were correct. It helps to control the likelihood of making a Type I error, which occurs when the investigator rejects the null hypothesis by mistake, when it should be accepted. A finding was significant when the significance level was 0.05 or less since it furnishes stronger evidence against the null hypothesis. Using a significance level of 0.05 for calculating the sample size in this study is an index of the probability that the findings will be reliable.

Power is the ability of the research design to detect differences or relationships that actually exist in the population, (Burns & Grove, 2005). Increased power assists the statistical test to pick out the small differences. This helps to control the likelihood of the investigator committing a Type II error by accepting the null hypothesis when it should be rejected. The minimum acceptable power in nursing research of 0.80, (Lipsey, 1990), will be used in this study. According to Polit and Sherman (1990), a study should be neither underpowered nor overpowered. This may lead to non significant results and use of more resources than necessary, respectively. Polit and Sherman, (1990), define effect size as an index of how strong the effect of the independent variable is on the dependent variable, that is, the degree to which the null hypothesis is false. Effect size has a negative relationship on sample size. As the effect size increases, the sample size decreases and vice versa, (Burns & Grove, 2005). According to the same authors, effect size comes in small, medium and large sizes. The medium size of 0 .5 which is recommended for nursing studies will be used, (Cohen & Cohen 1983). In this study, the power calculations based on Lipsey, (1990) were as follows: significance level at 0.05, with an estimated effect size of 0.5 and power of 0, 80 give a sample size of 65. An additional 15 subjects, to cater for attrition will bring the actual sample size in this study to 80.

Sampling Method

Polit and Hungler, (1997), define sampling procedure as a process of selecting a portion of the population to represent the entire population. Sampling will thus allow the investigator to draw inferences and make generalization about a population, without necessarily examining each element in the population (Burns & Grove, 2005). It is important to ensure that the sample is representative of the target population so as to minimise bias.

In this study, systematic random sampling was used. It is a probability sampling method in which subjects are afforded an equal chance to participate in the study and thus selection bias is minimised. A list of all young mothers who deliver and meet the sampling criteria was drawn using the client's names from the delivery register, forming the sampling frame for the study. The method involves selection of every K^{th} number from some list or group. The accessible population (N) was divided by the desired sample size (n) to get the Kth number. For example, in this study the number of young women deliveries is about 400 per month. The Kth number was obtained by dividing 400 by the sample size of 80 ($400 \div 80 = 5$). This means that the investigator selected every 5th eligible participant. The first subject was selected randomly with a table of random numbers. For example, 2 was selected first and the sequence was 5, 8, 11, and 14 and so on. The procedure was continued until the sample required was achieved.

Sampling Procedure

On each data collection day, the investigator used the register of women who had delivered at the hospital. The sampling criteria guided selection and making of a list (sampling frame) of those participants who met the inclusion criteria. It is from the sampling frame that every 5th member was selected for interview. The procedure was repeated on each data collection day until the desired sample size of 80 was achieved.

Variables

A variable is a quality, property or characteristic of a person, thing, or situation that changes or varies and is manipulated or measured in research (Burns & Grove, 2005). The variables which were assessed in this study were the birth related outcomes as the dependent variable and self-care practices as the independent variable.

Conceptual and Operational Definitions

According to Burns and Grove (2005), a conceptual definition provides a variable with connotative (abstract, comprehensive, theoretical) meaning and is established through concept analysis, concept synthesis and concept derivation. The same authors define an operational definition as a description of how variables or concepts will be measured or manipulated in a study. Defining concepts allows for consistency in terms used in the study.

Birth Outcomes

An outcome is the end result of a process (MacMillan English Dictionary, 2006) while birth refers to the emergency of a baby from the body of its mother and signifies the start of life as a physical separate being. Conceptually birth outcomes therefore refer to the end result of a pregnancy. Operationally, birth outcomes will refer to the adverse end result of youth pregnancy and will mean, low birth weight, prematurity, low Apgar score, still births, small for gestational age, intra-uterine deaths, and increased mortality among others.

Birth outcomes are a category of measures that describe the health of babies and mothers at birth and represent their current and future morbidity and future mortality. (Gupta, 2010). Birth outcomes that affect the young women are, post-partum

haemorrhage, pregnancy induced hypertension, anaemia and infections including HIV/AIDS, (Myles, 2008).

Self -Care Practices

Self-care is defined by Orem (1991) as behaviour that exists in concrete life situations directed by persons to self or to the environment to regulate factors that affect their own development and functioning in the interests of life, health or well-being. Operationally self-care practices during pregnancy will refer to those behaviours that a pregnant youth may or may not perform that may have an effect on the birth related outcomes of the pregnancy. Self-care practices addressed in this study will include awareness of being pregnant and disclosure of pregnancy, prenatal care, eating habits and nutrition as well as substance abuse during pregnancy.

Demographic Variables

Burns and Grove (2005) refer to demographic variables as specific variables such as age, gender and ethnicity which are collected in a study to describe the sample. In this study, demographic variables of relevance will be age, marital status, educational level, occupation, religious denomination, place of residence, whom they live with, gravidity and parity.

Instruments

A research instrument is defined by Polit and Beck (2010) as a device used to collect data, for example, a questionnaire, test, observation schedule. A structured interview schedule developed by the investigator was used for data collection in this study. The interview schedule content resembles that of a questionnaire, with the possible responses to questions carefully designed by the investigator. Closed-ended questions offering a number of alternative responses from which the participants chose the one that closely matches the appropriate answer was used. That helped to focus on the phenomenon of interest. Room was given for participants to say out any other responses that was not included in the interview schedule to minimize the risk of the investigator overlooking important alternatives. Participants would choose alternatives that misrepresent their position thereby introducing bias (Polit & Hungler, 1997). An interview schedule was ideal in this study since it caters for the blind, and the uneducated individuals.

The interview schedule consisted of three sections. Section A addressed the demographic attributes of the participants, Section B addressed the birth related outcomes and the self- care practices were addressed in Section C. The instrument was translated from English into Shona by bilingual translators to check for consistency in meanings and cultural context.

Birth related outcomes questionnaire

Birth related outcomes questionnaire (BROQ), consisted of eleven items, one for each of the birth related outcomes developed from the literature. Item one focused on preterm delivery by addressing the gestational age at which the infant was delivered.

The higher the gestational age, the more favourable the outcome and thus the higher the score. Minimum score = 1. Maximum score = 3 (see Section B).

Item two sought to find out whether the infant was born alive or not. A score of one was awarded for a positive response and a zero for a negative response.

Item three addressed the infant's Apgar score at 5 minutes. A score of l was awarded for Apgar score of 7-10 at 5 minutes, which according to Fraser and Copper (2003), indicates the infant's successful adaption to extra uterine life. No point was awarded for Apgar score less than 7 at 5 minutes. The fourth item addressed the infant's weight at birth. A score of 0 was awarded for birth weight less than 2500g and a score of 1 for birth weight from 2500g and above.

The fifth item sought to find out if the woman suffered post-partum haemorrhage. A score of 0 was awarded for suffering post-partum haemorrhage and 1 point for not. The sixth item sought to find out the amount of blood loss. A score of 1 was awarded for blood loss less than 500 millilitres and a score of 0 was awarded for an amount of blood loss exceeding 500mls.The seventh item sought to find out if the woman received any treatment for lack of blood or reduced blood in the body after delivery. A score of 1 was given for a positive response and a 0 for a negative response. The eighth item sought to find out whether the woman felt tired or had loss of energy after delivery. A score of 1 was awarded if the woman did not have loss of energy after delivery and a score of 0 for having suffered loss of energy after delivery.

The ninth item sought to find out if the woman suffered from any infections related to HIV/AIDS during pregnancy. A score of 1 was given to a positive answer and 0 to a negative answer. The tenth item sought whether the woman had a raised blood pressure during pregnancy. A score of 0 was awarded for a negative answer and a

score of 1 point was given to a positive answer. The eleventh item sought to find out if the woman was commenced on medication for the raised blood pressure during pregnancy. A score of 1 was given for being commenced on medication for raised blood pressure and a score of 0 for not being commenced on medication for a raised blood pressure.

The investigator made use of the documented data on clients' hospital records to validate information from the clients. Minimum score for this section of the questionnaire was 0 and maximum was 15. A total score of 0-4 means poor birth outcomes,5-9 indicated fair birth outcomes 10 and above indicated good birth outcomes.

Self-Care Practices during pregnancy

The Self-Care Practices questionnaire (SCPQ) assessed the young mother on how she took care of herself during the current pregnancy. This part of the questionnaire consisted of 16 items. Items 1 to 4 will address awareness of being pregnant and disclosure of pregnancy as a self-care practice during pregnancy.

Item 1 addressed the gestational age at which the participant realised she was pregnant. The earlier the participant realised they were pregnant, the higher the score for each of the items. A score of 0 was awarded to the participants who realised that they were pregnant after 29 weeks of gestation, 1 for those who got to know they were pregnant at 21 – 28 weeks, 2 for 12 -20 weeks and the highest score of 3 for those who realised they were pregnant at less than 12 weeks.

Item 2 focused on how the participants got to know that they were pregnant. Being aware of the signs and symptoms of pregnancy may also affect self – care practices

during pregnancy. A score of 1 was awarded for reporting increase in abdominal size, 2 for knowing after pregnancy test and 3 for reporting a missed period.

Item 3 addressed the gestational age at which the young mother disclosed the current pregnancy. The earlier one discloses her pregnancy, the earlier one is likely to get support and thus may prevent adverse birth related outcomes. A score of 0 was awarded for first disclosing pregnancy at 29 weeks and above, 1 for disclosing at 21 – 28 weeks, 2 for disclosing at 12 – 20 weeks and the maximum score of 3 was awarded for disclosing at less than 12 weeks of gestation.

The fourth item sought to find out to whom the young mother first disclosed her current pregnancy. The response is expected to shed light on the social network of the young mother during pregnancy. A score of 0 was awarded for not disclosing to anyone and a score of 1 for disclosing either to parents/guardian, family member, husband/boyfriend, friend or any other.

Items 5 to 7 elicited responses on prenatal care as a self-care practice during pregnancy. Item 5 sought to find out whether the adolescent mother was booked or not booked for prenatal care. A score of 0 was awarded for unbooked and 1 for booked.

Item 6 addressed the gestational age at which the young mother booked with the antenatal clinic. The earlier one entered prenatal care, the higher the score. A score of 0 was awarded for none, 1 for booking at 29 weeks and above, 2 for booking at 21 -28 weeks, 3 for booking at 12 – 20 weeks and 4 for booking at less than 12 weeks.

Item 7 elicited responses on the number of times the participant attended antenatal clinic. A score of 0 was awarded for none, 1 for once, 2 for twice, 3 for three times and 4 for four times and above.

Items 8 to 10 elicited responses on eating habits and nutrition during pregnancy. Item 8 enquired as to whether the participants enjoyed food during pregnancy. A healthy appetite is assumed to contribute to maternal nutrition and prevent adverse birth related outcomes such as LBW babies. A score of 0 was awarded for a negative response while a score of 1 was awarded for a positive response.

Item 9 sought to find out the number of times the participants ate per day. A score of 1 was awarded for once, 2 for twice, 3 for three times and 4 for four times and above. The tenth item sought to find out whether the woman was advised that she had low blood levels in the body. A score of 0 was awarded for a negative answer and a score of 1 for a positive answer. The 11th item elicited from the participants as to whether they took any supplements during pregnancy. A score of 0 was awarded for none, 1 for Iron and Folic acid respectively. A score of 2 will be awarded for reporting both Iron and Folic acid.

Item 12 sought to find out the amount of weight gained by the participant during the current pregnancy. Average weight gain during pregnancy is 10 – 12.5kg. A score of 0 was awarded to weight gain of less than 5kg, 1 for 5 – 9kg and 2 for 10 – 12.5kg.

Items 13 to 14 addressed substance abuse during pregnancy. Item 13 sought to find out whether the participants took any drugs that were not prescribed for them during pregnancy. If yes, a score of zero was awarded and the participant requested to specify the drug/s taken where possible. A score of 1 was awarded for no. Item 14 asked the participants as to whether they smoked any cigarettes/tobacco during

pregnancy. A score of 0 and a score of 1 was awarded to yes and no respectively. Item 15 sought to find out whether participants took any alcohol during pregnancy. A yes response attracted 0 points while a no response will attract 1 point. Item 16-17 addressed exposure to HIV/AIDS and prevention of HIV/AIDS. Item 16 sought to find out if the woman was tested for HIV/AIDS.A no response attracted 0 points and a yes response attracted 1 point. Item 17 sought to find the HIV status of the woman. A score of 0 was awarded if the woman did not know her HIV status, a score of 1 for a positive result and a score of 2 for a negative result. Item 18 sought to find out if the woman was commenced on PMTCT after a positive result. A score of 0 was awarded for not commenced on PMTCT and a 1 for being commenced. Item 19-20 addressed exposure to sexually transmitted infections and treatment of STI.Item 19 sought to find out if the woman suffered from any STIs and whether she got treatment for STIs.A score of 0 was awarded for a negative answer and a 1 for a positive answer. Item 21 sought to find out if the woman was using condoms during pregnancy. A score of 0 was awarded for never used condoms,a score of 1 for using condoms at times and a score of 2 for using condoms all the time. Maximum score for Section C was 42 points. No points were awarded for any other responses. A total score of 0 – 14 = poor self care practices, 15 – 29 = fair self care practices and 30 –42 = good self care practices.

Demographic Data Questionnaire

The demographic data questionnaire (DDQ), comprises of items 1 to 9. Items 1 to 7 elicited responses on age, marital status, level of education, occupation, religious denomination, and place of residence and with whom the participants live. Items 8 to 9 addressed clinical data such as gravidity and parity status respectively.

Reliability and Validity of the Instruments

According to Burns & Grove (1997), reliability and validity are crucial steps in the research process. Measures need to be put in place to ensure that instruments are reliable and valid. The present investigator took several steps to eliminate threats to reliability and validity of the instruments.

Reliability

Reliability means the likelihood of obtaining the same results when the researcher measures the same variable more than once or when more than one person measures the same variable (Brink, 2000). Reliability therefore refers to the measurement accuracy of the data collection instrument. An instrument can be said to be reliable if its measurement accurately reflects the true score of the attribute under investigation (Polit & Beck, 2004).

To ascertain reliability of the instruments in this study, the present investigator addressed issues of the stability (consistency) of the instrument and measurement of random error. To ensure stability of the instruments, a pretest of the instrument was done on 5 participants at Gweru maternity hospital with similar attributes to the intended sample.

The instruments were translated from English into Shona. Translation ensured collection of data that is reliable and free from misinterpretation.

A reliability analysis was also performed to measure the amount of random error in the measurement technique. The co-efficient alpha, also known as the Cronbach's alpha (a psychometric test) was used to measure internal consistency of the instrument. The values of the co-efficient alpha range from 0.00 to 1.0. Higher values

closer to one (1) reflect reliability and therefore higher degree in the internal consistency. Burns and Grove (1997) state that a reliability of 0.80 is considered the lowest acceptable co-efficient for a well developed measurement tool. For a newly developed instrument, a reliability of 0.70 is considered acceptable. The Cronbach's alpha for this study was 0.733 which means that the instrument was reliable and was a good measure of the variables under study.

Validity

Validity refers to the degree to which an instrument measures what it is supposed to measure (Polit & Beck, 2004). Instruments need to reflect the abstract construct being examined. For example, the items measuring demographics, birth outcomes and self care practices in this study have to be phrased and organized to give a true reflection of these variables. This approach removes ambiguity and ensures elimination of systematic error.

Several dimensions of validity were considered in developing the instruments for this study. To ensure face validity, the instruments were developed as three separate tools, each measuring a respective variable. It was ensured that each item in the instruments pertains to the variable under study.

Content validity of the instrument, defined as the sampling adequacy of items for the construct that is measured (Polit & Beck, 2004), was addressed. Content validity was ensured through identification of items obtained from literature and inclusion of these items into the instruments. Several instruments used in previous studies were analysed to select items found to be highly predictive towards measuring the variables for this study. When constructing the BOQ for example, items included were adopted from those found to be highly predictive of positive birth out comes in a study by

Guttmacher, (2002). The study was on "Proximate determinants of birth outcomes questionnaire in a large cohort of pregnant adolescent women".

Construct validity was also ensured. Construct validity examines the fit between the conceptual definitions and operational definitions of variables (Burns & Grove, 1997). All variables under study were conceptually defined. During the development of the questionnaires, the investigator worked with the research supervisor to carefully phrase the items in each instrument so that the items reflect the defined variables. The instruments were translated into the local language to maintain construct validity and reduce systematic error whereby an inaccurate term is systematically applied each time a new participant is interviewed.

Specialists in the field such as the obstetricians and midwives working at Gweru maternity hospital were given the instruments to analyse the items and comment on the construct validity. Finally, the pre-test of the instrument also highlighted areas of ambiguity and guide towards ensuring construct validity. The instrument was refined using suggestions from all these approaches for construct validity.

Pilot Study

According to Polit and Beck (2004), a pilot study is a small-scale version or trial run of the major study. It is conducted to obtain information which can be used to improve the study or assess its feasibility as well as the internal and external validity (Burns & Grove 2005). A pilot study was ideal for this study. However, due to time limitations, it was not possible to conduct the pilot study.

Data Collection Plan

A data collection plan details how the study was implemented (Burns & Grove, 1993). The data collection plan is necessary to provide ground work for the implementation of the data collection process. According to Polit and Beck (2010), the data collection plan constitutes formal guidelines researchers develop to give direction to the collection of data in a standardised fashion. Permission was sought from the Medical Research Council of Zimbabwe (MRCZ), an ethical review board for the protection of human subjects in the study. The research committee in the Department of Nursing Science reviewed the proposal to reduce study risks to participants in the study. Permission to conduct the study at Gweru Maternity Hospital was also sought from the authorities since key individuals can influence the possibilities of obtaining an adequate sample size. A written consent was obtained from the participants. A consent form detailing the participants' rights, the benefits and potential risks of the study was availed for the participants to voluntarily sign before the interview.

Human Rights Consideration

According to Burns and Grove (1993) every prospective subject should have the opportunity to choose whether or not to participate in the research study. Approval was sought from the relevant research authorities namely the Department of Nursing Science, MRCZ and the Medical Superintendent at Gweru Maternity Hospital. An informed consent was obtained from the participants.

Informed consent assures the participants of the right to self determination. Each participant was given full explanations of the research purpose and data collection procedures using a language the study participants understand. Participants were

assured of their right to refuse to participate or refuse to respond to some of the questions without penalty.

The participants were assured of no foreseeable risk to themselves and families as a result of taking part in the study. The participants also needed explanations that their participating in the study may not lead to direct personal gain but would assist in management of and empowering adolescent women and their families. Participants, however, needed to be informed that no monetary or material gains would be provided for participating in the study.

A private room was used for conducting interviews to afford participants privacy. Coding system to ensure non use of names was employed to assure participants of anonymity and confidentiality. The code numbers were written on each interview schedule and the pages checked on interview completion to ensure no missing data. Completed interview schedules were placed in a lockable bag kept by the investigator to ensure confidentiality. Investigator's contact details were reflected on the consent form.

<center>Data Collection Procedure</center>

Effective communication skills and ability to create good rapport in different settings assisted the investigator in gaining staff cooperation and help to increase access to participants. Burns and Grove (2005) suggest that establishing a good working relationship with the personnel who will be involved in the study is essential to gain co-operation and support. The investigator identified midwives and obstetricians who worked in the postnatal department. The midwives helped in identifying potential subjects and the obstetricians gave permission for the conduct of the study since they are in charge of these clients. At the study setting, the investigator began by

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explaining the consent form, purpose and benefits of the study to the sisters in charge and then proceeded to request for a private room to use for the interviews. The same room was used to ensure constancy of conditions so as to prevent introduction of extraneous variables.

Data was collected by the investigator through a face to face structured interview until the required sample was achieved. Youths who deliver during the data collection period were interviewed in the postnatal department. The potential participants were put in different rooms on transfer from the labour ward. By referring to the hospital records, the investigator established the total number of potential participants that would have delivered. The participants were then screened for eligibility to take part in the study based on the specified inclusion and exclusion criteria. All eligible were then approached to be part of the study sample.

The investigator approached the potential participant at her bedside and started by introducing herself and then proceeded to inform the potential participant that she would like to interview her. The interview took place during the time the potential participant was awaiting review by the midwife or by the obstetrician. If the potential participant was agreeable, the investigator took her to a private room to ensure privacy and to control extraneous variables like noise and distractions from the routine activities of the ward.

The participant was given explanations on the purpose of the interview after a formal introduction by the investigator. The participant was informed of the amount of time it would take to complete the prepared questions. The investigator would then read out or asked the participant to read the contents of the consent form if they agree to

participate. The participant would then be asked to sign the consent form to indicate acceptance.

The investigator would ask questions in the same order and manner and note down the responses to each question. Duration of each interview session was verified following the pilot study. Interviews were conducted during the months of March and April 2012. Interviews were carried out between 0800 hours to 1300 hours in order not to miss or delay the participants who might have delivered the day before and are due for discharge home. The investigator interviewed at least five participants per day for five days a week, from Monday to Friday until all participants were interviewed.

Subjects were allocated code numbers which were written on each interview schedule and the pages of each checked to ensure that they were present and thus ensure no missing data. Completed interview schedules were placed in a lockable bag prior to data analysis.

Data Analysis

According to Polit and Beck (2010) data analysis is the systematic organization and synthesis of research data and, in quantitative studies, the testing of hypotheses using the data. It is an important factor in evaluating the meaning of results (Burns & Grove, 1993). The meaning of collected data was determined through analysis. Data was first organized and then precisely entered into the computer to ensure accuracy of results. Data was analysed using computer software called the Statistical Package for Social Sciences (SPSS.PC). A code book developed by the investigator directed in putting of data into the computer.

Demographic Variable

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Descriptive statistics was used to analyse demographic data using the mean, frequencies and percentages.

Birth Outcomes

Birth outcomes is the dependent variable. It is reflected in the first research question: "What are the birth outcomes of pregnancy in young women delivering at Gweru Maternity Hospital?" Responses to this question were analysed through descriptive statistics such as the mean, frequencies and percentages.

Self Care Practices during Pregnancy

Self care practices is the independent variable. Descriptive statistics were employed to determine the mean, frequencies and percentages in describing responses to the second research question: "What are the prenatal self care practices during pregnancy among young women delivering at Gweru Maternity Hospital?"

Relationship between Prenatal Self Care Practices during pregnancy and Birth Outcomes

Inferential statistics were used to analyse data for this question. Pearson's Product Moment Correlation analysis was used to assess the relationship between self-care practices during pregnancy and birth outcomes. The result appeared as a Pearson's correlation coefficient (r) which ranges from -1 to +1. This "r" value indicates the linear relationship between the two variables. A score of zero indicates no linear relationship. A coefficient of -1 indicates a perfect negative relationship while that of +1 indicates a perfect positive relationship. For the present study, a positive relationship was expected to indicate that as self care practices increases, birth outcomes also improve.

The "r" value also indicates the strength of the linear relationship. According to Burns & Grove (1997), traditionally, an "r" of 0.1 to 0.3 is considered a weak linear relationship. A moderate linear relationship ranges from 0.3 to 0.5 while that one above 0.5 is a strong linear relationship.

The relationship between self-care practices during pregnancy and birth outcomes was tested for statistical significance at the 0.05 significance level and a linear regression was performed.

CHAPTER 4

RESULTS

Introduction

This chapter presents and analyses findings of the study. Major findings are highlighted as a means of answering research questions. Tables and narratives were used to present the findings with regard to the variables under study.

Summary

The purpose of the study was to examine the relationship between Prenatal Self Care Practices during pregnancy and Birth Outcomes among youths delivering at one of the major referral centres in the Midlands Province in Zimbabwe. The study was conducted at Gweru Hospital Maternity department in the Postnatal Unit. Birth related outcome was the dependent variable while self care practices during pregnancy was the independent variable.

The study sought to answer the following research questions:

1. .What are the birth outcomes of pregnancy in young mothers aged 16-24 years delivering at Gweru Maternity Hospital?

2. What are the prenatal self care practices during pregnancy of young mothers aged 16-24 years delivering at Gweru Maternity Hospital?

3. What is the relationship between prenatal self care practices during pregnancy and birth outcomes among young mothers aged 16-24 years delivering at Gweru Maternity Hospital?

Data analysis was conducted using descriptive as well as inferential statistics. Descriptive statistics such as frequencies, percentages, mean and mode were used to describe the study sample in terms of demographic characteristics, birth outcomes and the self care practices during pregnancy. Pearson's correlation coefficient was used to analyse data in order to determine the relationship between the dependent variable and the independent variable. A significance level of $p < .05$ was used for all statistical analyses. The correlation test was significant and thus a regression analysis was also done

Sample Demographic Characteristics

Table 1 summarises the above demographic characteristics. The sample comprised 80 participants, the youngest being 16 and the oldest were 24 years old. The mean age of the sample was 20.44years. The 16 year age category was represented by 4 participants (5%), while another 4 (5%) were aged 17 years, 8 (10%) were aged 18 years, 9 (11.2%) were aged 19 years, 17 (21.2%) were aged 20 years and 15 (18.8%) were aged 21 years, 6(7.5%) were aged 22 years, 7(8.8%) were aged 23 years and 10(12.5%) were aged 24 years.

Distribution of the participants in terms of marital status shows that 38 (47, 5%) were single, 33 (41.25%) were married, 8 (10%) were divorced and 1(1.25%) was widowed. In terms of educational level, 25 participants (31.2%) had reached primary level (Grade 1 – 7) of education, while the majority 40 (50%) attained secondary level (Form 1 – 6) of education,15 participants (18.8%) had reached up to tertiary level.

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Responses on occupation indicated that 19 (23.8%) were students, 35 (43.8%) were unemployed, 18 (22.5%) were self employed and 8 (10%) were formally employed. An analysis of the religion to which the participants belong revealed that 26 (32.5%) were Protestants, 23 (28.8%) Pentecostals, 12 (15. %) Apostolic Faith sects, and 19 (23.8) did not belong to any church.

Table 1

Demographic Characteristics (1). (N = 80)

Variable	Frequency	Percentage
Age in years		
16	4	5
17	4	5
18	8	10.0
19	9	11.2
20	17	21.2
21	15	18.8
22	6	7.5
23	7	8.8
24	10	12.5
Marital status		
Single	38	47.5
Married	33	41.2
Divorced	8	10.0
Widowed	1	1.2
Level of education		
None	0	0
Primary	25	31.2
Secondary	40	50.0
Tertiary	15	18.8
Occupation		
Student	19	23.8
Unemployed	35	43.8
Self employed	18	22.5

Employed	8	10.0
Church denomination		
None	19	23.8
Protestants	26	32.5
Pentecostal	23	28.8
Apostolic faith sects	12	15.0
Moslem	0	0

Table 2 illustrates more demographic characteristics of the sample. The responses on place of residence indicated that 33 (41.2%) stay in rural areas, 26 (32.5%) in urban areas, 12 (15%) in the mining areas and 9 (11.2%) stay in farming areas. In terms of with whom the participants stayed, 10 (12.5%) stayed alone, 25 (31.2%) with their husbands/boyfriends, 15 (18.8%) with their in-laws, 26 (32.5%) with their parents and 4 (5%) stayed with a friend.

Responses on the number of pregnancies the participants had had revealed that the majority, 57 (71.2) had had two pregnancies and 23 (28.8%) had had three pregnancies. Thirteen (16.2%) had no children, 45 (56%) had one child and 22 (27%) had two or three children.

Table 2

Demographic Characteristics (2). (N = 80)

Variable	Frequency	Percentage
Place of Residence		
Rural	33	41.2
Urban	26	32.5
Mining area	12	15.0
Farm	9	11.2
With whom		
Alone	10	12.5
Husband/Boyfriend	25	31.2
In – laws	15	18.8
Parents	26	32.5
Friend	4	5.0
Number of pregnancies		
Two	57	71.2
Two and above	23	28.8
Number of children		
None	13	16.2
One	45	56.2

Birth Outcomes

Table 3 displays the distribution of participants according to birth outcomes experienced with the current pregnancy. Birth outcomes under investigation were prematurity, low birth weight, low Apgar score and still birth. Maternal outcomes were post-partum haemorrhage; pregnancy induced hypertension, anaemia and sexually transmitted infections including HIV/AIDS. Ten (12.5%) delivered their infants at gestational age 28 -32 weeks, 22 (27.5%) at 33 – 36 weeks and the majority 48 (60%) delivered at 37 weeks and above.

Seventy-seven (96.25%) of the participants delivered live births while the remaining 3 (3.75%) delivered still births. Responses to Apgar score at 5 minutes revealed that 17 (21.3%) of the infants had an Apgar score of less than 7 and 63 (78.7%) had an Apgar score of 7 – 10. In terms of birth weight, 16 (20%) weighed less than 2500g while 64 (80%) had birth weight of 2500g and above. Seventy-three (91.2%) of the participants did not lose much blood during delivery and 7(8.8%) lost much blood during delivery. Seven of the participants (8.8%) lost more than 500millilitres of blood per vagina during delivery and 73 (91.2%) lost less than 500 millilitres of blood per vagina during delivery. Forty-one (51.2%) participants received treatment for lack of blood or reduced blood in the body after delivery and 39 (48.8) did not receive any treatment for lack of blood or reduced blood in the body after delivery. Forty-one (51.2%) reported feeling tired or loss of energy after delivery whilst 39 (48.8%) did not report any tiredness or loss of energy after delivery. Responses to ever suffering from any infections related to HIV/AIDS during pregnancy indicate that 20 (25%) suffered some infections related to HIV/AIDS during pregnancy and 60 (75%) did not suffer any HIV/AIDS related infections during pregnancy. In terms of suffering high blood pressure during pregnancy 32(40%) suffered a raised blood pressure during

pregnancy and 48 (60 %) did not suffer any raised blood pressure during pregnancy. Fifteen (46.8%) were commenced on medication for a raised blood pressure and 17 (53.2%) were not commenced on medication for raised blood pressure.

Table 3

Birth Outcomes (N = 80)

Variable	Frequency	Percentage
Gestational Age at Delivery		
28 – 32 weeks	10	12.5
33 – 36 weeks	22	27.5
37 weeks and above	48	60.0
Alive at birth?		
Yes	77	96.25
No	3	3.75
Apgar Score at 5 minutes		
Less than 7	17	21.2
7 – 10	63	78.8
Birth Weight		
Less than 2500g	16	20.0
2500g and above	64	80.0
Blood lost during delivery		
Yes	7	8.8
No	73	91.2
Amount lost		
More than 500mls	7	8.8
Less than 500mls	73	91.2
Treatment for low blood		
Yes	39	48.8
No	41	51.2
Tiredness		

Yes	39	48.8
No	41	51.2
HIV/AIDS infections		
Yes	20	25.0
No	60	75.0
High blood pressure		
Yes	32	40.0
No	48	60.0
Treatment for high BP		
Yes	15	46.8
N0	17	53.0

Table 4 displays total Birth Outcomes Scores. Maximum possible score was 15. A total score of 0-5 indicated poor birth outcomes, 6-11 indicated fair birth out comes while 12 and above was indicative of good birth outcomes. The minimum total birth outcomes score for the sample was 4 and the maximum was 12. The mean score was 8.99, range was 8, mode was 9 and the standard deviation was 1.480.

Table 4

Total Birth Outcome Scores (N = 80).

Total Score	Frequency	Percentage
4	4	5.0
6	1	1.2
7	10	12.5
8	11	13.8
9	25	31.3
10	15	18.8
11	13	16.2
12	1	1.2

Self Care Practices During Pregnancy

Table 5 shows the distribution of participants according to self care practices during pregnancy. Responses to gestational age at which participants became aware of their pregnancy revealed that 18 (22.5%) knew that they were pregnant at less than 12 weeks of pregnancy, 35 (43.75%) at 12 – 20 weeks, 26 (32.5%) at 21 – 28 weeks and 1 (1.25%) at 29 weeks and above.

Majority of participants 72 (90%) reported missed menstrual periods as their first sign of pregnancy while 5 (6.3%) knew of their pregnancy after pregnancy test and 3 (3.8%) only became aware of the pregnancy from the increase in their abdominal size. Twelve (15%) of the participants disclosed their current pregnancy at less than 12 weeks, 47 (58.75%) at 12 – 20 weeks, 20 (25%) at 21 – 28 weeks and 1 (1.3%) at 29 weeks and above. In terms of first disclosure of pregnancy, 2 (2.5%) of the participants disclosed to their parents/ guardians first, 9 (11.3%) disclosed to a family member, 65 (81.3%) to their husbands/ boyfriends and 4 (5%) first disclosed pregnancy to their friends.

Table 5

Self Care Practices on Pregnancy Awareness and Disclosure (N = 80)

Variable	Frequency	Percentage
Gestational age at pregnancy Awareness		
Less than 12 weeks	18	22.5
12 – 20 weeks	35	43.7
21 – 28 weeks	26	32.5
29 weeks and above	1	1.3
Pregnancy Sign		
Missed period	72	90.0
Investigations	5	6.2
Increase in abdominal size	3	3.8
Gestational age at pregnancy disclosure		
Less than 12 weeks	12	15.0
12 – 20 weeks	47	58.7
21 – 28 weeks	20	25.0
29 weeks and above	1	1.3
First disclosed to:		
Parents/ Guardian	2	2.5
Family member	9	11.2
Husband /Boyfriend	65	81.3
Friend	4	5.0
No one	0	0

Table 6 shows distribution of the participants according to their self care practices regarding prenatal care. Fifty-six (70%) of the participants booked for prenatal care while 24 (30%) did not book for prenatal care. Only 1 (1.7%) participant booked for prenatal care at gestational age less than 12 weeks, 13 (23.2%) booked at 12 – 20 weeks, 25 (44.6%) booked at 21 – 28 weeks and 17 (30.3%) booked at 29 weeks and above. Of the booked participants, 10 (17.9%) attended prenatal clinic once, 13 (23.2%) attended twice, 8 (14.3%) attended three times and 25 (44.6%) had four prenatal visits and above.

Table 6

Self Care Practices on Prenatal Care (N = 80)

Variable	Frequency	Percentage
Booking Status		
Booked	56	70.0
Unbooked	24	30.0
Gestational Age at Booking		
Less than 12 weeks	1	1.8
12 – 20 weeks	13	23.2
21 – 28 weeks	25	44.6
29 weeks and above	17	30.4
Number of Prenatal Visits		
Once	10	17.9
Two	13	23.2
Three	8	14.3
Four and above	25	44.6

Participants' eating habits and nutrition as self care practices during pregnancy are shown in Table 7. Sixty one (76.3%) of the participants reported to have enjoyed food during the current pregnancy while 19 (23.8%) did not enjoy food during the current pregnancy. Responses to the number of times participants ate per day during pregnancy revealed that 3 (3.8%) ate once a day, 12 (15%) ate twice a day, 34 (42.5%) ate three times a day and 31 (38.8%) ate four and above per day. Forty-four (55%) reported being given advise on low blood levels in the body and 36 (45 %) were not.

On whether participants took any supplements to boost their blood levels, responses revealed that 34 (42.5%) did not take any supplements during pregnancy, 3 (3.8%) took iron supplements, 1 (1.3%) took Folic Acid and 42 (52.5%) took both iron and Folic Acid during the current pregnancy. Twenty five (31.3%) of the participants reported maternal weight gain during pregnancy of less than 5kg, 49 (61.3%) gained 5 – 9kg and 6 (7.5%) gained 10 – 12.5kg.

Table 7

Eating habits and Nutrition (n = 80)

Variable	Frequency	Percentage
Appetite during pregnancy		
Yes	61	76.2
No	19	23.8
Feeds per day		
Once	3	3.8
Twice	12	15.0
Thrice	34	42.4
Four and above	31	38.8
Advice on blood levels		
Yes	44	55.0
No	36	45.0
Supplements		
None	34	42.5
Iron	3	3.8
Folic Acid	1	1.2
Both Iron and Folic Acid	42	52.5
Weight gain during pregnancy		
Less than 5kg	25	31.2
5 – 9kg	49	61.3
10 – 12.5kg	6	7.5

Table 8 shows distribution of participants according to whether they used unprescribed drugs, cigarettes and alcohol during pregnancy. Twenty two (27.5%) of the participants reported having taken drugs and medicinal preparations that were not prescribed for them during pregnancy. Majority 58 (72.5%) did not take any drugs or medicinal preparations that were not prescribed for them during pregnancy. Responses as to whether participants took any alcoholic beverages during pregnancy revealed that 11 (13.8%) took some alcohol during pregnancy while 69 (86.3%) did not take any alcohol during pregnancy. Responses on whether participants were tested for HIV during pregnancy showed that more than half of them 52(65%) were tested and 28(35%) were not tested. Twenty six (32.5) of the participants were positive for HIV, 26(32.5) were negative. Nineteen (73%) of the HIV positive participants were commenced on PMTCT, 7(27%) were not commenced. On whether the participants had ever suffered sexually transmitted infections (STI), 53(66.2%) did not suffer and 27(33.8%) had suffered some type of STI. Of the infected participants 15(58%) were treated for STI and 12(42%) were not treated. Fifty-one (63.8%) never used condoms during pregnancy, 20 (25%) used condoms at times and only 9(11.25) reported using condoms all the time during pregnancy.

Table 8

Substance Abuse and exposure to HIV/AIDS (N = 80)

Variable	Frequency	Percentage
Unprescribed drug use		
Yes	22	27.5
No	58	72.5
Smoking during pregnancy		
Yes	1	1.3
No	79	98.7
Alcohol consumption		
Yes	11	13.8

Self Care Practices During Pregnancy Total Scores

Table 9 illustrates the total actual scores on self care practices during pregnancy.

The minimum score for the sample was 14 while the maximum score was 30. The

mean score was 24.32, mode being 28, with a standard deviation of 3.561. The range

was 16.

Table 9

Total scores for Self Care Practices during pregnancy (N = 80)

Total Score	Frequency	Percentage
Fourteen	4	1.2
Fifteen	1	1.2
Sixteen	1	1.2
Seventeen	0	0.0
Eighteen	2	2.5
Nineteen	4	5.0
Twenty	3	3.8
Twenty-one	3	3.8
Twenty-two	7	8.8
Twenty three	7	8.8
Twenty four	9	11.2
Twenty five	9	11.2
Twenty six	9	11.2
Twenty seven	6	7.5
Twenty eight	11	13.8
Twenty nine	4	5.0
Thirty	3	3.8

Self Care Practices During Pregnancy and Birth Outcomes

Table 10 illustrates the correlation matrix of the relationship. The correlation coefficient was .340 and significant (r = .340, p = < .001). The strength of the relationship is moderately strong since the coefficient is near to 1.The significance level is 0.001.In summary, Pearson's correlation coefficient showed a moderately strong positive and statistically significant correlation of self care practices during pregnancy and birth outcomes(r=.340 p<0.001).The actual significance level was 0.001 which is less than 0.01.

This means that the independent variable and the dependent variable were increasing together. The results support the premise that as self care practices during pregnancy increases, the birth outcomes improve. Possible values for correlation coefficient range from −1.00 through 00 to +1.00 with - 1.00 and +1.00 indicating perfect correlations (Polit & Beck, 2010). The authors' further state that it is difficult to offer guidelines on what should be regarded as strong or weak relationships because it depends on the variables.

Table 10

Pearson's Correlation Matrix of Self Care Practices During Pregnancy (N = 80)

Variable	Y
	1.000
X	.340**

*P = < .05   **p = < .01   ***p =< .001

Y = Birth Outcomes

X = Self Care Practices During Pregnancy

Regression Analysis

Table 11 below summarises the regression analysis. Regression analysis was used for further estimation of the linear relationship between self care practices during pregnancy (Independent variable) and the birth outcomes (Dependent variable). Brink (1990) defines regression analysis as an estimation of the linear relationship between the independent variable and the dependent variable. Significant R^2 = .115. Expressed as a percentage R^2 = 11.5%. This result implies that the effect of the independent variable (self care practices during pregnancy) accounts for 11.5% of the variance in the dependent variable (birth outcomes). R^2 shows us the effect of the self care practices during pregnancy on the birth outcomes that is 11.5% of the changes in the birth outcomes are as a result of the self care practices during pregnancy.

To test the significance of R^2, the F statistic test was done. The significant F test (F = 10.163, p = <.01) indicates a linear relationship and that the R^2 is significant. The unstandardized Regression Coefficient b (0.141 p< 0.001) represents a change in birth outcomes for every unit change in the self care practices. The regression coefficient (b) represents an average change in the birth outcomes for a unit change in the self care practices. From the unstandardized regression coefficient a small relative importance of self care practices during pregnancy was revealed. The bigger the value, the more important in terms of its contribution to birth outcomes. In this study, the importance of self care practices during pregnancy, therefore, was 0.141 in terms of its contribution to birth outcomes.

Table 11

Regression Analysis of Birth Outcomes (N = 80)

Variable	B	SEB	Beta	Significant T
X	5.555	1.088	.340	5.106
Constant	.141	.044		3.188
	$R^2 = .115$		$F = 10.163$	

*p = < .01   **p = < .01   ***p = < .001

X = Self Care Practices During Pregnancy

CHAPTER 5

DISCUSSION, IMPLICATIONS AND RECOMMENDATIONS

Introduction

This chapter discusses findings and makes conclusions regarding the results of the study. Discussion focus on specific study questions which addressed self care practices during pregnancy, birth outcomes and the relationship between the two variables. Implications of the study findings in relation to Maternal Child Health and Midwifery practice, Nursing Education and Nursing Research will also be highlighted. Recommendations, study limitations and the summary of the study will conclude this chapter.

Summary

The purpose of the study was to examine the relationship between self care practices during pregnancy and birth outcomes among youths aged 16 – 24 years delivering at Gweru Maternity Hospital. Participants were randomly sampled from the Postnatal Unit at Gweru Maternity Hospital, a major referral centre in the Midlands Province, and 80 participants were interviewed. Face to face interviews based on a structured interview schedule was used to collect data.

The findings show positive birth outcomes for most of the participants with majority 65 (81.25%) scoring above the mean (8.99) in a total possible score of 15.Responses scores were segmented into 3 categories. Those who scored 0-5 had poor birth outcomes and those comprised of 4 (1.25%) of the respondents. Those who scored 6-11 had fair birth outcomes and were 78 (97, 5%) of the respondents. Those with good birth outcomes were in the category 12-15 and comprised 1 (1.25%) of the

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respondents. Self care practices during pregnancy had a total score of 42.The mean score was 24.32, 56(70%) scored above the mean which is indicative of good self care practices, with 24 (30) participants scoring below the mean.

Pearson's Correlation Coefficient test showed a significant positive correlation of self care practices during pregnancy and birth outcomes ($r = .340$, $p = < .01$). The regression analysis was indicated by significant $R^2 = .115$ ($F = 10.171$, $p = < .01$) implies that self care practices during pregnancy explain 11, 5% of the variance in birth outcomes. The regression analysis showed a significant moderate positive effect on the dependant variable. Therefore, as self care practices during pregnancy increase, there is a corresponding increase in improvement of birth outcomes. In this study, the findings moderately support the hypothesis that there is a relationship between self care practices and birth outcomes.

Discussion

Sample Demographics

Participants' ages ranged from 16 to 24 years. This age range is similar to a survey data from 51 developing countries which showed that almost 10% of the girls were mothers by age 16,with highest rates in Sub-Saharan Africa (UNFPA,2011). The majority of the participants 41 (51.2%) were aged 19 – 24 years with 39 (48.8%) aged 18 years and below, which may support the finding that pregnancy in such minors maybe a result of forced sexual relationships. Studies from South Africa have found that 11-20% of pregnancies in youths are a direct result of rape while about 60% of young mothers had unwanted sexual experiences preceding their pregnancies (Ventura, 2003). The mean age for the sample was 17.75 years, suggesting that most of the girls got pregnant in their late teens.

A high number of the participants 33(41.25%) were married, confirming earlier reports that in some African countries, Zimbabwe included, cultural and religious practices like early and forced marriages contribute to youth pregnancy (Farber, Rodriquez & Moore, 2003).In Zimbabwe, in a study done by Mitra (2005) findings revealed that about 60% of adolescents women were married by the time they were 18 years of age. According to UN (2007) the highest number of adolescents' pregnancies in the world is in the Sub-Saharan Africa where women marry at an early age. This means that the married participants had support hence the positive outcomes. In contrast Zimbabwe Demographic Health Survey (2006) posited that married youths are often neglected in designing interventions but they present a special target group with a 20% prevalence of adolescent pregnancies. In Zimbabwe, however, for most of the married young women, pregnancy usually precedes marriage. Thus once pregnant the woman has no choice but to get married to avert social stigma directed to self and family. However single participants were 47.5% making the majority of the sample. WHO (2007) acknowledged that ignorance and the erratic and non-use of contraceptives by adolescents leads to pregnancy and ignorance of sexuality leads to unwanted pregnancies. Youths may lack knowledge of access to conventional methods of preventing pregnancy, as they may be too embarrassed or frightened to seek such information. Ventura (2003) acknowledged that premarital sexual relation is being condoned by many but the social acceptance of the unwed mother and of cohabitation denotes the change of social attitude to sexuality.

The educational level of the majority of the participants 40 (50%) was secondary education, and 15(18.8%) had tertiary education. These results show that the majority of participants had attained some higher level of education though a few had primary level 25(31.2%) This has implications for self care practices during pregnancy that

Midwifery practice should take advantage of. The supportive-educative role of the midwife should be more meaningful, using that level of education as a base. The mothers' educational level helps in information assimilation and facilitates modification of self care practices during pregnancy (Ventura, 2003).The same author acknowledged that in developing countries, adolescents' pregnancies are associated with many social issues including low level of education. According to UNAIDS (2005) report, education plays an important role in predicting how well an individual is able to incorporate current lifestyle messages into their sexual behaviour. The level of education of the sample may have accounted for the increased self care practices during pregnancy, mean score 24.32 out of 42 with a corresponding improved birth outcomes, mean score 8.99 out of 15.

The majority of the participants were unemployed that is 54(67.5%) and 26 (32.5%) being self - employed or employed. These findings imply that youths depend on others for their upkeep. The findings are supported by Ventura (2003) who echoed that in developing countries, adolescent pregnancies are associated with higher rates of unemployment and poverty. Earlier child bearing and failure to complete high school are correlated and reduce career opportunities for many adolescents (UNICEF, 2010). The results of the study support demographic research findings that the majority of Zimbabwean women are not gainfully employed and depend on the benevolence of their husbands or male partners (Phiri, 2010).The high unemployment rate in the sample may also be attributed to the high unemployment rates in Zimbabwe following the hyperinflation and economic meltdown era.

The majority 26 (32.5%) were protestant, 23 (28.0%) were Pentecostals, 12(15%) were Apostolic Faith sects and nineteen (23.8%) did not belong to any church. In this study, though the Apostolic sect participants were not many, these findings may be

attributed to some practices such as encouraging early marriage of adolescent girls within some Apostolic Faith sects. Thirty-three (41.2%) of the participants came from rural areas, 26(32.5%) came from the urban areas with the remainder coming from mining, 12 (15%) and farming areas 9 (11.2%). The number of urban dwellers among the participants might explain the increased self care practices during pregnancy, due to the availability and accessibility of care facilities in the urban area.

Twenty-five (31.2%) of the participants stayed with their husbands or boyfriends while only 10 (12.5%) stayed alone, and 4(5%) with a friend, and the rest 41 (51.25%) stayed with parents or in-laws. These findings may suggest a good social support network and the supportive extended family concept in Zimbabwe, which, according to Orem (1991) forms part of the external factors that influence a person's ability to perform self care. The ten participants who stayed alone and four with a friend might have been victims of what Sellers (2009) referred to as social problems of youth pregnancy such as rejection by family and expulsion from home.

The majority of participants 57(71.2%) had had two pregnancies and 23(28.8%) had two or more pregnancies. Self care was likely to be increased in these women, which was the case in this study. These young women were found to be knowledgeable about self care practices in pregnancy and the knowledge was attributed to repeated contact with midwives. The 23(28.8%) who had had two pregnancies and above may imply that whether married or not, few youths have a third pregnancy during the youth period. This supports findings by UNFPA (2011) that an analysis of survey data from 51 developing countries almost (10%) of the adolescents were mothers by age 16 with the highest rates in Sub-Saharan Africa. The findings concurred with the results from a Zimbabwean study done by Mitra (2005) which revealed that about 60% of adolescent women were married by the time they were 16 years of age and

those with less education tending to start child bearing earlier. WHO, (2007) concurred with the aforementioned authors citing that ignorance and the erratic and non use of contraceptives by youths leads to pregnancy. Youths may lack knowledge of access to conventional methods of preventing pregnancy as they may be too embarrassed or frightened to seek such information this may further support the need to have the second and above pregnancies. The majority of the participants 45 (56%) had one child. Twenty-two (27%) had two or more children and 13(16.2%) had no live children despite the findings that 22 (27%) had had two pregnancies. This may imply that some youths may have experienced adverse infant related outcomes such as abortions, prematurity, still birth, low Apgar score and low birth weight, which ended fatal. It is assumed that the higher the parity the more informed one becomes of issues of pregnancy and may contribute to improved self care. The findings are supported by Towsend (2006) who acknowledged that in Sub-Saharan Africa infants born with these adverse birth outcomes may die in their first week or month and these are the major determinants of child survival.

Birth Outcomes

The birth outcomes assessed were prematurity, still birth, low Apgar score and low birth weight. The maternal outcomes were anemia, pregnancy induced hypertension, post-partum haemorrhage and infections including HIV/AIDS. Study findings revealed that 48 (60%) of the participants delivered term infants while 32 (40%) delivered premature infants. The relatively higher percentage of premature deliveries may be attributed to the high number of the participants 39 (48.8%) who were aged 18 years and below. This is supported by Khashan, Baker & Kenny (2010) who found that biological immaturity accounted for most of the preterm deliveries, with youths

aged less than 17 years being at increased risk of preterm delivery (Wallis, 2000; Stomes, 2010).

In the present study, 67 (83.8%) of the participants delivered live births while 3 (30.7%) delivered still births. This finding supports Santhya, Ram, Achrya, Jejeebhoy & Singh (2010) who reported that women marrying at less than 18 years were more at risk for miscarriages or still births. The authors further suggested that the increased risk may not be attributable to age alone but also to adoption of preventive care practices and utilisation of health care services during pregnancy. UNICEF (2011) concurred with the afore mentioned authors citing that Zimbabwe like any other Sub-Saharan Africa country bears a heavy burden of neonatal mortality when compared to other regions of the world. In Africa, an alarming rate of 341 neonatal deaths per 1000 live births has been reported in 2011 (UNICEF 2011).

Seventeen (21.3%) of the infants had an Apgar score of less than 7 at 5 minutes while 63 (78.7%) had an Apgar score of 7 to 10 at 5 minutes after birth. This finding maybe attributed to the good self care practices during pregnancy and to most youths getting pregnant in their early twenties. The 21.3% who had low apgar maybe attributed to self care practices that ranged from poor to fair among young mothers. The findings were supported by Chen & Fleming (2007) who cited that infants born to young women had a high risk for low Apgar score at five minutes and found out that low apgar score is thus an adverse birth outcome that may contribute to neonatal and infant mortality. A fifth of the participants delivered low birth weight infants (< 2500g) while 64 (80.0%) had birth weight of 2500g and above. These findings may suggest that infants born to young mothers in Zimbabwe are at increased risk of LBW as they are double the 10% LBW babies born to adult mothers in Ventura's (2003) study. In this study 7(8.8%) of the participants lost more than 500millilitres of blood

per vagina during delivery. Findings may imply that youths are prone to post-partum haemorrhage (PPH) as Pilliteri acknowledged that pregnant youths are more prone to PPH because if the woman's uterus is not yet fully developed, it becomes over-distended by pregnancy, it does not contract as readily as of older women's uterus and this will lead to PPH. The same author cited that the PPH is compounded by anaemia during pregnancy. Forty-one (51.2%) of the participants received treatment for lack of blood or reduced blood in the body after delivery. Thirty-nine were not put on prophylaxis for post-natal anaemia. The high number of women who were not commenced on anaemia prophylaxis may suggest that these women are missed opportunities because sometimes they are not clinically evident for anaemia post-delivery. The results were supported by Dangal (2005) who posited that iron deficiency anaemia affects about half of all pregnant women in developing countries. The same author went on to cite that nutritional status of youths even long before pregnancy leads to anaemia and young mothers with severe anaemia are at increased risk of maternal death as they succumb to PPH.WHO (2005) concurred with the above author echoing that observational studies done of iron-deficient pregnant young women who were not clinically anaemic showed an increased risk of associated complications during pregnancy like pre-eclampsia, and an increased risk of maternal deaths, still birth, early neonatal deaths and or cognitive impairments. In this study 20% of the participants had suffered some infections related to HIV/AIDS during pregnancy. The results suggest that young women succumb to a host of infections including HIV/AIDS. The results were supported by WHO 2005 who cited that globally,40% of HIV infections occur in youths and the prevalence rate of HIV infections among pregnant young mothers attending prenatal care in Zimbabwe is 13.1%.Thirty-two(40%) suffered a raised blood pressure during pregnancy and 17(21.2%) were commenced on medication for high blood pressure. Sellers (2009)

pointed out that the actual causes for pregnancy induced hypertension are not known but thought to be an auto-immune rejection in women of age less than 20 years and those in new marriages. The participants who were not commenced on medication cited that they were advised on diet and rest. Diet plays an important part as high protein is recommended to resolve the problem this was postulated by Myles (2003).However some women even defaulted either of the remedies. Myles (2003) acknowledged that pregnancy induced hypertension is estimated to affect 7-10% of all young mothers' pregnancies in the United States and it is the main cause of deaths in the developing countries.

<center>Self Care Practices during pregnancy</center>

Practices such as awareness of being pregnant, disclosure of pregnancy, prenatal care, eating habits and nutrition, substance abuse and exposure to sexually transmitted infections including HIV/AIDS were assessed as they may influence birth outcomes of pregnancy. The majority of participants 35 (43.8%) were aware of their pregnancy status at 12-20 weeks gestation. Eighteen (22.5%) became aware of being pregnant at less than 12 weeks gestation. Twenty-six (32.5%) knew that they were pregnant at above 21 weeks gestation including 1 (1.25%) who only became aware of the pregnancy in the third trimester. The study findings concur with earlier literature that reported that the majority of adolescents may not recognise that they are pregnant due to lack of awareness that a missed period may indicate pregnancy (Kalyanwala, Zavier, Jejeebhoy & Kumar, 2010). Furthermore, 72 (90.0%) participants reported a missed period as a first sign of pregnancy. This is commendable and may be attributed to input on biology in the curricula at both primary and secondary levels of education in Zimbabwe.

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Study findings further show that 12 (15%) of participants first disclosed the pregnancy at less than 12 weeks of gestation, 47 (58.8%) at 12- 20 weeks and 20(25%) at 21-28 weeks including 1(1.25%) who disclosed at 29 weeks and above. Since awareness of being pregnant and subsequent disclosure provide the basis to preventive and supportive care that promotes positive birth outcomes, it is highly commendable that 73.8% of the participants disclosed the pregnancy within twenty weeks gestation. Despite few cases of late disclosure, all participants interviewed reported disclosing the pregnancy at some point before delivery and none kept it to themselves.

From the findings 65 (81.2%) of the participants first disclosed the pregnancy to their husbands or boyfriends. These findings may be attributed to the high number of married women in the sample and anecdotal evidence that adolescents' pregnancy in Zimbabwe precedes marriage and the earlier one discloses to the boyfriend, the better are the chances of acceptance of the pregnancy by and subsequent marriage to the boyfriend. Notably, whereas only 2 (2.5%) first disclosed to their parents/ guardians, which may be explained on fear of the parent's reaction and/or respect as was noted by Sellers (2009) that even if aware of the pregnancy, the pregnant youth may not reveal the pregnancy to parents/guardians for fear of rejection and expulsion from home. Pilliteri (1999) however differs on the issue of disclosure; the author is of the opinion that not disclosing may be a way of protecting the pregnancy. The belief, according to the author is that if the teenager does not tell anyone, no one can suggest that she terminates the pregnancy. This finding may mean that Zimbabweans have functional family relationships.

The study findings also revealed that the majority 56 (70.0%) participants were booked for prenatal care while 24 (30%) did not book for prenatal care. These

findings are a cause for concern for Midwifery practice since adequate prenatal care is the pillar for safe motherhood and the most reliable means by which the burden of maternal and infant mortality may be reduced, particularly in developing countries. Not booking for prenatal care may be attributed to lack of user fees since prenatal and maternity care is not free in Zimbabwe. Lack of knowledge on the importance of booking might also have contributed to the adolescents not booking.

Only 14 (17.5%) booked for prenatal care at less than 20 weeks. This finding is supported by Baker (2005) who found out that in Boston, prenatal services were initiated in which pregnant women were urged to report early in pregnancy and be instructed on self care. A number of studies have indicated a relationship between the use of prenatal care services and birth outcomes. However Baker (2003) cited that the more children a woman has had the more likely she is to obtain insufficient care or none at all. Kanani (2005) supported the results acknowledging that adolescent women are at a high risk of obtaining late or no prenatal care with the greatest risk being among below 18 years of age. Myles (2003) supported the other authors that adolescents tend to book late due to late recognition of pregnancy, denial of pregnancy, emotional stress and confusion about available services. Due to delayed booking, inadequate time is left for care before giving birth. Considering the fetus' vulnerability to teratogens during the early stages of human development, it is worrying that 48 (60%) either did not book or booked in third trimester. Early entry into prenatal care is crucial for the supportive-educative role of the midwives to be beneficial in reducing adverse birth outcomes.

Goal oriented Antenatal Care (Focused prenatal care) protocol in Zimbabwe stipulates at least six prenatal care visits with first booking expected at 14 weeks of pregnancy (Ministry of Health & Child Welfare, 2010), yet in this study only 25

(44.6%) of the participants had 4 prenatal care visits and above. Study findings show that 19 (23.8%) participants had poor appetite, yet a healthy appetite is essential to maintain optimal nutritional status for the pregnant mother and promote growth and development of the baby in utero. Only 31 (38.8%) had 4 meals and above. This finding may not only be attributed to poor appetite but also to lack of food as a result of the higher number of young women not employed making it difficult to acquire enough food and also in the face of harsh economic environment of the country. Kapoor (2006) cited that many pregnant youths are subjected to nutritional deficiencies from poor eating habits including food faddism and consumption of fast foods. Nutrition is of paramount importance as lack of adequate nutrition during pregnancy may lead to adolescents suffering from complications like obstructed labour, prematurity and or retardation of fetal growth. In this study 45% of the participants were not given advice on low blood levels in the body. The results may imply that those who were given information booked for prenatal care and those who were not given showed poor prenatal adherence as health education marks the hall mark of prenatal care and is routinely done at prenatal care centres in Zimbabwe.

Findings regarding taking of iron and folic acid supplements, which should be routinely supplied to all pregnant women on booking, revealed that although 56 (70%) booked for prenatal care only 42 (52.5%) received both supplements. Fifty-eight (72.5%), including the 24 participants who did not book, did not get the supplements. This finding may be explained on the unavailability of these supplements in some health care centres or failure by care givers to supply the supplements. Lee and Grubbs (2000) reported almost similar findings where only 54% of the pregnant adolescents who began prenatal care in the first trimester and

41.6% of pregnant youths, who began prenatal care in the third trimester, used vitamin and mineral supplements.

From the findings, only 6 (7.5%) of the participants gained 10 – 12.5 kg, which, according to Wallis (2000), is the average maternal weight gain in pregnancy. Thus the majority 74 (92.5%) gained less than the average weight gain. These findings may not be a reflection of the true picture since most subjects were not aware of their pre-pregnant weight.

On use of unprescribed drugs and any other medicinal preparations during pregnancy, findings revealed that 22 (27.5%) used unprescribed medications during pregnancy. Moore & Pursaud (1993) posited that some drugs were found to be teratogenic and they cause a great deal of malformations and intra-uterine growth restriction. The young mother should be counselled on the use of over the counter and self prescription of drugs.   In this study, only 1 (1.2%) participant smoked during pregnancy, in sharp contrast to findings by Mancini & Witter (2003) who reported that 46.2% pregnant youths smoked cigarettes during pregnancy and it was a significant predictor of decreased infant birth weight. Murphy (2003) differed with the aforementioned author acknowledging that little evidence was found on smoking and marijuana use among African youths including Zimbabwe. The same author acknowledged that in developing countries like Zimbabwe, smoking may not be a problem among black female youths and black women. Eleven (13.8%) of the participants took alcohol and most of them reported no prior use of alcohol but developed a craving (pica) for alcohol during pregnancy. This is a common phenomenon during pregnancy whereby a pregnant woman may develop an excessive liking towards certain edibles, but needs to be curbed if it may be detrimental to infant related outcomes. Some women reported that they only took some few sips of

traditionally brewed beer, but as Moore& Pursaud (1993) rightly put it across that there is no safe taking of alcohol during pregnancy even at low levels of consumption the effects are deleterious. Due to the teratogenic effects of alcohol during pregnancy on the fetus, counselling of youths should start in the pre-conceptual period. In this study 35% of the participants were not tested for HIV during pregnancy. Half of the participants who were tested for HIV were positive. The results suggest for urgent interventions to avert the MTCT problems among the youth population. The findings were consistent with that of a study which was done in Malawi, which found out that stigma and discrimination discouraged the adolescent mothers to visit the voluntary counselling and testing services and hence this also affects their uptake of PMTCT services. In Zimbabwe, HIV prevalence is almost 3 times higher among youths and is fuelled by intergenerational sex (UNFPA, 2011).The same author postulated that becoming infected during pregnancy heightens the risk of transmitting the virus to the unborn baby. In this study 19(73%) of the HIV positive women, were commenced on PMTCT programme. This is not recommendable as CDC (2010) cited that the babies of mothers who were not commenced on PMTCT have high chances of being infected by HIV and may lead to adverse outcomes like congenital anomalies, low birth weight and an increase in neonatal mortality. Twenty-seven (33.8%) of the participants reported to have suffered from some type of sexually transmitted infection and 15(55.5%) got treated during pregnancy. The results suggest that the health seeking behaviour of adolescents is bad. The findings were supported by Guttmacher's (2005) study results from Northern America who found out that repeated sexually transmitted infections were significantly linked to a host of adverse birth related outcomes. Ventura (2003) concurred with the afore mentioned author citing that a variety of factors place adolescent women at risk of contracting sexually transmitted infections(STI).Many of these youths have been engaging in un protected sexual

activity and have had more than one sexual partner, have a history of STIs and or have experienced sexual abuse. Fifty-one (63.8%) never used condoms during pregnancy for prevention of mother to child transmission of HIV/AIDS. The results suggest various strategies for information dissemination to adolescent women pertaining to condom use as a measure to curtail HIV transmission to the unborn babies. It is also important to note that whether condoms as a means of contraception or as protection from STIs, they are strongly associated with extra marital sex. Although condom use has increased significantly over the past few years, the limited data available indicate the majority of young mothers do not use condom or use them inconsistently. The results are supported by WHO (2007) who acknowledged that youths may lack knowledge of access to conventional methods of preventing HIV/AIDS as they may be too embarrassed or frightened to seek such information. UNAIDS (2010) concurred with the former author citing that youth is a time of experimenting and testing the boundaries and this may result in increased incidence of risk behaviours including unprotected sexual activities or inconsistent use of condoms.

Relationship Between Self Care Practices During Pregnancy and Birth Outcomes

Study findings showed a significant moderately positive correlation of self care practices during pregnancy and birth outcomes (r = .340, p = < .01). Regression analysis was used to examine the strength of the relationship and R was significant. R^2 = .115 (F = 10.163, p = < .01). This means that self care practices during pregnancy explain 11.5% of the variance observed in birth outcomes. Regression coefficient of the independent variable self care practices during pregnancy was significant at (p = < .01). This implies that the regression coefficient B (0.141,

p<0,001) represents a change in birth outcomes for a unit change in self care practices during pregnancy. Thus self care practices during pregnancy have a small relative positive influence on birth outcomes. These findings support those of Delpisheh, Attia, Drammond and Brabin (2006) and Guttmacher (2005) who reported a link between self care practices such as inadequate prenatal care use, smoking and alcohol use during pregnancy and adverse birth outcomes such as low birth weight, preterm deliveries and low Apgar score in infants of young mothers. Significant anaemia, post-partum haemorrhage and pregnancy induced hypertension were observed as maternal outcomes. However, Pagnini (2006) echoed that, the seemingly poorer birth outcomes of young mothers appear to result not from their adverse socio-economic circumstances but maybe largely from other diverse related factors. Campbell,(2009) also cited that, less is known about how biological and self care practices, for example women vary in their capacity to conceive or carry a pregnancy to term, many other factors interplay like the mother's health status at the start of pregnancy among others. There should be also more contributing factors leading to varying levels of self care among pregnant youths that may also affect the birth outcomes.

Theoretical Framework

Orem's Self Care Model was used to guide and direct this study. The concepts selected from the model were Self Care, Self Care Deficit and the Supportive-Educative Nursing system. The supportive-educative nursing system was chosen because it explains how nursing agency uses education to empower the client (in this study, through teaching the pregnant young mothers) so that the client may overcome self care deficit and perform effective self care. Self care deficit may lead to adverse

birth outcomes while the support and education on self care practices by the midwives may lead to effective self care and improved birth outcomes. Pregnant youths' perception of self care practices can be used as a starting point for midwives to employ the supportive-educative to support, educate and empower pregnant youths. Use of Orem's Self care model assisted in the identification of poor self care practices such as pregnancy awareness and disclosure and mild substance abuse which can contribute to positive birth outcomes. Other self care practices identified include inadequate prenatal care as a result of none or delayed booking, low uptake of PMTCT programmes, poor adherence to high blood pressure remedies and prophylaxis for anaemia and below average weight gain which may contribute to adverse birth outcomes. The models assisted in confirming that generally pregnant youths book late for and attend prenatal care and feed less frequently.

Implications

Maternal Child Health/Midwifery practice

The study findings show that self care practices have a relatively small impact on birth outcomes. However in Maternal Child Health (MCH), there is need for pregnant clients to be encouraged to actively plan and implement self care practices such as early booking, good eating habits, use of PMTCT programmes and use of condoms to prevent HIV/AIDS transmission to the mothers and their babies among others. MCH/Midwifery practitioners need to reinforce self care adopted through counselling clients and initiating teaching programs on value of self care during pregnancy in reducing adverse birth outcomes specifically low Apgar scores, LBW, preterm infants, post-partum haemorrhage and pregnancy induced hypertension.

Supportive-educative role of midwives should include health education on the need for early booking and adequate prenatal visits, four feeds and above to maintain optimal nutrition and also on the need to desist from use of unprescribed drugs and medicinal preparations to reduce interactions. The pregnant adolescent's support system has great influence on her ability to perform effective self care. Families and communities should be discouraged from suggesting use of herbal preparations since these may be harmful to the health of the mother and fetus leading to adverse birth outcomes. Churches should also be targeted seeing that Zimbabweans are religious, particularly the Apostolic Faith sects which encourage early marriage of young girls.

High rate of unemployment depicted in the demographics is a cause for concern and may be the major impediment to one of the essential self care practices during pregnancy; prenatal care. MCH/Midwifery practice should lobby for return to school of these adolescents to improve their employment opportunities and promote independence. There is need for MCH/Midwifery practice to be politically active and help shape policies regarding maternity care.

Education

Midwives should possess adequate information on the positive role that self care practices during pregnancy play in prenatal outcomes. This would make their supportive-educative role more meaningful. Lack of knowledge and skills on the midwife's part can be detrimental to maternal care resulting in adverse birth outcomes such as low Apgar score, LBW, prematurity, pregnancy induced hypertension, post-partum haemorrhage among others.

Schools of Nursing and Midwifery should incorporate into curriculum objectives aimed at developing skills and modifying behaviour related to supporting, educating,

and empowering pregnant clients so that they practice self care and become active partners in reducing maternal and infant mortality. There is need for pre-service and periodic in-service training to appraise MCH/Midwifery practitioners of current trends in maternity care.

Nursing Research

This study may be used as a base for further exploration on the relationship between self care practices and birth outcomes among pregnant clients incorporating the same or other variables. Literature reviewed revealed death of studies on self care practices in adolescents' pregnancy locally and regionally. There is need for a similar study in a non urban setting to find out if the study can yield different results. Midwives should develop enquiring minds and carry out research on topics emanating from their day to day practice. For example, use of various herbal preparations and spiritual concoctions (holy water) during pregnancy was reported to be a common practice believed to facilitate safe delivery and for pain relief in labour. Research based evidence can be used to improve care, in the policy making processes and also research on other factors that influence birth outcomes.

Administration

Nurse administrators should allocate midwives to take care of maternity clients whenever possible. Where qualified midwives are unavailable, pre and in-service training should be a must before non midwives are tasked to take care of maternity clients. Nurse administrators should also supervise the quality of care rendered and ensure availability of resources like supplementary iron and folic acid that some participants in this study did not get despite their having attended prenatal care. Nurse

administrators should ensure that PMTCT services are accessible to the communities by lobbying for resources and training of personnel manning the facilities.

Recommendations

In light of the study findings, the investigator recommends the following:

1. Public awareness through health education stressing importance of delaying sexual debut and benefits of early entry into prenatal care so that adverse birth outcomes, maternal, perinatal and infant mortality and morbidity can be reduced.

2. Male involvement is important for successful implementation of safer sexual practices to increase condom use and reducing Mother to Child Transmission of HIV/AIDS.

3. MCH/Midwifery practitioners to be proactive client advocates and influence policy making on issues related to maternity fees. Clients need not be turned away prenatally nor detained postnatally for failure to pay for their care.

4. In-service programs for MCH/Midwifery and Nurse practitioners working with pregnant clients should be initiated and maintained in order to improve care and reduce maternal and infant morbidity and mortality.

5. The study should be carried out on a larger scale with a larger sample to ensure generalizability to the general population.

Limitations

1. The study was conducted at a single urban site; therefore, results may not be representative of the entire population. Caution should be exercised in generalizing study findings to all pregnant adolescents.

2. The instrument was developed by the investigator based on available literature. It was used for the first time hence its validity and reliability had not been tested in other studies. Further testing and refinement of the instrument may be required. However Cronbach's alpha was 0.733. Consultation was made with the supervisor from the Department of Nursing Sciences as well as with senior midwifery practitioners to ensure validity. The instrument was also pre- tested and necessary adjustments were made.

3. The nature of self reporting and face to face interviews could have introduced bias. Participants could report what they felt the investigator wanted to hear, especially with weight gain during pregnancy where majority were not aware of their pre-pregnant weight.

4. The research was carried out in a hospital setting; the results could have been different if familiar environment like the home was used.

Summary

Studies from developed and developing countries have consistently reported that adolescent pregnancy were at increased risk of preterm delivery, low birth weight, maternal anemia, post-partum haemorrhage and low Apgar score among other adverse outcomes (Guttmacher,2005). It remains unclear as to whether the adverse outcomes are attributable to biological immaturity alone or are as a result of other factors. According to Munjanja (2007), preterm births account for 49.1% of perinatal deaths.

The purpose of this descriptive correlation study was to describe and examine the relationship between self care practices during pregnancy and birth outcomes among young mothers aged 16 – 24 years delivering at a big referral centre in Zimbabwe. A probability sample of 80 young mothers delivering at gestational age not less than 28 weeks, had had one or more pregnancies, was used in the study. Orem's Self Care Model was used to guide and direct the study. Face to face interviews based on a structured interview schedule was used to collect data.

Data was coded, entered into the computer and analysed using the Statistical Package of Social Sciences (SPSS- PC). Descriptive statistics such as mean mode, percentages and standard deviation were used to describe sample demographics, self care practices during pregnancy and birth outcomes. Pearson's correlation coefficient test and simple regression were used to analyse the relationship and strength of the relationship between the two variables respectively.

Most participants were in their late teens and early twenties which may explain the increased self care practices during pregnancy. Despite having attained secondary level education, majority were unemployed which can interfere with independence in performance of self care. However 41.25% were married confirming earlier reports

that in the developing world, adolescent pregnancy is usually within marriage (UNFPA, 2011; Mitra, 2005). This means participants had support hence the positive outcomes. Twelve (15%) of participants belonged to the Apostolic Faith sects where some sects encourage early marriage of female adolescents.

The majority of the participants 65 (81.3%) had positive birth outcomes. Findings revealed that 40% delivered preterm infants, 16.2% delivered still births, 21.3% infants had low Apgar score at 5 minutes after birth and 20% had LBW. Findings revealed that 8.8% of the participants had post-partum haemorrhage, 20% suffered some infections related to HIV/AIDS and 40% suffered pregnancy induced hypertension. These relatively high rates may significantly contribute to maternal and infant morbidity and mortality.

Findings indicated fair to good self care practices during pregnancy. The majority 56(70%) scored above the mean. However, 60.3% did not book or booked late, 68% had 3 or less prenatal visits, only 38.8% had 4 or more feeds per day, 47.5% had no iron and folic supplements and 27% of the HIV positive participants were not commenced on PMTCT. This calls for Midwifery practice to strengthen health education on early booking, regular visits, importance of feeding and supplements and possible dangers of using unprescribed drugs during pregnancy.

Data analysis indicated that self care practices during pregnancy showed a moderate positive correlation and significant to birth outcomes (r = .340, p = < .001) meaning that an increase in self care practices during pregnancy will positively affect birth outcomes. This was revealed by findings that 1(1.25%) of respondents had poor birth outcomes and also 1(1.25%) had poor self care practices. The effect of independent variable, self care practices during pregnancy is indicated by R^2 = .115 (F = 10.163, p

= < .01).This means that the variable self care practices during pregnancy explain 11, 5% of the variance in birth outcomes. Regression coefficient (b) of the independent variable self care practices during pregnancy was significant at ($p = < .01$). The regression coefficient B (0.141) represents a change in birth outcomes for every unit change in self care practices during pregnancy and therefore self care practices has a relatively weak positive effect on birth outcomes.

Maternal Child Health/Midwifery practitioners should however strengthen and design, in partnership with communities, supportive-educative methods which assist and prepare clients to engage in effective self care.

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APPENDIX A

Informed Consent

My name is AVELYN GOMORA. I am a student at the University of Zimbabwe undertaking a Master of Science Degree in Nursing Science. In partial fulfilment of the programme, I am carrying out a study to examine the relationship between self care practices and birth outcomes among adolescent women aged 16 – 24 years delivering at Gweru Maternity Hospital. It is hoped that information gained from the study will improve management of pregnant adolescents in order to reduce maternal and infant mortality.Although the findings may not benefit you directly, they may provide information that may benefit others in the future. If you choose to participate in this study you will be required to respond to questions which should last approximately 30 minutes. The questions relate to the condition of your baby at birth and how you cared for yourself during pregnancy. The study procedure has no foreseeable risk to you and your baby.

Your participation in this study is voluntary and you may withdraw from the study at any time. Your withdrawal will not affect your care in any way. You will remain anonymous since no name will appear anywhere on the interview schedule. None of the data collected will be shared with anyone without your permission. Data will be kept locked in a file cabinet and later destroyed when the study is complete.You will not be paid for your involvement and no financial cost is associated with your participation. In case of comments or complaints related to the research, please contact:Avelyn Gomora

Department of Nursing Science

University of Zimbabwe,P.O.Box A178

Avondale

  I have read this consent form and voluntarily agree to participate in this study.

Subject's signature...

Date: ....

I have explained this study to the participant and have sought permission.

Investigator's signature. ....

Date: ....

APPENDIX B

Gwaro Remvumo

Ndinonzi muzvare Gomora. Ndiri mudzidzi paUniversity yeZimbabwe pandiri kudzidzira digirii reMaster of Nursing Science. Kuzadzisa chirongwa ichi, ndiri kuita ongororo maererano nekuzvibata kwemadzimai echidiki ari pasi pemakore makumi maviri nemana, panguva yavanenge vaine pamuviri uye utano hwemwana pakuzvarwa. Ruzivo ruchawanikwa kubva muongororo iyi ruchabatsira kuwedzera unyanzvi pakurapwa kwevechidiki vakazvitakura kuitira kuderedza kurasikirwa nemadzimai nevana vari pasi pegore.

Zvichawanikwa muongororo zvingatadza kubatsira imi pari zvino asi ruzivo rwacho rungangobatsira vamwe pane ramangwana. Kana masarudza kuti munoda kupindura mibvunzo iyi, zvichakutorerai maminitsi anokwana kuita makumi matatu. Hamumanikidzwi kupindura mibvunzo iyi. Munokwanisa kuregera kupindura pamunenge mazvifungira. Kurega kwenyu hakukanganisi mabatirwe enyu neipi zvayo nzira. Hapana achaziva zita renyu sezvo fomu remibvunzo risinganyorwe mazita. Zvamuchataura zvichange zvichiremekedzwa uye hazvina mumwe achaziva nezvazvo pasina mvumo yenyu. Fomu remhinduro richange rakavharirwa mukabhodhi yakakiyiwa, richizopiswa pandichapedza kunyora zvese.

Hamubhadhari kana kubhadharwa pakupindura kwamuchaita mibvunzo iyi. Kana pane zvamungada kutsinhira kana kubvunza zvakanangana neongororo iyi munotsvaga:

Avelyn Gomora

Department of Nursing Science

120

University of Zimbabwe

P.O.Box A178,   Avondale

Ndaverenga zviri mupepa iri. Ndinobvuma kuve muongororo iyi pasina kumanikidzwa.

Runyoro rwemuongororwi..

Date: ....

Ndatsanangura zvizere nezveongororo iyi kumuongororwi uye ndapiwa mvumo.

Runyoro rwemuongorori..

Zuva: ....

APPENDIX C

Interview Schedule

Topic: Relationship between Self Care Practices during pregnancy and Birth Outcomes among adolescents 16 – 24 years delivering at Gweru Maternity Hospital.

Section A – Demographic Data

In this section I will ask you questions about yourself. Please feel free to answer the questions to the best of your ability.

1. How old are you?   Years   ☐

2. What is your marital status?

Single   ☐

Married   ☐

Divorced   ☐

Widowed   ☐

3. What is your level of education?

None   ☐

Primary   ☐

Secondary   ☐

Tertiary   ☐

4. What is your occupation?

Student ☐

Unemployed ☐

Self- employed ☐

Employed ☐

5. What is your religion?

None ☐

Protestant ☐

Pentecostal ☐

Apostolic Faith ☐

Moslem ☐

6. Where do you live?

Rural ☐

Urban ☐

Mine ☐

Farming ☐

7. Whom do you live with?

Alone ☐

Husband/Boyfriend ☐

In-laws ☐

Parents ☐

Friends ☐

8. How many pregnancies have you had?

Two ☐

Two and above ☐

9. How many children do you have?

Zero ☐

One ☐

Two and above ☐

SECTION B – Birth Outcomes

In this section I am going to ask you questions about the condition of yourself and the baby at delivery. Please feel free to respond to the questions.

10. At how many weeks was your baby delivered?

28 weeks – 32 weeks ☐

33 weeks – 36 weeks ☐

37 weeks and above ☐

11. Did you deliver a live baby?

Yes ☐

No ☐

12. What was the baby's Apgar score at 5 minutes?

Less than 7 ☐

7 - 10 ☐

13. What was the weight of your baby at birth?

Less than 2500g ☐

2500g and above ☐

14. Did you lose much blood per vagina after delivery?

Yes ☐

No ☐

15. If yes, how much was the blood loss per vagina?

Less than 500 mls ☐

More than 500mls ☐

☐

Not applicable

16. Did you receive any treatment for lack of blood or reduced blood in the body after delivery?

Yes ☐

No ☐

17. Are you feeling tired now or loss of energy?

Yes ☐

No ☐

18. Did you suffer any infections related to HIV/AIDS during pregnancy?

Yes ☐

No ☐

19. Did you suffer any raised blood pressure during pregnancy?

Yes ☐

No ☐

20. If yes, were you commenced on any medication for raised blood pressure?

Yes   □

No   □

SECTION C–Self – Care Practices

In this section I am going to ask you questions about how you took care of yourself during pregnancy. Please answer to the best of your ability.

21. At how many weeks did you know that you were pregnant?

Less than 12 weeks   □

12 – 20 weeks   □

21 – 28 weeks   □

29 weeks and above   □

22. How did you get to know that you were pregnant?

Missed periods   □

After a pregnancy test   □

Increase in size of abdomen   □

23. At how many weeks did you disclose your pregnancy?

Less than 12 weeks ☐

12 – 20 weeks ☐

21 – 28 weeks ☐

29 weeks and above ☐

24. To whom did you first disclose your pregnancy?

Husband/Boyfriend ☐

Parents/Guardian ☐

No one ☐

25. Were you booked with the antenatal clinic?

Booked ☐

Unbooked ☐

26. At how many weeks did you book with the antenatal clinic?

Less than 12 weeks ☐

12 – 20 weeks ☐

21 – 28 weeks ☐

29 weeks and above ☐

None ☐

27. How many times did you attend antenatal clinic?

None ☐

Once ☐

Two ☐

Three times ☐

Four times and above ☐

28. Did you enjoy eating food during pregnancy?

Yes ☐

No ☐

29. How often did you eat per day?

Once ☐

Two times ☐

Three times ☐

Four times and above ☐

30. Were you advised that you had low blood levels in the body?

Yes ☐

No ☐

31. Name any supplements you took during pregnancy.

None ☐

Iron ☐

Folic acid ☐

Both Iron and Folic acid ☐

32. How much weight did you gain during pregnancy?

Less than 5kg ☐

5 – 9kg ☐

10 – 12.5kg ☐

33. Did you take any drugs that were not prescribed for you during pregnancy?

Yes ☐

No ☐

34. Did you smoke any cigarettes/tobacco during pregnancy?

Yes ☐

No ☐

35. Did you take any alcohol during pregnancy?

Yes ☐

No

36. Were you tested for HIV during pregnancy?

Yes ☐

No ☐

37. What is your HIV status?

Positive ☐

Negative ☐

I do not know ☐

38. If positive, were you commenced on PMTCT   for HIV?

Yes ☐

No ☐

Not applicable ☐

39 Have you suffered any sexually transmitted infections during pregnancy?

Yes ☐

No ☐

40. If yes, did you get treatment for any sexually transmitted infections?

Yes ☐

No ☐

Not applicable ☐

41. Were you using condoms correctly and consistently during pregnancy?

Never used condoms ☐

At times ☐

Yes, all the time ☐

Thank you for your time.

CHINAMIRWA CHECHISHANU

BVUNZURUDZO YENHOROWONDO YEMUBVUNZWI

NHANO YEBEPA ☐

Chikamu Chekutanga: Nhorowondo Yemubvunzwi

Muchikamu chino ndichakubvunzai mibvunzo pamusoro penyu. Sunungukai kupindura mibvunzo iyi nepamunogona napo.

1. Mune makore mangani ☐

2. Makadzidza kusvika parugwaro rwupi?

Handina kuenda kuchikoro ☐

Puraimari ☐

Sekondari ☐

KumaKoreji ☐

3. Munoita basa rei?

Ndiri mwana wechikoro ☐

Handishandi ☐

Ndinozvishandira ☐

Ndakabairwa chitupa ☐

4. Makamira sei panyaya dzewanano?

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Handina kuroorwa ☐

Ndakaroorwa ☐

Takarambana ☐

Ndakafirwa nemurume ☐

5. Munopinda svondo ipi?

Handipindi svondo ☐

Ma Protestants ☐

MaPentecostal ☐

Mapositori ☐

MaMoslem ☐

6 Munogara kupi?

Kumamisha ☐

Kudhorobha ☐

Kumigodhi ☐

Kumapurazi ☐

7. Munogara nani?

Ndoga ☐

Murume/Mukomana wangu ☐

Vabereki vemurume ☐

Vabereki vangu ☐

Shamwari ☐

8. Makaita pamuviri kangani?

Kaviri ☐

Kaviri kana kudarika ☐

9. Mune vana vangani?

Handina ☐

Mumwechete ☐

Vaviri kana kudarika ☐

Chikamu Chepiri

Muchikamu chino ndichakubvunzai mibvunzo maererano neutano hwenyu nemwana wenyu pakuzvarwa. Sunungukai kupindura mibvunzo iyi.

10. Makasununguka mwana pamuviri pane masvondo mangani?

Makumi maviri nemasere kusvika makumi matatu nemaviri ☐

Makumi matatu nematatu kusvika makumi matatu nematanhatu ☐

Makumi matatu nemanomwe zvichidarika ☐

11. Makasununguka mwana mupenyu here?

Hongu ☐

Kwete ☐

12. Mwana akachema here pakuzvarwa (Apgar score)?

Haana kuchema (Apgar iri pasi penomwe) ☐

Akachema (Apgar yechinomwe kusvika yegumi) ☐

13. Mwana akarema zvakadii pakuzvarwa?

Pasi pezviuru makumi maviri nemazana mashanu emagiramu ☐

Zviuru makumi maviri nemazana mashanu zvichidarika ☐

14.Makabuda ropa rakawandisa pakubatsirwa kwenyu here?

Hongu ☐

Kwete ☐

15.Kana makabuda ropa rakawandisa,rainge rakawanda zvakadii?

Pasi pemazana mashanu emamiririta ☐

Mazana mashanu emamiririta zvichikwira ☐

16.Makamborapiwa nekuda kwekushaikwa kweropa mumuviri wenyu   mabatsirwa

here? ☐

Hongu

Kwete ☐

17.Murikunzwa kupera simba mumuviri parizvino here?

Hongu ☐

Kwete ☐

18.Makambonzwa marwadzo anotodzana nezvechirwere cheHIV/AIDS here?

Hongu ☐

Kwete ☐

19Mainge muine BP rakakwira muine pamuviri here?

Hongu ☐

Kwete ☐

20.Kana rainge rakakwira,makarapiwa nemapiritsi e BP here?

Ndakarapiwa ne mapiritsi e BP ☐

Handina kurapiwa ne mapiritsi e BP ☐

CHIKAMU CHETATU

Muchikamu chino ndichakubvunzai mibvunzo maererano nekuti maizvichengetedza sei makazvitakura. Sunungukai kupindura nepamunogona napo.

21. Makaziva kuti mave nepamuviri mushure memasvondo mangani?

Pasi pegumi nemaviri ☐

Gumi nemaviri kusvika makumi maviri ☐

Makumi maviri nerimwe kusvika makumi maviri nemasere ☐

Makumi maviri nemapfumbamwe zvichidarika ☐

22. Makaziva sei kuti mave nepamuviri?

Ndakadarika mwedzi ☐

Ndakandoongororwa ☐

Dumbu raiwedzera kukura ☐

23. Makazivisa vamwe kuti mune pamuviri pave nemasvondo mangani?

Pasi pegumi nemaviri ☐

Gumi nemaviri kusvika makumi maviri ☐

Makumi maviri nerimwe kusvika makumi maviri nemasere ☐

Makumi maviri nemapfumbamwe zvichidarika ☐

24. Ndiani wamakatanga kutaurira kuti mave nepamuviri?

Vabereki/ Vanondichengeta ☐

Wemumhuri yedu ☐

Murume/Mukomana wangu ☐

Shamwari yangu ☐

Hapana ☐

25. Manga makanyoresa here pamuviri kukiriniki?

Ndakanyoresa ☐

Handina kunyoresa ☐

26. Makanyoresa pamuviri paine masvondo mangani?

Pasi pegumi nemaviri ☐

Gumi nemaviri kusvika makumi maviri ☐

Makumi maviri nerimwe kusvika makumi maviri nemasere ☐

Makumi maviri nemapfumbamwe zvichidarika ☐

Handina kunyoresa ☐

27. Makaenda kundotariswa pamuviri kukiriniki kangani?

Handina kumboenda ☐

Kamwe chete ☐

Kaviri ☐

Katatu ☐

Kana zvichidarika ☐

28. Maifarira kudya chikafu muine pamuviri here?

Hongu ☐

Kwete ☐

29. Maidya kangani pazuva?

Kamwechete ☐

Kaviri ☐

Katatu ☐

Kana zvichidarika ☐

30.Makamborairwa kuti mune ropa shoma mumuviri muine pamuviri here?

☐

Hongu

☐

Kwete

31.Domai mishonga yamakatora yekuwedzera ropa muine pamuviri?

Hapana ☐

Iron ☐

\Folic Acid ☐

Zvese Iron neFolic Acid ☐

32. Makawedzera uremu hwenyu zvakadii mune pamuviri?

Pasi pemakirogiramu mashanu ☐

Makirogiramu mashanu kusvika mapfumbamwe ☐

Makirogiramu gumi kusvika gumi nemaviri nechidimbu ☐

33. Pane mishonga yamakatora here musina kunyorerwa mune pamuviri?

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Hongu ☐

Kwete ☐

34. Makamboputa fodya here mune pamuviri?

Hongu ☐

Kwete ☐

35. Makambonwa zvinodhaka here muine pamuviri

Hongu ☐

Kwete ☐

36.Makamboongororwa ropa reutachiona hwe chirwere che HIV/AIDS muine pamuviri here?

Hongu ☐

Kwete ☐

37.Makamira sei pautachiona hwe chirwere cheHIV/AIDS?

Ndakabatwa chirwere ☐

Handina kubatwa chirwere ☐

Handizivi chimiro changu ☐

38.Makaiswa pachirongwa chekudzivirira mwana arimudumbu kuchirwere cheHIV/AIDS here?

Hongu

Kwete

39.Makamborwara nezvirwere zvepabonde here?

Hongu

Kwete

40.Kana makamborwara ,makarapiwa here?

Hongu

Kwete

41.Makamboshandisa makondomu kuzvidzivirira pachirwere cheHIV/AIDS,nezvirwere zvepabonde muine pamuviri here?

Handina zvachose

Ndaishandisa dzimwe nguva

Ndaishandisa nguva dzose

Ndatenda nenguva yenyu yamandipa.