PSYCHOLOGICAL DISTRESS AND COPING STYLES: A STUDY AMONG MOTHERS WITH PRETERM INFANTS IN THE NEONATAL INTENSIVE CARE UNIT OF KORLE-BU TEACHING HOSPITAL (KBTH)

BY

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DECLARATION

This is to certify that this thesis is the result of research carried out by ABDUL-RAHIM SALISU ANGO towards the award of the MPhil Clinical Psychology in the Department of Psychology, University of Ghana.

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Psychological Distress and Coping Styles: A study among mothers with preterm infants In The NICU of Korle-Bu Teaching Hospital.

DEDICATION

I dedicate this work to my parents and family who inspired me to explore higher heights and to be the best that I can be.
Psychological Distress and Coping Styles: A study among mothers with preterm infants In The NICU of Korle-Bu Teaching Hospital.

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I am ever indebted to God Almighty for all His goodness, mercy and guidance towards me throughout my life and especially during my stay on campus. Had it not been for Him, I would not have been here today. Glory is to Him, the Master of the universe.

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ABSTRACT

This study examined the psychological distress and coping styles among mothers with preterm infants at the major hospital (Korle-Bu Teaching Hospital) in the Greater Accra Region of Ghana. A sample of 100 mothers with preterm and 50 with term infants were used in the study. Cross-sectional survey method was used and the participants were administered with the parental stressor scale, Africultural coping inventory, multidimensional scale of perceived social support and the Brief Symptom Inventory. Results from the analysis showed that mothers with preterm infants report more of depression and anxiety than mothers with term infants. Further analyses showed that, level of depression was significantly predicted by the sight and sound of the unit. Additionally, Sight and sound, appearance and behaviour of infants, parental role and staff behaviour and communication predicted level of anxiety. Anxiety was significantly predicted by the support received from family. Spiritual and collective centered coping also predicted anxiety. Finally, education, and number of days in NICU did not have any influence on psychological distress. The implications of these outcomes are discussed in relation to mental healthcare delivery, maternity and the health sector. It is concluded that mothers with preterm perception about NICU plays a significant role in their experience of psychological distress, and also support received from family, spiritual and collective coping styles also influence their psychological distress, and therefore attention is required from the health officials for a holistic healthcare.
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CHAPTER ONE

INTRODUCTION

Background

Pregnancy is an important life experience in a woman’s social and psychological development (Bryanton, Gagnon, Hatem & Johnston, 2009; Hall & Taylor, 2004). Childbirth is also viewed as a journey, shared between mother and baby (Fenwick, Gamble & Hauck, 2007). The childbearing years, is a period characterized by significant hormonal fluctuation with new stressors associated with parenting (Surkan, Kennedy, Hurley, & Black, 2011). An estimated 10% of pregnant women and 13% of those who have recently given birth meet criteria for depression and anxiety disorders (O’Hara & Swain, 1996).

Preterm birth is a significant perinatal health problem globally with low income countries, especially those in Africa and Southern Asia having the highest incidence of preterm birth (Beck, Wojdyla, Say, Betran, Merialdi, Requejo, Rubens, Menon, & Van Look, 2010). Preterm infants are babies born before 37 completed weeks of pregnancy or gestation regardless of gestational age or birth weight (WHO, 2009). These babies are classified as high-risk neonates. High-risk neonates are those in whom the levels of growth and development are less than normal neonates (Fraser & Cooper, 2003). High-risk neonates are newborns, regardless of gestational age or birth weight. They have greater-than-average chances of morbidity or mortality because of conditions or circumstances associated with birth and the adjustment to extra uterine life. These neonates are classified according to birth weight, gestational age and predominant pathophysiologic problem (Hockenberry& Wilson, 2009). The high-risk neonates who are classified according to birth weight are: Low Birth Weight (LBW); Very Low Birth Weight (VLBW), Extremely Low-Birth Weight (ELBW), Appropriate-for-gestational-age (AGA), Small-for-date
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(SFD), Intrauterine Growth Restriction (IUGR), Symmetric Intrauterine growth restriction (SIUGR), Asymmetric IUGR and Large-For-Gestational Age (LGA) infants. LBW are infants who weigh 2500 grams (5.5 pounds) or less at birth regardless of gestational age, Very Low- Birth Weights (VLBW), are infants with birth weights of 1500 grams (3.3 pounds) or less. Extremely low-birth-weight infants are infants whose birth weight is less than 1000g (2.2 pounds). Appropriate-for-gestational-age infants are infants whose weight fall between the 10th and 90th percentiles on intrauterine growth curves (AGA), Small-For-Gestational-age (SGA) or Small-for-date (SFD) infants are those rate of intrauterine growth were slowed and whose birth weights fall below the 10th percentile on the intrauterine growth curve. Intrauterine growth restriction is found in infants whose intrauterine growth are restricted and sometimes described as small-for-date (SFD). Large-For- Gestational age (LGA) or Large- For- Date (LFD) infants are babies whose weights are above the 90th percentile on the growth chart (Fraser & Cooper, 2003). The lesser the gestational age of preterm babies, the more problems they have. Usually preterm babies are not discharged home after assessment at the labour ward. They are transferred to the Neonatal Intensive Care Unit (NICU) where universal and optimal care is provided to enhance the chances of survival of these babies, since the lesser the weights of these babies the more complex their outcomes.

In Ghana, one in three newborn deaths is due to preterm birth complications (Liu, Oza, Hogan, Perin, Rudan, Lawn, Cousens, Mathers, & Black, 2014). Ghana ranks 25th in the world for the number of preterm births (Liuet al., 2014).

This denotes that one in every 7 babies born alive is born preterm (Blencowe et al., 2010 & UNDP, 2013 revision). Prematurity is the leading cause of death for babies in the first month of life, with 7,200 newborn deaths due to preterm birth every year in Ghana (Liu et al., 2014). Neonatal Intensive Care Unit (NICU) environment has the possibility of
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Exacerbating stress for parents of infants admitted to the unit. NICU stressors, whether individually or in combination, may affect the parent-infant relationship and create extra difficulties for the mother and wider family (Carter, Mulder, & Darlow, 2007). Higher number of parents of NICU infants had clinically relevant anxiety and depression when assessed within 3 weeks of infant admission, compared to a control group of parents of term infants (Carter et al. 2005).

Additionally, a research carried out in USA indicated that 5% of all preterm births occur in less than 28 weeks (extreme prematurity), 15% of preterm deliveries occur at 28-31 weeks (severe prematurity), 20% also occurs at 32-33 weeks (moderate prematurity) and 60-70% of them are born at 34-36 weeks (Goldenberg, Culhane, Jams, & Romero, 2008). A total of about 33,577 preterm babies were delivered in Ghana in 2010 (WHO annual report, 2009).

The number of preterm births in a country has significant consequences for the society, the economy and the family as a whole. Despite the technological advancement and the efforts of health care providers, the numbers of preterm births continue to increase (March of Dimes, Peristatistics, 2006). This in turn could increase the psychological distress of mothers who have given birth to premature infants, due to the complications surrounding these infants.

Korle-Bu Teaching Hospital (KBTH) is the largest teaching hospital in the southern part of Ghana and the number of preterm births has increased from 440 (6.1%) in 2006 to 1,132 (10%) in 2010 with an average of 94 preterm babies admitted to Neonatal Intensive Care Unit per month (Bilinla, 2010). It is important to research on the relationship associated with stress related to preterm and the NICU environment among mothers because, researches elsewhere have shown a link between parental stress and environmental factors among others which lead to psychological difficulties compared to other infants (Theunissen, Veen, Fekkes, Koopman, Zwinderman, Brugman, et al. 2001).
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Ghana is not exceptional in admitting infants in NICU environment due to complications and premature birth. Research in determining the environmental stressors and coping styles among mothers with preterm infants is lacking in Ghana. Additionally, understanding coping style of these mothers will be relevant in helping them to minimize the stressors experienced by them in the NICU environment.

Causes of premature birth

The exact cause of preterm birth is unidentified. Nonetheless, there are several predisposing factors leading to reduction in gestational period in expectant mothers. These include previous obstetric history, maternal age, social class, multiple pregnancies, antepartum bleeding, premature rupture of membranes, infections, smoking, alcohol intake and maternal diseases in pregnancy such as hypertension and diabetes mellitus, (Fraser & Cooper, 2003 & Ling, Lian, Ho & Yeo, 2009).

Factors that relate directly to the foetus may account for the delivery of preterm babies and these include placental insufficiency, Rhesus diseases and congenital abnormalities (Fraser & Cooper, 2003 & Ling et al., 2009). The problems of preterm babies are numerous ranging from physical, behavioural, psychomotor and emotional (Holditch-Davis & Miles, 2000). Preterm babies also have problems with respiration, temperature regulation, infection control, feeding and general ill health (Ball & Bindler, 2008). It could also be the fact that, having a weak healthcare system, increasing cost of healthcare, cultural practices may increase the delivery of preterm.

Stress among parents with preterm infants

Stress has been conceptualized in multiple ways, and with its various psychological definitions. Stress has been defined as “psychological and physical strain or tension
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generated by physical, emotional, social, economic, or occupational circumstances, events, or experiences that are difficult to manage or endure” (Colman, 2003, p. 711). The definition highlights components of stress, which includes psychological component which is the focus of the current study. Researchers have utilized each of these conceptualizations in their attempt to untangle potential links between stress and preterm birth. Stress has devastating effects on individual, interpersonal, and societal levels; therefore, it is important to understand its nature to assist development of interventions to mitigate these effects. One potentially stressful life event, which is the focus of this study, is the birth of an infant who is then cared for in a Neonatal Intensive Care Unit (NICU).

Stress affects an individual positively or negatively by way of an evolutionary concept named the fight or flight response (Schooler, Dougall & Baum, 2000). A threatening situation puts stress on an individual, therefore eliciting the fight or flight response: an increase in metabolism and blood flow throughout the body increases the capacity to protect one’s self or escape from the situation. The fight or flight response is often accompanied by cognitive appraisal of the situation, leading to emotions such as anger and fear (Gleitman, 1995). With regard to positive effect on an individual, when the situation is immediately threatening, the fight or flight response promotes survival, in contrast, negative effects occur when the situation is not immediately threatening, for example the threat to a person’s health, or important relationships, which are common in the modern world. When changes in the body repeatedly occur from the fight or flight response, it becomes susceptible to disease such as heart attack, stroke hypertension, and cancer (Gleitman, 1995; Schooler, Dougall & Baum, 2000); and to mental illness such as anxiety and depression (Cox, 1978; Davison & Neale, 2001). The deadly or disabling effects on an individual in turn disturb others who are close to the individual. Furthermore, the monetary costs to society must consequently be enormous directly, in terms of health care,
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Psychological distress (depression and anxiety), the most common mental disorders, are the leading cause of disability worldwide (Mathers, Lopez, & Murray, 2006). By 2020, psychological distress is projected to be, overall, among the three leading contributors to the burden of disease as measured by Years Lost to Disability (YLD) and Disability Adjusted Life Years (DALY), respectively (Mathers&Loncar, 2006; World Health Organization, 2009a). Research has shown that, depression and anxiety are much more common in women than in men (Nolen-Hoeksema& Keita, 2003), particularly during the childbearing years, and this is a period characterized by significant hormonal fluctuation where new stressors affect parenting.(Surkan, Kennedy, Hurley, & Black, 2011). Psychological distress is the third leading cause of disease burden globally for women between 14 and 44 years of age (Mayosi et al., 2009). Averagely, an estimated 10% of pregnant women and 13% of those who have recently given birth meet criteria for depression and anxiety disorders (O’Hara & Swain, 1996).The prevalence of maternal

and indirectly, in terms of loss of productivity. Therefore, it is important to research the nature of stress in the NICU environment to assist the development of interventions to mitigate its negative effects on mothers with premature babies.

Nonetheless study found pregnancy-related anxiety predicting preterm birth after adjustments for alcohol and tobacco use. The anxiety which is related to pregnancy is responsible for the effect of stress on preterm birth (Dole, Savitz, Hertz-Picciotto, Siega-Riz, McMahon, &Buekens, 2003).

Stress could also be as a result of fear of whether a baby might not survive high cost of living and visitation to hospitals. Therefore the need to for this study is imperative to find how psychological distress has a link with the way the mothers cope with the distress.

**Psychological distress among mothers with preterm infants**

Psychological distress (depression and anxiety), the most common mental disorders, are the leading cause of disability worldwide (Mathers, Lopez, & Murray, 2006). By 2020, psychological distress is projected to be, overall, among the three leading contributors to the burden of disease as measured by Years Lost to Disability (YLD) and Disability Adjusted Life Years (DALY), respectively (Mathers&Loncar, 2006; World Health Organization, 2009a). Research has shown that, depression and anxiety are much more common in women than in men (Nolen-Hoeksema& Keita, 2003), particularly during the childbearing years, and this is a period characterized by significant hormonal fluctuation where new stressors affect parenting.(Surkan, Kennedy, Hurley, & Black, 2011). Psychological distress is the third leading cause of disease burden globally for women between 14 and 44 years of age (Mayosi et al., 2009). Averagely, an estimated 10% of pregnant women and 13% of those who have recently given birth meet criteria for depression and anxiety disorders (O’Hara & Swain, 1996).The prevalence of maternal
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CMDs is estimated to be even higher in low- and middle-income countries (LMICs) (Fisher et al., 2012). The relatively high prevalence of maternal depression in LMICs may be attributable to women’s exposure to multiple psychosocial risk factors for depression, including poverty, conflict, disasters, violence, and a high prevalence of medical conditions, particularly HIV/AIDS (Dhanda & Narayan, 2007; Patel, Araya, de Lima, Ludermir, & Todd, 1999; Stein et al., 2005).

The prevalence of postpartum depression following a preterm delivery has been estimated between 28 and 70 % (Davis, Edwards, Mohay, Wollin, 2003 &; Miles, Holditch-Davis, Schwartz, & Scher, 2007). Mothers of preterm infants are considered at higher risk for depressive symptoms, higher than for mothers of healthy term infant. (Ballantlantne, Benzies, & Trute, 2013)

The abrupt transition of the babies from protected environment of the womb to the pressered environment of the neonatal intensive care unit (NICU) presents mothers with a wide range of psychological distress (Patil, 2014). The environment of the neonatal intensive care unit (NICU) serves as a significant source of stress for parents. Neonatal units are often burdened with loud sounds, unpleasant sights and procedures, and crowds of health care professionals. Other sources of stress for parents of NICU infants have been found to be alterations in the parental role, uncertainty of the infant’s outcome, and ineffective patterns of communication among health care providers and parents’ stressful experiences can lead to barriers in parents-infant interactions that appear to have a long-term impact on parenting (Kelly ward & pediatrics nursing 2001). High levels of stress following a preterm birth may develop into more severe psychological distress and more health-related outcomes (Witt, Litzelman, Spear et al., 2012). Parental response does appear to be linked to the severity of postnatal risks (Borghini, Pierrehumbet, Miljkovitch, Muller-Nix, Forcada-Guex, & Ansermet, 2006). Ongoing distress and anxiety have been
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reported, particularly in parents of very preterm and very low birth weight (VLBW) infants who are more likely to have long-term health and developmental issues (Auslander, Netzer, & Arad, 2003). A higher number of parents of NICU infants had clinically relevant anxiety and depression when assessed within 3 weeks of infant admission, compared to a control group of parents of full term infants.

In the month following the birth of their infant, mothers of NICU infants, when compared with control mothers, scored higher on measures of the following: difficulty making decisions, depression, anxiety, and obsessive-compulsive behaviours (Carter, Mulder, Bartram, & Darlow 2005). There is little understanding on the psychological distress and coping style of preterm mothers in NICU in Ghana hence the need for the current study.

Coping among mothers with preterm infants.

The transition to parenthood and the first years after childbirth are unique emotional experiences for most mothers (Nelson, 2003). Nonetheless, when childbirth occurs too early, the normal process of transition to parenthood is disrupted due to the unexpected preterm birth and a prolonged hospital stay. During hospitalization, compared to parents of term infants, parents of preterm infants are additionally confronted with several problems, such as the infant’s health, its distinctive social behavior pattern, and uncertain developmental perspectives (Goldberg & Divitto, 2002). Mothers used more emotion-focused coping strategies at admission, and used more problem-focused coping strategies after two weeks of admission. Psychological well-being is impaired in mothers of preterm infants upon NICU admission and surveillance is warranted prior to discharge. Problem-focused coping strategies were used in mothers by 2 weeks of hospitalization (Cheon & Keejeong, 2012). Mothers caring for preterm babies at home had arrayed of challenges including feeding, temperature control and attitudes of significant others. Their
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coping strategies included a reliance on the support of family and significant others and religion (Suraju, Aniteye, Adabayeri, 2013).

Both mothers with preterm infants and mothers with term infants use the strategies to cope with their psychological distress (Perricone, Morales, De Luca, Carollo, Maniscalco, Caldas Luzeiro & Polizzi, 2014). Africentric coping style had no statistical relationship with psychological well-being (Pieterse & Portia 2009). Additionally, studies to determine the relationship between Africentric coping style and psychological well-being in HIV infected women of African descent revealed that culture specific coping had no relationship with psychological distress and Negative Self-esteem, and was marginally associated with Positive Self-esteem. Again, coping is negatively associated with psychological distress (Burns, Feaster, Mitrani, & Szapocznik, 2008). Furthermore, cultural specific coping styles had a small effect on psychological well-being. The National Center for Health Statistics in 2008 found that Black women were more likely to be depressed than White women. Yet, despite these alarming rates, research has shown that Black women are least likely to receive treatment distress (Burns, Feaster, Mitrani, & Szapocznik, 2008).

Problem statement

Every pregnant woman expects to deliver a baby without any complication. However, this is not the case of mothers who deliver preterm babies. In the Ghanaian culture, babies are considered healthy and admirable when they are fleshy (Suraju, 2013). The case of preterm babies in the intensive care unit could have a negative psychological impact on mothers. Delay in naming a child due to long stay in the neonatal intensive care unit could have a negative impact on the psychological well-being of the mothers, since culturally; babies are given names on the eight day of delivery. (Suraju, 2013)
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Additionally, admitting a baby into the NICU can further exacerbate the mother’s distress as the environment is alien to the mother. This is because, the NICU environment is made of sophisticated factors like monitors, incubators, sounds and staffs. Nurses who work daily with very sick infants can sometimes lose their sensitivity as to how this environment appears thereby vent their displeasure on mothers (Rosalie & Cee, 2005).

Maternal delivery at Korle-Bu Teaching Hospital spanning from the period 2006 to 2014 shows steady increase of preterm birth. Data from the biostatistics of the Korle-Bu Teaching Hospital shows that, in 2006 out of 7,227 babies born 440 were preterm birth and the average monthly preterm delivery was 37 and in 2014, out of 10,732 total birth, 734 were preterm birth and the average monthly preterm delivery was 61 (Biostatistics Unit of Korle-Bu Teaching Hospital).

From the above data information, the focus of this study will be based on the need to determine the psychological distress among mothers with preterm infants under the following,

1. Having preterm infants is associated with stress.
2. Poor coping style could exacerbate the problem of psychological functioning.
3. Inadequate support could extend distress for mothers.
4. Poor development of infants increase the distress experienced by mothers.

Aims and Objectives of the study

The purpose of this study is to examine the psychological distress and coping styles of mothers caring for their preterm infants at neonatal intensive care unit in the Accra Metropolis.

Specific Objectives are:
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1. To determine whether there will be a difference between mothers with preterm and term mothers on psychological distress.
2. To determine the psychological distress experienced by mothers with preterm infants.
3. To determine how mothers with preterm infants cope with their distress.
4. To determine whether education and number of days spent in the unit have an influence on psychological distress of mothers with preterm infants.
5. To determine which physical and psychosocial factors influence psychological distress of mothers with preterm infants.
6. To determine whether social support have an influence on psychological distress.

Relevance of the study

The findings from this study will inform clinician, management and policy makers about the psychological distress that confront mothers with preterm infants and their coping strategies. This study will help in developing appropriate institutional responses to help mothers with preterm infants cope better. The study will add to the existing literature on mothers with preterm babies.

The findings will provide a better management options as well as provide appropriate strategies to policy makers to solve the challenges confronting mothers with preterm infants at NICU. Results from this study will also inform practicing clinical psychologists in sub-Saharan Africa particularly Ghana to identify measures in the management of mothers with preterm infants who are experiencing psychological distress.
CHAPTER TWO

LITERATURE REVIEW

Introduction

This study seeks to find out how mothers with pre-term infants cope with their psychological distress in the NICU of Korle-Bu Teaching Hospital in Greater Accra. In this chapter, the researcher discusses relevant theories that seek to explain the relationship between coping styles, social supports among mothers with pre-term infants. This chapter also contains review of related studies, rationale for the study, statement of hypotheses, hypothesized conceptual framework and operational definition of terms.

Theoretical Framework

Three main theories were used to guide this research and they are; parental NICU stress model, Africultural coping theory and social support theory.

Parental NICU stress model (Wereszczak, Miles, & Holditch-Davis, 1997).

In the Parental NICU Stress model (Wereszczak et al., 1997), NICU environment stressors directly influence parents’ stress response. Four major NICU environment stressors were identified and described in detail by Miles, Funk, & Carlson (1993). First, the factor “sights and sounds” was described as the physical environment, including the machines, equipment, lights, noises, infants, and staff. Second, the factor “infant appearance and behaviour” was described as how a parent’s infant looked and behaved, usually quite different to a healthy new born infant because of illness and medical treatments.

Third, the factor “parent-infant relationship” was described as alterations to the normal parent-infant relationship and parental role, due to nurses being the primary caregivers.
Fourth, the factor “staff” was described as staff communication and behaviour towards the parents about their infant’s condition or treatment. Maternal emotional distress associated with premature birth and subsequent parenting is affected by personal and family factors, infant’s characteristics, and environmental. According to this theory, environmental factors influence psychological distress, NICU mothers are bound to be affected psychologically from factors such as high temperature, poor attitudes of healthcare practitioners, overcrowding of patients, longer distance from home to NICU, physical wellness on account of delivery, social support challenges, financial constraints, marital status, low birth weight of neonates among others.

**Africultural Coping Theory (Utsey et al., 2000)**

Africultural coping model explains four major factors of coping styles being used by individuals with African descents when confronted with stressful life event. These factors are spirituality, religiousity, ritual and emotion/cognitive-centered coping. Research has shown that, every individual when entrapped in a stressful situation sorts to different ways of coping in dealing with the situation. According, Daly et al., (1995), Africans when confronted with stressful situation, sort to group-relied ego strengths; these are family, community, social support and religious belief systems. In this regard, An African-centered philosophy holds that everything in the universe is functionally connected, and individuals are viewed as an extension of the environment.

In this regard, the collective consciousness underlines collaboration and group orientation and this group serves as a natural support system (Jackson & Sears, 1992; Post &Weddington, 1997). Additionally, Africans coping behavior is viewed as culturally manifest in the conceptual framework of a worldview that is inherently spirit based which is a reality characteristic of people of African descent. Again, it should be noted that
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collective or group-centered approaches to forming and maintaining harmony during stressful situation with the environment underscore an African ontological framework that posits “I am because we are and since we are, therefore I am” (Mbiti, 1963, p. 106). Moreover, the spirituality aspect of coping explains the fact that, difficult life events can be avoided or dealt with. Mothers in the intensive care unit are faced with stressful experiences in that environment. Therefore, it is believed that, the mothers would be using the Africultural coping in dealing with their psychological distress.

Social Support Theory (Lakey & Cohen, 2000).

According to this theory, stress occurs when people interpret situations negatively (i.e., negative appraisals) and by so doing the stress leads to health problems, in part, insofar as people do not employ adequate coping responses (e.g., problem solving, emotion regulation). Social support promotes health by protecting people from the adverse effects of stress. It does so by promoting more adaptive appraisals, more effective coping or both. In theory, social support should only improve appraisals and coping to the extent that the particular type of social support matches the demands of the stressor.

Based on the above premise, the stress and coping standpoint suggests that social support is one of the coping resources of stress and therefore reduces the effects of stressful life events on health through either supportive actions of others or the belief that support is available (Lakey & Cohen, 2000). Supportive actions of others are found to enhance an individual’s coping ability while perceptions of available support may lead to evaluating potentially threatening situations as less stressful (Lazarus, 1966; Lazarus & Folkman 1984). This implies that individuals going through major life stressors such as illness, who perceive that social support is available would interpret their situations as less stressful.
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This improves the individual’s ability to cope with the situation and in turn has beneficial effects on both physical and psychological well-being (Kawachi&Berkman, 2001).

Additionally, researches that have been conducted on stressful events and coping have shown that, one of the most effective means by which people cope with stressful events is through social support. Social support is shown to function as a protective factor against psychological distress as a result of stressful events (Lowe, Chan & Rhodes, 2010; Pickens, Field, Prodromidis, Pelaez-Nogueras&Hossain, 1995).

Review of Related Study

Review of related studies has been divided into four main sub-headings, comprising of challenges of having a preterm, stress and anxiety among mothers with preterm infants, depression, coping and social support among mothers with preterm infants and some selected demographic variables and psychological distress.

Challenges of having a preterm infant

Maternal psychological distress is a major public mental health problem in low and middle income countries and sub Saharan African countries like Ghana. A recent meta-analysis of studies investigating the incidence of perinatal psychological distress in low middle income countries including several sub Saharan African countries revealed a striking epidemiological data in more than 80% of the world’s 112 low- and middle-income countries and 90% of the least-developed countries (Fisher, Cabral de Mello, Patel,Rahman, Tran, Holton, Mello, De. 2012). Overall, a recent meta-analysis by Fisher and colleagues (2012) reported data from 13 studies that have investigated incidence of perinatal (i.e., antenatal through to 1-year postpartum) psychological distress (common
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mental disease) across 17 low level income countries (LMICs). The average prevalence of antenatal common psychological distress was estimated to be 15.9%.

The rate of postnatal common psychological distress (i.e., up to one year following birth) was found to be as high as 19.8% (Fisher et al., 2012).

Using less stringent article selection criteria, another systematic review reported data from 35 studies assessing maternal mental health in Africa and calculated an average rate of 11.3% for antenatal depression and 14.8% for antenatal anxiety; postnatal, prevalence rates of depression and anxiety were estimated to be 18.3% and 14.0% respectively (Sawyer, Ayers, & Smith, 2010).

Findings from the Research to Improve Infant Nutrition and Growth (RIING) Project conducted in the Manya and YiloKrobo districts, Eastern region, Ghana, revealed a prevalence of 10% of postnatal depression following birth (Okronipa, Marquis, Larrey, Brakohiapa, Perez-Escamilla, & Mazur, 2012). Prevalence of postnatal depression was assessed using the Edinburgh Postnatal Depression Scale (EPDS) with the Western-validated cut-off score of 13. Similar results were reported from a recent study with 153 high-risk mothers of ill newborns conducted in a tertiary teaching hospital in Kumasi, Ghana (Gold, Spangenberg, Wobil, &Schwenk, 2013). Approximately 10% of the mothers exhibited moderate to severe depression (PHQ-9 scores > 15), whereas over 25% scored within the range of 10–14, indicating moderate depression.

Both perinatal and postnatal mothers according to researches experience some levels of psychological wellness. Additionally, all mothers including mothers with preterm infants whose infants are being admitted in the neonatal intensive care units also experience some level of psychological wellness due to stressors associated with the environment. The
current study determined the level of psychological distress and also determined the type of coping styles the mothers sort to in dealing with their psychological wellness.

Erlandsson and Fagerberg (2004) conducted a qualitative study in Sweden that sought to describe the NICU experiences of mothers of premature or sick mature babies and its influence on their health. Participants (six mothers) were interviewed using semi-structured and opened ended interview guide and the data was analyzed with the Husserlian phenomenological approach. The study was conducted in a neonatal unit using the concept of co-care and part-care. The findings of the study indicates that mothers of premature infants desired close physical contact with their babies at the hospital and also wanted to be given constant information about the health status of their babies at all times. Additionally, it was found that separation of babies from the mothers affected the feelings and realization of the motherhood role. This consequently had a negative influence on the health status of the mothers of preterm babies. Again, the mothers perceived their hospital stay as an episode and could not differentiate between the experiences in the maternity ward and the neonatal unit. The researchers suggested that the mothers also needed to be cared for while on the ward. It was again reported that the mothers were given the chance to work on their babies practically which created a bond between the mothers and the babies. Furthermore the findings proved that, mothers who experienced the co-care were overwhelmed and confident as a result; they could manage any situation in relation to care of the babies. Furthermore, those who were separated from their babies felt otherwise and developed feelings of guilt and abandonment of their babies.

Mothers felt bad leaving the babies in the unit unable to take their babies home. Some of the mothers felt disconnected from their babies due to part-care because they did not co-operate with the staff for their needs to be understood. Those who received part-care felt
sorrowful and neglected because of frequent changes of staff which made it difficult for them to identify with the needs of the mothers.

According to the researchers, the study design was such that they could not draw conclusions about the co-care and the part-care. However, they were able to outline the implications of the study and suggested that means should be identified for mothers with preterm infants and those with sick babies to be brought together and treated as individuals by taking time to listen to them, talk to them and provide support.

Generally, the study was useful because it threw more light on the challenges of mothers. The importance of the co-care and part-care was identified and valuable recommendations were made. However, the sample was so small that generalization was not possible to other settings and again the study design was qualitative in nature.

The current study will examine the psychological distress and how mothers with preterm infants cope with their distress. The study also will also examine whether staffs behaviour and communication towards mothers have an influence on psychological distress the mothers experienced. There are few studies on "psychological distress and coping styles among mothers with preterm infants" in Africa and most especially in Ghana. It is imperative to research on this current study to throw more light in understanding what mothers with preterm infants experienced and again identify the predictors of their distress and the type of coping styles they use to deal with the situation.

The present study is important to research on because, mothers with preterm infants experiences of their babies on care is limited in the NICU environment, since they do not actively take part in the care of their babies due to complexity of the care of preterm infants at the unit. This could influence their psychological well-being thereby affecting
their health. To date, no quantitative research has been conducted in the area under study in Ghana.

It is therefore imperative to conduct this study to enable the health care professionals realize the importance of understanding the distress mothers of preterm infants go through, thereby improving the quality of care received by mothers and babies in the intensive care unit.

A study carried by Lindberg and Ohrling (2008) on experiences of having a prematurely born infant from the perspective of mothers in Northern Sweden. Their aim was to describe mothers’ experiences of having preterm infant. The focus of the study was on the birth itself and during the time immediately following the birth. The study was conducted in collaboration with neonatal intensive care unit (NICU) in Norrbotten. A descriptive qualitative method was used. Six participants with premature infants born between 28 to 34 weeks who needed care at the Neonatal Intensive Care Unit took part in the study. However, participants were interviewed at the time the children were 3 years old. The data were analyzed by content analysis. It was found that mothers with prematurely born infants were not initially ready for the birth of premature babies therefore it took time for them to consider themselves as mothers. Again, they felt anxious and separated from their infants in NICU whiles the babies were kept in the incubators. This led to a stressful experience by mothers of premature babies. Also their social roles as mothers could not be played well since they could not have time for other children at home.

However, the mothers felt supported by the hospital staff because they were equipped with knowledge and involved in the care of the infants. According to the mothers, the support they received from their partners made their situation less stressful.
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One of the limitations of this study was that, the mothers might have forgotten some of the lived experiences they encountered and therefore might not have been able to share their experiences vividly because the 3-year elapsed period post-delivery of a preterm was too long.

Another limitation was that, the study was conducted using qualitative method with six participants who took part in the study and so this study cannot be generalized. The current study seeks to use a quantitative method to examine the psychological distress and coping styles among mothers with preterm infants admitted at the neonatal intensive care unit of Korle-Bu Teaching Hospital. Mothers with preterm infants’ could experience psychological distress due to the stressors evoked by the NICU environment. The longer the time elapses between their experiences and the time of interview the lesser the chances of recollection. The element of recall bias must be taken into account. Therefore the need for the current study is pivotal. Again, the literature under review stated, mothers had a good relationship and communication with the staffs in the neonatal intensive care unit. The current study seeks to determine whether this is true in our part of the world like Ghana.

Stress and anxiety among mothers with preterm infants

Steedman (2007) conducted a study on the stress experienced by parents from the neonatal intensive care unit. The aim of the study was to find out which parental stress from the parent-infant relationship in the unit was associated to parenting they received as a child.

Adjustment to their couple relationship was also examined. The sample comprised of 182 mothers and 183 fathers who were cohabitating and their infants were admitted in the NICU at Christchurch Women’s Hospital. The self-report questionnaires included the
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Parental Stressor Scale, Parental Bonding Instrument, and the Dyadic Adjustment Scale. The scales were administered to parents within 2-3 weeks of their infant's birth.

The results indicated that, mothers experienced significantly higher stress from the unit compared to fathers. A previous finding also indicated that, parent-infant relationship was the most stressful aspect of the unit (Franck et al., 2005; Reid & Bramwell, 2003; Shields-Poe & Pinelli, 1997). Sight and sound in the same study was the stressful aspect of the unit for fathers. There was no relationship found between parental stress from the parent-infant relationship in the unit and parenting received as a child, or adjustment to the couple relationship. Finally, there was a weak but significant negative correlation found between stress from the mother-infant relationship and maternal care received in childhood. (Franck et al., 2005; Reid & Bramwell, 2003; Shields-Poe & Pinelli, 1997).

The study has thrown more light on the stress experienced by parents from the neonatal intensive care unit. There are some possible limitations the current study seeks to address. One of the limitations is that, the researchers used all NICU parents for their study. The current study seeks to focus on mothers with preterm infants to determine the psychological distress and coping style among them. Another limitation has to do with communication between staffs and mothers in the intensive care unit.

Mothers would be expecting staff of the unit to be communicating to them about their infants’ state of condition on timely basis which could calm their nerves down. The current study seeks to identify whether staff - mother communication has an influence on psychological distress of the mothers at the neonatal intensive care unit.

Alkozei, McMahon & Lahav (2014) conducted a study on stress levels and depressive symptoms in NICU on mothers in the early postpartum period. The aim of the study was
to examine whether particular maternal and infant factors could identify mothers at risk for increased stress upon admission to the neonatal intensive care unit.

Eighty-five mothers of preterm infants (24-34 weeks gestation) were enrolled in this study. The instrument used in collecting the data included the Parental Stressor Scale (PSS: NICU) and the Edinburgh Postnatal Depression Scale (EPDS). The researchers used Hierarchical linear regression models to determine the extent to which maternal stress is influenced by individual factors. The results of the study indicated that, 52% of mothers reported elevated levels of overall stress and 38% of mothers displayed depressive symptoms. A multivariate analysis of variance revealed significant differences between the three PSS: NICU subscales. Additionally, stress related to alterations in parental role was significantly higher than stress related to infant’s behavior and appearance and NICU sights and sounds. Stress related to infant’s behavior and appearance was significantly higher than stress related to NICU sights and sounds. Maternal depression was positively correlated with overall maternal stress, stress related to parental role and stress related to infant behavior and appearance, but not with stress related to NICU sights and sounds. The researchers found elevated level of stress and depressive symptoms among the mothers.

Furthermore, they found significant differences among the three subscales of the parental stressor scale.

Eighty-five mothers participated in the study which could be difficult to generalize the results. The study did not look out for how mothers with preterm infants cope with their distress in the NICU environment which is the focus of this current study. This will enable us to reveal the true picture of what mothers with preterm infants experienced psychologically and also examine how they cope with their distress in the neonatal intensive care unit environment.
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The current study will consider looking at how the mothers with preterm infants cope and the type of strategy they use to cope with their psychological distress. Additionally, the current study seeks to find out whether staff communication and behaviour has an influence on the psychological distress of the mothers.

A study by Shaw, Deblois, Ikuta, Ginzburg, Fleisher, & Koopman (2006) using quantitative approach with a sample size of forty parents (mothers and fathers) to find out the acute stress disorder among parents of infants in the neonatal intensive care nursery. Parents from couples in which both mothers and fathers participated were 24, mothers 13, and 3 fathers. The respondents completed self-report questionnaires 2 to 4 weeks after their infants were being admitted in the neonatal intensive care unit. Stanford Acute Stress Reaction Questionnaire (SASRQ) was used in assessing acute stress disorder. Again, respondents completed a brief demographic questionnaire that assessed age, ethnicity, education, employment status, income, religious affiliation, and religious practice, the parental stressor scale was used to assess parental perception of stressors arising from the physical and psychosocial environment of the NICU. Additionally, the Neonatal Index of Parental Satisfaction (NIPS) assessed parent satisfaction with the medical care of their infants in the NICU. The Family Environment Scale (FES) assessed the parents’ perceptions about their current family environment and the Weinberger Adjustment Inventory (WAI) assessed the dimensions of distress, restraint, denial of distress, and repressive defensiveness. The results of the study indicated that, (28%) met all symptom criteria used to diagnosis ASD for the stress of having an infant hospitalized in the NICU; 44% of mothers were classified as meeting the symptom criteria for ASD, although none of the fathers did. Moreover, severity of ASD symptoms, as measured by number of ASD symptoms, was greater among mothers than fathers.
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There was a similar pattern among mothers and fathers, with more hyper arousal and dissociation symptoms than intrusion and avoidance symptoms. Among the 12 couples, the husbands’ severity of ASD was not significantly correlated with that of the wife. Additionally, severity of ASD was not associated with the respondents’ sociodemographic characteristics or with the assessments of the neonates’ medical condition. For parental stressor scale, greater ASD symptom severity was strongly related to concerns regarding Parental Role Alteration and was moderately related to stress pertaining to Infant Behavior and Appearance and to the Sights and Sounds of the NICU. Ratings of Staff Behavior and Communication and ratings of parental satisfaction with medical care were not significantly related to the severity of ASD symptoms. To control for the gender differences in severity of ASD, the researchers examined gender differences in perceived stress. The researchers found mothers to have significantly greater concerns than fathers regarding Parental Role Alteration. Partial correlations, controlling for gender, indicated that the association between ASD and concerns regarding Parental Role Alteration remained significant. Other parental concerns were not related to gender.

The researchers also found that severity of ASD symptoms was significantly and negatively associated with FES ratings of Cohesion and with the system-maintenance dimension of Control. Severity of ASD was not significantly associated with the other FES indices. The researchers also found that, mothers and fathers did not significantly differ in their coping style. Parents’ ASD symptom severity was significantly related to their coping style. Scheffe’ post-hoc contrasts indicated that parents’ ASD symptoms were greater among those high in use of restraint. The WAI Distress score was not significantly associated with ASD. However, the combination of Distress and Restraint was related to ASD.
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The findings of this study demonstrated that family interconnection and feeling are associated with less psychological distress in parents. The study also extended previous research on parental coping as one factor that may help explain differences in psychological outcome in NICU parents.

Sample size was one of the limitations of the study with a small number of participants. Another limitation was that, the researchers used all mothers with infants in the NICU instead of considering either mothers with preterm or compare both.

The current study seeks to focus on mothers with preterm infants in the neonatal intensive care unit and to also examine their psychological distress. How they cope with their distress in the neonatal intensive care unit of Korle-Bu Teaching Hospital is also a factor which needs to be looked at. The present study also will examine the factors that influence psychological distress in NICU.

Cheon & Keejeong (2012) conducted a study on the psychological well-being of mothers with preterm infants. The aim of the study was to examine the impact of maternal stress and coping strategies on the psychological well-being of mothers with preterm infants in the NICU from admission to two weeks, to examine the impact of perceived social/nursing support on the psychological well-being of mothers with preterm infants and also identify maternal/infant characteristics that may affect the psychological well-being of these mothers. The research was quantitative in nature and the sample size was hundred mothers of preterm infants were included in the study. A repeated measures-measures design was employed at two time points using instruments including Brief Symptoms Inventory, Patient Health Questionnaire and mood scale, General Well-Being Schedule, Parental Stress Scale: NICU, Perceived Stress Scale, Brief COPE Inventory, Multidimensional Scale of Perceived Social Support, and Nurse Parent Support Tool.
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The result of the study indicated that, maternal stress was a negative predictor, and perceived social support was a positive predictor of psychological well-being. Mothers used more emotion-focused coping strategies at admission they turned to also used more problem-focused coping strategies at two weeks. Infant characteristics (i.e., gestational age, infant morbidity score, hospital discharge < 2 weeks) and maternal characteristics (i.e., race/ethnicity, language, education, marital status, income, employment, pregnancy complications, and 2 weeks breastfeeding) were identified as predictors of maternal psychological well-being. In conclusion, the researchers indicated, psychological well-being is impaired in mothers of preterm infants upon NICU admission and observation is warranted prior to discharge.

Problem-focused coping strategies were used by mothers 2 weeks of hospitalization and can be used as a bench-mark for willingness for discharge education.

The current study seeks to include mothers of babies with term delivery to find out whether there will be a significant difference among the mothers psychological distress related to neonatal intensive care unit.

The study also seeks to find out whether distance from home to the hospital has an influence in predicting psychological distress of mothers with preterm infants. Finally, the current study seeks to find out which of the coping style mothers more often use to cope with their distress.

Singer, Fulton, Kirchner, Eisengart, Lewis, Short, Min, Satayathum, Kercsmar and Baley (2007) conducted a study aimed at comparing the severity and determinants of stress and coping in mothers of 8-year-old very low birth weight (VLBW). They researchers also used term children varying in medical and development risk. It was a longitudinal, controlled, prospective study of 3 groups of mothers with very low birth weight infants.
were compared from birth to 8 years with term children. 110 high-risk VLBW, 80 low-risk VLBW and 112 term children’s mothers participated in the study. Conceptual model of family adjustment was used to view VLBW as stressful life event that may negatively affect families across multiple biopsychosocial domains. This model noticed that stressors and resources may change with time. However, race, maternal education, multiple birth socioeconomic status and other stressful life events were considered as confounding variables and their effects were examined statistically after mothers were interviewed.

The researchers found that those high-risk VLBW children had more neurological and medical risks at birth and low IQ at 8 years than low-risk VLBW and term children.

VLBW who were at high-risk was 19%, 9% of the low-risk VLBW and 2% of term children had IQ of greater than 70.

This implied that there was no significant difference in the score of the data. Also, the mothers of very low birth weight were different from mothers of term infants because they reported more concerns on their children’s health, less parent-child conflict and attained fewer years of additional education. Furthermore, mothers of high-risk VLBW children were found to experience the highest family and personal problems and used less denial and mental disengagement in coping than mothers of low-risk VLBW and term children. Thus the mothers had developed coping strategies that would help them manage the stressors associated with parenting. Additionally, the mothers had lower consensus with marital/partner relationship, divorce rate, parenting competence and psychological distress symptoms. However, multiple birth, low socioeconomic status, low intelligent quotient (IQ) and mental retardation in the infants were found to add to maternal stress.

The findings of the study were appropriate to the topic since the researchers elaborated on the stressors and the coping mechanisms of the mothers. Also, the topic for the research
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was appropriate and the duration of the study was also appropriate since it was a longitudinal study. Nevertheless, there were limitations in this study. The study only made use of mothers with infants with low birth weight and mothers with term infants. The current study focuses on mothers with preterm infants in terms of their psychological distress and their coping style compared to mothers with term infants.

Additionally, coping style among mothers in Africa especially Ghana, will differ from what has been reported in this research. In view of this, it is therefore imperative to research on the coping mechanism of these mothers with Africentric Coping Inventory, since this scale measures types of coping for African descents.

**Depression, cope and social support among mothers with preterm**

Davis, Edwards, Mohay&Wollin (2003) conducted a quantitative study on the impact of very preterm birth on the psychological health of mothers of singleton preterm infants born at less than 32-week gestation. The study sampled sixty-two mothers at a tertiary referral hospital in Australia. The objective of the study was to examine the correlation of maternal depressive symptoms at one month following the birth of preterm baby after infant admitted to neonatal intensive care. The instruments used in conducting this study included the Edinburgh Postpartum Depression Scale (EPDS); the stress subscale of Depression Anxiety and Stress Scale (DASS); Social Support Interview (SSI); Nurse Parent Support Tool (NPST) and Coping Health Inventory for Parents (CHIP). The findings of this study revealed that the mothers were mildly to moderately stress.

Additionally, they were fairly satisfied with their coping efforts and reported receiving high levels of support from the nursing staff. Furthermore, family social support, previous history of depression, infant birth weight and Apgar scores were not statistically associated with the EPDS scores. Also maternal stresses, education, nurse support, the infant’s
gestational age were associated with the EPDS scores. A significant positive relationship was found between maternal stress and depressive symptoms with stress related to risk of depression by 14%.

In addition, a negative relationship was found between mothers’ perception of support from nursing staff and depressive symptomatology such that as nursing support decreased, the risk of depression increased by 6% The risk of depressive symptoms was also significantly higher in mothers who had non-secondary school completers than those with secondary School completers. There was a similar trend for mothers who had completed primary and some secondary education compared to tertiary educated mothers but this did not reach statistical significance.

No significant difference was found between the prevalence of depression in those mothers completing secondary education and those with tertiary education. Finally, neither gestational age of the infant nor maternal coping was statistically significant.

The current study will examine the psychological distress and coping style of mothers with preterm infants at the neonatal intensive care unit of the leading specialist hospital in Ghana. Mothers of preterm infants could differ in coping style and the way they perceive psychological distress based on sociocultural background. It could be the case that, mothers with preterm infants in Africa specifically Ghana, would have a different coping styles compared to those in Europe. Using the Africultural scale, the present study would want to find out whether Africentric coping style will have an influence on psychological distress of mothers with preterm infants.

A study was conducted in Ghana by Gold, Spangenberg, Wobil, Schwenk, (2013). The aim of the study was to describe the prevalence of and risk factors for depression in a high-risk population of mothers of ill newborns in Ghana using the PHQ-9. Semi-
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Structured interviews were used with mothers who had their newborn sick infants hospitalized at a tertiary hospital; Komfo Anokye Teaching Hospital (KATH).

Mothers of infants hospitalized in the Mother-Bay Unit (MBU) were recruited as a convenience sample by nursing staff and participation in the research was limited to mothers who were at least eighteen years of age. A total of 153 mothers took part in the survey. Out of the total number, 50 (32.7%) had PHQ-9 scores of 5-9 indicating mild depression; 42 (27.4%) had PHQ- scores of 10-14, indicating moderate depression; and 15 (9.8%) had scores of 15 or higher, indicating moderate severe depression.

Furthermore, the study indicated that, more than two-thirds of mothers with a hospital infant screened positive for many symptoms of depression. Finally, the study also indicated that, lack of perceived social support, poor self-rated health, history of interpersonal violence with current partner, and home delivery are important risk factors of postpartum depression among mothers of sick infants in Ghana.

Even though, the study was the largest study in Ghana of its kind, one of its limitations was the population used. The present study will utilize mothers with preterm infants admitted at the NICU and mothers with term infants to be compared with on psychological distress. The study seeks to also focus on mothers with preterm infants at the NICU of Korle-Bu Teaching Hospital on their levels of the psychological distress and coping styles within the NICU environment.

Madu & Roos (2006) examined the level of maternal depressive symptoms and ways of coping among mothers with preterm infants as compared with mothers with full-term babies in their study. It was conducted in a hospital in Pretoria, South Africa. The data were collected using the Edinburgh Postnatal Depression Scale (EPDS; Cox, Holden, and Sagovsky, 1987) and the Ways of Coping Questionnaire (Folkman and Lazarus, 1988).
The result of the study indicated that, there was no significant difference found in the level of depression between the two groups. Furthermore, a positive correlation was found between the "Seeking Social Support" coping strategy and higher levels of depression among mothers of preterm infants. A positive correlation was also found among mothers of full-term infants who used the "Accepting Responsibility" coping strategy and higher levels of depression.

Ziya Yurdakul et al (2009) also conducted a study on NICU mothers and the purpose of the study was to determine depression and anxiety symptoms and attachment style in NICU mothers. The NICU group consisted of mothers whose infants were admitted to the NICU and the control group consisted of mothers of healthy term infants. The Edinburgh Postpartum Depression (EPDS) scale, State-Trait Anxiety Inventory (STAI), Adult Attachment Scale (AAS), and Multidimensional Scale of Perceived Social Support (MSPSS) at the first month after delivery were used in collecting the data. The result of the study indicated that, the EPDS score was significantly higher in NICU mothers than that of the control group mothers. Furthermore, NICU mothers who had high EPDS scores had significantly higher anxiety scores and insecure attachment style in comparison to the subgroup of NICU mothers who had low EPDS scores.

This study contradicts with the findings of Madu & Roos (2006) which found no significant difference in the level of depressive symptoms among the two groups. These two contradictory findings could be replicated to address issues surrounding psychological distress among mothers with preterm infants, hence the need for the current study.
Africultural coping styles

Constantine, Donnelly, and Myers (2002) studied the relationship between collective self-esteem and Africultural coping. In this related study, they found that African American adolescents who believed their cultural group was an important part of their self-concept reported greater use of collective and spiritual –centered Africultural coping to deal with stressful situations than those without such beliefs. African Americans also use different types of coping methods to deal with different types of racism stressors.

This study clearly points to the fact that Africans indeed have a way of coping but this is influenced by their belief in that culture. Therefore if one does not believe in the African values and culture the source of coping or mechanism used to cope may be different. Also, depending on what the stressor is a particular type of coping mechanism is used. For these differences, the current study seeks to find out how mothers with preterm infants may cope and what type of coping styles they will adapt.

Tate (2011) in another study identified how African American women often use spirituality to overcome the physical, psychological, and emotional burdens that accompany a breast cancer diagnosis. Spirituality has been used over the years by African American women to bring hope when dealing with hardships.

This integrative study explored the importance of spirituality to African American women throughout the breast cancer experience. Thirteen qualitative and quantitative studies that discussed how spirituality was used to cope with breast cancer from initial diagnosis to survivorship were reviewed. Spirituality was found to be the main coping mechanism used during all phases of the cancer experience. To provide holistic nursing care, nurses must understand that spirituality is an important coping strategy used by most African American women with breast cancer. The implications for nursing that were identified include the
incorporation of spiritual interventions and the utilization of culturally appropriate assessment tools. The current study is appropriate to find out the coping styles mothers with preterm infants use in the neonatal intensive care unit to alter their distress.

Summary

This study examined the psychological distress and coping style among mothers with preterm infants in Ghana. Based on a systematic and thematic review of literature, theories and related studies were analysed. However, no single theory may be self-reliant in explaining the relationship between stressors from the NICU environment including the staffs, social relationships, coping styles and psychological distress, the most suitable theories for the purposes of the present study are the Parental stress model, the Africultural coping model and Social support model. It can be determined from the theories and related studies reviewed that preterm birth is associated with psychological issues and social support and coping also have influence on psychological distress. It is important to study relationships of these factors on the Ghanaian samples.

Rationale

This study is based on the following research gaps identified in literature that must be filled. Generally, studies before this thesis worked on mothers of low birth weight infants compared with term infants’ mothers to determine their psychological distress and coping mechanisms. The current study will examine mothers with preterm infants and their coping style to be compared with mothers with healthy term infants.

Additionally, studies reviewed before this study in Ghana by Gold, Spangenberg, Wobil, Schwenk, (2013) only focused on the risk factors for depression among mothers of sick infants. It is important to focus on mothers with preterm infants in the intensive care unit (NICU).
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Mothers with preterm infants differ from mothers of sick infants since the preterm babies have features like low weight and gestational age less than 37 weeks of normal pregnancy.

Other researchers (Singer, Fulton, Kirchner, Eisengart, Lewis, Short, Min, Kercsmar and Baley 2007) also focused only on the determinants and severity of stress and coping strategies of mothers of 8 year old very low weight infants with their babies admitted in NICU without considering other psychological distress like anxiety and depression. Suraju (2013) conducted a qualitative study on mothers with preterm infants who have been discharged with their babies from the hospital. Thus, a quantitative approach is imperative to determine the psychological distress and coping style of mothers with preterm infants who have been admitted in neonatal intensive care unit in Korle-Bu Teaching Hospital. It is also important to determine the factors that influence the distress the mothers’ experience.

Remarkably, few studies (Patil, 2014) identified some of the psychological distress experienced by mothers with preterm infants. Studies assessing psychological distress and coping styles among mothers with preterm infants with Ghanaian samples is lacking. The need to identify stressors that influence the level of distress is pivotal in the neonatal intensive care unit. As the need to prevent psychological distress, it is important that health professionals acknowledge the impact of parental experiences after preterm birth and apply this knowledge for early screening of parents with psychological distress.

Finally, this study will serve as a bridge to link researches globally with that of Ghanaian samples. Hence, this offers a data on Ghanaian samples and will serve as a beginning point for other future researches.
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**Statements of hypotheses**

The following hypotheses were tested based on the literature reviewed.

1. There will be a significant difference between mothers with preterm and mothers with term infants on their levels of psychological distress.

2a. Parental stress will significantly predict depression among mothers with preterm infants

2b. Parental stress will significantly predict anxiety among mothers with preterm infants.

3a. Perceived social support is likely to predict depression among mothers with preterm.

3b. Perceived social support is likely to predict anxiety among mothers with preterm.

4. Africultural coping is likely to predict depression and anxiety among mothers with preterm.

5. Education and days in NICU will significantly predict psychological distress

**Proposed conceptual framework**

Figure 1 shows the proposed conceptual framework of the study's hypothesized findings.

The figure indicates the expected significant predictions between variables used in the study. Stress from the NICU environment is expected to affect psychological distress (depression and anxiety). Perceived social support, coping style are expected to influence psychological distress. Finally education and days in NICU are also expected to influence psychological distress.
Figure 1: Proposed conceptual Framework.

Operational definition

Psychological distress: The everyday practical life of mothers caring for their preterm babies at NICU.

Coping styles: The specific efforts, such as religious, behavioral, and psychological, that mothers employ to master, tolerate, reduce, or minimize distress in NICU.

Mothers: Nursing mothers who have delivered preterm babies and admitted at the Neonatal Intensive Care Unit of Korle-Bu Teaching Hospital. Preterm babies/Infants/Prematurity: Babies born less than 37 weeks of gestation or pregnancy regardless of their weight. Low Birth Weight: Babies with birth weight below 2.5 kilograms. Very Low Birth Weight: Babies with birth weight of 1.5 kilograms or less.

Term infants: babies born 37 or more weeks. Neonatal Intensive Care Unit (NICU): The unit where high-risk neonates including preterm babies are cared for.
CHAPTER THREE

METHODOLOGY

Introduction

This chapter provides detailed information on the research design employed in achieving the research objectives in addition to methods used in the collection of empirical data (instruments), characteristics of study population, research design, sample, sampling technique, and procedure for data collection.

Population

The primary population was made up of mothers who had delivered preterm infants and whose babies were on admission at the Neonatal Intensive Care Unit of Department of Child Health at the Korle-Bu Teaching Hospital. The infants were one week and above old in the unit. The mothers were 18 years and above. The researcher chose mothers whose infants were admitted one week and above because, at this period mothers were expected to experience much of distress in the NICU environment.

The term infant’s mothers were made up of mothers who came for review two weeks after delivery at the antenatal clinic. The selection into this group was done by going through the admission and discharge registers of this unit, and picking those whose demographic information matched those of the mothers with preterm infants. These mothers were chosen as the target population because almost all mothers who deliver preterm babies and term babies in the Accra Metropolis have their babies managed at the NICU Clinic and the antenatal clinic of the Korle-Bu Teaching Hospital.
Psychological Distress and Coping Styles: A study among mothers with preterm infants In The NICU of Korle-Bu Teaching Hospital.

Sampling Technique

Purposive sampling method was used to select the samples. This is due to the specialized nature of the study and the selective nature of samples to suit the study.

Purposive and convenient sampling techniques were used in selecting the target sample for the present study. The purposive sampling technique was employed because the sample was selected first of all from the population of mothers. The researcher was interested in certain subgroups within the population; mothers with preterm infants and those with term infants; hence these subgroups were selected purposively based on their characteristics. Also participants were selected based on their availability and willingness to take part in the study.

Sample

In total, one hundred and fifty (150) respondents were selected for the study. Hundred (100) out of the total sample represents mothers with preterm infants and fifty (50) out of the total represents mothers with term infants. These participants were purposively and conveniently selected. The sample size selected was deemed appropriate because according to Field (2009), in order to analyze data using multiple regressions and obtain a medium effect size (.8), a sample size of 100 is enough for 6 predictors.
Psychological Distress and Coping Styles: A study among mothers with preterm infants In The NICU of Korle-Bu Teaching Hospital.

The demographic characteristics of participants are summarized in Table 1.

### Table 1: Demographic Characteristics of Participants

<table>
<thead>
<tr>
<th>Demographic Variables</th>
<th>Frequency</th>
<th>Percentage</th>
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<tbody>
<tr>
<td><strong>Age</strong></td>
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<td></td>
</tr>
<tr>
<td>18-25</td>
<td>32</td>
<td>21.3</td>
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<td>26-33</td>
<td>81</td>
<td>54.0</td>
</tr>
<tr>
<td>34-42</td>
<td>37</td>
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<tr>
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<tr>
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</tr>
<tr>
<td>Secondary</td>
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</tr>
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<td>Caesarian</td>
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<tr>
<td><strong>Gestation</strong></td>
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<tr>
<td>Extremely preterm</td>
<td>19</td>
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<tr>
<td>Very preterm</td>
<td>70</td>
<td>46.7</td>
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<tr>
<td>Moderate to late</td>
<td>11</td>
<td>7.3</td>
</tr>
<tr>
<td>Term</td>
<td>50</td>
<td>33.3</td>
</tr>
<tr>
<td><strong>Days in NICU</strong></td>
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<td></td>
</tr>
<tr>
<td>One week</td>
<td>38</td>
<td>25.3</td>
</tr>
<tr>
<td>Two weeks</td>
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<td>Three weeks</td>
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<tr>
<td>Four and above weeks</td>
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<tr>
<td>No NICU</td>
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Psychological Distress and Coping Styles: A study among mothers with preterm infants In The NICU of Korle-Bu Teaching Hospital.

<table>
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<th>Birth weight</th>
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<tr>
<td>Very low weight</td>
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<td>Normal weight</td>
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</thead>
<tbody>
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<td>Preterm</td>
<td>100</td>
<td>66.7</td>
</tr>
<tr>
<td>Term</td>
<td>50</td>
<td>33.3</td>
</tr>
</tbody>
</table>

Participant’s selection was based on the following criteria.

**Mothers with preterm infants**

**Inclusion criteria**

Mothers with preterm infants who were 18 years and above and could communicate effectively in English and Twi took part in this study.

**Exclusion criteria**

Mothers with preterm infants under 18 years and could not communicate effectively in English and Twi were excluded. Again mothers who were experiencing maternal illness, infections or ill during data collection were also excluded.

**Term mothers**

**Inclusion criteria**

Mothers with term infants who were 18 years and above and could communicate effectively in English and Twi took part in this study.
Exclusion criteria

Mothers with term infants under 18 years and could not communicate effectively in English and Twi were excluded. Again mothers who were experiencing maternal illness, infections or ill during data collection were also excluded.

Measures

Data was collected on the research variables using the following measures/instruments:

**Demographic Variables**

Demographic questionnaire was used to collect data on demographic characteristics of participants such as age, education, marital status, number of children, distance from home to hospital, infant gestational age.

The study adopted and adapted the following set of test as tools for data collection.

**The Parental Stressor Scale: Neonatal Intensive Care Unit (PSS: NICU; Miles et al., 1993)**

The PSS: NICU measures the perception held by parents to physical and psychosocial stressors of to the Neonatal Intensive Care Unit environment.

The subscales include 1. Sights and Sounds of the NICU environment’ (6 items); sample question “The constant noise of monitors and alarms” 2. Infant Behaviour and Appearance (13 items) sample question “Seeing needles and tubes put in my baby”, 3. Relationship with Infant and Parental Role (7 items), sample question is “Being separated from my baby”, and 4. Staff Communication and Behaviours(11 items), sample question “Staff acting as if they didn’t parents around. The entire scale has a Cronbach alpha .83. Each item is scored on a Likert-style rating scale ranging from 1= not at all stressful, to 5- extremely stressful or as 0= not applicable.
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**Africultural coping inventory (Utsey et al., 2000)**

The Africultural Coping Systems Inventory (ACSI) is a thirty-item, self-report, likert scale measure of the culture-specific coping strategies used by African Americans in stressful, day-to-day situations which has also been successfully tested for validity and reliability (Utsey et al., 2000.) The ACSI is comprised of four subscales: 1. Cognitive/Emotional Debriefing (11 items) sample question “I tried to forget about the situation”; 2. Spiritual-Centered Coping (8 items), sample question “I asked someone to pray for me”; 3. Collective-Centered Coping (8 items), sample question “I shared my feelings with a friend or family member”; and 4. Ritual-Centered Coping (3 items), sample question “I lit a candle for strength or guidance in dealing with the problem (Utsey, Brown, et al., 2004). In completing the ACSI, participants are asked to recall a stressful event that occurred over the past week, and then, using a 4-point likert scale measure, (0=did not use, 1=used a little, 2=used a lot, 3=used a great deal) rate the coping techniques they used during that stressful situation (Utsey, Brown, et al., 2004). Cronbach’s alpha coefficients for the ASCI subscales have been found to range from .71 to .82 (Utsey, Adams, et al, 2000).

This instrument will be useful in this study in assessing the coping style of both mothers with preterm infants.

**Brief Symptom Inventory [BSI] (Derogatis, &Melisaratos, 1983)**

This is a 53-item self-report inventory designed to reveal the clinical psychological manifestations of psychiatric, medical and healthy subjects alike. It measures nine profiles of primary symptom areas and three global dimensions of psychological distress. The answers are on a 5-point likert scale, from 0 = not at all, to 4 = extremely. Sample questions for example include “Nervousness or shakiness inside” BSI’s component
subscales measure several dimensions of psychological dysfunctions. The Global severity index (the total score on the scale) is obtained by adding up all the items under all the subscales and dividing it by 53 (the total number of items on the scale). These subscales are Somatization (7 items), sample question “Pains in heart or chest”; 2. Obsession-Compulsion (6 items), sample question “Trouble remembering things” 3. Interpersonal Sensitivity (4 items), sample question “Your feelings being easily hurt” 4. Depression (6 items), sample question “Feeling lonely”; Anxiety (6 items), sample question “Suddenly scared for no reason”; Hostility (5 items), sample question “Feeling easily annoyed or irritated”; Phobic Anxiety (5 items), sample question “Feeling afraid in open spaces or on the stress”; Paranoid Ideation (5 items), sample question “Feeling that most people cannot be trusted”; and Psychoticism (5 items), sample question “The idea that someone can control your thoughts”. The BSI has a high Cronbach's α that ranges from 0.71 to 0.85 (Derogatis, & Melisaratos, 1983).

The current study will employ only the depression and anxiety subscales from the BSI-53 to measure psychological distress.

**Multidimensional Scale of perceived social support (Zimmert et al., 1988)**

The Multidimensional Scale of Perceived Social Support (MSPSS) measures an individual’s perceptions of social support received from 3 sources. The instrument has three subscales. These are Family, (4 items), sample question “My family really tries to help me”; Friends (4 items), sample question “I can talk about my problems with my friends”; and Significant Other (4 items), sample question “I have a special person who is a real source of comfort to me”. These sources also represent three subscales. The scale consists of 12 items, with 4 items for each subscale, rated on a 7-point Likert scale,
Psychological Distress and Coping Styles: A study among mothers with preterm infants In The NICU of Korle-Bu Teaching Hospital.

ranging from (1) strongly disagree to (7) very strongly agree. The scale reported a Cronbach alpha 0.88.

Settings
Korle-Bu Teaching Hospital is the largest hospital in the country. It has various departments and units. Neonatal intensive care unit is one of the units under department of child health. This unit admits babies with medical conditions including preterm babies. The Department of Child Health was built in 1960 to offer specialized care to children from the southern part of Ghana with referrals from other hospitals. The vision of the Child Health Department is to continue to maintain its lead as the first class children’s Hospital in Ghana offering specialized care. Its objective is to provide good quality care to children and significant others, be well equipped both in human and material resources, to renovate the whole block and to make admitted children to the hospital comfortable. The NICU has four (4) cubicles with twenty-two (22) incubators and twenty-eight (28) cots. The unit has ten (10) monitors, which help the staff to monitor the vital signs of the babies. The unit is managed by two neonatal consultants, four (4) resident doctors, six (6) house officers, ten (10) nurses and four (4) health care assistants.

Research Design
The cross-sectional survey design was used to collect data. This design enabled the researcher to collect information from women with diverse socio-economic backgrounds on certain characteristics and perceptions (anxiety, depression, coping styles social support, perceived stress and some demographic variables) through the use of questionnaires and self-report measures. Data was collected from the respondents only once.
Psychological Distress and Coping Styles: A study among mothers with preterm infants In The NICU of Korle-Bu Teaching Hospital.

Procedure

Ethical clearance to undergo the research was sought from both the Ethical Research Board of Ethics Committee for Humanities in the University of Ghana and the department of child Health in the Korle-Bu Teaching Hospital. After approval was obtained, an introductory letter from the Psychology Department was sent to the unit Heads to permit data collection within three months period. A pilot study was first conducted to establish the appropriateness, and reliability of the adopted tests on Ghanaian samples with 20 samples.

Details of reliability for the various tests are as follows PSS 1 = 0.70 PSS 2 = 0.84, PSS 3= 0.84, PSS 4= 0.92, BSI Depression subscale= 0.74, BSI Anxiety subscale= 0.81, AFCSI Spirituality subscale= 0.70, MSPSS= 0.90.

Respondents who met the inclusion criteria were sampled and allowed to sign informed consent forms to indicate their willingness to join the study before administration of the questionnaires. The process entailed administration of the questionnaires followed by the demographic information.

The data collection was done in a special room in the NICU environment and at the postnatal clinic created for the data collection to ensure that all screening biases like noise were controlled to a higher degree. After screening was completed, participants were thanked as a sign of appreciation for their time. Completed questionnaires were then collected at the end of each session, scored and packed into sealed envelopes to ensure confidentiality and safety of responses.
CHAPTER FOUR

RESULTS

The formulated hypotheses used in this study were analysed using the Statistical Package for the Social Sciences (SPSS) version 22.0 for windows. All the assumptions necessary for parametric test selection and usage were followed, the hypotheses were analysed with Multivariate Analysis of Variance and Simple Multiple regression Analysis.

Descriptive Statistics

The summary of the means and standard deviations of scores on the scales of depression, anxiety, social support, parental stress and Africultural coping as well as internal consistencies of scales are presented in (Table 2).

Table 2: Mean Standard Deviation and Cronbach alpha of Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Means</th>
<th>SD</th>
<th>Cronbach</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sight and sound</td>
<td>16.45</td>
<td>7.01</td>
<td>.85</td>
<td>-.25</td>
<td>-.50</td>
</tr>
<tr>
<td>Appearance</td>
<td>40.61</td>
<td>14.50</td>
<td>.91</td>
<td>-.60</td>
<td>-.27</td>
</tr>
<tr>
<td>Parental role</td>
<td>28.30</td>
<td>7.15</td>
<td>.94</td>
<td>-1.0</td>
<td>-.12</td>
</tr>
<tr>
<td>Staff behaviour</td>
<td>27.03</td>
<td>13.03</td>
<td>.92</td>
<td>.02</td>
<td>-.61</td>
</tr>
<tr>
<td>Depression</td>
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<td>7.53</td>
<td>.91</td>
<td>.27</td>
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<td>.83</td>
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<td>Spiritual coping</td>
<td>13.55</td>
<td>5.23</td>
<td>.71</td>
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<tr>
<td>Collective coping</td>
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<td>.63</td>
<td>.60</td>
<td>1.08</td>
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<td>Cognitive coping</td>
<td>22.83</td>
<td>8.09</td>
<td>.77</td>
<td>.07</td>
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<td>.66</td>
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<td>-.20</td>
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<tr>
<td>Friends support</td>
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<td>.88</td>
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<td>Significant other support</td>
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<td>7.47</td>
<td>.90</td>
<td>-.91</td>
<td>-.38</td>
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</table>
Psychological Distress and Coping Styles: A study among mothers with preterm infants in the NICU of Korle-Bu Teaching Hospital.

Table 3: Correlation Matrices of parental stress, psychological distress, coping styles and perceived support

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<tr>
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<th>1</th>
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<th>3</th>
<th>4</th>
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<th>7</th>
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<th>9</th>
<th>10</th>
<th>11</th>
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<th>13</th>
<th>14</th>
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<th>16</th>
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<tr>
<td>2.</td>
<td>Appear</td>
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<td>.45**</td>
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<td>3.</td>
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<td>.16</td>
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<td>Spiritual</td>
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<td>.04</td>
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<td>.36**</td>
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<td>.03</td>
<td>.15</td>
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<td>.08</td>
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<td>-.14</td>
<td>-.09</td>
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<td>.28**</td>
<td>.28**</td>
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<td>.40**</td>
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<td>.20*</td>
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<td>-.0</td>
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<td>.07</td>
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<tr>
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<td>-.09</td>
<td>.37**</td>
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<td>.28**</td>
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<td>GA</td>
<td>-.27</td>
<td>-.13</td>
<td>.01</td>
<td>-.04</td>
<td>-.06</td>
<td>-.09</td>
<td>.18</td>
<td>.12</td>
<td>-.01</td>
<td>.07</td>
<td>.24*</td>
<td>.22*</td>
<td>-.06</td>
<td>.25*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16.</td>
<td>Friend</td>
<td>.11</td>
<td>.19</td>
<td>.22*</td>
<td>.18</td>
<td>.15</td>
<td>.13</td>
<td>.14</td>
<td>.16</td>
<td>.03</td>
<td>.15</td>
<td>.22</td>
<td>-.04</td>
<td>-.03</td>
<td>.12</td>
<td>-.07</td>
<td></td>
</tr>
</tbody>
</table>

*Significant at .05 level of significance (1-tail) ** significance at .01 level of significant (1-tail)

Apear= appearance of the infants, Role = parental role, Dep= depression, Anx= anxiety, cog= iterative debriefing coping, collect= collective coping, friend= friends support, family= family support, significant support, GA= gestational age, Days= number of days in NICU

Testing of hypotheses

Hypothesis 1 was analyzed using multiple analysis of variance (MANOVA). Hypotheses 2a and 2b, 3a and 3b, 4a and 4b were analyzed using multiple regression and finally hypothesis 5 was analyzed using hierarchical multiple regression.

**Hypothesis 1a:** Mothers with preterm infants will report higher depression and anxiety than mothers with term infants

This hypothesis was analyzed using MANOVA after the participants were grouped into two groups based on the overall mean score of the sample (≈39) on psychological distress outcome in order to ascertain the difference between the mean scores of mothers with preterm infants and mothers with term infants. The multivariate test shows that a significant difference exists between the groups \[ F(2, 149) = 92.87, \rho < .05; \eta^2 = .56; \text{Wilk"s Lambda} = .44 \]. The summary of the results from the means of the groups on the psychological distress outcomes and MANOVA are presented in Table 4.
The MANOVA results in Table 4 clearly shows that a significant difference exists between the two groups being compared on all the psychological distress outcomes at the .05 level of significance \( [F (1,198) = 153.85, \rho < .05; \eta^2 = .51] \); \( [F (1,198) = 110.10, \rho < .05; \eta^2 = .43] \), for depression and anxiety respectively. The means of the groups show that, mothers with preterm infants reported higher psychological distress compared to mothers with term infants \( (10.52 > 3.10; 9.77 > 3.40) \). The findings therefore supported the stated hypothesis that “mothers with preterm infants will report higher psychological distress than mothers with term infants”.

**Hypothesis 2a: parental stress is likely to predict depression among mothers with preterm infants**

This hypothesis was analysed using multiple regression analysis to find out whether parental stress influences depression. The analysis showed that, only sight and sound had an influence on depression. Three of the subscales namely, appearance and behaviour of infants, parental role and alteration and staff communication and behavior did not predict depression among mothers. Results from the analyses were summarized in Table 5.
Table 5: Multiple regression result of parental stress on depression of mothers with preterm infants

<table>
<thead>
<tr>
<th>Predictors</th>
<th>B</th>
<th>SEB</th>
<th>β</th>
<th>t</th>
<th>ρ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sight and sound</td>
<td>.20</td>
<td>.10</td>
<td>.32</td>
<td>3.13</td>
<td>.00</td>
</tr>
<tr>
<td>Appearance and behavior</td>
<td>.03</td>
<td>.04</td>
<td>.08</td>
<td>.66</td>
<td>.51</td>
</tr>
<tr>
<td>Parental role</td>
<td>-.04</td>
<td>.10</td>
<td>-.06</td>
<td>-.50</td>
<td>.62</td>
</tr>
<tr>
<td>Staff behavior</td>
<td>.06</td>
<td>.04</td>
<td>.17</td>
<td>1.38</td>
<td>.17</td>
</tr>
</tbody>
</table>

The parental stress as a whole significantly predicted 15% of the variance in depression, \( R^2 = .15, F (4, 95) = 64.34, \rho < .05 \). After this, further analysis was carried out to find out which of the components of the parental stress scale predicted depression. The multiple regression analysis showed that, only sight and sound of the unit significantly predicted depression among the mothers with preterm infants at .05 alpha levels, \( \beta = .32, t=3.13, \rho < .05 \). Appearance and behaviour of infants, parental role and staff communication and behaviour did not predict any depression among mothers with preterm infants. Therefore the hypothesis that stated, parental stress is likely to predict depression was supported by the data.

**Hypothesis 2b:** parental stress is likely to predict anxiety among mothers with preterm infants

This hypothesis was analysed using multiple regression analysis to find out whether parental stress has an influence on anxiety. The analysis showed that, of, sight and sound of the unit, appearance and behaviour of infants and parental role predicted anxiety among mothers. Only staff communication and behaviour did not predict anxiety among mothers. Results from the analyses were summarized in Table 6.
Psychological Distress and Coping Styles: A study among mothers with preterm infants in the NICU of Korle-Bu Teaching Hospital.

Table 6: Multiple regression results of parental stress on anxiety of mothers with preterm infants

<table>
<thead>
<tr>
<th>Predictors</th>
<th>B</th>
<th>SEB</th>
<th>β</th>
<th>t</th>
<th>ρ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sight and sound</td>
<td>.22</td>
<td>.06</td>
<td>.32</td>
<td>3.95</td>
<td>.00</td>
</tr>
<tr>
<td>Appearance and behaviour</td>
<td>-.14</td>
<td>.04</td>
<td>-.42</td>
<td>-3.81</td>
<td>.00</td>
</tr>
<tr>
<td>Parental role</td>
<td>.21</td>
<td>.06</td>
<td>.33</td>
<td>3.28</td>
<td>.00</td>
</tr>
<tr>
<td>Staff behaviour</td>
<td>.07</td>
<td>.04</td>
<td>.21</td>
<td>2.00</td>
<td>.04</td>
</tr>
</tbody>
</table>

The parental stress as a whole significantly accounted for 32% of the variance in anxiety, \[R^2 = .32, F (4, 95) = 11.23, ρ < .05\]. After this, further analysis was carried out to find out which of the components of the parental stress scale predicted anxiety. The multiple regression analysis showed that, the most significant predictor of anxiety of mothers with preterm infants was appearance and behaviour of infants at .05 alpha level, \[β = -.42, t = -3.81, ρ < .05\]. The second significant predictor of anxiety was parental role in the unit at .05 alpha level, \[β = .33, t = 3.28, ρ < .05\]. The third significant predictor was sight and sound of the unit at .05 alpha level, \[β = .32, t = 3.95, ρ < .05\]. The least significant predictor was staff communication and behaviour at .05 alpha level, \[β = .21, t = 2.00, ρ = .04\]. Therefore the hypothesis that stated, parental stress is likely to predict anxiety of mothers with preterm infants is supported by the data.

**Hypothesis 3a: Perceived social support is likely to predict depression among mothers**

This hypothesis was analysed using regression analysis to found out whether social support had an influence on depression. The analysis showed that, all the components of perceived social support did not predict depression among the mothers. The result of this test is summarized in table 7.
Psychological Distress and Coping Styles: A study among mothers with preterm infants in The NICU of Korle-Bu Teaching Hospital.

Table 7: Multiple regression results of perceived social support on depression of mothers with preterm infants

<table>
<thead>
<tr>
<th>Predictors</th>
<th>B</th>
<th>SEB</th>
<th>β</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Friends support</td>
<td>.11</td>
<td>.07</td>
<td>.151</td>
<td>.71</td>
<td>.16</td>
</tr>
<tr>
<td>Family support</td>
<td>-20</td>
<td>.09</td>
<td>-23</td>
<td>-2.50</td>
<td>.15</td>
</tr>
<tr>
<td>Significant others support</td>
<td>-15</td>
<td>.06</td>
<td>-21</td>
<td>-2.41</td>
<td>.21</td>
</tr>
</tbody>
</table>

Predictors: family support, friends support and significant others support
Dependent variable: depression

All the components of the multidimensional perceived social support did not significantly predict depression among mothers with preterm infants \([R^2 = .05, F (3, 96) = 1.69, \rho > .05]\). Therefore, there was no need for further analysis. Hence, the hypothesis that stated, “perceived social support is likely to predict depression among mothers with preterm infants was not supported by the data.

Hypothesis 3b: perceived social support is likely to predict anxiety of mothers with preterm infants

This hypothesis was analysed using regression analysis to found out whether social support had an influence on anxiety. Family support had an influence of anxiety among mothers with preterm infants. However, significant support and friends support did not have any influence of anxiety among the mothers. The result of this test is summarized in table
Psychological Distress and Coping Styles: A study among mothers with preterm infants in the NICU of Korle-Bu Teaching Hospital.

Table 8: Multiple regression result of perceived social support on anxiety of mothers with preterm infants

<table>
<thead>
<tr>
<th>Predictors</th>
<th>B</th>
<th>SEB</th>
<th>β</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Friend support</td>
<td>-.12</td>
<td>.06</td>
<td>-.17</td>
<td>-.151</td>
<td>.14</td>
</tr>
<tr>
<td>Family support</td>
<td>.15</td>
<td>.08</td>
<td>-.292</td>
<td>.53</td>
<td>.01</td>
</tr>
<tr>
<td>Significant others support</td>
<td>-.07</td>
<td>.06</td>
<td>-.14</td>
<td>-1.29</td>
<td>.20</td>
</tr>
</tbody>
</table>

Predictors: family support, friends support and significant others support

Dependent variable: Anxiety

The multidimensional perceived social support scale as a whole significantly predicted 7% of the variance in anxiety, but was not statistically significant, [R² = .07, F (3, 96) = 2.56, p > .05]. After this, further analysis was carried out to find out which of the components of the perceived support scale predicted anxiety. The multiple regression analysis showed that, the significant predictor of anxiety was found to be support received from family of the mothers with preterm infants at .05 alpha level, [β = -.29, t = 2.53, p < .05], even though the overall prediction was not significant. The support received from significant other and support from friends did not predict any significant relationship. Hence, the hypothesis that stated, perceived social support is likely to predict anxiety was not supported by the data.

Hypothesis 4a: Africultural coping is likely to predict depression among mothers with preterm infants.

This hypothesis was analysed using regression analysis to find out whether Africultural cope had an influence on depression.
The scale as whole did not have any influence on depression among the mothers with preterm infants. The result of this test is summarized in table 9.

Table 9: Multiple regression result of Africultural coping on depression of mothers with preterm infants

<table>
<thead>
<tr>
<th>Predictors</th>
<th>B</th>
<th>SEB</th>
<th>β</th>
<th>t</th>
<th>ρ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spiritual</td>
<td>-.04</td>
<td>.11</td>
<td>-.03</td>
<td>-.36</td>
<td>.77</td>
</tr>
<tr>
<td>Collective</td>
<td>-.08</td>
<td>.12</td>
<td>-.06</td>
<td>-.62</td>
<td>.54</td>
</tr>
<tr>
<td>Cognitive</td>
<td>-.23</td>
<td>.11</td>
<td>-.23</td>
<td>-.25</td>
<td>.81</td>
</tr>
</tbody>
</table>

Predictors: spiritual, collective and cognitive

Dependent variable: depression

The Africultural scale as a whole did not have any influence on depression of mothers with preterm infants, \[ R^2 = .06, F (3, 96) = 2.0, \rho > .05 \].

Therefore, there was no need to carry out further analysis. Hence the hypothesis that stated “Africultural coping is likely to predict depression among mothers with preterm infants” was not supported by the data.

Hypothesis 4b: Africultural coping is likely to predict anxiety among mothers with preterm infants

This hypothesis was also analysed using regression analysis to find out whether Africultural cope had an influence on anxiety. Collective-centered coping and spiritual-centered coping predicted anxiety among mothers with preterm infant. The result of this test is summarized in table 10.
Table 10: Multiple regression result of Africultural coping on anxiety of mothers with preterm infants

<table>
<thead>
<tr>
<th>Predictors</th>
<th>B</th>
<th>SEB</th>
<th>β</th>
<th>t</th>
<th>ρ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spiritual</td>
<td>-.22</td>
<td>.10</td>
<td>-.26</td>
<td>-2.11</td>
<td>.04</td>
</tr>
<tr>
<td>Collective</td>
<td>.34</td>
<td>.12</td>
<td>.36</td>
<td>3.00</td>
<td>.00</td>
</tr>
<tr>
<td>Cognitive</td>
<td>-.03</td>
<td>.10</td>
<td>-.04</td>
<td>-3.33</td>
<td>.74</td>
</tr>
</tbody>
</table>

Predictors: spiritual, collective and cognitive

Dependent variable: anxiety

The Africultural scale as a whole significantly accounted for 11% of variance in anxiety, [R² = .11, F (3, 96) = 3.77, ρ < .05]. After this, further analysis was carried out to find out which of the components of the Africultural scale predicted anxiety. The multiple regression analysis showed that, the most significant predictor of anxiety was found to be collective-centered coping among mothers with preterm infants at .05 alpha level, [β = .36, t = 3.00, ρ < .05], followed by spiritual-centered negatively predicted at .05 alpha level, [β = .26, t = 2.11, ρ < .05].

Cognitive-centered coping did not predict any influence on anxiety of mothers with preterm infants. Therefore the hypothesis was supported by the data.

Hypothesis 5: Education and number of days in NICU will predict psychological distress of preterm mothers.

Education and number of days in NICU were stated to be predictors of psychological distress and was dummy coded and entered.
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With reference to Table 3, there was no relationship between the hypothesized demographic variables and psychological distress. Therefore the hypothesis was not supported by the data.

**Summary of findings of the study**

Six hypotheses were framed and out of that objectives, hypothesis one was used to test for differences between means of the two groups on their level of psychological distress. It was found out that, there was a significant difference between mothers with preterm and mothers with term infants.

Additionally, the hypothesis that stated parental stress will significantly predict psychological distress (depression and anxiety) was supported with sight and sound of the NICU predicting depression. But appearance and behaviour of infants, parental role alteration and staffs communication and behaviour did not predict depression. The second part of the hypothesis that stated “parental stress will significantly predict anxiety” was also supported with the appearance and behaviour of infant being the most predicting variable, followed by parental role and the least predictor was the sight and sound of the unit. The other component which is staff communication and behaviour did not predict anxiety.

All the components of perceived social support did not predict depression of mothers with preterm infants, but support received from friends predicted anxiety of mothers with preterm infants.

Additionally, all the components of (African cultural coping scale) coping style did not predict depression. Spiritual and collective coping predicted anxiety of mothers with preterm infants.
Finally, education, and number of days in NICU did not predict psychological distress.

\[ \beta = .32 \]
\[ \beta = -.42 \]
\[ \beta = .33 \]
\[ \beta = .32 \]
\[ \beta = .21 \]

**Figure 2: Observed model**

The model showed that parental stress significantly predicted psychological distress. Only sight and sound predicted depression among the mothers. All the components of the parental stressor scale significantly predicted the level of anxiety. Only one of the perceived social support components predicted anxiety.

Finally, spiritual and collective coping also predicted anxiety among mothers with preterm infants. These findings are diagrammatically illustrated in the figure 3 above.
CHAPTER FIVE

DISCUSSION

Introduction

The main aim of the study was to find out how parental stress, social support, coping style and some selected maternal variables influence the psychological distress of mothers with preterm infants and also to find out if any difference exists between mothers with preterm infants and mothers with term infants. The main objectives were: to determine the psychological distress experienced by mothers with preterm infants in NICU of the Korle-Bu teaching hospital in Accra, to ascertain whether maternal characteristics could influence psychological distress of mothers with preterm infants, to determine which physical and psychosocial factors influence psychological distress of mothers with preterm and to determine whether social support and coping styles have a significant influence on mothers with preterm infants. To accomplish the above aims and objectives, several hypotheses were tested. This chapter presents discussion of findings, limitations, recommendations and conclusions.

Psychological Distress on mothers with preterm infants.

One of the objectives of the study was to find out whether there is a significant difference between mothers with preterm and mothers with term infants on their level of psychological distress. Findings show a significant difference between mothers with preterm infants and mothers with term infants on their level of psychological distress.

It is empirical to say that, mothers who had given birth to preterm infants will experience more of psychological distress than mothers who have delivered term infants. Mother’s perception and understanding of the size of their infants could be one of the source of their psychological distress. Additionally, the limited time the mothers spend with their infants
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in the unit could be a factor to experience more of psychological distress compared to the term mothers. Furthermore, the general perception they have about the NICU environment as a result of factors like sight and sound, the limited role the mothers play to nurse their infants and their infants health and their appearance could exacerbate their levels of psychological distress. All these factors mentioned are a burden to a mother with preterm infant after delivery compared to a mother with a term infant who does not go through all these stressful situations. The result is consistent with the findings of Ukpong, Fatoye, Oseni & Adewuya (2003) in their attempt to investigate whether mothers of preterm infants experience more psychological distress than mothers with term infants in the immediate postpartum period. Their result indicated that, more mothers of preterm infants experienced emotional distress and were more depressed than the term mothers.

Additionally, Misund, Nerddrum, & Diseth (2014) in their study aimed to discover the extent of psychological distress, anxiety, and trauma related stress reactions in mothers who experienced preterm birth. Their result indicated that, mothers with preterm infants reported levels of psychological distress two weeks after delivery and this is consistent with the present study.

The influence of parental stress on psychological distress

It was found in this study that, parental stress had a significant influence on psychological distress. Parental stress was found to partially predict psychological distress among mothers with preterm infants with the sight and sound of the unit predicting psychological distress. The sight of the unit being equipped with complicated devices, light and sounds emanating from the devices could be stressful. A mother, who finds herself in this environment which is very alien to her, could be anxious about the environment. As a result, it could lead to the mother experiencing psychological distress. Additionally, being
grouped in a cubicle whiles feeding their infants could also contribute to their distress. The present result is consistent with the findings by Alkozei, McMahon, & Lahav A (2014) in their examination to find out whether particular maternal and infant factors can identify mothers at risk for increased stress upon admission to the neonatal intensive care unit. Their analyses were also focused on stressors arising from the physical and psychosocial environment of the NICU across three main domains: parental role, infant’s behavior and appearance, and the sights and sounds in the NICU environment. The results showed that, generally, majority of mothers experienced high levels of stress within only some days of their infants’ hospitalization. Furthermore, higher stress scores were positively associated with higher depressive symptoms. The sight and sound of the neonatal intensive care unit predicted parental stress in their study.

Similarly, Shaw et al (2009) on their examination to find out the prevalence of post-traumatic stress disorder in parents, four months after the birth of their preterm or sick infants and the relationship of post traumatic-stress and symptoms of acute stress disorder immediately after the birth of infants, found a significant relationship between post traumatic-stress symptoms.

Parental stressor scale: NICU subscale showed that, the severity of post traumatic-stress symptom was significantly related to the level of stress brought by the sight and sound of the NICU. Additionally, Kelly Ward (2001) in their research also found the NICU environment as a significant source of stress for parents, with loud sound, unpleasant sights and crowds of health care professionals.

The influence of parental stress and depression

Findings of the current study showed that, sight and sound of the unit significantly predicted depression among mothers with preterm infants. The more sounds emanate from
the devices, the more the mothers experience depression symptoms. Furthermore, the
more the mothers come in contact with the monitors and incubators in the unit, the more
they become depressed. This environment is alien or strange and a mother who finds
herself in this situation will find it distressing. Another explanation is that, mothers upon
seeing the nature of the environment and how infants are being fed through intravenous
drip could also find it distressing. Similarly, needles being pierced through the skins of
these young infants and the number of healthcare professionals working around the infants
could also exacerbate their level of distress. Additionally, it could also be said that,
mothers being grouped in a cubicle feeding their infants, and also lack of being
independent in breastfeeding their infants could also result in their depression.

Appearance and behaviour of infants, parental role alteration and staff communication and
behaviour could not predict depression in this study.

This could be as a result of the fact that, being depressed with the sight and sounds of the
unit, would be enough for mothers to experience different factors that could lead to
experiencing depression. This result is consistent with the findings by Busse,
Stromgren & Thorngate (2013) in their study to find parent response to stress in the
neonatal intensive care unit, sight and sound of the unit was found to be one of the sources
of stress in the NICU environment. Similarly, Alkozie, McMahon & Lahav (2014)
examined whether particular maternal and infant characteristics can identify mothers or
increased stress upon admission to the neonatal intensive care unit which found significant
relationship between maternal depression and sight and sound of the unit. Alkozie et al.,
(2014) additionally, found parental role alteration to also predict depression among
mothers with preterm infants. This could be as a result of the environment equipped with
lights, monitors and also the continue sounds of the unit which is new to the mothers,
these devices and the sounds could exacerbate the stress level leading to depression.
Psychological Distress and Coping Styles: A study among mothers with preterm infants in The NICU of Korle-Bu Teaching Hospital.

Contrary to the findings by Alkozie et al. (2014), the present study could not establish any influence between parental role alterations and appearance and behaviour of infants with depression. Similarly, Miles, Holditch-Davis, Schwartz & Scher (2007) in their study aimed at describing the level of depressive symptoms in mothers of preterm infants and also examined factors associated with depressive symptoms. They found parental role alteration to be stressful and also the most predictor of depression.

The influence of parental stress on anxiety

Consistent with the findings of Busse et al. (2013), sight and sound, parental role alteration and appearance and behaviour of infants showed a significant relationship with mothers’ anxiety. Sight and sound of the unit could be the source of mothers’ anxiety in that, the environment is equipped with sophisticated devices.

Seeing these devices could exacerbate anxiety for the mothers. Again, Sounds emanating from the monitors and noises from the staffs and the overcrowding of mothers and the staffs could be also a source of anxiety to the mothers. As a result, the mothers find the environment to be stressful and that could lead to their experiencing of anxiety.

Furthermore, appearance and behaviour of infants negatively had an influence on anxiety in the current study. It could be said that, as appearance and behaviour of infants show improvement and recovery to good health, the anxiousness reduces. Additionally, parental role alteration was found to positively predict anxiety. This can be explained with regards to the role the mothers play in the unit and also how they alternate through their breastfeeding. The role of every mother is to see to it that, her baby is being fed well. Pampering a baby by a mother plays a significant role in ensuring or exhibiting good mothering. Unlike mothers in NICU, their role as mothers is being tampered by the staffs in the unit. In this regard, mothers see their role as ineffective. The more they find
themselves in this kind parental role, the more they become anxious about their role as mothers. Furthermore, mothers attend to their infants to feed them in sessions, which in the actual sense should not be the case. Mothers are given an hour to feed their infants and after that, they are being asked to leave the unit. This could also distort their parental role as mothers, thereby increasing their levels of anxiety. Finally, staff communication and behaviour could not predict anxiety because; mothers could not consider the staffs as being a source of their experiences of anxiety. These results were consistent with the findings by Alkozie et al., (2014), in relation to sight and sound, parental role alteration and appearance and behaviour of infants in neonatal intensive care unit. Their results also found a significant relationship between the components of the parental scale and anxiety.

Contrary to the current findings, Holditch-Davis et al., (2009) in their study to examine inter-relationships among stress due to infant appearance and behavior in the NICU, parental role alteration, stress in the NICU and anxiety by African American mothers of preterm infants. Their result indicated that, appearance and behaviour of infant was the most significant predictor of anxiety followed by parental role alteration. Miles, Funk, & Kasper (2007), also found parental role alteration to be the most stressful to mothers, which significantly predicted anxiety. Carter, Mulder & Darlow (2007) in their study compared sources of NICU stress for mothers and fathers and explored variables associated with NICU stress. They also found parental role alteration to be most stressful to mothers and also predicted anxiety. Appearance and behaviour of infant was the second predictor of anxiety. Study by Zelkowitz, Papageorgiou, Bardin & Wang (2008) found parental role alteration in the neonatal intensive care unit most predictor of anxiety among mothers with preterm infants. Even though, the current study found appearance and behaviour of infants to be the most predictor of anxiety among the mothers. This could be as a result of the tubes and other medical instruments being inserted on the infants.
The influence of perceived social support and depression

To test for the influence of perceived social support on depression, it was found in this study that; none of the subscales showed any prediction on depression. The absence of any relation or prediction between perceived social support and depression could be as a result of mothers not willing to reveal the true picture of what they were experiencing in terms of support.

Additionally, it could also be as a result of the fact that, the stressful situations that they find themselves in would not allow them to respond well to the type of support they receive from significant other, family or friends. This result is inconsistent with the findings of Chen, Kuo, Chou&Chen (2007); they found social support to predict depression among postpartum mothers. Hoseini, Panaghi, Habibi, Davoodi&Monajemi (2015) in their study to find out the relation between social support and marital satisfaction and couple’s depression after the birth of the first child, found a significant relationship between depression and social support. Ballantyne M, Benzies KM &Trute B. (2013) also found a negative relationship between depressive symptoms and social support among immigrant and Canadian born mothers of preterm infants at the intensive care discharge.

Perceived lack of social or family support has been linked with depression among Nigerian women during the antenatal period (Adewuya, Ola, Aloba, Dada&Fasoto 2007) and perinatal women in rural Ethiopia (Hanlon, Medhin, Alem, Araya, Abdulahi, Hughes, Prince,2008). Additionally, prevalence and risk factors for postpartum depression among women with preterm infants showed that, a sustained depression was associated with perceived lack of social support (Vigod, Villegas, Dennis, & Ross, 2010). Abiodun (2006) also found that young mothers had greater symptoms of postnatal depression if their husbands were unsupportive or had relationship problems with their in-laws.
The influence of perceived social support on anxiety

The current study showed a significant negative relationship between family support and anxiety.

Consistent with the findings by Margaret, Shetty, and Edward Lewis & Bha (2014), which indicated family support negatively correlated with level of anxiety among mothers admitted in the neonatal intensive care unit. It is inferred that, the more family support a mother receives, the less anxiety she experiences. Friends and significant other supports could not significantly predict anxiety. The result was inconsistent with the findings by Kara, Tan, Aldemir, Yilmaz, Tatli & Dilmen (2013). They found negative relationship with support received from significant others and anxiety level. Meaning, the more a mother receives an increased partner or closed relative support, the less she experiences anxiety. Additionally, friends support was negatively correlated with anxiety level among mothers with infants admitted in NICU. This support was facilitative and helped the mothers throughout every stage in the NICU environment (Rossman, Michelle, Greene, & Meier, 2015). The current study found family support negatively predicting anxiety among the mothers. This could be explained, due to the stressful environment a mother finds herself in with those complicated machines found in the unit. Every human being at a point in time needs a kind of support to progress in life or to improve wellness. In the African tradition specifically Ghana, the system of extended family is what is more important to live in harmony. Family members give their support to a parent to show their appreciation to God when a child is born. Likewise when the child becomes ill, family members also give their support to the mother. In this vein, mothers who receive support from family members be it emotional or physical support could have an influence on their level of the anxiety they are experiencing. Hence, the need for family support to mothers with preterm infants in the NICU.
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Infants is very crucial in making it possible for them to have a feel of sense of belonging in the neonatal intensive care unit.

The influence of coping styles on depression and anxiety

It was hypothesized in the current study that, Africultural coping styles will predict depression. The result indicated that, none of the components of Africultural coping styles significantly predicted depression. This could be as a result of different types of cope which the current study could not establish when mothers with preterm are experiencing depression. Another explanation could be that, mothers whose preterm infants are being admitted in NICU could experience depression as a result they would not be in a position to tell how they cope in times like this. Additionally, it could also be the case that, mothers could sort to using components of the Africultural coping wrongly. When a coping style is being used wrongly, it turned to have a negative effect on the user or end up not working adequately to them.

Mayer and Latu, (2008) in their study speculate that the uniqueness of a stressor may bring about differences in the coping methods people use. In some studies reviewed (Utsey et al., 2007) not all the domains predicted depression. The reason for this being that, depending on the stressor in question or the situation, the type of coping method that is used differs. Manne et al., (2003) found negative significant relationship between depression and coping styles among mothers of children receiving bone marrow transplants. Cooper (2008) found positive correlation between emotion-focused, problem-focus, dysfunctional coping and depression among mothers with preterm infants admitted in NICU. Additionally, Spirituality as a coping strategy has positive effects on an individual (Rippentrop, 2005).
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The culture of a people is peculiar to them and this determines and influences their choice of coping (Chiang et al., 2004; Lee & Luu, 2004; Frydenberg et al., 2001; and Baldacchino et al., 2004).

According to Dein et al. (2012), in collectivist cultures, individuality and the spirit world are narrowly interconnected, and in such cultures, mental health and spiritual health intensely reflect each other. In this regard, it could be said that since the Ghanaian culture emphasizes collectivism, being spiritual is part of an individual’s self-identity; hence being religious/spiritual would reflect better mental health. Several other studies also found positive associations between measures of spirituality and various mental health outcomes (Bonelli & Koenig, 2013; Ismail & Desmukh, 2012). In this regard, the mothers did not use any of the coping styles components to alter or decrease their depression, even though, the analyses showed negative directions on each component..

It was also hypothesized in the current study that, Africultural coping styles will predict anxiety among mothers with preterm infants. This hypothesis was supported with spirituality and collective coping predicting anxiety. This is consistent with the findings by Constantine, Donnelly, and Myers (2002) who studied the relationship between collective self-esteem and Africultural coping. In this related study, they found that African American adolescents who believed their cultural group was an important part of their self-concept reported greater use of collective and spiritual–centered Africultural coping to deal with stressful situations than those without such belief. Taste (2011) in another study identified how African American women often use spirituality to overcome the physical, psychological, and emotional burdens that accompany a breast cancer diagnosis.

Similarly, spirituality affected the lives of African American mothers with Human Immunodeficiency Virus (HIV) in the context of coping (Casarez 2008). Likewise in
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Ghana, religiosity and collectivism is often used to overcome stressful life situations. The current study identified that, mothers in the NICU turned to be anxious when their infants are admitted in the unit.

To cope with this situation, they turned to use spirituality and the people around them (family or people available) to cope with the anxiety being experienced. It was also found out in the current findings that, the more spiritual a mother is, the less the level of anxiety a mother will experience. Mothers here turned to use their belief which is connected to their faith to cope with their anxiety. Being religious is part of an individual’s self-identity, hence being religious would reflect better health and decrease anxiety.

In a society, where socialization and being part of a larger family makes one feels a sense of belonging. Ghana is made up culture which emphasizes collectivism. It could be said that, mothers with preterm infants who report higher the level of anxiety used more of collective-centered coping to cope with level of anxiety.

The influence of demographic variables on psychological distress

It was hypothesized in the current study that, education, and number of days in NICU will significantly predict psychological distress. The hypothesis was not supported by the data. The results indicated that, education and number of days in NICU do not have any influence on psychological distress of the mothers. This could be as a result of limited or lack of information about the conditions of the infants by the staffs to the mothers.

All that the mothers in the NICU know is the situational factors that is, the prematurity of the infants and also what they are experiencing in the environment. Whether a mother is educated or not or and stayed for few or longer days would not show whether she would be distressed or not. Their distress according to the findings emanates from the situational and physical environment not from personal characteristics.
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The finding is consistent with the findings by Alkozie et al., (2014) which indicated that, age of mother, gestational age of infants and number of days spent in NICU by the mothers were not significantly correlated with psychological distress (depression and anxiety) of mothers. Education predicted psychological distress (Alkozie et al., 2014) in the same study contrary to what the present study found. Similarly, Holditch-Davis et al., (2009) in their study aimed at examining the inter-relationship among stress due to infant appearance and behaviour among others and level of education of African American mothers of preterm infants. They found significant negative correlation between education and psychological distress.

Recommendation

We found in this research that, the NICU environment was a strong predictor in both depression and anxiety. It is recommended that, psychological services should be directly made available for the parents. Clinical psychologists could be attached to the work force at the NICU to provide supportive therapy and counseling. Again stress management is also needed for the mothers to help reduce their distress.

Additionally, collectivism and religiosity also influence psychological distress, social interactions is also very relevant to their psychological distress, hence mental health professionals should consider encouraging women to improve their religiosity and the quality of their social interactions as part of prevention programs at the community level to promote psychological wellness among mothers with preterm infants.

African cultural values such as, brotherhood, humanity, mutual help and respect should also be strengthened in order to improve the quality of social relationships, since the perception of frequent negative interactions in relationships influence psychological distress.
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As a recommendation for future studies, the sample selection should be done using the probability sampling technique to ensure the representativeness of the sample to the population of mothers with preterm infants. Future studies should also examine extensively the role of coping with parental stress on the psychological health outcome of the mothers. This study examined the psychological distress and coping styles of mothers with preterm infants. Further, this study would have thrown more light from a mixed-methods approach. Additionally, the experiences of mothers (and perhaps their partners) with preterm infants is invaluable data which needs to be studied qualitatively.

Limitations of the study
The study has some challenges and limitations that are worth mentioning. The first and foremost challenge was the time of the data collection which was virtually a short period for the mothers after or before feeding their infants. This situational factor is seen as a possible extraneous variable that could influence the outcome of the study.

That is, some mothers were not willing to be part of the study as they were eager to see the condition of their infants. This also led to the second limitation which the use of the purposive and convenient sampling to select the respondents as a result of the few number of people willing to be part of the study. Therefore, the generalization of the study outcome is somewhat limited. One other challenge was getting permission to conduct the study at the hospital which was also one of the major limitations in this study.

Conclusion
The birth and subsequent hospitalization of a neonate induces considerable psychological distress in mothers. The study findings conclude that mothers whose neonates are admitted in NICU exhibit some levels of anxiety and depression during their neonate’s
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hospitalization. Talking with mothers caring for preterm infants at the Korle-Bu Teaching hospital (NICU) has been an important learning exercise for the researcher. The researcher was interested in gaining an understanding of the psychological distress, coping styles and type of support mothers caring for preterm infants’ experience. The findings of the study showed that mothers who have delivered preterm babies have challenges upon admission into NICU. The challenges are diverse and enormous. They range from care of the infants to support the mothers require. Mothers need the support of both family, significant others and health professionals to enable them cope with their situation. The findings of the study must be given attention to help reduce infant morbidity and mortality rate in Ghana. It is suggested that health care providers, especially clinical psychologist should be employed at the unit to give psychological therapy to these mothers.

The findings of the study indicate that mothers with preterm infants in NICU need more health education and support to cope with their situation.

The need for further studies on this important topic is proposed so that effective guidelines to enhance quality of care of preterm infants in general can be developed in health care settings.
REFERENCES


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Appendix A: QUESTIONNAIRES

Participant’s ID ………

TOPIC: Psychological distress and coping style: A study among mothers with preterm infants in neonatal intensive care unit (NICU).

NOTE: This Questionnaire is strictly for academic purpose and your co-operation is needed to conduct this study. Your refusal to participate will in no way affect your treatment or that of your baby.

Please, fill where appropriate but some questions will require your personal opinion.

SECTION B
PARENTAL STRESSOR SCALE

Parents are asked to rate each item on a Likert-style rating scale. Parents are to rate the overall stressfulness of the experience of having a baby in NICU.

0= Not applicable 1= Not at all stressful 2= A little stressful 3= moderately stressful 4= Very stressful 5= Extremely stressful

1. The sights and sounds of the unit
   (a) The presence of monitors and equipment
      0 1 2 3 4 5
   (b) The constant noise of monitors and alarms
      0 1 2 3 4 5
   (c) The sudden noise of monitors and alarms
      0 1 2 3 4 5
   (d) The other sick babies in the room
      0 1 2 3 4 5
   (e) The large number of people working in the unit
      0 1 2 3 4 5
   (f) Having a machine breathe for my baby
      0 1 2 3 4 5

2. Appearance and behaviour of infant
   (a) Tubes and equipment on or near my baby
      0 1 2 3 4 5
   (b) Bruises, cuts or incisions on my baby
      0 1 2 3 4 5
   (c) The unusual colour of my baby
      0 1 2 3 4 5
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(d) My baby’s unusual or abnormal breathing pattern 0 1 2 3 4 5
(e) The small size of my baby 0 1 2 3 4 5
(f) The wrinkled appearance of my baby 0 1 2 3 4 5
(g) Seeing needles and tubes put in my baby 0 1 2 3 4 5
(h) My baby being fed by an intravenous drip 0 1 2 3 4 5
(i) When my baby looked to be in pain 0 1 2 3 4 5
(j) When my baby looked sad 0 1 2 3 4 5
(k) The limp and weak appearance of my baby 0 1 2 3 4 5
(l) Jerky or restless movements of my baby 0 1 2 3 4 5
(m) My baby not being able to cry like other babies 0 1 2 3 4 5

0 = Not applicable 1 = Not at all stressful 2 = A little stressful 3 = Moderately stressful 4 = Very stressful 5 = Extremely stressful.

3. Relationship with infant and parental role

(a) Being separated from my baby 0 1 2 3 4 5
(b) Not feeding my baby myself 0 1 2 3 4 5
(c) Not being able to care for my baby myself 0 1 2 3 4 5
(d) Not being able to hold my baby when I want 0 1 2 3 4 5
(e) Feeling helpless and unable to protect my baby from pain 0 1 2 3 4 5
(f) Feeling helpless about how to help my baby during this time 0 1 2 3 4 5
(g) Not being able to be alone with my baby 0 1 2 3 4 5

0 = Not applicable 1 = Not at all stressful 2 = A little stressful 3 = Moderately stressful 4 = Very stressful 5 = Extremely stressful.

4. Staff behaviours and communication

(a) Staff explaining things too fast 0 1 2 3 4 5
(b) Staff using words I don’t understand 0 1 2 3 4 5
(c) Telling me different (conflicting) things about my baby’s condition 0 1 2 3 4 5
(d) Not telling me enough about tests and treatments being done to my baby 0 1 2 3 4 5
(e) Not talking to me enough 0 1 2 3 4 5
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(f) Too many different people talking to me
      0 1 2 3 4 5

(g) Difficulty in getting information or help when I visit or telephone
      0 1 2 3 4 5

(h) Not feeling sure that I will be called about changes in my baby’s condition
      0 1 2 3 4 5

(i) Staff looking worried about my baby
      0 1 2 3 4 5

(j) Staff acting as if they didn’t want parents around
      0 1 2 3 4 5

(k) Staff acting as if they did not understand my baby’s behaviour or special needs
      0 1 2 3 4 5

SECTION C
BRIEF SYMPTOM INVENTORY

(0) Not at all (1) A little bit (2) Moderately (3) Quite a bit (4) Extremely

HOW MUCH WERE YOU STRESSED BY

1. Nervousness or shakiness inside
   (0) (1) (2) (3) (4)

2. Faintness or dizziness
   (0) (1) (2) (3) (4)

3. The idea that someone else can control your thoughts
   (0) (1) (2) (3) (4)

4. Feeling others are to blame for most of your troubles
   (0) (1) (2) (3) (4)

5. Trouble remembering things
   (0) (1) (2) (3) (4)

6. Feeling easily annoyed or irritated
   (0) (1) (2) (3) (4)

7. Pains in heart or chest
   (0) (1) (2) (3) (4)

8. Feeling afraid in open spaces or on the streets
   (0) (1) (2) (3) (4)

9. Thoughts of ending your life
   (0) (1) (2) (3) (4)

10. Feeling that most people cannot be trusted
    (0) (1) (2) (3) (4)

11. Poor appetite
    (0) (1) (2) (3) (4)

12. Suddenly scared for no reason
    (0) (1) (2) (3) (4)

13. Temper outburst that you could not control
    (0) (1) (2) (3) (4)

14. Feeling lonely even when you are with people
    (0) (1) (2) (3) (4)

15. Feeling blocked in getting things done
    (0) (1) (2) (3) (4)

16. Feeling lonely
    (0) (1) (2) (3) (4)
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- **17. Feeling sad**: (0) (1) (2) (3) (4)
- **18. Feeling no interest in things**: (0) (1) (2) (3) (4)
- **19. Feeling fearful**: (0) (1) (2) (3) (4)
- **20. Your feelings being easily hurt**: (0) (1) (2) (3) (4)
- **21. Feeling that people are unfriendly or dislike you**: (0) (1) (2) (3) (4)
- **22. Feeling inferior to others**: (0) (1) (2) (3) (4)
- **23. Nausea or upset stomach**: (0) (1) (2) (3) (4)
- **24. Feeling that you are watched or talked about by others**: (0) (1) (2) (3) (4)
- **25. Trouble falling asleep**: (0) (1) (2) (3) (4)
- **26. Having to check and double check what you do**: (0) (1) (2) (3) (4)
- **27. Difficulty making decisions**: (0) (1) (2) (3) (4)
- **28. Feeling afraid to travel on buses, subways or trains**: (0) (1) (2) (3) (4)
- **29. Trouble getting your breath**: (0) (1) (2) (3) (4)
- **30. Hot or cold spells**: (0) (1) (2) (3) (4)
- **31. Having to avoid certain things, places or activities because they frighten you**: (0) (1) (2) (3) (4)
- **32. Your mind going blank**: (0) (1) (2) (3) (4)
- **33. Numbness or tingling in parts of your body**: (0) (1) (2) (3) (4)
- **34. The idea that you should be punished for your sins**: (0) (1) (2) (3) (4)
- **35. Feeling hopeless about the future**: (0) (1) (2) (3) (4)
- **36. Trouble concentrating**: (0) (1) (2) (3) (4)
- **37. Feeling weak in parts of your body**: (0) (1) (2) (3) (4)
- **38. Feeling tense or keyed up**: (0) (1) (2) (3) (4)
- **39. Thoughts of death or dying**: (0) (1) (2) (3) (4)
- **40. Having urges to beat, injure, or harm someone**: (0) (1) (2) (3) (4)
- **41. Having urges to break or smash things**: (0) (1) (2) (3) (4)
- **42. Feeling very self-conscious with others**: (0) (1) (2) (3) (4)
- **43. Feeling uneasy in crowds, such as shopping or at a movie**: (0) (1) (2) (3) (4)
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44. Never feeling close to another person (0) (1) (2) (3) (4)
45. Spells of terror or panic (0) (1) (2) (3) (4)
46. Getting into frequent arguments (0) (1) (2) (3) (4)
47. Feeling nervous when you are left alone (0) (1) (2) (3) (4)
48. Others not giving you proper credit for your achievements (0) (1) (2) (3) (4)
49. Feeling so restless you couldn’t sit still (0) (1) (2) (3) (4)
50. Feeling of worthlessness (0) (1) (2) (3) (4)
51. Feeling that people will take advantage of you if you let them (0) (1) (2) (3) (4)
52. Feelings of guilt (0) (1) (2) (3) (4)
53. The idea that something is wrong with your mind (0) (1) (2) (3) (4)

SECTION D
AFRICULTURAL COPING INVENTORY

Instructions: Please consider the strategies you use in coping with stressful situations. Recall a stressful situation(s) that occurred. Rate each coping strategy by indicating whether you used it to cope with the stressful situation.

0 = Did not use 1 = Used a little 2 = Used a lot 3 = Used a great deal.

_____ 1. I prayed that things would work themselves out.
_____ 2. I got a group of family or friends together to help with the problem.
_____ 3. I shared my feelings with a friend or family member.
_____ 4. I remembered what a parent (or other relative) once said about dealing with these kinds of situations.
_____ 5. I tried to forget about the situation.
_____ 6. I went to church (or other religious meeting) to get help or support from the group.
_____ 7. I thought of all the struggles mothers have had to endure and it gave me strength to deal with the situation.
_____ 8. To keep from dealing with the situation, I found other things to keep me busy.
_____ 9. I sought advice about how to handle the situation from an older person in my family or community.
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_____ 10. I read a scripture from the bible (or similar book) for comfort and/or guidance.

_____ 11. I asked for suggestions on how to deal with the situation during a meeting of my organization or club.

_____ 12. I tried to convince myself that it was not that bad.

_____ 13. I asked someone to pray for me.

_____ 14. I spent more time than usual doing group activities.

_____ 15. I hoped that things would get better with time.


_____ 17. I spent more time than usual doing more things with friends and family.

0 = Did not use   1 = Used a little    2 = Used a lot            3 = Used a great deal.

_____ 18. I tried to remove myself from the situation.

_____ 19. I sought out people I thought would make me laugh.

_____ 20. I got dressed up in my best clothing.

_____ 21. I asked for blessings from a spiritual or religious person.

_____ 22. I helped others with their problems.

_____ 23. I lit a candle for strength or guidance in dealing with the problem.

_____ 24. I sought emotional support from family and friends.

_____ 25. I burned incense for strength or guidance in dealing with the problem.

_____ 26. I attended a social event (dance, party, movie) to reduce stress caused by the situation.

_____ 27. I sang a song to myself to help reduce the stress.

_____ 28. I used a cross or other object for its special powers in dealing with the problem.

_____ 29. I found myself watching more comedy shows on television.

_____ 30. I left matter in God’s hands.

SECTION E

Multidimensional Scale of Perceived Social Support (Zimet, Dahlem, Zimet & Farley, 1988)

Instructions: We are interested in how you feel about the following statements. Read each statement carefully. Indicate how you feel about each statement.
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Circle the “1” if you Very Strongly Disagree
Circle the “2” if you Strongly Disagree
Circle the “3” if you Mildly Disagree
Circle the “4” if you are Neutral
Circle the “5” if you Mildly Agree
Circle the “6” if you Strongly Agree
Circle the “7” if you Very Strongly Agree

1. There is a special person who is around when I am in need. 
2. There is a special person with whom I can share my joys and sorrows. 
3. My family really tries to help me. 
4. I get the emotional help and support I need from my family. 
5. I have a special person who is a real source of comfort to me. 
6. My friends really try to help me. 
7. I can count on my friends when things go wrong. 
8. I can talk about my problems with my family. 
9. I have friends with whom I can share my joys and sorrows. 
10. There is a special person in my life who cares about my feelings. 
11. My family is willing to help me make decisions. 
12. I can talk about my problems with my friends.
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SECTION A

DEMOGRAPHIC INFORMATION

1. Age


6. Monthly income GH Cedis
   7. a. 140-300  b. 300 – 500  c. 500 – 800  d. 800-1000
   e. 1000-1500  f. 1500 – 2000  g. 2000 – 3000  h. 3000 - 4000  i. 4000 - 5000

8. Type of child delivery: a. Vagina b. Caesarian

9. Gestational age

10. Birth weight

11. Is this your first child a. Yes b. No

12. Days in NICU

13. Number of births

14. Previous miscarriage a. Yes b. No

15. (a) Does your child have any other complication(s) a. yes b. no (b) If yes please specify
16. Place of residence ……………………

17. Mode of transportation a. Private b. Commercial

18. Social support (whom do you get help from) a. Husband b. Mother c. Sibling d. Friend(s) e. Self f. Other g. Non
Appendix B: CONSENT FORM

Title: “Psychological Distress and Coping styles among mothers with preterm infants”

Principal Investigator: Abdul-Rahim Salisu Ango

Principal Supervisor: Dr. Adote Anum

Department of Psychology, University of Ghana, Legon

General Information about Research

The purpose of the study is to examine the psychological distress of preterm mothers and how they cope in times of distress.

The entire filling of questionnaires for each participant will be approximately 30 minutes. Participants will be asked questions about past medical history and alcohol history. They will be administered a brief, depression scale, neonatal stressor scale, psychological distress scale and coping scale.

Benefits/Risk of the study

This study will not benefit the participants directly. However, participation in the study will enhance our understanding on the psychological distress and coping style among mothers with preterm babies admitted in neonatal intensive care unit (NICU). There are no foreseeable physical, psychological or social risks a participant is likely to face for participating in this research. That notwithstanding, any risk or discomfort experienced by the participants as a result of their involvement in the study will be managed by means of psychotherapy or any other appropriate means of treatment after assessment of the participants.

Confidentiality

All information obtained from the participants during this research will be confidential. Their privacy will be protected at all times. They will not be identified in any way due to their participation in this research. For the purposes of privacy and confidentiality, it is only the two supervisors and the trained research assistants that may have direct access to the research records at any particular time. They do so by signing or thumb printing a written consent form, the participants, or their representatives will be authorizing such access. All data will be de-identified by using codes that does not identify participants.
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The data will be stored in locked cabinet, and on computer which could be accessed with password only known by designated research staffs.

**Compensation**

There will be no material or direct compensation for participation in the study.

**Withdrawal from Study**

Your participation in this research is voluntary and you have the right to withdraw or decline to participate in this study at any time without Penalty. You are also assured that you will be informed well before time if information becomes available that may be relevant to your willingness to continue in participation of this study.

**Contact for Additional Information**

Should you decide to clarify anything about the research or seek for any additional information concerning the study, you may contact the principal investigator, Abdul-Rahim SalisuAngo, University of Ghana, Legon. Telephone: 0264259043 or email: alkeramat@yahoo.com

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**Section C- VOLUNTEER AGREEMENT**

"I have read or have had someone read all of the above, asked questions, received answers regarding participation in this study, and am willing to give consent for me, my child/ward to participate in this study. I will not have waived any of my rights by signing this consent form. Upon signing this consent form, I will receive a copy for my personal records."

________________________________________________________

Name of Volunteer

_____________________________________________         _______________________

Signature or mark of volunteer     Date

If volunteers cannot read the form themselves, a witness must sign here:

I was present while the benefits, risks and procedures were read to the volunteer. All questions were answered and the volunteer has agreed to take part in the research.
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Name of witness

___________________________________________             ______________________
Signature of witness            Date

I certify that the nature and purpose, the potential benefits, and possible risks associated with participating in this research have been explained to the above individual.

___________________________________________
Name of Person who Obtained Consent

___________________________________________
Signature of Person Who Obtained Consent            Date