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Psychosocial correlates of attachment in adolescents during pregnancy and early motherhood: an Australian rural perspective

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University of Wollongong

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Psychosocial Correlates of Attachment in Adolescents During Pregnancy and Early Motherhood. An Australian Rural Perspective.

A thesis submitted in fulfilment of the requirements for the award of the degree

DOCTOR OF PHILOSOPHY

from

UNIVERSITY OF WOLLONGONG

by

MAVIS MARY SMITH.


DEPARTMENT OF NURSING.

JUNE 1999.
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The purpose of this study was to investigate the psychosocial correlates of attachment in adolescents living in a rural area during pregnancy and early motherhood. Early exchanges between the mother and her infant provide a positive foundation on which to build relationships across the lifespan. The aims of this research is twofold. Firstly, problems in attachment have been proposed to have an important causative role in childhood delay and problems in emotional, social and intellectual development. Secondly, postnatal depression in mothers is known to be associated with problems of attachment and social support.

One hundred and twenty two consenting pregnant adolescents attending a public based midwifery antenatal clinic in a rural health service area in south west New South Wales participated in a correlational study. One hundred and thirteen adolescent mothers were reinterviewed at 6 weeks and 6-12 months after the birth of the baby.

A demographic questionnaire and six objective research instruments were employed to measure the main variables of attachment, self esteem, social support and postnatal depression. i) The Maternal-Foetal Attachment Scale, ii) Prenatal Attachment Inventory, iii) The Support Behaviours Inventory, iv) Rosenberg’s Self Esteem Scale. During motherhood: v) How I Feel About My Baby Now Scale, vi) Maternal Attachment Inventory vii) Parenting Sense of Competence Scale, viii) Edinburgh Postnatal Depression Scale and ix) Facilitators and Regulators Questionnaire. Qualitative data was collected exploring the mother’s relationship with her foetus and her infant.

The results indicated that maternal-foetal attachment was
significantly related to the amount and quality of social support. Higher maternal-infant attachment scores were associated with self esteem at 6-12 months after the birth of the baby and to greater social support. High maternal-infant attachment was associated with positive parenting sense of competence and high self esteem at 6 weeks and 6-12 months during motherhood. Lower maternal-infant attachment was associated with those adolescents suggestive of the symptoms of postnatal depression at 6 weeks and 6-12 months after the birth of the baby. Self esteem decreased as the symptoms suggestive of postnatal depression increased at 6 weeks and 6-12 months.

This study found that self esteem, social support and postnatal depression were the main variables impacting on attachment in adolescents during pregnancy and early motherhood. The quality of support and number of people perceived supportive by the adolescent influences greater attachment behaviours in pregnancy. High self-esteem influenced greater attachment behaviours at 6-12 months after the birth of the baby but not at 6 weeks after delivery. Positive parenting sense of competence was associated with high maternal-infant attachment and higher self esteem at 6 weeks and 6-12 months during motherhood. Symptoms suggestive of postnatal depression were associated with lower attachment scores and lower self esteem. Maternal-foetal attachment in pregnant adolescents was not associated with maternal-infant attachment in adolescent mothers at 6 weeks or 6-12 months.

This study alerts us to the issues faced by pregnant adolescents and adolescent mothers living in a rural area in relation to attachment. Of concern is the high rate of symptoms suggestive of postnatal depression which may influence attachment. It is essential that midwives and
health professionals provide a family centred approach, actively involving not only the pregnant adolescent and adolescent mother but also the family where possible. This in turn may reduce the risk of postnatal depression and its potential impact on maternal-infant attachment.

A significant finding not directly associated with the hypotheses of this study relate to the high rate of older partners, conflict relationships and domestic violence. This issue is a cause for concern and midwives need to be vigilant for indicators of domestic violence.
PREFACE

While working as a midwife in the delivery suite of a large rural hospital I became aware that there were large numbers of adolescents giving birth. There was much discussion at the time between medical practitioners on the need to investigate the high rates of adolescent pregnancy, however, no one took this any further.

Investigation of the New South Wales Midwives Data Collection specific for Wagga Wagga Base Hospital, supported the high rate of adolescent childbirth. In 1994 the number of births for women aged 12 to 19 years was 11.8% of all maternal ages, while for 1995 it was 11.1% and in 1996, 11.2%. The percentage remained above 11% while the adolescent birth rate for the entire state of NSW in 1996 was 5%. In 1997, Bull, Hemmings and Dunn stated that, "in rural and remote Australia...adolescent pregnancy continues to occur at a rate approximately double that experienced in the larger cities" (p. 64). The elevated prevalence of adolescent pregnancy in regional areas of NSW was also noted by the 1989 Shearman Report of Maternity Services. The report documented "significant pockets of socioeconomic disadvantage exist and in Wagga Wagga 3.5% of deliveries are to mothers, 17 years or less, and 23% of all deliveries are to single women" (p. 40). It recommended community midwifery support services for adolescents and consideration be given to establishing a separate clinic in areas where there is a high proportion of adolescents giving birth (pp. 40, 169).

As a result of the Shearman Report (1989) a full time Social Worker was appointed to care for the needs of the pregnant adolescent in conjunction with antenatal care and education provided by the midwives
in the antenatal clinic at the hospital. Should the adolescent fail to attend an antenatal appointment the community midwife would visit the home of the adolescent to provide follow up care and education. However, with funding cuts to the health budget, this position has been reduced to a part time position, even though the adolescent birthrate has not declined. Since May 1997 the position has been held by the Adolescent Support Midwife replacing the full time Social Worker position.

As a rural midwife I believe it is imperative to investigate the needs identified by the pregnant adolescent and adolescent mother and in particular those issues which may impact on their relationship to their unborn baby and infant. I am unaware of other research in this rural location related to adolescent pregnancy, childbirth and parenting. This is in spite of a continual calls for research and services to target the special needs of pregnant adolescents in rural and remote Australia.

My research topic focusses on "Psychosocial Correlates of Attachment in Adolescents During Pregnancy and Early Motherhood. An Australian Rural Perspective". There is a need to investigate the factors that influence maternal-foetal attachment and maternal-infant attachment in order to assist the midwife in identifying issues specific to the adolescent. This in turn will assist the planning, implementation, assessment and evaluation of education and support programs designed to enhance quality of life and future outcomes for the adolescent mother and her baby.
ACKNOWLEDGEMENTS.

Thank You:

To the pregnant adolescents attending the Pregnancy Care and Education Centre (Midwife’s Antenatal Clinic) at Wagga Wagga Base Hospital for their participation in the study, to the midwives for their support and professional commitment in promoting this project to the adolescents and to the Greater Murray Health Service for permission to access the antenatal clinic. Thank you to the adolescent mothers who continued to support the project by participating in further interviews during the parenting period.

To John Sibbald, University of Wollongong for his supervision, support and encouragement with revisions to this thesis.

To my husband Harry, who stood the test of time.

To my friends in all walks of life for encouragement and support.

To the Creator who gives us life and shares with us the incredible privilege of bringing new lives into the world.

A special thank you to my mother Ida Gaff who has continually encouraged me in all that I have achieved in childhood and adulthood.

This thesis is also dedicated to my father Hector Gaff who died in the first year of this PhD research.

I would also like to acknowledge the support of the Australian College of Midwives Incorporated and the NSW Midwives Association for a scholarship that funded part of this research in 1997.
**Statement of Authorship**

This thesis contains no material published elsewhere except where reference is made in the text of the thesis.

No other person's work has been used in the main text of this thesis without due acknowledgement.

This thesis has not been submitted to any other tertiary institute for the award of any other degree or diploma.

Signed: __________________________

Date: ___________
CHAPTER ONE
INTRODUCTION

Attachment at birth is a continuation of the process commenced in pregnancy and exhibited by the mother as a sense of knowing, shared experience and shared history (Kitzinger, 1993). Klaus and Kennell (1976) recognised and promoted early contact, particularly in the first hour of life between the mother and the new born infant, as a time crucial for bonding and secure attachment to take place. Bonding is a vital process to the emotional and physical development of the infant. The post birth maternal responsiveness in the first two years of an infant’s life is determined by effective adaption to sustaining a relationship to the unborn baby during the prebirth period (Oates & Heinicke, 1985). For the adolescent mother developmental immaturity may interfere with the maternal-infant attachment process as it is difficult for any mother to sustain quality maternal behaviour over time (Zuravin, 1988).

Self Esteem:

Given the complex nature of adolescent development, it is not surprising to find many factors can affect attachment in pregnancy and early motherhood. One of the variables considered in this study is self esteem during pregnancy and early motherhood. Self esteem is one’s own personal view or the degree to which one values one-self (Rosenberg, 1965).

A number of researchers have considered the relationship between self-esteem and pregnancy (Connelly, 1998; Keddie, 1992; Lesser, Anderson & Koniak-Griffin, 1998). While these authors found that adolescent pregnancy was perceived as a source of self enhancement and esteem boosting, others found similar levels of self esteem between
pregnant and non pregnant adolescents (Bolden & Williams, 1995). Self esteem can affect the mother’s behaviours toward the unborn baby and may be related to prenatal and postnatal maternal attachment (Kemp, 1992). The perception of self has been identified as being crucial to developing a positive relationship with the unborn baby and future infant (Gaffney, 1986). Some adolescents with low self esteem may have difficulty in seeking social support, the next variable for consideration.

Social Support:

Similar to self esteem, a socially supportive environment and the availability of appropriate physical and emotional support is seen to have an impact on maternal attachment, facilitating positive mother-infant feelings (Erickson, 1996). It is viewed as critical for the pregnant adolescent as she faces many stressors and changes in her life as it promotes successful completion of the tasks of pregnancy, in particular the acceptance of the unborn baby (Rubin, 1975). Social support may enhance the experience of motherhood and improve maternal-infant interaction and attachment (von Windeguth & Urbano, 1989). Another advantage of social support is that it has been found to have favourable impact on the outcome of pregnancy and general health (Ferketich & Mercer, 1990) and is associated with fewer childbirth complications (Albrecht & Rankin, 1989). Social supportive relationships are valuable in providing direct help for the adolescent and indirectly assists them in coping with situations associated with pregnancy and motherhood.

Postnatal Depression:

The final major variable that will be investigated by this study is postnatal depression. There is considerable agreement within the literature that postnatal depression may delay optimal maternal-infant
attachment (Cohn, Campbell, Matias & Hopkins, 1990) while maternal depression has been linked with insecure attachment both in the infant and preschool age groups (Teti, Gelfand, Messinger & Isabella, 1995). For the adolescent the ability to be a parent and to cope with the unexpected demands of parenthood places a strain on their developmental tasks thus placing them at risk for postnatal depression (Pond & Kemp, 1992). Other risk factors for postnatal depression for the adolescent are: low self esteem, lack of social support, very young age (age not stated), no partner, unplanned or unwanted pregnancy, social isolation and poor relationship with their own mother (Ferketich & Mercer, 1990; Williams & Searle, 1989).

In recent times there has been an impressive increase in the literature on the subjects of attachment in pregnancy and motherhood, self esteem, social support and postnatal depression. While this is encouraging, few researchers are actively investigating these variables in the adolescent population. The vast majority of research being carried out is orientated to the adult population, with little attention to rural populations. Given that adolescent pregnancy in some geographic areas is increasing, research that investigates the relationship between attachment, self esteem, social support and postnatal depression would add greatly to our understanding of the needs of this population.

This project aims to address the shortfall of information by investigating attachment, self esteem, social support and postnatal depression in a sample of rural adolescents during pregnancy and early motherhood. If these concepts are left unexplored, a considerable proportion of rural adolescent mothers may experience continuing long term problems with parenting and psychological distress. This in turn
may have an adverse effect on attachment to the infant. If an association between attachment, self esteem, social support and postnatal depression is identified, then a case may be made for regarding those adolescent women and their infants as at risk for later emotional problems in relation to present and subsequent maternal-infant attachment experiences. Identification of key risk factors could lead to the development of on-going screening and preventative health programs such as parenting support and parenting education.

Despite literature that identifies the need for appropriate social support and bolstering of self esteem to enhance the outcome in the adolescent population, little information is available on attachment in adolescent pregnancy and early motherhood within an Australian setting. In view of literature that stresses the importance of such factors during pregnancy and motherhood, it is essential that research investigates these relationships. The information that emerges from such research is vital to the identification of at-risk adolescent women, the design of pre and postnatal educational programs as well as professional care that would better meet the unique needs of adolescent young women.

It was proposed to commence a longitudinal study to explore attachment in pregnancy and early motherhood and to identify the characteristics of the relationship between self-esteem, social support and postnatal depression in a sample of rural adolescents. Other issues identified which may have an impact on the variables (attachment, self-esteem, social support and postnatal depression) for investigation are: characteristics of pregnancy, obstetric outcome, type of delivery, infant characteristics, breastfeeding and rural issues will be addressed.
Chapter Two reviews the research related to the theories of attachment, adolescent psychosocial maturity, factors hypothesised to influence prenatal and postnatal attachment and implications of problems in prenatal and postnatal attachment. Chapter Three presents the research design and methodology followed by Chapter Four with the results. Chapter Five discusses and interprets the results of the study and Chapter Six proposes implications for midwifery and nursing practice and the conclusion.
CHAPTER TWO
LITERATURE REVIEW

There are many factors which could be hypothesised as influencing prenatal and postnatal attachment, including major life events such as the death of a family member, divorce or accident. The multitude of individual problems which could beset the pregnant woman will not be reviewed but instead the focus will be on the two key factors identified in the literature as having a major influence on prenatal attachment: self esteem and social support. Three key factors which have an influence on postnatal attachment will be discussed: self esteem, social support and postnatal depression. The focus of the study is on rural adolescents.

Theorists have contributed much to the understanding of the attachment process during pregnancy and the postnatal period. It is now important to consider how attachment theories and factors may be influenced if the mother is an adolescent and further, an adolescent mother living in a rural area.

2:1 THEORIES OF ATTACHMENT

This section reviews the literature in relation to the main theories of attachment which have been postulated by Bowlby (1969), Ainsworth (1973), and Klaus and Kennell (1976). Further discussion relates to Main’s (1996) adult attachment theory and Cranley’s (1981) maternal-foetal attachment research.

Attachment or bonding is a process which has been understood throughout time by mothers, shepherds, farmers and midwives who have been familiar with the process of birth as it occurs naturally among mammals. It is broadly understood as a connection between the mother and the baby, a welding together of the emotional and physical bonds
required for the continuation of a healthy relationship (Gaskin, 1990). As demonstrated by Whittlestone in 1971, human mothers respond to the smell of their babies just as the mother goat recognises her kid by smell. Olfactory bonding while not extensively documented is an important element in the bonding process (Donley, 1997). Infants recognise their mothers’ odour and in particular that of the mother’s breast milk (Varendi, Porter & Winberg, 1994).

Attachment is a vital process to the emotional and physical development of an infant. Babies in an orphanage who were fed, clothed and kept warm but were not given emotional attention, holding or affection did not experience attachment. Instead they developed a syndrome called “hospitalism”. Their physical and mental growth slowed or ceased and after a short period they often died (Spitz, 1945).

For the adolescent the capacity to nurture and form positive attachment behaviours with their infant may be undermined by their own struggle to establish an adult identity and autonomy as well as possible unresolved issues from their own childhood experience (Moroz & Allen-Meares 1991; Levine, Garcia Coll & Oh, 1985).

A primary figure in attachment literature, and one of the most influential is John Bowlby, who began research after observing the traumatic effects of the separation of mothers and young children during World War II. Ainsworth (1978) became interested in attachment after observation studies in East Africa of mother-infant separation during weaning and was further influenced by the work of Bowlby. Modern attachment theory is based on the separate and joint work of John Bowlby and Mary Ainsworth which began in the 1930s (Bretherton, 1992). Klaus and Kennell, (1976) paediatricians, became concerned at the abrupt and
unnecessary separation of the baby from the mother immediately after delivery. Their studies influenced and improved maternal care practices and the delivery experience for mothers allowing them time to have contact with their baby after delivery.

Main (1995) explored the intergenerational transmission of attachment aspects which were initially the centre of Bowlby’s interests. This theory of adult attachment corresponds with Ainsworth’s patterns of infant-parent attachment categories. Main was influenced greatly by both Bowlby and Ainsworth in the development of her adult attachment theory and the understanding of its influence across the life span into the next generation.

In 1981, Cranley, a nurse researcher, recognised the need to develop an instrument for the measurement of maternal-foetal attachment in pregnancy. The instrument she developed has become the maternal-foetal attachment scale which has been used in many studies with adult mothers and in a limited way with adolescent mothers. Positive maternal-foetal attachment, according to some authors, (Fuller, 1989; Leifer, 1977; Muller, 1992, 1996) is a predictor for positive maternal-infant attachment and influences attachment across the life cycle. Although, Stainton (1990) found that parents/mothers regardless of prenatal style or foetal interaction achieved healthy attachment in the postnatal period to their infant.

2.1.1 What is Attachment?

Attachment refers to the child’s bond to its parents and involves the formation and maintenance of an affectional tie. Bowlby sees attachment as the seeking and maintaining of close proximity with specific others (Bowlby 1969, 1973, 1980). Ainsworth (1973) suggests that
attachment is not only an affectional tie that is formed with specific others, but also the tie binds them together in space and endures over time. Bonding refers to the parents bond to the child and is the emotional investment the mother has in her child, a process of repeated meaningful and pleasurable experiences which grow and build over time. It occurs soon after birth when the mother demonstrates behaviours of touching, eye to eye contact, "en face" position and intimate communication directed towards the baby. At the same time as bonding of the mother to the infant occurs, attachment of the infant to the mother takes place (Klaus & Kennell, 1976). However, not all theories differentiate between bonding and attachment. Further, on some occasions the terms have been used interchangeably.

2.1.2 Attachment: Bowlby's Theory

Bowlby (1969, 1973, 1980) described attachment as an infants in-built propensity to form strong emotional bonds to specific others. Bowlby was influenced in his formulation of attachment theory by the work of Lorenz (1937) who discovered and researched imprinting by bird species to the mother figure. The young birds demonstrated an in-built process of attachment and sought close proximity to their first parental figure. This process is known as imprinting. The parental figure might not be the mother bird, or even a bird of another type. Work with infant Rhesus monkeys by Harlow (1958) also influenced Bowlby. It was discovered that the infant rhesus monkeys who were isolated from other monkeys preferred a wire surrogate mother covered with a soft material in preference to a wire surrogate mother which was not covered but supplied food. The motherless monkey formed a preferential attachment to the cloth covered surrogate mother, particularly when frightened. It
was concluded from the research that the essential ingredients for attachment are softness and comfort contact. Children who form an attachment to a rag doll, teddy bear or blanket are found to derive emotional support from these objects (Biringen, 1994; Hinde, 1991; Petersen, 1989).

Four principles related to maternal-infant attachment were postulated by Bowlby in 1972. These are: i) the infant has physiological needs which must be met, in particular, food and warmth, therefore it becomes attached to its mother as she is the supplier of these needs, ii) infants have a built in desire to relate to the breast of the mother, to possess it orally and suck on it, iii) infants desire to be touched and held by another human, iv) the infant resents expulsion from the womb and seek to return to the womb (Bowlby, 1972). Bowlby (1972) believes that attachment is reflected by any form of behaviour that results in maintaining a close proximity to a figure of attachment.

Bowlby recognised the importance of attachment, however, focussed specifically on attachment to the mother thus limiting this important concept. His theory of attachment did not consider attachment with a caregiver or multiple caregivers. Further, Bowlby did not take into account individual differences in attachment and took an “all or none” approach when in fact there are varying degrees of attachment. Ainsworth extends Bowlby’s attachment theory which suggest that it does not provide a total explanation for all aspects of attachment.

2.1.3 Attachment: Ainsworth’s Theory

Bowlby’s theory of attachment was expanded by Ainsworth, she recognised that there are individual differences in the attachment relationship and promoted the concept of the care giver as a secure base
Three major infant-parent attachment categories were developed by Ainsworth: secure, insecure-avoidant, insecure-ambivalent. Ainsworth set up an experimental procedure known as the "strange situation". Twenty six children and their parents were observed several times over a 12 month period as they experienced a series of sequential episodes: i) the infant and parent entered the room, ii) the infant played in the presence of the parent, iii) a stranger entered the room, iv) the parent left the infant alone in the presence of the stranger and v) the mother returned to the room (Ainsworth, 1983).

The infant was categorised as secure if it showed signs of missing the parent, seeking close proximity when the parent returned then resumed play. This infant behaviour is associated with maternal sensitivity to the infant’s communication and signals. The insecure-avoidant infant showed few signs of missing the parent and ignored her return to the room. According to Ainsworth, Blehar, Waters & Wall (1978) in Main (1995, p. 140) this pattern of behaviour is associated with insensitivity by the mother to the infant’s signs and “specifically with rejection of attachment behaviour”. The insecure-ambivalent infant was distressed when the parent left the room and was unable to settle on the return of the parent, expressing anger and seeking close contact at the same time. There is an association between the insecure-ambivalent infant and the insensitivity and unpredictability of the mother.

Main (1995) added a fourth category to Ainsworth’s three, in which the insecure-disorganised/disorientated infant demonstrated disorganised and disorientated behaviours. No particular maternal behaviour has been identified for this category, although it is associated
with particularly inconsistent and poor/neglectful parenting.

At 22 months toddlers who had been considered securely attached to their mothers at 12 months of age were found to be “superior” in exploratory play and in language development in comparison to the nonsecure toddlers (Ainsworth, 1983). At 24 months the “secure” infants were better able to problem solve and to seek and accept help from their mothers, compared with the anxious-avoidant toddlers, who were aggressive towards their mothers and sought help from others. The anxious-ambivalent toddlers excessively relied on their mothers and demonstrated frustration behaviours. The toddlers at 24 months who were securely attached effectively shared with their mothers whereas the anxious toddlers did not. At three and a half years of age, children securely attached to their mothers demonstrated socially competent behaviours in preschool and at 5 years of age were ego resilient and moderately controlled in kindergarten. However the anxious-avoidant children were over-controlled while the anxious-ambivalent children were under-controlled and both groups were “less ego resilient” (Ainsworth 1983, p. 45) When presented with a picture of parent-infant separation, 6 year old children who had been secure since infancy offered a solution which was constructive while children who were insecure did not know what to do (Main, 1995). Infants who are insecurely attached develop defensive thinking processes which disorganise, distort and may limit their access to memories, intentions, feelings and option recognition (Ainsworth, 1983; Hinde & Stevenson-Hinde, 1990; Isabella & Belsky, 1985; Main, 1995,1996).

Although most theorists agree on the importance of maternal sensitivity as being central to infant attachment, some researchers since
Ainsworth’s study have “questioned the strength of the relation between maternal sensitivity and attachment security” as maternal behaviours do not occur in isolation but are part of a complex system (Pederson, Moran, Sitko, Campbell, Ghesquire & Acton, 1990, p. 1974; Vaughn & Waters, 1990). While attachment theory leaves open many questions, both theoretical and practical, Ainsworth and Bowlby (1991, p. 340) encourage attachment theorists to continue “to be alert to new developments” to “provide answers to problems still outstanding”.

Ainsworth has contributed much to the development of attachment theory and research. Given differences in cultural groups in relation to child rearing, is the Ainsworth Strange Situation assessment appropriate for each culture?

2.1.4 Attachment: Klaus and Kennell

The term bonding has been defined as the emotional investment the parents have in their child, a process of repeated meaningful and pleasurable experiences which grow and build over time (Klaus et al., 1995).

Klaus and Kennell’s theory of bonding refers to a “sensitive” period soon after birth when the mother and infant have contact and interact with each other, “skin-to-skin” particularly in the first hour of life. The newborn’s first response is one of a quiet but alert state of consciousness, looking into the mother’s eyes with eyes wide open and responding to voices (Klaus & Kennell, 1976). Klaus and Kennell believe that mothers and infants experience a period of peak responsiveness soon after birth for about forty-three minutes. During this time there is a systematic progression of touching activities involving the fingertips, then hands. Maternal elation and excitement
increases and time is spent in the "en face" position. According to Klaus and Kennell, this period of time is considered to be critical for the success or failure of attachment and can have long lasting effects for the mother and infant (Klaus & Kennell, 1976; Klaus et al., 1995).

The origins of this theory of bonding are based on that of imprinting and the work of Lorenz (1937). However research has shown that mothers develop positive attachment to their infants even if there is an absence of immediate maternal-infant contact (Parkes, Stevenson-Hinde & Marris, 1995). Some studies have found that early maternal-infant contact is associated with strong maternal-infant attachment (Norr & Roberts, 1991).

Midwives have been strong supporters of the findings of Klaus and Kennell, encouraging early and extended maternal-infant contact as well as infants rooming-in with their mothers, and further, providing mothers with a photograph of their premature or sick infant. Studies have found that these actions promote early and positive maternal-infant attachment or bonding (Coffman, 1992; Norr, Roberts & Freese, 1989; Prodromidis, Field, Arendt, Singer, Yando & Bendell, 1995). Securely attached mothers are more attuned to their infant than those mothers who are insecurely attached (Haft & Slade, 1989). The mothers ability to share in and validate the affective experience of the infant is central to its development (Haft & Slade, 1989).

Klaus and Kennell provided an important framework for maternal-infant interaction. However, their theory of a peak period immediately after birth as critical for the success or failure of attachment is questionable. This theory fails to take into account the isolated sick infant or adoptive infant who do not have the opportunity of the so
called "critical period" but demonstrate secure attachment with their mother/adoptive mother.

2.1.5 Attachment: Main's Adult Theory

Main's (1995) Adult Attachment Interview focuses on the adult's early attachment experiences and their effects and influences. The interview assesses the relationship of the adult to his/her parents during childhood. The Adult Attachment Interview was developed to predict the relationship and quality of infant-parent attachment, as observed in the Ainsworth Strange Situation, and to predict the parents' responsiveness to the attachment signals of their infant. Literature suggests that intergenerational influences on the parent-infant relationship affect the transition to parenthood. A number of studies have suggested that patterns of relationships such as parent-infant attachment are transmitted through generations (Benoit & Parker, 1994; Cox, Owen, Lewis, Riedel, Scalf-McIver & Suster, 1985; Main, 1995, 1996). Further, van IJzendoorn (1995), conducted a meta-analysis on the validity of Main's Adult Attachment Interview and suggests additional study is needed to determine the impact of early attachment experiences and their influence across the lifespan.

A study by Main and Goldwyn cited in Moroz & Allen-Meares (1991, p. 463) found that "not all mothers of secure infants were themselves secure as infants". However "mothers with insecurely attached infants felt less accepted by their parents as adults" (Moroz & Allen-Meares, 1991, p. 463) thus demonstrating that insecure childhood attachment continued to dominate their life as an adult and their ability to provide a secure attachment with their own children.

On the other hand, mothers who were able to "connect past
experiences with current feelings had children who were rated more secure” (Dozier & Tyrrell, 1998, p. 242). For the adolescent the capacity to nurture and form positive attachment behaviours with their infant may be undermined by their attempts to establish an adult identity and autonomy as well as possible unresolved issues from their own childhood experience (Main, 1996; Moroz & Allen-Meares, 1991; Levine, Garcia Coll & Oh, 1985).

The Parent Attachment Interview was developed by Bretherton, Biringen, Ridgeway, Maslin and Sherman (1989) to assess the parent-infant relationship from an attachment perspective. According to the researchers, a study of mothers attachment to their 25 month old children, provided new insights into parental experiences of the attachment regarding mother-child affect communication, mother-child separation, and autonomy negotiations. They suggest that the Parent Attachment Interview could be used as an additional or alternative measure of attachment quality.

The recent Adult Attachment Interview is structured entirely around the concept of attachment. Main’s (1995) Adult Attachment Interview relates back to Ainsworth’s attachment theoretical basis. It explores retrospectively how the adult perceived attachment during childhood to the caregiver. It inquires of the subject about relationships and experiences in childhood associated with distress, separation, loss, abusive treatment, and other relevant attachment experiences. In addition to asking for specific memories, subjects are asked repeatedly to evaluate the effects of their experiences. The interviews are audio taped, and verbatim transcripts are scored according to a specified system.

An early (Berkeley) version has three classifications: i)
Avoidant/Dismissing, ii) Ambivalent/Preoccupied and iii) Secure/Autonomous. A study was conducted using 100 mothers during the last trimester of their first pregnancy. The autonomous mothers demonstrated a balanced childhood experience while the dismissing mother seemed cut off from childhood attachment and the preoccupied mother was over involved in childhood experiences. It was confirmed that the mother’s organisation of thoughts assessed prior to the birth of the infant is associated with her child’s security of attachment at one year of age. The dismissing mother was reluctant to acknowledge attachment needs, having possibly been rejected by her own mother and was often insensitive and unresponsive to her own infant’s needs (Fonagy, Steele & Steele, 1991; Main, 1995, 1996).

Adolescent attachment studies and reviews have been conducted using the framework of adult attachment theory, with samples which have included adolescents. Rosenstein and Horowitz (1996) investigated the relationships among attachment classification of sixty psychiatrically hospitalised adolescents. Mental illness and personality traits were examined and the concordance of attachment in twenty seven adolescent and mother pairs. Insecurity of the mother and adolescent was highly concordant. The results of the study support the development model of mental illness based partially on relational experiences with parents. The next researchers took their study a step further by examining attachment issues over time in the adolescent population.

The study of Allen, Hauser and Borman-Spurrell (1996), examined long term sequelae of severe adolescent psychopathology from an adult attachment theory perspective. Sixty six upper-middle-class adolescents who were psychiatrically hospitalised at the age of fourteen years were
compared to seventy six socially similar high school students. These subjects were reinterviewed eleven years later. Most adolescents who had been hospitalised displayed insecure attachment in contrast with the high school students with a mixture of secure and insecure. These findings reflect a substantial and enduring connection between attachment organisation, adolescent mental illness and life span attachment problems.

Ward and Carlson (1995) examined the associations among adolescent attachment organisation, maternal sensitivity (recall of childhood attachment experiences), and infant attachment, prospectively in seventy four adolescent mother-infant dyads. Pregnant adolescent attachment organisations predicted both sensitivity and infant-mother attachment. Mothers who were classified autonomous in the prenatal period demonstrated higher levels of sensitivity at both three and nine months than mothers who were dismissing, preoccupied or unresolved. The association between maternal sensitivity and infant attachment was not significant which suggests that adolescent mothers are capable of forming adaptive attachment with their infants even if they have difficult early experiences. The authors of this study suggest the general process of intergenerational transmission of relationships proposed by attachment theorists.

Levine, Tuber, Slade & Ward (1991), investigated adolescents mothers’ mental representations and their relationship to mother-infant attachment. Forty two pregnant adolescents were assessed for models of attachment and object-representations (representations of attachment relationships). When the infant was fifteen months old, the adolescent mothers were further assessed for attachment and object-representations.
The study found that adolescent mothers with greater levels of object-representations were more likely to have autonomous models of attachment than mothers with lower levels of object relations. In this study infant attachment was significantly related to both adolescent attachment and adolescent object relations.

Kobak, Cole, Ferenz-Gillies & Fleming (1993) investigated attachment and emotional regulation during mother-adolescent problem solving in a sample of forty eight mother-adolescent dyads using the Adult Attachment Interview. Twenty seven were female adolescents and twenty one were male adolescents with an age from fourteen to eighteen years. Adolescence is a time of changing attachment relationships and it is during this time that the adolescent challenges and reevaluates the rules that have governed parent-child interactions. Those adolescent found to have secure strategies engaged in problem solving and had less dysfunctional anger and less avoidance of problems. Further, adolescents with attachment security maintained a balanced assertiveness with their mothers. Adolescents with deactivating strategies engaged in problem solving interactions and displayed dysfunctional anger towards maternal dominance.

These studies suggest that security in childhood provides and forms the bases for the development of interpersonal relationships in later years when an emotional bond develops to a care giver. Findings also suggest that attachment organisations may be transmitted from the parents, who may be adolescents, to their off spring (Allen, Hauser & Borman-Spurrell, 1996; Fonagy, Steele & Steele, 1991; Van IJzendoorn, 1993).

Main's (1995) Adult Attachment Interview provides an additional
model of attachment based on the memory of adults and adolescents to recall early experiences of childhood. However, the ability of adults to recall intimate events of childhood may be distorted over time. Further, one may question are these early events fact or fantasy, do childhood experiences predict for all adult behaviour and outcomes?

The next section examines maternal-foetal attachment theory.

2.1.6 Attachment: Cranley’s Maternal-Foetal Theory

In the mid 1970s, maternal attachment theory identified by Bowlby and by Klaus and Kennell was found to be inconsistent with the idea that the beginnings of attachment occurred just after the birth of the baby. This led to an exploration of the notion that attachment relationships begin in the prenatal period, thus the concept of maternal-foetal attachment was developed (Cranley, 1981a). The roots of these ideas may be traced to Deutsch (1944), who believed that some form of emotional attachment was formed by the mother to her unborn baby. This initial attachment by the woman takes place in the form of narcissistic love towards the foetus and over time changes to an appreciation of the foetus as a separate individual. Gaffney (1986) and Kitzinger (1993), suggest that attachment at birth is a continuation of the process begun in pregnancy and exhibited by the mother as a sense of knowing, shared experience and shared history.

Maternal-foetal attachment was defined by Cranley (1981a, p. 282) as the “extent to which women engage in behaviours that represent an affiliation and interaction with their unborn child”. Initially attachment takes on the form of love for the foetus then an appreciation of it as a separate person. This is considered an important psychological task of pregnancy for the woman. Early attachment is said to begin once
perceptions of foetal movement are felt by the pregnant mother (Brazelton & Cramer, 1990). The maternal-foetal relationship is one that "happens in the dark" and interactions between the pregnant mother and her unborn baby are conducted over the months of pregnancy through a "veil" obscuring direct contact, sight, smell and hearing (Raphael-Leff, 1991). Stainton (1990) found that mothers form a relationship with their unborn baby. Prenatal attachment is a sensitive process involving a combination of individual maternal intimacy, assigning meanings and reading cues of the unborn baby. A study conducted by Stainton (1985) described the involvement of parents in verbal and non verbal communication with and identifying characteristics of their unborn baby.

Maternal-foetal attachment can be classified as either positive, neutral or negative. Positive maternal-foetal attachment occurs when the mother experiences a "falling in love" with the unborn baby while a neutral attachment refers to the minimising of attachment feelings and a negative attachment when the mother views the unborn baby with negative thoughts (Raphael-Leff, 1991, 1993).

In keeping with Cranley's (1981) theory of maternal attachment occurring in pregnancy, studies have found that maternal-child attachment is already present before mothers see or touch their infant (Condon & Dunn, 1988). In 1977, Leifer reported maternal attachment to the unborn baby as being strongly predictive of maternal-attachment, particularly in the first few days. The post birth maternal responsiveness in the first two years of an infant’s life is determined by effective adaptation to sustaining a relationship to the unborn baby during the prebirth period (Oates & Heinicke, 1985).

For the pregnant adolescent the process of developing a
relationship with the foetus may be one of struggle as she copes with both the physical and emotional demands of adolescent development and pregnancy with a progression to the maternal role. However, a study related to the development of attachment behaviours in pregnant adolescents supported the existence of a relationship between maternal foetal attachment and maternal infant attachment (Bloom, 1995). Therefore the antenatal period is a crucial time for the adolescent in terms of developing future attachment with the infant.

An experimental study conducted by Carter-Jessop (1981) involved promoting maternal attachment through prenatal intervention to determine whether it enhanced maternal-infant attachment. Ten healthy primiparous women in the last trimester of pregnancy aged twenty one to thirty four years were involved in the study. Five of them were randomly assigned to the control group and five to the experimental group. The prenatal intervention involved encouraging the pregnant mothers to, check the position of their unborn baby each day; describe their daily interactions with the unborn baby; talk to and soothe the baby; press on the abdomen and notice whether this reduced the baby’s kicking movements; and to rub, stroke and gently massage their abdomen over the baby. The postnatal attachment test was used to assess for maternal attachment between the second and fourth day after the birth of the baby. There was a significant difference between the control and experimental groups’ scores which suggests that prenatal interventions enhance maternal-infant attachment after the birth of the baby (Carter-Jessop, 1981). Maternal behaviours such as eye contact, talking to the baby, “en face” position, touching the baby’s trunk and extremities with the palms of the hands and fingertips and encompassing and smiling at the baby
were present (Carter-Jessop, 1981; Carson & Virden, 1984). These findings supported an earlier study by Leifer (1977) who found that women who display greater attachment behaviours during pregnancy had greater positive feelings towards the baby after delivery. Limitations of the Carter-Jessop (1981) study relate to the small sample size and use of the postnatal test which at that time had not been tested for reliability and validity.

A more recent study conducted by Carson and Virden (1984) found that postnatal maternal-infant attachment behaviours were not different between a group who received the Carter-Jessop prenatal intervention compared to a second group who received directions on relaxation techniques in labour.

In 1989, Fuller administered the Cranley Maternal-Foetal Attachment Scale to thirty two women between thirty five and forty weeks gestation. Fuller (1989), then observed mothers with their infants on the second or third day post delivery. The Nursing Child Assessment Feeding Scale (interactive behaviours) and the Funke Maternal-Infant Interaction Assessment instrument were used to assess maternal-infant interaction. The findings from this study found a positive relationship between maternal-foetal attachment behaviours and maternal-infant interaction.

According to Muller (1996) and Olds et al (1992), maternal-foetal attachment is moderately correlated to maternal-infant interactions and attachment. While, Cranley (1981b) suggests that failure to attach according to has unfavourable effects on the development of the infant particularly the motor, mental and affective development. Friedman (1992) states that maternal-infant attachment is “crucial” as it affects the
quality and nature of future attachment relationships which in turn influence the psychosocial and cognitive development of the child.

Muller and Ferketich (1993), using factor analysis, found the Cranley Maternal-Foetal Attachment Scale subscales to be problematic and the results of the study did not support the validity of the subscales. The subscales place an emphasis on behaviours rather than affiliation or the maternal role (Muller, 1993). A Prenatal Attachment Inventory (PAI) to measure attachment during pregnancy and a Maternal Attachment Inventory (MAI) to measure attachment after birth were developed by Muller (1993) to provide another instrument to measure both prenatal and postnatal attachment.

While studies have shown contradictory and inconclusive evidence of the benefits of prenatal interventions for enhancing maternal-infant attachment, their findings have implications for the midwife who provides antenatal and postnatal education. Attachment is a developmental process and midwives are in a unique position to encourage and enhance this process pre and post birth as they provide the mother with education and support.

2.1.7 Summary

This section has reviewed some of the literature related to attachment and attachment theorists and identified the important discoveries and issues proposed as factors of attachment. Earlier theorists such as Bowlby (1969), Ainsworth (1973), and Klaus and Kennell (1976) focussed on attachment between the mother and infant. Attachment theory has been expanded on and identifies the need for maintenance of a "close relationship across the life span" (Muller, 1992, p. 6). Cranley (1981), a nurse researcher recognised that attachment occurs during
pregnancy and developed an instrument to assess attachment and further believes that maternal-foetal attachment influences maternal-infant attachment. Main (1995) took the attachment process a step further and addressed the issues of adult attachment theory across intergenerational boundaries.

All of these theorists have contributed much to the understanding of the attachment process during pregnancy and the postnatal period. However, few of the studies have focussed on attachment in adolescents, and the results have been inconclusive. One of the aims of the present study was to explore this further. The attachment theorists which have most to offer to the current study are Cranley and Klaus and Kennell. These well established theorists offer frameworks which appear to have the greatest application to midwifery practice. Midwives are closely involved with women during the prenatal period and the early postnatal period when attachment takes place. Hence the inclusion of the Maternal-Foetal Attachment Scale (MFAS, Cranley, 1981) and the How I Feel About My Baby Now Scale (FAB, Leifer, 1977). Further, the Prenatal Attachment Inventory and the Maternal Attachment Inventory developed by Muller (1993) were added later to validate the other attachment scales.

It is now important to consider how these factors may be influenced if the mother is an adolescent. The next section reviews the important findings on the emotional and psychological development of adolescents.

2:2 ADOLESCENT PSYCHOSOCIAL MATURITY

This section discusses the issues faced by the adolescent as they attempt to come to terms with their own identity and development as
well as that of becoming a mother and attaining the maternal role.

2.2.1 Adolescent Development

During adolescence a new experience occurs as biological, cognitive and social changes take place. The adolescent is essentially in a stage of psychosocial development and maturational turmoil between childhood and adulthood. Internal conflict for the adolescent and external conflict with parents occurs as the bonds of early childhood are broken to allow the adolescent growth towards maturity (Heaven & Callan, 1990; Raphael-Leff, 1991, 1993). As Laursen and Collins (1994, p. 199) state, "conflict with and detachment from parents are normative pathways for adolescents to realign relationships and reduce anxieties". The adolescent then moves from dependence on parents through a stage of peer group influence and activity to take on the adult role (Friedman, 1992).

Adolescence has been identified by Erikson (1968) as the fifth stage of development across the lifespan, a stage involving identity vs identity confusion. This fifth stage is charged with emotional and physical changes as the young person moves from the learned morality of the child to the developed ethics of adulthood. Adolescents experience a "no man's land" situation as they come to terms with the demands and roles of adult life (Erikson 1968; Heaven, 1994). Adolescents during this time may indulge in experimentation in their social and educational environments to test different roles, behaviours, identities and personalities. In addition to the positive outcomes, dangers are sexual promiscuity, alcohol and drug use, depression, suicide, delinquency and adolescent pregnancy (Medora, Goldstein & von der Hellen, 1993). Identity formation and self-awareness flourish during adolescence. For the female adolescent, Erikson believed that there is a need for identity
development which includes sex role learning as females, being committed to nurturing others and needing an intimate relationship (Heaven & Callan, 1990).

It is through interaction with the social environment that the adolescent develops behaviour patterns which become the behavioural norm (Kossakowski, 1974). An important task of adolescence is that of integration of the cognitive and biological changes with freedom of choice and integration of peer and parental pressures. Social modelling takes place through television, magazines, friends and family leading to self exploration and role experimentation in discovering sexual and socio-emotional identity (Erikson, 1968; Heaven, 1994; Peterson, 1989; Slee, 1993; Hurrelmann & Engel, 1992). The media do not encourage the "high moral standards" of yesterday, and through magazines and television sex is portrayed "without responsibility", "out of the family context", "outside marriage" and "as a means of solving life's problems" (Nunnerley, 1985, p. 244). Changes in attitudes, morals, discipline and sexual freedom have an influence on the developmental maturity of the adolescent. One could argue that there are excessive pressures on adolescents as they are targeted by the sex, fashion and food industry. The principle pressure being the desire for social acceptance by the peer group.

According to Erikson's model there are a number of key phases that characterise adolescence. **Identity diffusion** refers to the inability to resolve the crisis of identity and is characterised by indecisiveness and poor self-esteem. Poor self esteem is associated with sexually experienced adolescent females and pregnancy (Keddie, 1992). **Identity foreclosure** is the failure to resolve and confront a developmental crisis, settling
prematurely on a role rather than exploring the available options. Moratorium results in a resolved sense of identity although it involves prolonging of the crisis past adolescence. Identity achievement signals the completion of the adolescent period as the identity crisis has been resolved successfully (Heaven, 1994; Peterson, 1989; Arehart & Hull Smith, 1990; Boyes & Chandler, 1991; Bilsker & Marcia, 1991; Lavoie, 1994). Adolescents who have formed and achieved a stable identity generally exhibit higher levels of self esteem and have a positive inner directed behaviour capacity (Craig-Bray, Adams & Dobson, 1988).

Relationships with parents often deteriorate during adolescence, and this can be in the form of poor communication, lack of problem solving and increased levels of parent-adolescent conflict (Heaven & Callan, 1990; Grace, Kelly & McCain, 1993; Laursen & Collins, 1994). While for some young people relationships with parents may deteriorate during adolescence, for others the period is not always so “stormy”, it may be uneventful and undramatic (Slee, 1993). An important key to a quality family relationship is “separateness and self-assertion in family interaction” (Grotevant & Cooper, 1985, p. 416) which allows for respect for individual opinions. For the adolescent, conflict with parents can be positive behaviour as it aids in learning and practising skills of conflict resolution, assertive behaviours and role taking (Holmbeck & Hill, 1991). The research of Spitz (1954) dramatically illustrates the longing of humans for physical contact by others. Heaven and Callan (1990), state that parental warmth, intimacy and nurturance are importance aspects for promoting adolescent self esteem, emotional well-being, low anxiety, academic performance, friend satisfaction and reducing hostility. Thus the adolescent-parent relationship can be harmonious and continuous.
Erikson (1968) provides an important framework for understanding adolescent development. However, adolescents may not accomplish the psychosocial phase in sequences as suggested by Erikson. In fact, the adolescent may alternately progress and regress at times before achieving a particular stage.

2.2.2 Adolescent Pregnancy and Parenting

The quality of the emotional bonding between adolescent and parents may mediate the potential risk of adolescent pregnancy. Romig and Bakken (1990) suggest that through pregnancy adolescents may attempt to gain a loving relationship through a child or they may have a child as a means of renewing their relationship with their mother. A number of reasons for adolescent pregnancy have been suggested, some adolescents become pregnant to “resolve” problems, while others wish to “punish” their mother, escape from an unhappy family life or repeat their mothers adolescent pregnancy. Unplanned or unintended pregnancy can occur as the adolescent negotiates through the difficult transition to adulthood (Fleming, 1990; Romig & Bakken, 1990). Keddie (1992) states that a lack of parent-daughter interaction influenced sexual activity and a higher pregnancy rate was associated with the absence of the father from the home. According to Medora et al. (1993, p. 160), “the majority of pregnant adolescents come from single parent families”. The adolescent daughter felt alienated and “estranged from their mother before becoming pregnant” in Jamaica (Keddie, 1992, p. 875). Keddie (1992) suggests that the pregnant adolescents in the study may have felt that their mothers cared for them more now they were pregnant. Further, this study (Keddie, 1992) found that low self esteem in the pregnant adolescent was associated with the absence of a father figure.
from the home. Although many earlier studies focussed on the complex relationship of the pregnant adolescent to her mother, more recent studies have found no difference between the mother’s “nurturance” as perceived by pregnant and non pregnant adolescents. However, study findings suggest that a secure mother-daughter relationship is associated with a lower likelihood of unintended pregnancy (Raphael-Leff, 1991, 1993).

For the pregnant adolescent the transition from a childless state to becoming a mother involves complex cognitive, affective and behavioural changes. This can be a time of physical and psychological upheaval as the adolescent copes with the demands of adolescence as well as those of pregnancy, with a progression to the maternal role (Bloom, 1995). A shift may be required from internalising an identity to developing a relationship with the foetus then caring for the infant. Many obstacles to taking on the adult role may be encountered because of the level of psychosocial maturity of the adolescent (Koniak-Griffin & Verzemnieks, 1991). Rodriquez and Moore (1995, p. 687) state that, "pregnancy at any age generates developmental change", for the adolescent it can “create a developmental crisis. When the stress occurs of two developmental stages, adolescence and young parenthood are compressed, successful completion of both sets of tasks is compromised”.

Some pregnant adolescents may be mature enough to cope with the responsibility of rearing a child while others may not. Sommer, Whitman, Borkowski, Schellenbach, Maxwell & Keogh (1993), found that for the adolescent prenatal and postnatal maternal cognitive readiness affected parenting stress and maternal-infant interactions.

The needs of the adolescent are often in conflict with that of the
infant and, while the adolescent mother is expected to mother the infant, she may be in need of mothering herself (Raphael-Leff, 1991, 1993). The early adolescent mother especially “needs a mother-person to mother her and to provide guidance in order to learn to provide nurturant behaviours and meet her infant’s needs” (Mercer, 1995, p. 260). The developmental immaturity of the adolescent mother may interfere not only with the mothering process but also the maternal attachment process (Norr & Roberts, 1991). However, Mercer (1985) found the process of maternal role attainment for the adolescent mothers no different than for other ages groups across the first year. The adolescent mother achieved competence in the role, integrating mothering behaviours into her role set and feeling comfortable with her identity as a mother.

This section has covered some of the issues identified in the literature associated with adolescent pregnancy and parenting.

The developmental tasks of the pregnant adolescent have been described by Mercer (1990) and Rubin (1984). Rubin was Mercer’s supervisor in her studies. The following section will focus on these developmental tasks.

2.2.3 Adolescent : Developmental Tasks of Pregnancy

Rubin (1984) and Mercer (1990) developed their theory of the developmental tasks of adolescence in the pregnant adolescent. They combined the work of Werner, Burr and Erikson’s (1968) theory of adolescent development (Bee & Oetting, 1989) and this has guided the current research and will be considered in the next section.

a) Mercer (1990)

Mercer (1990) as an outcome of serious analysis identified the Achievement of Developmental Tasks of Adolescence by the Pregnant
Adolescent. Six tasks were established and related to the **Early Pregnant Adolescent** (11 to 15 years), **Middle Pregnant Adolescent** (14 to 18 years) and **Late Pregnant Adolescent** (17 to 20 years). The first task looks at the "achievement of a stable identity" followed by "body image", "sexuality", "personal value system", "vocation/career" and "independence from parents" (See Table 2).

i. **Achievement of a Stable Identity.**

For the *early* pregnant adolescent, the sense of self is weak and there is considerable difficulty in adapting to the demands of pregnancy. There is a greater degree of turmoil and confusion for formation of identity. The adolescent experiences a sense of parenthood responsibilities being thrust upon her. The *middle* pregnant adolescent is developing a sense of self and may be developing ideas of how to behave and what she wants to do. Pregnancy may be seen as a confirmation of feminine identity and therefore desirable. The *late* pregnant adolescent has a strong sense of self and has developed feminine identity, adapting to pregnancy and parenting roles similar to an adult mother (Drake, 1996; Mercer, 1990).

ii. **Body Image.**

The *early* pregnant adolescent feels awkward and self conscious about being different because of the rapid growth of her body and may attempt to conceal the pregnancy. The *middle* adolescent reacts in a negative manner to changes to the body imposed by pregnancy. However the *late* pregnant adolescent is comfortable with the maternal appearance and mature body (Drake, 1996, Mercer, 1990).

iii. **Sexuality.**

During this task the *early* pregnant adolescent has only a casual
## Achievement of Developmental Tasks of Adolescence by the Pregnant Adolescent

<table>
<thead>
<tr>
<th>Developmental Tasks of Adolescence</th>
<th>Early Pregnant Adolescent</th>
<th>Middle Pregnant Adolescent</th>
<th>Late Pregnant Adolescent</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Achievement of a stable identity</strong></td>
<td>Weakly developed sense of self. Much difficulty in adapting to the demands of pregnancy. Too much turmoil and confusion for identity formation. Responsibilities of parenthood may be thrust upon them.</td>
<td>A developing sense of self. May still be developing ideas of what they want to do, how they want to behave. Pregnancy may have been desired to confirm feminine identity.</td>
<td>A strong sense of self. Has developed a feminine identity and is able to adapt to pregnant and parenting roles like adult mothers.</td>
</tr>
<tr>
<td><strong>Sexuality</strong></td>
<td>Prefer same gender peers. Usually has only casual relationships with the father of the fetus.</td>
<td>May have entered relationship with father of the fetus but it lacks depth and closeness. May have desired the pregnancy to strengthen relationship with father of the fetus.</td>
<td>Ability to form close relationships with both genders. Has a stable relationship with the father of the fetus.</td>
</tr>
<tr>
<td><strong>Personal value system</strong></td>
<td>Premoral or preconventional (Kohlberg, 1964). Obey to avoid punishment. Conforms to obtain rewards, have favors returned (Mercer, 1990). Needs concrete incentives to comply with recommendations for healthy prenatal behaviors.</td>
<td>Role conformity or conventional (Kohlberg, 1964). Maintains good relationships for others’ approval. Conforms to avoid censure by authorities and resultant guilt (Mercer, 1990). Does what is suggested for prenatal care to avoid reproach by parents or health care providers.</td>
<td>Self-accepted moral principles (Kohlberg, 1964). Conforms to maintain respect of impartial observer and to avoid self-condemnation (Mercer, 1990). Self-motivated to do what is best for a healthy pregnancy.</td>
</tr>
<tr>
<td><strong>Vocation/career</strong></td>
<td>In the 6th to 9th grade. Not able to be future oriented or concerned about career choices. Also is not able to have motherhood as a role without support.</td>
<td>In the 10th to the 12th grade. If doing poorly in school and not encouraged to have educational and employment goals, motherhood may be her primary role.</td>
<td>May have completed high school. Is able to define career choices and goals. May combine choices and goals. May combine employment or education with motherhood.</td>
</tr>
<tr>
<td><strong>Independence from parents</strong></td>
<td>Dependent on parents or other adults. Needs much assistance with parenting responsibilities.</td>
<td>Usually still dependent on parents or another adult. Shares parenting responsibility with adult family members.</td>
<td>May be independent if gainful employment is available for the adolescent or her partner. Can take primary responsibility for parenting with the father of the fetus.</td>
</tr>
</tbody>
</table>


### TABLE 1. Drake (1996, p.520)
relationship with the father of the unborn baby preferring same gender peers. The middle pregnant adolescent may have a relationship with the father of the unborn baby, desiring the pregnancy to strengthen the relationship, however it may lack depth and closeness. The ability to have a stable and close relationship with the father of the unborn baby is associated with the late pregnant adolescent (Drake, 1996; Mercer, 1990).

iv. Personal Value System.

The personal value system of the early pregnant adolescent is described by Kohlberg (1964), as “premoral” or “preconventional”. The adolescent in this age group obeys to avoid punishment and conforms to obtain rewards of returned favours. She displays a need for concrete incentives for healthy prenatal behaviours. The middle pregnant adolescent is “role conforming” or “conventional” (Kohlberg, 1964), maintaining good relationships with others to obtain approval, conforming to authorities to avoid censure and she complies to prenatal care. The late adolescent is of “self-accepted moral principles” (Kohlberg, 1964) and conforms to maintain respect and avoid self condemnation. She is self motivated for a healthy pregnancy and “to do what is best” (Drake, 1996, p. 520).

v. Vocation/Career.

The early pregnant adolescent is unable to orientate to the future or feel concern about choices for a career or motherhood as a role. For the middle pregnant adolescent, motherhood may be the primary goal, particularly if the adolescent is not achieving at school or has no employment goals. The late pregnant adolescent may have completed her education, have defined career choices and goals for continuing employment or education along with motherhood (Drake, 1996; Mercer,
vi. Independence from Parents.

The *early* pregnant adolescent is dependent on parents or other adults and needs assistance with the responsibilities of parenting. Usually the *middle* pregnant adolescent is dependent on parents or other adults and shares the responsibility of parenting with adult family members. The *late* pregnant adolescent may be independent, have employment and can take responsibility for parenting (Drake, 1996; Mercer, 1990).

b) Rubin (1984)

In 1984, Rubin identified four developmental tasks of pregnancy by the adolescent, relating them to *early adolescent* (11 to 15 years), *middle adolescent* (14 to 18 years) and *late adolescent* (17 to 20 years) criteria. The first task looks at "seeking a safe passage" followed by "acceptance of the pregnancy by self and others", "acceptance of the reality of the unborn child" and the final task, "acceptance of the reality of parenthood" (See Table 3).

i. Seeking a Safe Passage.

The *early* adolescent is "hampered" by denying the pregnancy, unable to express concerns or ask questions, seeking late prenatal care or no care at all. The *middle* adolescent is often not assertive and common among this age group is late prenatal care. However the *late* adolescent usually commences prenatal care in mid pregnancy, actively seeking information about pregnancy, birth and infants (Rubin, 1984; Drake, 1996).

ii. Acceptance of the Pregnancy by Self and Others.

There is a high level of secrecy for the *early* adolescent during this developmental task as she denies the pregnancy. Often there is a strong reaction from the family to the pregnancy once it is revealed. The *middle*
## Achievement of the Developmental Tasks of Pregnancy by Adolescents

<table>
<thead>
<tr>
<th>Developmental Task of Pregnancy*</th>
<th>Early Adolescent</th>
<th>Middle Adolescent</th>
<th>Late Adolescent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seeking safe passage</td>
<td>Hampered by denial of pregnancy. Not able to clearly state questions and concerns. Seeks prenatal care late or not at all.</td>
<td>May not be assertive in expressing concerns. Late prenatal care is common.</td>
<td>Actively seeks information about pregnancy, birth, and infants. Usually starts prenatal care in the middle trimester.</td>
</tr>
<tr>
<td>Acceptance of the pregnancy by self and others.</td>
<td>High levels of secrecy and denial of pregnancy may occur. Usually strong negative reaction by her family.</td>
<td>May have chosen the mothering role to gain mature status. Family reaction usually negative: shock, anger, guilt, and sadness (Johnson, 1995)</td>
<td>Mixed reaction of adolescent, her partner, and family. More acceptance if she is financially independent.</td>
</tr>
<tr>
<td>Acceptance of the reality of the unborn child</td>
<td>Has difficulty focusing on the fetus because of being present-oriented, self-centered, and concrete thinker.</td>
<td>May be willing to make the needs of the fetus her first priority. Influenced by her developing feminine identity and the significance of the mothering role to her.</td>
<td>Able to focus on the fetus. Can understand the consequences of her behavior on fetal growth and development.</td>
</tr>
<tr>
<td>Acceptance of the reality of parenthood</td>
<td>Not emotionally ready to assume a parenting role. Requires adult guidance and assistance to share responsibility for infant care.</td>
<td>May be able to take on some responsibility for parenting. To continue her own education, assistance with child care from adults is necessary.</td>
<td>Can get prepared and assume the tasks of parenting competently.</td>
</tr>
</tbody>
</table>

adolescent to gain a mature status may have chosen the mothering role. The reaction of the family is usually negative. A mixed reaction occurs for the late adolescent, her family and partner. There may be more acceptance of the news by others if the adolescent is independent financially (Drake, 1996; Rubin, 1984).

iii. Acceptance of the Reality of the Unborn Child.

The early adolescent, being "present orientated, self centred and a concrete thinker" (Drake, 1996, p. 521) may have difficulty focusing on the unborn baby. However the middle adolescent may make the needs of the unborn baby a first priority, "influenced by her developing of feminine identity and the significance of the mothering role to her" (Drake, 1996, p. 521). The late adolescent focusses on the unborn baby and is able to understand the consequences of her behaviour on the growth and development of the unborn baby (Drake, 1996; Rubin, 1984).


The early adolescent is emotionally unable to take on the role of parent, requiring adult assistance and guidance to share in the responsibility for the care of the infant. The middle adolescent may take on some responsibility as a parent but may need assistance with childcare, in order to continue education. The late adolescent competently prepares for and assumes the tasks of parenthood (Drake, 1996; Rubin, 1984).

Mercer (1990) and Mercer (1984) provide an important framework for understanding the differences in early, middle and late pregnant adolescents in relation to developmental tasks. They suggest that the pregnant adolescent achieve or master certain tasks. This portrays the idea that the pregnant adolescent needs to pass certain tests before one is considered to have achieved the developmental tasks of pregnancy.
However, these tasks are more complex and may not be limited specifically to the stages proposed. Further, they may be different for each individual and may not be accomplished in the sequence suggested by Mercer and Rubin.

The work of Mercer and Rubin has been based on North American adolescents and while they provide an important framework, caution should be taken as we do not know if they apply to the Australian pregnant adolescent. Further, no studies have investigated the developmental tasks in Australian pregnant adolescents to compare with the work of Mercer and Rubin. The results of this study may determine the usefulness or otherwise of these frameworks in Australian conditions. However, these important developmental levels may assist midwives in an Australian rural situation, to identify the tasks associated with the age of the pregnant adolescent and provide insight and understanding into the needs of the early, middle or late adolescent group. With this information, midwives are in a unique situation during pregnancy and early motherhood care of the adolescent to develop a profile and priority of care to meet specific needs, thus enhancing the achievement of these tasks of pregnancy and development by the adolescent. The need for developing an adolescent, pregnant adolescent and adolescent parent profile is supported by Rodriguez and Moore (1995) who suggest that developmental characteristics provide insight into this turbulent time, supplying the health personnel with valuable information for a more integrated approach to prevention and intervention needs.

2.2.4 Summary

The period of adolescence is one of moving between childhood and
adulthood. This progression towards adulthood is marked by phases or stages of achieving levels of cognitive and psychosocial development in order to establish independence from parents and maintain interdependence as the adult identity is attained and integrated into a personal value system. The adolescent may experience a significant psychosocial challenge as they attempt to adapt to the pregnancy and forthcoming parenthood (May & Mahlmeister, 1994). In considering maternal-foetal and infant attachment for the pregnant adolescent, it is clearly important to assess the kind of psychosocial influences impacting on them. The social world of family, friends and the father of her child can wield a significant influence on the adolescent. The turbulent time of psychosocial development towards maturity can threaten the adolescents' self esteem. The present study therefore planned to incorporate considerations of the rural adolescent's social and personal world and how these might impact upon her feelings about her new baby.

The next section will consider in detail some specific variables that are considered important in setting the scene for maternal foetal attachment and maternal infant attachment.

2:3 FACTORS HYPOTHESES TO INFLUENCE PRENATAL AND POSTNATAL ATTACHMENT.

There are many factors which could be hypothesised as influencing prenatal and postnatal attachment. These will not all be reviewed but instead the focus will be on the two key factors identified in the literature as having a major influence on prenatal and postnatal attachment: self esteem and social support (Connelly, 1998). A third key factor which has an influence on postnatal attachment: postnatal depression, will be addressed. These three important psychosocial factors are intertwined
with the developmental tasks of adolescence.

This section reviews the literature related to self esteem, social support and postnatal depression and their effects on adolescent attachment and during pregnancy and motherhood.

2.3.1 Self Esteem

Self esteem has been defined as the degree to which one values oneself (Rosenberg, 1965, 1979) while for adolescents it is defined as the emotional evaluation they make about themselves in the general form of approval or disapproval (Medora et al., 1993). According to Coopersmith (1981, p. 5) a person arrives at a self appraisal just prior to middle childhood and it remains "relatively stable and enduring over a period of several years". There are two primary sources of self esteem, the "reflected appraisal of significant others and one's accomplishments" (Kemp & Page, 1987, p. 196). Factors which influence self esteem are interwoven with the specific developmental tasks of adolescence (Connelly, 1998). Schweitzer, Seth-Smith & Callan (1992, p. 84) believe that there is no reason to "discriminate between self-concept and self esteem" as they are interdependent.

Motherhood can affect the woman's self esteem in either a positive or a negative manner and is influenced by stress, anxiety, attitudes towards motherhood, perceived ability to parent and other issues. For the adolescent it may be more difficult as they are working simultaneously on the developmental tasks of adolescence, pregnancy and parenthood (Pond & Kemp, 1992).

2.3.1.1 Self Esteem: Adolescent Pregnancy

A common theme in the literature is that adolescent pregnancy often occurs as a response to low self esteem associated with low ego
strength. Adolescence may create conditions for an unplanned pregnancy as they avoid taking birth control precautions because of their poorly structured ego associated with a deficiency in the early formative years (Fleming, 1990; Holden, Nelson, Velasques & Richie, 1993). Some studies have found that adolescent pregnancy is also associated with low self esteem and low self concept (Holden et al., 1993; Streetman, 1987; Zongker, 1977) while other studies have not supported this view (Alpers, 1998; Bolden & Williams, 1995). A planned pregnancy provides some mothers with a sense of control and mastery over pregnancy and increases self esteem.

Contradictions exist in the literature which indicates that it is not possible to determine whether low self esteem preceded pregnancy as a risk factor or if it is the result of early pregnancy (Keddie, 1992). In Keddie's study, pregnant adolescents scored very low on items which measured "sense of personal worth and how they perceived themselves in relation to their families" (Keddie, 1992, p. 876) while Zongker, (1977) found that school-aged mothers demonstrated a low self esteem. In contrast Robinson and Frank (1994) found that pregnant adolescents and adolescent mothers did not have a low self esteem or negative views of themselves while Matsushashi and Felice (1991) found that self esteem was higher for pregnant than non pregnant adolescents. A recent study by Connelly (1998) revealed that adolescent pregnancy status was not associated with a lack of hopelessness, low self esteem or inadequate social support when age and socioeconomic status were controlled. Other studies found similar, average levels of self esteem between pregnant and non pregnant adolescents (Bolden & Williams, 1995). Further, these authors state that sexual activity was not related to self esteem. Robinson
and Frank (1994) found no difference in self-esteem between pregnant and non pregnant adolescents. These studies have presented diverse views of self esteem and its association with adolescent pregnancy.

The adolescent’s perceptions and experiences during pregnancy are linked with the way she views herself. Some pregnant adolescents perceived the future birth of the baby as a ticket to happiness and greater prestige (Medora et al. 1993) or an opportunity to be loved by the baby and for them to have someone to love (Connelly, 1998). Others saw the pregnancy and ensuing child as a way to "heal childhood wounds" (Lesser, Anderson & Koniak-Griffin, 1998). For these adolescents pregnancy was perceived as a source of self-enhancement and esteem boosting. For others, self questionings and conflicts may appear at this time and if the pregnant adolescent feels a threat to her identity in relation to her own mother these feelings may influence her relationship to the unborn baby. The unborn baby and later the infant may be viewed as a rival by the adolescent (Brazelton & Cramer, 1990; Bibring, Dwyer, Huntington & Valenstein, 1961). Adolescent mothers sometimes experienced powerlessness (Alpers, 1998). Stress and anxiety may affect the adolescent mother’s ability for resolution of the task of identity, thus self esteem and sense of self worth may be compromised (Erickson, 1996). For some adolescent mothers the relationship with parents may be strained, creating social isolation (Unger & Wandersman, 1988) thus self esteem may be affected. The results of the studies reviewed are contradictory and further research is needed to tease out the relationship between variables.

2.3.1.1 Self Esteem: Pre and Postnatal Attachment

Self esteem can affect the mother’s behaviours toward the unborn
baby and is probably related to prenatal and postnatal maternal attachment (Pond & Kemp, 1992). High levels of maternal self esteem are more likely to produce positive parent-child interaction, improve child outcomes and have a major impact on future life. In contrast low maternal self esteem, poverty and the mother being less than 17 years are factors which are more likely to have a negative affect on the child and future outcomes (Diehl, 1997).

2.3.1.3 Self Esteem: High Risk Pregnancy

Pregnant adolescents are more likely than adults to have a high risk pregnancy (Adelson et al., 1997; Zhang & Chan, 1991). It is suggested that a significant relationship exists between high risk pregnancy and low self esteem. Higgins, Murray & Williams (1994) found that adolescents who have poor self esteem and social support network are less likely to seek prenatal care, thus increasing the risk to the pregnancy. Should there be a high risk pregnancy the mother may experience feelings of failure, guilt and blame. Such feelings are likely to have more negative effect on a pregnant adolescent with low self esteem. An individual with a positive self esteem is more effective in meeting the environmental demands such as a high risk pregnancy or birthing complications than an individual with a negative self esteem (Coopersmith, 1967; Rubenstein, Panzarine & Lanning, 1990).

Kemp and Page (1987), suggest that any high risk event perceived by the woman to threaten either her health or that of the foetus may compromise and limit the achievement of the developmental tasks of pregnancy. These perceptions by the woman may negatively impinge on her self esteem and her feelings toward the unborn baby. The pregnant woman may avoid attachment behaviours toward the foetus as a
protective mechanism to avoid distress, disappointment and minimise grief (Kemp & Page, 1987) if she fears the baby may not survive.

The woman experiencing a high risk pregnancy who demonstrated a low self esteem may believe she is unable to accomplish the task of protecting her unborn baby. However Pond & Kemp (1992) were unable to determine whether adult and adolescent high risk pregnant woman had a low self esteem prior to pregnancy. The only way to do this would be to use a prospective study design, an expensive yet accurate methodology which has not as yet been applied to this area.

Rubin (1977), Leifer (1977) and Cranley (1981) suggest that there are two variables that affect maternal-foetal attachment: self-concept and anxiety. The perception of self has been identified as being crucial to developing a positive relationship with the unborn baby (Gaffney, 1986). However some studies have demonstrated that there is not a significant relationship between maternal-foetal attachment and self concept (Cranley, 1979; Gaffney, 1986; Koniak-Griffin, 1988). The explanation provided by Deutsch (1945, p.159) is that, "now I do not have to be anything else, after all I am pregnant". This statement suggests that the woman with a low self concept may experience a vacation of the ego during pregnancy. Since maladaptive ways of thinking, including negative evaluation of the self, may be temporarily ameliorated during the period of pregnancy. A woman who may assess herself in a self-denigrating way ordinarily, is able to view pregnancy as not requiring her to be anything else but 'pregnant'. Some pregnant women become less worried by guilt and anxiety in relation to others and their own evaluation of their behaviour (Gaffney, 1986).

In contrast, Curry (1990) states that the ego is very vulnerable
during pregnancy. Thus the person may experience discomfort, anxiety and have a need to hurriedly repair the wound to one’s personal perfections. Some adolescents with a low self esteem may experience not only instability of their self image but vulnerability and social isolation. As social support increases, low self esteem and anxiety decrease (Rosenberg, 1965).

2.3.1.4 Self Esteem: Summary

This section has reviewed the literature in relation to self esteem and its impact on pregnancy, maternal-foetal attachment, parenting and maternal-infant attachment. Self esteem is a controversial issue. Some authors say it increases others say it decreases during pregnancy. Clearly it is an important issue, particularly for vulnerable adolescents, experiencing their first pregnancy. This study chose to use Rosenberg’s Self Esteem Scale to assess self esteem as it has stood the test of time. It is well established and has been used by many researchers. Further, it is considered to be appropriate for use with adolescent populations (Rosenberg, 1965).

The next section discusses the literature in relation to social support and its effect on pregnancy, maternal-foetal attachment, parenting and maternal-infant.

2.3.2 Social Support

Social support, as described by a number of writers, provides for a wide variety of needs. Connelly (1998, p. 198) sees social support as, “providing guidance, social reinforcement and tangible assistance” which then promotes psychosocial development and assist individuals to negotiate developmental tasks. Social support has been identified (Brown, 1986, p. 4) as support which provides “information, nurturance,
empathy, encouragement, validating behaviour, constructive
genuineness, sharedness and reciprocity, instrumental help, or
recognition of competence”. Support can be emotional, informational,
physical or appraisal. Emotional support involves the feeling of being
loved, cared for and trusted while informational support refers to the
provision of information by others. Physical support is direct help and
appraisal support is being told by others how one is performing in the
role thus allowing for self evaluation. Each type of support meets
different needs (Mercer, 1986).

Higgins et al. (1994, p. 27) found that “women with low self esteem
have difficulty in seeking social support”. Positive self esteem and social
support provide a “sense of mastery and reduce feelings of helplessness”
influencing prenatal and postnatal satisfaction (Higgins et al. 1994, p. 27).
Erickson (1996) developed a theoretical model of the bonding-attachment
process derived from a synthesis of research findings. The model depicts
possible predictors that may facilitate positive mother-infant relations as
well as outcomes of that relationship. Intervention variables are
suggested which may be implemented by nursing practitioners to
facilitate maternal and infant well being. Research findings identified
that the adolescent mother’s “perception of being supported influences
her sense of self worth, self-concept, and parental competence, as well as
her ability to handle stress and anxiety” (Erickson 1996, p. 186). This is
seen as having an impact on maternal attachment and facilitating
positive mother-infant feelings. Erickson’s theoretical model (Figure 1)
concludes that support perceived by the adolescent affects maternal
bonding and attachment; foetal and maternal variables influence
maternal and infant attachment; “the nature of maternal bonding affects
Figure 1. The Erickson bonding-attachment process model. Variables in boxes are interventions that can be implemented to facilitate maternal and infant well-being. Maternal and infant outcomes are depicted in circular shapes.
maternal attachment to the infant" (Erickson 1996, p. 194); parent-child interactions and relationships are affected by parenting; "the nature of mother-infant attachment affects infant well-being as well as the infant’s attachment to the mother" (Erickson 1996, p.194).

The transition during adolescent development creates both demands and opportunities affecting milestones, social support plays an integral role during the transition (Connelly, 1998). Social support is an important element in completing successfully the tasks of pregnancy, in particular acceptance of the unborn baby by self and others (Rubin, 1975). Social support lessens the "impact of the crisis component of adjusting to the new infant" (Ruchala & James, 1997, p. 686). Childbearing, giving birth and caring for a baby may place enormous strain on the adolescent, increasing dependence on others (Cutrona, 1989).

2.3.2.1 Social Support: Adolescent Pregnancy

The impact of social support is critical for the pregnant adolescent as she faces many stressors and changes in her life, with few resources available to help her. For the pregnant adolescent the biological changes experienced are often “accompanied by major alterations in their relationships with their family and friends” (Boyce, Schaefer & Uitti, 1985). Pregnancy may involve a change of residence and disruptions to the routine each day. Existing social support may be compromised or be withdrawn. There is some evidence that social support has a favourable impact on the outcome of pregnancy and general health (Koniak-Griffin, Lominska & Brecht, 1993; Thompson, 1986); enhances the experience of motherhood (Oakley, 1992; Unger & Wandersman, 1988); and significantly improves maternal-infant interaction and attachment (vonWindeguth & Urbano, 1989). Social support and a supporting
environment is one of the “most critical factors in the development of both the infant and adolescent parent” (Causley, Nixon & Bright, 1991, p. 621; Cooper, Dunst & Vance, 1990) facilitating positive maternal-infant feelings (Erickson, 1996).

2.3.2.2 Social Support: Pre and Postnatal Attachment

There is much debate in the limited literature available related to social support, maternal-foetal attachment in pregnant adolescents and maternal-infant attachment in adolescent mothers. A review of literature related to maternal-infant bonding, identifies that the presence of social support for the pregnant adolescent is an important predictor for both maternal-foetal attachment and maternal-infant attachment, associated with positive maternal feelings (Symanski, 1992). A study conducted by Frodi et al. (1984) found that a social support network is positively related to maternal-infant attachment in the adolescent while Mercer (1982) found a positive relationship between “informational support” and maternal-foetal attachment in the adolescent. Total functional support and the size of the support network are predictors of prenatal attachment in some pregnant adolescents. Several studies have identified that social support has a positive effect on the attachment of the pregnant adolescent to the foetus and facilitates positive maternal-child relationships (Koniak-Griffin, 1993).

Other studies did not find a correlation between overall social support and maternal-foetal attachment or overall social support and maternal-infant attachment (Koniak-Griffin, 1988). This view is supported by an earlier study which found there was no positive relationship identified between social support and the “mothers’ attitudes toward their pregnancies or babies” (Tietjen & Bradley, 1985, p. 119).
Zachariah (1985) failed to find a significant relationship between social support and maternal-foetal attachment in a group of low risk pregnant women in Canada. There is limited information available related to pregnant adolescents and prenatal attachment (May, 1992) while research findings related to adolescent parenting are often contradictory as there is a lack of well controlled research designs and a diversity of the populations (Kemp, Sibley & Pond, 1990).

2.3.2.3 Social Support: Partner, Family, Friends

Wayland and Tate (1993) found that the support of the partner is positively related to maternal adjustment and effective mothering while social support from network members often had negative affects on the pregnancy. Further, Tietjen and Bradley (1985), suggest that women who have negative attitudes towards pregnancy have conveyed these thoughts to the pregnant woman. The support of the partner has a "powerful" effect on maternal role transition and parental adjustment according to Crnic, Greenberg, Robinson & Ragozin (1984). This key support significantly affects the quality of mother-infant interaction and attachment not only during the early infant period but also at twelve months. Support for the pregnant adolescent from family, friends and the father of the baby is important in promoting a positive parental attitude toward the baby (Burke & Liston, 1994; Kissman, 1990; Turner, Grindstaff & Phillips, 1990).

2.3.2.4 Social Support: Obstetric Outcome

Debate exists in the literature related to the positive effects of social support on health status. A number of studies (Dwyer, 1974; Fielding, 1978; Ryan & Schneider, 1978) cited in Turner et al., (1990), found that there is a relationship between social support and pregnancy
complications. Those with low social support networks were three times more likely to experience complications in pregnancy and during labour. Aaronson (1989, p. 4) proposes that the effect of social support on health has the ability to mitigate stress. On the other hand social support is associated with fewer childbirth complications (Albrecht & Rankin, 1989, p. 51) and enhances health thus benefiting the well-being of the mother and the growth of the unborn baby (Ferketich & Mercer, 1990; Oakley, Rajan & Grant, 1990). This view is further supported by controlled trials which found evidence that social support enhances the adjustment to motherhood and provides confidence and maternal control, reducing the risk of pregnancy and childbirth complications (Elbourne, Oakley & Chalmers, 1991).

Cutrona (1989) believes that social support provides positive coping skills and a link between good coping skills and health. Social support has a relationship to the health of the unborn baby and the children of adolescent mothers, with long term consequences, according to Barrera (1982).

The underlying rationale for a link between social support and maternal-foetal well-being is considered by most literature as sound and consistent. Hodnett (1993, 1998a) combined eleven published randomised trials involving 8,000 at risk pregnant women in nine countries in a meta-analysis. Hodnett found that there is no link between additional social support given by a professional/trained caregiver and lower rates of preterm birth for those at risk but has other positive benefits such as a shorter length of labour, less need of medication and fewer operative deliveries. In view of these findings, Hodnett suggests that social support continue for the pregnant mother. Hodnett's (1993) findings have
created much controversy, with Villar, Farnot, Barros, Victoria, Langer & Belizan (1993) suggesting that there may have been a narrow entry into the trials, excluding those at greatest risk, and that trials may have failed to account for differences in the women recruited or detect improvement in outcomes. Further 9 controlled trials conducted in 8 countries to assess support from a health caregivers/lay woman during childbirth found there were benefits to the woman and her baby (Hodnett, 1998b). There was a reduction in the need for medication during labour and less operative deliveries and caesarean section for the woman. The infant was less likely to have an Apgar score of less than seven at five minutes. Another benefit found in 4 trials was a reduction in the time of labour for both primigravida and multigravida women (Hodnett, 1998b). These results provide evidence of the benefits of support provided by health caregivers/lay women in reducing intervention and improving the outcome for the mother and child. For example, one study found that those with low social support were three times as likely to have pregnancy and childbirth complications while a supportive network is likely to have a buffering affect against the impact of life stresses (Turner et al., 1990).

2.3.2.5 Social Support: Parenting Competence

Dormire, Strauss & Clarke (1989, p. 329), found that “social support is related to the adaptation to the parental role of first-time adolescent mothers”, predicting a more positive attitude toward the infant as well as a “sense of competence in the role”. It fosters the development of reciprocal mother-infant interactions and attachment as well as long term positive consequences for both mother and infant (Barrera, 1982).
2.3.2.6 Social Support: Summary

This section has reviewed the literature in relation to social support and its impact on pregnancy, maternal-foetal attachment, maternal-infant attachment and parenting. The findings from the literature on the importance and type of social support are controversial and at time contradictory. The Support Behaviours Inventory (SBI, Brown, 1986) was used as it explored avenues of support for the pregnant adolescent and adolescent mother.

The next section discusses the literature associated with postnatal depression and its impact on self esteem, social support and attachment. Further, it presents research conducted in the rural area of the current study. Thus providing an insight into issues which apply to rural women such as loneliness, geographic isolation and distance to services and facilities.

2.3.3 Postnatal Depression

The birth of a baby is a time of great happiness for most mothers however for those who develop postnatal depression it can be the beginning of a nightmare, (Wood, Thomas, Droppleman & Meighan, 1997). In fact, Beck (1998, p. 39) describes postnatal depression as the “worst possible nightmare”. Postnatal depression can occur irrespective of age, class and culture and may affect or disrupt the quality of the mother-infant relationship. There are many causes and risk factors suggested in the literature and one of these is that depression may develop during pregnancy and progress to postnatal depression. A number of studies (Cutrona, 1989; Ferketich and Mercer, 1990; Fleming, Ruble, Fleet & Wagner, 1990; Lineberger, 1987) have investigated depression in pregnancy and its link to postnatal depression. These
studies have assessed the mother during pregnancy and several times during the first year post delivery. Other factors which may apply to the adolescent mother will be reviewed in the following section.

Postnatal depression was first described by Pitt (1968) and has been defined by Reynolds, Seale & Williams (1988) as an emotional disorder which occurs in the first month postpartum and may remain for up to two years. It is characterised by feelings of sadness, tearfulness, self reproach or guilt, irritability, fatigue, depressed appetite, sleep disturbances, inability to cope with the baby, marital and sexual dysfunction, a moderate to severe risk of suicide and infanticide. Of concern is a Commonwealth of Australia report entitled, "Breaking Out, Challenges in Adolescent Mental Health in Australia" that identified adolescent mothers as having a higher rate of suicide than non-pregnant adolescents (Condon 1992, p. 25). The effect of postnatal depression has been described by Welburn (1980, p. 160) as "the black rose blooms, energy gone underground, behind a black curtain like the night of the soul, the extinguishing of a flame...how the baby perceives this as the cloud moves over the sun, we can only guess".

Pregnancy and childbirth, even when planned, are momentous and stressful events, both physically and emotionally, for the mother. This is particularly so in a first pregnancy and for pregnant adolescents who may have an unplanned pregnancy.

Failure to achieve adaptation places any mother at risk of difficulties (Barnett, 1990). Field, Sandberg, Garcia, Vega-Lahr, Goldstein & Guy (1985), believe the events of pregnancy and childbirth can precipitate and aggravate postnatal depression, thus affecting the early maternal-infant relationship. The woman who has conflicts regarding
the mothering role and is unprepared for motherhood (role diffusion and loss of identity) can progress to postnatal depression (Searle, 1987).

2.3.3.1 Postnatal Depression: Self Esteem and Social Support

Mothers with low self esteem are at greater risk of developing postnatal depression than those with high self esteem (Hall, Kotch, Browne & Rayens, 1996). In a study of single pregnant adolescents in which the association of depression with self esteem, social support and discomforts of pregnancy was examined, the majority (74%) of participants reported high levels of symptoms of depression. The study also revealed that adolescent mothers may experience high levels of stress in role transition to parenthood, placing them at risk of postnatal depression. This study found that poor self esteem strongly predicts depression in pregnant adolescents and lack of social support also has a significant influence on depression (Koniak-Griffin, Walker & de Traversay, 1996). A comparison study between adolescent and adult pregnant women found there was a significant relationship between anxiety and self confidence in the prenatal period for the adolescent. Adolescents may express concern at their ability to be a parent and to cope with the unexpected demands of parenthood. In adolescence this can be more difficult since there are demands to work "simultaneously on the developmental tasks of pregnancy, parenthood and adolescence and their cognitive skills may not be fully developed" (Pond & Kemp, 1992, p. 120). Gaffney (1986) suggests that mother-infant relationship may be negatively affected if the mother feels negative about her ability in the capacity of a mother. Researchers have found an inverse relationship between anxiety and prenatal maternal-foetal attachment (Gaffney, 1986). Williams, Jay, Travis, Gotowiec, Blum-Steele, Aiken, Painter & Davidson
in their longitudinal study of transition to motherhood concluded that prenatal attachment may be linked to postnatal attachment and parenting confidence for up to two years. However, other research has found no difference between the stress experienced by adolescent and adult mothers (Becker, 1987). Other studies found that the pregnant adolescent may experience depression, a sense of worthlessness or helplessness and a need for punishment. These feelings in the prenatal period can follow on into the postnatal period (Lineberger, 1987).

A number of risk factors have been identified in relation to postnatal depression. A study by O’Hara (1984) of women during the second week of the second trimester of pregnancy, revealed that 9 percent had clinical depression and this increased to 12 percent in the postpartum period. This may indicate that depression during pregnancy could be a precursor to postnatal depression. Some studies identified that postnatal depression can be predicted in pregnancy if there is a history of childhood depression, high risk pregnancy, low self esteem and high stress (Morse, 1993; Hopkins, Marcus & Campbell, 1984). Other factors which were identified are isolation, social deprivation, loneliness, unplanned pregnancy and no partner. Some of the risk factors for postnatal depression identified by Barnett (1990) may apply to the adolescent. These are: the young age of the pregnant female, no partner when the baby arrives, unplanned or unwanted pregnancy, pregnancy at risk, social isolation, stress and a poor relationship with their own mother. These risk factors suggested by Barnett are supported by earlier authors. Williams and Searle (1989) stated that a very young age, stressful life events, poor social supports and poor parental relationships were risk factors for postnatal depression. A lack of social support has been
identified as a direct link to depression in the antenatal and postnatal period (Ferketich & Mercer, 1990).

2.3.3.2 Postnatal Depression: Women in Rural and Remote Areas.

A report conducted by Purches and Jaeger (1994) in the Wagga Wagga Health Area found special issues faced by women with postnatal depression which were specific to rural areas. Those issues identified by the women were: isolation, loneliness, feeling "terrified" of being geographically isolated, distance to services, lack of services and facilities or support group services, financial stress, lack of social support, lack of childcare and other variables. These results are supported by another Australian study which investigated the difficulties associated with rural occupations such as lack of support and available support for women with postnatal depression (Griepsma, Marcollo, Casey, Cherry, Vary & Walton, 1994; Maloney, 1998). A study by Brown, Lumley, Small and Astbury (1994), related to postnatal depression, conducted in the state of Victoria, Australia, invited all women in the state of Victoria who gave birth to a live baby in a one week period (6-12 February), 1989, to participate. This included women from rural areas. 790 women completed questionnaires and 90 women were involved in recorded interviews. The issues identified by one subject, experiencing postnatal depression, who lived on an isolated farm were: i) physical and psychological isolation from her partner who had a business away from the farm, then worked the remaining daylight and weekend hours on the farm, ii) additional heavy workload in assisting with cropping, harvest, and other farm work, iii) no available assistance with five younger children or the new baby and iii) distance from local services and medical facilities, thus further compounding the isolation felt by this woman. For
many families living in rural Australia it is necessary for the partner/husband or wife to have paid work away from the farm to assist with costs associated with the farm, thus placing an added burden on family life. In a meta-analysis of predictors of postnatal depression, Beck (1996a) identified prenatal depression, childcare stress, life stress, social support, prenatal anxiety, maternity blues, marital satisfaction and previous depression as factors. Beck’s findings support a number of the variables identified by rural women such as, child care stress, life stress and social support. While those in urban areas may lack support it is an even greater problem for those living in rural areas who are geographically isolated from neighbours, friends, family and the nearest town for access to support services. Further, there are no childcare facilities in isolated rural areas either on a casual, part time or full time care basis.

This section has identified some of the predictors of postnatal depression and issues and concerns expressed by women living in rural and remote areas in Australia. The next section discusses the impact of postnatal depression on maternal-infant attachment and interaction.

2.3.3. Postnatal Depression: Maternal-Infant Attachment/Interaction

Morse (1993) found that postnatal depression has long term adverse effects on the maternal-infant attachment relationship. Postnatal depression immobilises the maternal role of the mother. Maternal-infant attachment and interaction behaviours have been described as a “dance” between the mother and the infant with both being “tuned in” and these rhythmic behaviours appear as “escalating cycles of engagement and disengagement” (Milgrom, 1994, p. 30). Beck (1996b, p. 98) described mothers with postnatal depression as being unresponsive to their
infant’s cues, quite withdrawn, with flatness of affect, displaying
difficulties with maternal-infant interaction and attachment, “acting like
robots while caring for their infants”.

Children of depressed mothers may display resulting emotional
effects. Concern was expressed by Lee and Gotlib (1989) that children of
depressed mothers were at risk for a range of emotional adjustment
difficulties. Mothers with depression are more likely to have children
who experience insecure attachment than those who do not experience
depression. After a brief separation from the depressed mother, on
reuniting, the child exhibits behaviours of avoidance and resistance
toward the mother (Stein, Gath, Bucher, Bond, Day & Cooper, 1991).
Maternal depression has been linked with insecure attachment both in
the infant and preschool age groups (Teti, Gelfand, Messinger & Isabella,
1995).

Another possible effect of postnatal depression on the newborn
infant is in the area of intellectual development. Cogill, Caplan,
Alexandra, Robson and Kumar (1986), found that children had
significant intellectual deficits if maternal depression occurred in the first
year of the child’s life. On the other hand, in Field et al.’s (1985) study the
developmental milestones of infants of depressed mothers appeared to be
not affected. Other research has produced inconsistent findings (Murray,
Cooper & Stein, 1991).

The development of expressive language may be affected in
children of mothers suffering postnatal depression. Bettes (1988)
investigated maternal depression and ‘motherese’ or infant directed
speech and found that interaction with and utterances toward the infant
were brief compared with non-depressed mothers. This finding is
supported in an earlier study by Breznitz and Shearman (1987) on speech patterning in the discourse of well and depressed mothers and their young children. Their research found that mothers who were depressed vocalised less and were slow to respond to their infant compared with non-depressed mothers. Children of depressed mother had greater difficulties in expressive language than children of non-depressed mothers, thus affecting the quality of maternal-infant interaction up to nineteen months after birth (Stein et al., 1991). Research indicates that a mother's depression affects general interaction between mother and infant. In 1985, Field et al. published their study reporting that children of depressed mothers displayed low interaction behaviours.

Stein et al., (1991) support the earlier findings of Field et al., (1985) that there is a reduction in the quality of maternal-infant interaction when the mother has postnatal depression which interferes with optimal mothering (Cohn, Campbell, Matias & Hopkins, 1990). Nevertheless these authors admit that some of the mothers had good interactions with their children and rated high or warm in their score.

2.3.4 Summary

A review of the literature has revealed some contradictory findings related to factors which may influence self-esteem, social support and postnatal depression in relation to pregnant adolescents and/or adolescent mothers. The literature indicates that there is a need for positive feedback to enhance self esteem and a good social support network to enhance positive adjustment by the adolescent to pregnancy and the future parenting role. Postnatal depression has many and varied risk factors according to the literature. Most mothers, rather than just specifically adolescent mothers, may be at risk of postnatal depression.
There is increasing evidence that psychosocial factors are significant in the development of postnatal depression. There are only a few studies addressing issues experienced by women in rural and remote areas. Research needs to clarify the issues and factors relevant to the development of postnatal depression, particularly in rural adolescents who may have different concerns than older urban women.

The next section reviews research on why prenatal attachment and postnatal attachment is important for the maintenance and enhancement of emotional and psychological wellbeing.

2:4 IMPLICATIONS OF PROBLEMS IN PRENATAL AND POSTNATAL ATTACHMENT

This section discusses the importance of attachment across the lifespan, the effects of an unplanned pregnancy and pregnancy complications on maternal-foetal and maternal-infant attachment. Also reviewed are the potential for child abuse and other effects on the lifespan stemming from early problems in attachment.

2.4.1 Attachment: Importance Across The Lifespan

Fonagy, Steele and Steele (1991, p. 891) state that Bowlby's attachment theory "provides a plausible explanation for the social transmission of relationship patterns across generations". Attachment influences relationships from childhood, "across the lifespan, and even into the next generation" (Fonagy et al., 1991, p. 891). Commencing in pregnancy the expectant mother's attachment to her unborn baby influences the quality of the future mother-infant relationship (Ammaniti, 1991). It has been suggested that attitude and feeling of most mothers toward the unborn baby predict the initial and subsequent interactions with the neonate (Reading, Cox, Sledmere & Campbell,
Josten (1982) found that mothers who are unable to care for their unborn baby in utero are unable to "care for" their infant's well being. The more intense the relationship of the pregnant mother to her foetus the shorter the time lag after delivery for strong maternal-infant attachment behaviours to take place. Caplan (1961) thinks that this is because the continuity of the relationship has only been interrupted by the mechanisms of delivery. The "strength and character of attachment will influence the quality of all future bonds to other individuals" according to Chess and Thomas (1982, p. 215).

Attachment of the mother to the unborn baby is highly correlated to postpartum interactions and attachment between the mother and the infant (Cranley, 1981b; Olds, London & Ladewig, 1992). An early study by Leifer (1977) found that maternal-foetal attachment was predictive of maternal-infant attachment. Women who displayed attachment behaviours in pregnancy had greater positive feeling towards their infant after delivery, demonstrated by the amount of eye contact, smiling, touching and talking.

### 2.4.2 Attachment: Unplanned Pregnancy

A study by Pascoe and French (1989) found that an unplanned pregnancy had delayed affects on maternal-foetal attachment and maternal-infant attachment. In contrast a planned pregnancy has been positively correlated with increased maternal-foetal attachment behaviours (Erickson, 1996; Lerum & LoBiondo-Wood, 1989). As most adolescent pregnancies are unplanned and the majority of adolescent mothers raise their children as single parents (Zubrzycki, Milch, Mier & Fleming, 1991) one could assume that attachment could be compromised. Attachment which has its origins in pregnancy can also be affected by
"environmental, social and individual characteristics" (Fuller, 1989, p. 434). The environmental, social and individual characteristics of the pregnant adolescent, as described earlier (unplanned pregnancy, disrupted living conditions, breakdown in social networks, poor self esteem, no partner, poor relationship with own mother, social isolation and other factors) could well influence the development of attachment.

2.4.3 Attachment: Obstetric Outcomes

In maternal units adolescents are generally considered to fit into a group "at risk". According to some research, both in Australia and other developed and developing countries, pregnant adolescents are at greater risk of delivering a premature and low birth weight baby (Adelson, Frommer, Pym & Rubin, 1992; Du Plessis, Bell & Richards, 1997; Mackay & Tiller, 1998; Scholl, Hediger & Belsky, 1994). Unfer, Piazze Garnica, Di Benedetto, Costabile, Gallo & Anceshi, (1995) conducted a case control study of pregnancy in adolescents aged 14 to 19 years, with a comparable number of 304 pregnancies in a group aged 20 to 24 years. They found that the adolescent group were more likely to have preterm deliveries (9.5% vs 5.9%), and they experienced a higher incidence of caesarean sections and obstetric complications such as spontaneous abortion, intrauterine growth retardation, acute foetal distress during labour and lower birth weight. Olausson, Cnattingius & Goldenberg (1997), in Sweden, found in their study of 62,433 single births to mothers aged less than 25 years of age that adolescents aged 17 years or less were at greater risk for very preterm and preterm delivery, low birth weight, small for gestational age and neonatal mortality. These findings were supported by earlier studies conducted by Cooper, Leland & Alexander (1995), into the effect of maternal age on birth outcomes among young adolescents.
There is lack of agreement, however, regarding how much adolescents are at risk for childbirth complications and adverse birth outcomes. The concept of adolescent pregnancy having a greater risk is not accepted by all researchers. Some studies suggest that adolescents present no more risk compared to adult women (Horon, Strobino & McDonald, 1983; Roosa, 1985; Scholl, Decker, Karp, Greene & De Sales, 1984; Turner et al., 1990; Zuckerman et al., 1983). According to the conductors of some studies, adolescents who were 18 years or 19 years were found to be at an optimal age for childbearing. A study comparing the trends and obstetric outcomes of pregnancy in adolescent women and adult women of 69,096 births, collected from a single inner-city tertiary medical centre, found that on average females 16-19 years old had better obstetric outcomes than adults (Amini, Catalano, Dierker & Mann, 1996). Bigner (1994) found that adolescents experienced easier and safer deliveries than older women if they received antenatal care.

A high incidence of smoking behaviour among pregnant adolescents has been reported in a number of Australian studies and identified as a factor in poor perinatal outcomes (Bell, Lumley, Palma & Fischer, 1987; Kenny, 1995; Stanley & Straton, 1981; Wakefield & Wilson, 1988; Zhang & Chan 1991). Smoking behaviour during pregnancy is known to be associated with preterm birth and low birth weight for the baby (Rasmussen & Adams, 1997; Ventura, 1994). A cohort study of 5980 women in the United Kingdom found that women who smoked during pregnancy had babies who were 153 grams lighter compared to non smoking women while those who quit smoking during pregnancy had babies 39 grams lighter. These results clearly demonstrate the effects of smoking during pregnancy on infant birth weight (Frank, McNamee,
It is probably not the physiological aspect of being an adolescent that accounts for the adverse outcomes associated with adolescent pregnancy and childbirth but rather the psychosocial problems (Adelson, Frommer, Pym & Rubin, 1992). Some studies have found that support received from others, especially the mother of the pregnant adolescent, increased the gestation period (Mackey & Coster-Schulz, 1992; Mackey & Tiller, 1998; Rogers & Lee, 1992; Schroeder, 1996). A randomised controlled trial found that social support intervention in high risk pregnancy improves the well being of the mother and infant, reducing complications in labour and delivery. For the infant less invasive methods of resuscitation and less intensive neonatal care are required and to enhance the birth weight of the baby (Oakley, Rajan & Grant, 1990). For the mother good support is associated with a reduction in the need for a caesarean section (Elbourne et al., 1991).

Mothers of preterm infants may experience parenting difficulties as normal mother-infant attachment may be disrupted by prolonged separation, particularly if the infant is transferred elsewhere for specialist care. Anxiety has direct negative effects on maternal-infant attachment according to Mercer and Ferketich (1990). This view is well supported by earlier studies and literature which show that the anxiety and depression caused by a sick infant can inhibit positive maternal-infant interaction and attachment. However, some research shows that high-risk pregnant women demonstrate a greater maternal-foetal attachment than low-risk pregnant women as they place higher value on the foetus (Ferketich & Mercer, 1990).
2.4.4 Summary: Pregnancy and Obstetric Outcome

A number of Australian and international studies have highlighted the public health issues associated with adolescent pregnancy, in terms of elevated rates of adverse physical and psychological pregnancy outcomes (Adelson et al., 1997; Zhang & Chan, 1991). These findings suggest that it is not necessarily the biological age per se which confers an increased risk, but rather the additional psychosocial problems faced by the pregnant adolescent which contribute to poor obstetric outcomes. Despite the potential importance of psychosocial factors in adolescent pregnancy, recent Australian studies have typically focussed mainly on medical complications. This is in spite of continuing calls for research and services to target the special needs of pregnant adolescents (National Health and Medical Research Council, 1996). The prevalence in the state of New South Wales (NSW), Australia, of adolescent births in 1995 and 1996 was 5% of all maternal ages (Gilchrist, 1998), however, there are some areas where this is more than double. For instance, in 1995 the number of births for women aged 12 to 19 years at Wagga Wagga Base Hospital (a large rural hospital in NSW) was 11.8% and for 1996, 11.2% (Gilchrist, 1998). The increased prevalence of adolescent pregnancies in regional areas of New South Wales was also noted by the Shearman report (Ministerial Task Force on Obstetric Services in New South Wales, 1989) and also by Bull, Hemmings & Dunn (1997) who state that "In rural and remote Australia ... adolescent pregnancy continues to occur at a rate approximately double that experienced in the larger cities" (p. 64).

The next section discusses research which has focussed on maternal-infant attachment and the issues which have either a negative or positive impact on the adolescent mother behaviour towards her
infant.

2.4.5 Attachment: Effects on Maternal-Infant Attachment

While some studies have reported poorer parenting skills for adolescent mothers, others have found that adolescents are not deficient in parenting skills by virtue of their age (Barrett, Roach & Colbert, 1991) and that their interactions with their infants are usually appropriate (Bigner, 1994). Interaction between the adolescent mother and her infant plays a significant role in affecting the developmental outcome of the child. Although little is known of the factors that place the children of adolescent mothers at risk of developmental problems, some studies have shown that "consistent deficits of cognitive development have been found in children" of some adolescent mothers (Levine, Coll & Oh, 1985, p. 23). This is manifested as scoring low on intelligence scales at eight months, four years and seven years as well as lower levels of reading skills (vonWindeguth & Urbano, 1989).

Children of adolescent mothers may suffer intellectual, emotional and physical difficulties for a number of reasons. The adolescent mother may lack basic experience with child rearing (Bigner, 1994). The very young adolescent mother may be developmentally immature and not "ready" to mother her child (Causby, Nixon & Bright, 1991).

Adolescent mothers tend to demonstrate less expressiveness, less verbal and facial expression, less delight and less positive regard towards their infants. During play the adolescent mother may be less inventive, patient, appropriate and positive (Culp, Culp, Osofsky & Osofsky, 1991). The younger the age of the adolescent mother the "less accepting, less accessible, and less sensitive" mothering behaviours were demonstrated toward her infant of approximately one year of age (McAnarney,
Lawrence, Ricciuti, Polley and Szilagyi, 1986, p. 588; Passino et al., 1993). McAnarney et al. (1986), found that, as the infant became ambulatory between the ages of 9-12 months, the adolescent mother became more impatient, limiting the infant’s ability to play and the freedom to explore the surrounding (Cooper, Dunst & Vance, 1990). Moroz and Allen-Meares (1991) found that adolescent mothers were less likely to cradle their infant during feeding and were less likely to gaze at their infant frequently. Adolescent mothers were more likely to “play” with their newborn baby however, they often touched their infants in an aggressive or unpleasant manner, according to a study comparing older and younger mothers expectations of infant development (Norr & Roberts, 1991).

A less optimal care-giving environment may be provided for the infant by some adolescent mothers as they may lack education, experience financial deprivation and lack emotional and social support. Further difficulties are associated with social isolation, deficits in nutrition knowledge, poor housing, lack of transport access and child health care (Levine, 1985; Zubrzyki et al., 1991). The adolescent mother may experience more stress than an adult mother and this is detrimental to the well-being of both the mother and the infant, thus affecting her ability to function effectively as a parent (Passino et al, 1993; Zuravin, 1988).

Developmental immaturity interferes with the maternal attachment process of the adolescent mother (Norr & Roberts, 1991). Adolescent mothers often focus on the “here and now” and may be unable to take into account the future or the implications of their behaviour toward their infant (Kemp, Sibley & Pond, 1990). Sommer Whitman, Borkowski, Schellenbach, Maxwell and Keogh (1993), found
that adolescent mothers were unprepared in prenatal and postnatal cognitive readiness for parenting, although some studies found that they are as sensitive, involved and interactive with their infant as adult mothers. While Passino et al (1993) suggests that some pregnant adolescents may have personality styles which are not be conducive to effective parenting.

There was a significant correlation between the age of the adolescent and more negative vocalisation towards the infant. Some younger adolescent mothers were less likely to initiate and reinforce their infant’s vocalisations or interact verbally compared with some older adolescent mothers. Some adolescent mothers use “less high-pitched voice, touching and synchronous movements” than adult mothers towards their infant (Levine et al., 1985, p. 23)

The relationship between age and maternal attachment behaviours was moderately strong in a study comparing some adolescent mothers with some adult mothers for observed attachment behaviours with their infants (Norr & Roberts, 1991). This study supports previous study findings of Ragozin, Basham & Crnic (1982), who found that there is a positive relationship between maternal age and maternal attachment behaviours such as nurture and vocalisation towards the infant. Degenhart-Leskosky (1989) found that the pregnant adolescent and adolescent mother is interested in the physical care of herself and the physical needs of her infant rather than in education related to infant behaviours and maternal-infant interaction. The mother may have an expectation that the baby will provide her with unconditional love and may believe that the baby will care for them rather than she having the task of to caring and nurturing her baby (Foley, 1991). Zuravin asks the
question, "can young mothers be expected to understand the needs of a child for stability and security when their own needs are so similar?" (1988, p. 91). It is difficult for any mother to sustain quality maternal behaviour over time, particularly for the adolescent mother as behaviour may conflict with their egocentric pursuits (Rich, 1990).

This section has reviewed the literature related to factors which may influence adolescent maternal-infant attachment. The literature suggests that some adolescent mothers have different parenting styles and interact with their infant in different manners compared with some adult mothers. It was also suggested that the younger the adolescent mother the less likely that she would interact verbally with her infant compared with some older adolescent mothers.

2.4.6 Attachment: Potential Risk of Child Abuse

Child abuse is complex and has many causes, and mothers of less than 20 years of age have been significantly over represented in reports of child abuse in some countries (Leventhal, Horwitz, Rude & Stier, 1993; vonWindeguth & Urbano, 1989; Zuravin, 1988). Poor responses by some mothers toward the infant often begins in the antenatal period and are "related to poorly developed maternal-foetal attachment or insufficient bonding" (Olds et al., 1992, p. 1133). Child abuse has been identified as a symptom of "bonding failure" (Adler, Hayes, Nolan, Lewin & Raphael, 1991, p. 351). Chess and Thomas (1982, p. 216) state that "ominous consequences are predicted if bonding is inadequate in the first year of life". Child abuse occurs as a result of a "failure of adequate mother-infant bonding" according to Egeland and Vaughn (1981, p. 78).

Children of some adolescent parents may become victims of child abuse as the parents are too immature to cope with a crying baby and are
unable to understand how this "doll-like plaything" has a mind of its own (Tift, 1985). Kinard and Klerman (1980), identified stress produced by the pregnancy and parenting in adolescence as factors leading to child abuse, while a low level of maternal self esteem was associated with child abuse in a study by Diehl (1997).

Infant homicide in the United States is strongly associated with childbearing at an early age. The most frequent risk factors were a "second or subsequent infant born to a mother less than 17 years" (relative risk 10.9) compared to those aged 17 to 19 years (relative risk 9.3) and less than 15 years (relative risk, 9.3) during the first year of the child's life (Overpeck, Brenner, Trumble, Trifiletti & Berendes, 1998, p. 1211). Other risk factors were no antenatal care and less than 12 years of education (Overpeck et al., 1998).

2.4.7 Attachment: Effects on the Lifespan

Main (1995, p. 136) identified that young children are more vulnerable than older children or adults to "unfavourable attachment-related experiences" as they have a greater dependence on others. According to Bowlby (1973), children may develop multiple models of the attachment figure thus creating unfavourable patterns of interaction. However a child may develop and maintain an insecure-ambivalent attachment to one attachment figure despite intense contradictory experiences.

2.4.8 Summary

Positive maternal-foetal attachment has been identified in some studies as a predictor for positive maternal-infant attachment, which in turn influences relationships across the lifespan into the next generation. A planned pregnancy is more likely to have a positive effect on maternal-
foetal attachment than an unplanned pregnancy. The pregnant adolescent may or may not be at greater risk of pregnancy and birth complications which could compromise or delay attachment. The literature was contradictory and inconclusive in supporting the view that some adolescent mothers are at greater risk of pregnancy and birth complications.

The age of the adolescent mother is thought to have an influence on maternal-foetal attachment and maternal-infant attachment and interactive behaviours. The research literature was limited and often contradictory and inconclusive in relation to the possibility that the some adolescent mothers were more likely to abuse their children. It therefore should be viewed with extreme caution.

2.5 SUMMARY OF CHAPTER 2

It would appear from the above review that an important precursor to maternal-infant attachment is maternal-foetal attachment. Since maternal-foetal attachment occurs during the difficult stages of psychological growth which characterise the nine months of pregnancy and maternal-infant attachment occurs in the postnatal period, these attachments are likely to be vulnerable to certain threats, such as poor self esteem, low social support and possible postnatal depression. Given the added psychosocial developmental difficulties of adolescents, one could suggest that the pregnant adolescent may be particularly vulnerable to disruptions in the development of maternal-foetal attachment and maternal-infant attachment, hence the present study. For the adolescent, the capacity to nurture and form positive attachment behaviours with her unborn baby and infant may be undermined by her own strivings to establish an adult identity and autonomy as well as possible unresolved
issues from childhood. Maternal attachment has been identified as an important developmental process which has an impact on the unborn baby and infant affecting future attachment processes across the lifespan. It was therefore considered important to investigate the issue empirically as a lack of information exists in the literature related to variables which impact on attachment in pregnant adolescents and adolescent mothers during early motherhood. A search of the literature did not reveal previous research which focused on maternal foetal or infant attachment in association with Australian adolescents and further Australian rural adolescents. A previous study conducted by Smith (1995) focussed on the relationship between maternal-foetal attachment, self esteem and social support in pregnant adolescents.

The current study is important in contributing to the limited knowledge available of these samples and is unique as it involves an Australian rural sample. It addresses many of the issues identified in the literature review related to psychosocial correlates of attachment in adolescents during pregnancy and early motherhood and aims to address the shortfall of information related to attachment, self esteem, social support and postnatal depression.

The broad based questions addressed were: 1) Is there a relationship between maternal-foetal attachment in pregnant adolescents and maternal-infant attachment in adolescent mothers? and 2) What psychosocial variables impact on maternal-foetal attachment and maternal-infant attachment? The significance of this research is twofold. Firstly, problems in attachment have been proposed to have an important causative role in childhood delay and problems in emotional, social and intellectual development. Secondly, postnatal depression in mothers is
known to be associated with problems of attachment and social support. Early exchanges between the mother and the infant provide a positive foundation on which to build relationships across the lifespan.

This research therefore has as its central focus, factors which influence attachment in adolescents during pregnancy and early motherhood. The following chapter outlines the research design and methodology used in this study.
CHAPTER THREE
RESEARCH DESIGN AND METHOD

3:1 PURPOSE AND RESEARCH QUESTION

A semi-structured interview using a questionnaire and taped recorded interview approach was used for this correlational study to investigate the relationship between maternal-foetal attachment in pregnant adolescents and maternal-infant attachment in adolescent mothers. The specific broad based questions addressed were: 1) Is there a relationship between maternal-foetal attachment in pregnant adolescents and maternal-infant attachment in adolescent mothers? 2) What psychosocial variables impact on maternal-foetal and maternal-infant attachment?

3:2 HYPOTHESES

The seven hypotheses generated for testing in this project were:

a) Pregnancy
1. Maternal-foetal attachment in pregnant adolescents is positively associated with maternal-infant attachment in adolescent mothers.
2. Maternal-foetal attachment is positively associated with high self esteem.
3. Maternal-foetal attachment is positively associated with the amount and quality of social support received during pregnancy.

b) Motherhood (six weeks and six to twelve months)
4. Maternal-infant attachment in adolescent mothers is positively associated with high self esteem.
5. Maternal-infant attachment is positively associated with the amount and quality of social support received during early motherhood.
6. High maternal-infant attachment scores is associated with positive
TABLE 3. RESEARCH PROTOCOL.

**Pregnancy**
(6 - 41 weeks gestation)
Subjects recruited from Midwives Ante-natal Clinic
n = 122
Consent obtained

- Tape-recorded, semi-structured interview
- Adolescent Pregnancy Questionnaire
- Maternal-Foetal Attachment Scale
- Prenatal Attachment Inventory
- Rosenberg Self-Esteem Scale
- Support Behaviours Inventory

**Motherhood**
(6 weeks post-natal)
Subjects followed up from previous period
n = 68
Consent obtained

- Tape-recorded, semi-structured interview
- Adolescent Parenting Questionnaire
- How I Feel About My Baby Now Scale
- Maternal Attachment Inventory
- Rosenberg Self-Esteem Scale
- Support Behaviours Inventory
- Parenting Sense of Competence Scale
- Facilitators and Regulators Questionnaire
- Edinburgh Postnatal Depression Scale
- Adolescent Parenting Interview Schedule

**Motherhood**
(6-12 months post-natal)
Subjects followed up from previous periods
n = 113
Consent obtained

- Tape-recorded, semi-structured interview
- Adolescent Parenting Questionnaire
- How I Feel About My Baby Now Scale
- Maternal Attachment Inventory
- Rosenberg Self-Esteem Scale
- Support Behaviours Inventory
- Parenting Sense of Competence Scale
- Facilitators and Regulators Questionnaire
- Edinburgh Postnatal Depression Scale
- Adolescent Parenting Interview Schedule
parenting sense of competence.
7. Maternal-infant attachment is inversely related to postnatal depression. For full research protocol see Table 3.

3.3 SAMPLE

The sample consisted of 122 pregnant adolescents attending a public based Midwife's antenatal clinic in a large rural health service area in New South Wales during 1995 and 1996. The following inclusion and exclusion criteria were used in an effort to control many of the variables which may have a negative affect on attachment in pregnancy.

3.3.1 Inclusion Criteria

The respondents were pregnant adolescents attending the midwife's clinic, "The Pregnancy Care and Education Centre", were aged 15 to 19 years, all planned to keep their baby and agreed to participate in the study. All pregnant women under the age of 20 at interview who booked into the antenatal clinic during the data collection period were considered eligible for the study and were approached to participate.

3.3.2 Exclusion Criteria

Pregnant adolescents who had terminated their pregnancy or were planning to terminate their pregnancy were excluded from the study. It is unknown how many had terminated their pregnancy as they would have attended the Family Planning Clinic rather than The Pregnancy Care and Education Centre. It is known that there were at least three pregnant adolescents who were not approached to participate in this study as they were planning to terminate their pregnancy. They attended the midwife's clinic to confirm their pregnancy and were then referred to the Family Planning Clinic.
3:4 SETTING

Data were gathered through the hospital based midwife's antenatal clinic of a large rural hospital. This agency was selected because it had the highest number of pregnant adolescents attending compared to a private hospital in the same area which reported only one pregnant adolescent using their services during the study data collection period. This suggests that at least for this area the sample can be considered representative of adolescents who decide to continue with their pregnancy. In the selection of the centre it was also necessary to consider the extent of other professional commitments to the project. Without the support of midwifery professionals within the antenatal clinic, collection of the data would have been difficult. The midwives promoted the study to the pregnant adolescents thus they were informed and all but one adolescent who planned to adopt her baby and did not have parental support became involved in the project.

Informed consent was obtained from the pregnant adolescent and adolescent mother. If the adolescent was under 16 years of age, her parent or guardian signed the consent form at each interview.

3:5 INSTRUMENTS

3.5.1 General Demographic Questionnaire

A General Demographic Questionnaire was developed specifically for this study to elicit information about the adolescent. The questionnaire had questions related to age of the pregnant adolescent, gestation, marital status, living arrangements and suburb. Further questions related to education level completed or tertiary studies, which High School was attended and whether sex education classes were attended. Employment issues were considered, as well as level of
fortnightly take home income, adequacy of the income and how much income was perceived to be a satisfactory fortnightly amount.

The section on pregnancy asked how many times the adolescent had been pregnant, how many living children did she have and whether she was planning to keep the baby, have it adopted or was undecided.

Social support questions in the questionnaire related to 5 measures which were constructed specifically for this study. i) Social Support Dispersion (SS no): The questionnaire included a checklist of significant people in the adolescent's life and asked them to indicate how many people they talked to about their pregnancy. The raw score was used as this measure (SS no). ii) Social Support Mean Rating (SS me): The subjects were asked to rate on a 1 to 9 rating scale (from very unsupportive to very supportive) the degree of support of each person nominated as someone they talked to about their pregnancy. Professional caregivers were included for nomination of perceived support by the adolescent. This generated a mean total supportiveness score (SS me). iii) Mother's Support (m+): The subjects were asked to rate how helpful their mother had been on a 1 to 9 scale (from not helpful to very helpful). iv) Father's Support (f+): The subjects were asked to rate how helpful their father had been on a 1 to 9 scale (from not helpful to very helpful). v) How many days, see or speak with partner (p time): The subjects then were asked how many days their partner/boyfriend spoke to or saw the subject in days per week (where 0 = less than once a week, 1 = 1 day a week ... 7 = 7 days a week).

In the section entitled “Mother and Father”, questions were asked concerning whether mother was still living, father still living, whether
parents were living together and if not, how old the subject was when they separated. Further questions asked how many children did the mother of the adolescent have, including herself, and how old was the mother when she had her first baby. The subjects were also asked, if their mother and father knew that they were pregnant.

The "Partner/Boyfriend" section asked age of partner/boyfriend, whether the adolescent had a steady relationship, how many months in the relationship, did the partner/boyfriend know about the pregnancy or whether he would be informed of the pregnancy.

"Contraception" related to whether the pregnancy was planned or unplanned, what type of contraception was used over the last 12 months, whether a contraceptive method was used at the time of the subject becoming pregnant and who took responsibility for contraception.

For the adolescent parenting demographic questionnaire, questions related to pregnancy and conception were omitted.

3.5.2 Maternal Birth Outcome

Maternal birth outcome for each adolescent in the study was collected from a copy of the Midwives Data Collection, held by the Medical Record Department of Wagga Wagga Base Hospital in relation to obstetric outcome, type of delivery, infant characteristics and breastfeeding. This information was important to the study for two reasons, to develop a profile of the adolescent and identify if complications during pregnancy and delivery, and poor infant outcome and breastfeeding influenced maternal-infant attachment.

3.5.3 Maternal-Foetal Attachment Scale (MFAS, Cranley, 1981)

Cranley’s (1981) Maternal-Foetal Attachment Scale (MFAS) is a 24 item scale with 5 subscales. The subscales assess five aspects of the
relationship of the mother and foetus. These include: differentiation of self from the foetus, interaction with the foetus, attributing characteristics to the foetus, giving of self and role-taking. The scale and subscale are scored on a scale of 1 to 5, with 5 being the most positive statement. For item 22 the scoring is reversed. A mean score is then calculated by dividing the sum of the item scores by the number of items answered (Cranley, 1995). Cranley (1995) has supplied normative data on the scale. There is a co-efficient reliability of .85 for the the scale with a range of .83 to .87 reliability for the subscales (personal communication). The MFAS was chosen for the study for three reasons. At the commencement of the study the researcher was unaware of the Prenatal Attachment Inventory. Further, the MFAS has been used extensively in prenatal attachment research and some researchers have used it to assess maternal-foetal attachment in pregnant adolescents. Bloom's (1998), study of the development of attachment behaviours in pregnant adolescents had a Cronbach coefficient alpha for the MFAS of .88. Seventy-nine pregnant adolescents aged 12 to 19 years were involved in the study during the first trimester. Sixty four adolescents were involved in the second trimester, fifty four in the third trimester and forty seven after delivery. This study found that attachment begins in pregnancy and increases after quickening and predicts for affectionate behaviours towards the newborn after birth. Koniak-Griffin (1988) investigated the relationship between social support, self esteem, and maternal-foetal attachment in adolescents. This study involved a sample of ninety adolescents less than 19 years of age. Cronbach alpha for this study for the entire MFAS was .85. Predictors of prenatal attachment were found to be total functional support, total size of support, planning of pregnancy and the intention to keep the infant.
Wayland & Tate 1993) examined associations between adolescent maternal-foetal attachment and the perceived relationship with her mother and the father of the baby. The MFAS was used to assess maternal-foetal attachment and had a Cronbach alpha coefficient reliability of .85 for the whole scale. Sixty one subjects were involved in the study, 29 were Mexican-American, 14 were African-American, and 18 were Caucasian adolescents aged 14 to 20 years were involved in the study. Maternal-foetal attachment scores were significantly related to the adolescent's perceived close relationship with her mother, the father of the baby, frequency of contact with the father of the baby, gestation and marital status.

These adolescent studies support the use of the MFAS and demonstrate reliability suitable for this particular population.

3.5.4 The Prenatal Attachment Inventory (PAI, Muller, 1993)

In a study of 336 subjects to test the Prenatal Attachment Inventory (PAI), Muller (1993) used the Prenatal Attachment Inventory (PAI) in conjunction with the Maternal Foetal Attachment Scale (MFAS, Cranley, 1981), the Maternal Adjustment and Maternal Attitude Scale (MAMA, Kumar, Robson & Smith, 1984) and the Kansas Marital Satisfaction Scale (KMSS, Schummet al., 1986). Evidence from this study showed a strong correlation between the Prenatal Attachment Inventory (PAI) and Maternal Foetal Attachment Scale (MFAS), scores indicating that they are both essentially measuring the same construct and both instruments revealed that maternal-foetal attachment increases with gestation. Validity and reliability for the PAI was found in the results of this study, Cronbach alpha .80 - .82.

Muller (1993) developed the Prenatal Attachment Inventory as a
second instrument to that of Cranley’s Maternal-foetal Attachment Scale (MFAS). It was developed after findings from multiple studies revealed inconsistent results using the MFAS.

The PAI has 21 items to reflect maternal thoughts and behaviours that suggest affection. It is rated on a 4 point scale: (4 = almost always; 3 = often; 2 = sometimes; and 1 = almost never). The PAI has demonstrated evidence of reliability with a Cronbach alpha coefficient of internal consistency from 0.81 to 0.91 (Muller, 1993; Tyler, 1992; Wilson, 1991). It was chosen as a second instrument in this study to validate and support that of the MFAS in assessing prenatal attachment in an adolescent population.

3.5.5 Rosenberg Self-Esteem Scale (RSE, Rosenberg, 1979)

Rosenberg’s Self Esteem Scale is an 10 item 4 point Likert scale with a coefficient of reproducibility of 93% and a coefficient of scalability for items of 73% and scalability for individuals of 72%. It measures the aspect of self-acceptance of self esteem. Internal consistency is very satisfactory with $r = 0.84$ to 0.87. It has a total score of forty four. Self esteem is a continuous measure but these can be divided into either low or high self esteem.

The Rosenberg Self Esteem Scale is practical, easy to administer, can be completed in two or three minutes and has been found to be well suited for adolescent assessment (Rosenberg 1965; 1979). It has good face validity. It was chosen for this study because of the smaller number of items compared to the more lengthy scale of the Coopersmith Self-Esteem Inventory (School Form). Curry, Campbell and Christian (1994), added one item to Rosenberg’s original self-esteem scale; “Feel like you have control over your life”, because control may be a key factor in self esteem.
This item was included for this study as item 11.

### 3.5.6 Support Behaviours Inventory (SBI, Brown, 1986)

The Support Behaviour Inventory is a 11 item 6 point Likert-type scale that purports to measure satisfaction with "partner" support (boyfriend, spouse, mate) separate from "others" support. The Cronbach alpha reliability coefficients range from .90 to .96, the validity was not reported.

It was chosen for this study as it is a shortened social support version, easy to complete and unique among social support scales such as it provides the opportunity to measure "partner" (spouse, partner or boyfriend) support separate to "other" support. Combining both "partner" and "other" provides a score for overall social support. Support from partner is important to assess as they can make a substantial contribution to the individual's well being.

McVeigh (1995) in an Australian study investigated the relationship between functional status and child birth, self esteem, social support and anxiety. The Support Behaviour Inventory was used to assess support in a culturally diverse population of Anglo-Australian and non-English speaking backgrounds and found easy to administer to this group. Cronbach's alphas ranged from 0.09 to 0.96 and internal consistency from 0.83 to 0.96 depending on the support subscale investigated. Further, in Brown’s (1986) study of social support during pregnancy, a unidimensional or multidimensional construct, Cronbach's alphas calculated for each subscale ranged from .83 to .96. Thus, reliability for this scale has been supported by these two studies.

### 3.5.7 How I Feel About My Baby Now Scale (FAB, Leifer, 1977)

Leifer (1977) developed the "How I Feel About My Baby Now Scale"
(FAB) to measure maternal attachment. This 10 item scale has a mix of positive and negative statements. Items are scored from 1 to 4 with a possible range from 10 to 40. Reliabilities range from .64 to .80. In 1992, Coffman (1992) conducted a critical review of 26 nursing studies on parent and infant attachment and bonding between 1981-1990. The Leifer (1977) "How I Feel About My Baby Now" instrument was cited as one of the two instrument most commonly used to measure postnatal attachment in nursing studies utilising a "Self Report" instrument. It has been extensively used in other research (Coffman, 1992) and for this study ease of use by adolescents. The researcher of the current study was aware that the adolescents were completing a demographic questionnaire, a tape recorded interview and number of other assessment instruments so it was important that the instrument be not lengthy or complex. Further, prior to the commencement of this study the researcher was unaware of other "checklist" type instruments to assess maternal-infant attachment.

3.5.8 The Maternal Attachment Inventory (MAI, Muller, 1993)

The newly developed Maternal Attachment Inventory (MAI, Muller, 1993) was not available for use at the commencement of the study but was used for Group Two subjects interviewed during both interview periods. This instrument has been chosen and added to the study to check the validity of the How I Feel About My Baby Now Scale (FAB, Leifer, 1977) and as a second instrument in this study to measure postnatal attachment for a sub sample. This assessment instrument was also a "Self Report" similar to that of Leifer's FAB scale and considered by the researcher as appropriate to administer to the adolescent population.

Muller (1993) developed the Maternal Attachment Inventory to measure postnatal maternal attachment. The MAI has 26 items to reflect
maternal activities and feelings that indicate affection toward the infant. It is rated on a 4 point scale (4 = almost always; 3 = often; 2 = sometimes; and 1 = almost never). The MAI has demonstrated evidence of reliability with a Cronbach alpha coefficient of internal consistency of 0.85 (Muller, 1993).

Muller (1993) developed the Maternal Attachment Inventory in response to inconsistent findings and results in research when the Cranley (1981) Maternal-Foetal Attachment Scale was used. Further shortcoming identified by Muller (1992) have been validity, validity of the subscales and the suggestion that the MFAS may not be measuring prenatal attachment.

3.5.9 Parenting Sense Of Competence Scale (PSOC, Gibaud-Wallston & Wandersman, 1979)

The Parenting Sense of Competence Scale (PSOC) was developed by Gibaud-Wallston and Wandersman (1979) to measure self esteem and the perceived competence of the parent in the parenting role. The scale consists of 17 brief statements related to the respondent's experience of parenting. The items are rated on a 6 point scale from strongly agree to strongly disagree. The items are divided into two subscales: Skill/Knowledge and Valuing/Comfort with the total score of both subscales providing an overall assessment by the parent of perceived competence. Internal consistency reliabilities for the scale ranged from .82 to .87 (del Carmen & Huffman, 1993; Mercer & Ferketich, 1994).

3.5.10 Facilitators and Regulators Questionnaire (FRQ, Raphael-Leff, 1994)

The Facilitators and Regulators Questionnaire (FRQ) is based on a model of motherhood developed by Raphael-Leff (1983) to assess the
orientations of parenting: the Facilitator who adapts to the baby and the Regulator who expects the baby to adapt. The total score of the questionnaire determines the orientation of motherhood: Extreme Facilitator 0-2; Moderate Facilitator 3-5; Intermediate Group 6-10; Moderate Regulator 11-13 and the Extreme Regulator 14-16. This questionnaire was chosen for this study to assess orientation of adolescent motherhood style and whether particular orientation influenced maternal-infant attachment. This questionnaire was used in an Israeli study by Scher and Blumberg (1992) who reported a coefficient reliability of $r = .95$. There are possibly other research studies that have used this instrument but a search of the literature has been unable to locate these or the reliability and validity for the questionnaire.

3.5.11 Edinburgh Postnatal Depression Scale (EPDS, Cox, Holden, Sagovsky, 1987)

The Edinburgh Postnatal Depression Scale (EPDS) is a 10 item self report scale developed to screen for Postnatal Depression and has the ability to distinguish between symptoms of depressed and non-depressed mothers. Response to each item is a score from 0 to 3 resulting in a score between 0 and 30. Reliability analysis of the scale is an alpha coefficient of 0.97. A threshold score of 12/13 has the ability to identify depression (Cox, Holden & Sagovsky, 1987). This study has used a cut off score of 11, 12 (depressed mood) and 13 (major depression) in the analysis as it identifies levels of symptoms of depression. An Australian study used a score of less than 12 and a score of greater than 12 for a study related to postnatal depression (Stamp & Crowther, 1994). The EPDS was chosen for this study because it is simple to administer and it has been extensively used in Australian and overseas studies and has been found to be acceptable by
the respondents.

3.5.12 Tape Recorded Interview Questions

The tape recorded interview questions differed slightly between the pregnancy interview and the parenting interview. Question Two for pregnancy was, "What was your life like around the time you found out you were pregnant?, with prompts, "was the pregnancy expected? and how did you feel about the news?" while for mother the question focussed on, "tell me how you feel about being a parent?" The remaining three questions were the same for both pregnancy and motherhood (Questions 1, 3, 4). These interview questions were developed to reflect the variables assessed by the instruments to gain greater insight into attachment, social support, self esteem, postnatal depression and issues which may impact on these variables.

i) Pregnancy

The questions in the pregnancy period targeted attachment (Q3), general well being (Q1), news of pregnancy (Q2), future expectations of life with an infant and support (Q4).

Questions
1. What are the good things and the bad things for you at the moment?
2. What was your life like around the time you found out you were pregnant?
Prompts: Was the pregnancy expected?
How did you feel about the news?
3. How do you feel about your baby?
4. What do you think life will be like in 10 months time?
Prompt: Will you have support from anyone?
ii) Motherhood:

The questions in the parenting period targeted attachment (Q3), general well being (Q1), feelings about being a parent (Q2), future expectations of life with an infant and support (Q4).

Questions

1. What are the good things and the bad things for you at the moment?
Prompts: How has your life changed by becoming a parent?
   What has been better?
   What has been worse?

2. Tell me how you feel about being a parent?

3. How do you feel about your baby?

4. What do you think life will be like in 5 years time?
Prompt: will you have support from anyone?

These questions allowed a comparison between the pregnancy interview and the parenting interview to assess the variables of attachment, general well-being, parenting and support.

3.6 PILOT STUDY

A pilot study was conducted using three pregnant adolescents who were interviewed using an early version of the protocol. This revealed deficits in the original demographic questionnaire and the interview questions. One of the questions of the recorded interview was changed from “how close do you feel to your baby?” to “how do you feel about your baby?”. This was because the former question elicited only ‘closed’ answers (e.g. “very” or “very close”).

After this pilot study it was decided to add Rosenberg’s Self Esteem Scale (RSE, Rosenberg, 1979) and The Support Behaviour Inventory (SBI, Brown, 1986) and expand the original research question to include the
relationship between maternal-foetal attachment, self esteem and social support in pregnant adolescents. A second instrument to measure maternal-foetal attachment was added at a later date, The Prenatal Attachment Inventory (PAI, Muller, 1993).

During the parenting period the Demographic Questionnaire was repeated, and the tape recorded interview questions, Rosenberg's Self Esteem Scale (RSE, Rosenberg, 1979) and The Support Behaviour Inventory (SBI, Brown, 1986) were used for each interview. Two measure maternal-infant attachment two scales were used, How I Feel About My Baby Now Scale (FAB, Leifer, 1977) and The Maternal Attachment Inventory (MAI, Muller, 1993). Three other scales were added, these were the Parenting Sense of Competence Scale (PSOC, Gibaud-Wallston & Wandersman, 1979), Facilitators and Regulators Questionnaire (FRQ, Raphael-Leff, 1994) and the Edinburgh Postnatal Depression Scale (EPDS, Cox, Holden & Sagovsky, 1987).

Maternal Birth Outcome (obstetric outcome, type of delivery and infant characteristics) for each subject were obtained from copies of the New South Wales Midwives Data Collection Forms held by the Medical Records Department of Wagga Wagga Base Hospital (Hospital Ethics Committee Approval was given for the collection of this information). The obstetric complications, type of delivery and infant characteristics considered in this study were those according to the New South Wales Midwives Data Collection. 1) Obstetric complications were: antepartum haemorrhage, gestational diabetes, pregnancy induced hypertension, prolonged rupture of membranes (greater than 24 hours), threatened premature labour and blood group isoimmunisation. 2) Type of delivery were: normal vaginal delivery, forceps, forceps rotation, vacuum
extraction, vaginal breech, elective caesarean section and emergency caesarean section. 3) Infant characteristics were: an Apgar score of 0-6 at 5 minutes, birthweight of less than 2500 grams and a gestational age of less than 37 weeks at birth. These results were then compared to 1995/96 births to women aged 12-19 years in New South Wales for each category.

3:7 PROCEDURE

Pregnant adolescents were identified by clinic staff and were then invited to participate in a longitudinal study during pregnancy and the parenting period in 1995-1997. Informed consent was sought and obtained from each adolescent and if she was under 16 years of age, from her guardian following receipt of approval from the University and Health Region ethics committees. A consent form was signed at each interview by the participant after she was provided with information regarding the study purpose and project. Most of the interviews were conducted in the adolescent’s home by prior arrangement with the investigator, although three occurred in a private room of the clinic at the request of the adolescent. Following some brief introductory comments, the demographic questionnaire was administered by the author by asking each question verbally of the subject.

After question Number 9 the tape recorder was turned on and the 4 qualitative questions were asked in turn. If the subject had difficulty answering the questions the question was repeated, and the specific prompts were used. The tape recorder was then turned off and the final questions were asked. The final task for the subject was to complete the research questionnaires by filling in their responses. The tape recorded responses were made prior to any questions or questionnaires specifically about attachment, self esteem and social support. This helped to ensure
that the audio-recorded responses were uncontaminated by cues or prior questions on the area of interest.

The sample consisted of 122 pregnant adolescents approached over two data collection windows, Group 1: 25 May 1995 - 7 August 1995 (50 consecutive pregnant adolescents) and Group 2: 29 June 1996 - 7 January 1997 (72 consecutive adolescents). Group One adolescents were contacted during motherhood 6 to 12 months after the first interview and Group Two adolescents at 6 weeks and 6 months after delivery. The same adolescents interviewed in pregnancy were reinterviewed in early motherhood. All pregnant adolescents in the final sample met the sample criteria set out in the research design.

3:8 DATA ANALYSIS

3.8.1 Maternal Birth Outcome Analysis

Results for maternal birth outcome for the subjects in the study were compared to 1995/96 births to women aged 12-19 years for New South Wales for each category to determine if there was a difference in outcome for the rural adolescents in the study compared to those of the same age for New South Wales. The three main outcomes were: i) obstetric outcome: antepartum haemorrhage, gestational diabetes, pregnancy induced hypertension, prolonged rupture of membranes, threatened premature labour and blood group isoimmunisation, ii) type of delivery as per NSW Midwives Data Collection: normal vaginal delivery, forceps, forceps rotation, vacuum extraction, vaginal breech, elective caesarean section and emergency caesarean section, iii) infant characteristics: an Apgar score of 0-6 at 5 minutes, birth weight of less than 2500 grams and a gestational age of less than 37 weeks at birth.

Chi square analyses were also conducted where appropriate
comparing the two groups on the following nominal variables: i) antepartum haemorrhage, gestational diabetes, pregnancy-induced hypertension, prolonged rupture of membranes, threatened premature labour and blood group isoimmunisation, ii) normal vaginal delivery, forceps, forceps rotation, vacuum extraction, vaginal breech, elective caesarean section and emergency caesarean section, iii) Apgar score of 0-6 at 5 minutes, birth weight of less than 2500 grams and a gestational age of less than 37 weeks at birth.

3.8.2 Content Analysis

A statistician was consulted who pointed out that multivariate analysis was not appropriate for the current study because the variables in the study are qualitative and would require categorisation or quantification in some way to allow analysis to take place. Further, for the analysis to be valid the variables that are being compared have to be what they say they are and it is not certain that they represent what they say they do. It was then decided to use content analysis.

Content analysis was the method applied to analyse the tape recorded interviews to identify the themes, trends and goals in the communication from the adolescents in relation to the variables of attachment, general well-being, parenting and support. The methods, applications and issues associated with content analysis have been described as being effective to apply to any form of communication to “provide knowledge and understanding of the phenomena under study” (Downe-Wamboldt, 1992, p. 314). Content analysis enhanced the quality of results by relating the categories to the environment or context that produced the data.

The transcripts were reviewed on four occasions. The principles
used for analysis were scanning for repetition, recurring events, experiences and topics. Key words and ideas were notated at the side of the transcript, sections underlined and highlighted. Further it involved the counting of certain words or phases and the frequency of the occurrence to develop categories. Themes and categories were later developed from the differences or similarities between the experiences of the pregnant adolescent or adolescent mother and grouped together.

3.8.3 Statistical Analysis

Correlations were used to compare the results obtained from the various instruments used with the psychosocial variables investigated in this study to assess attachment. The main variables for this study were: attachment, self esteem, social support and postnatal depression. Frequency distributions were also computed. Analyses of variance were then calculated where appropriate, comparing each of the resulting groups in relation to each other on age, years of education, the partner's age, and the number of months in the relationship with the partner. Chi square analysis was used to compare the subjects in the study with births to adolescent women for New South Wales for nominal variables associated with obstetric outcome, type of delivery and infant characteristics.

3.9 SUMMARY

This section has outlined the various steps taken in the research design and methodology related to the relationship between maternal-foetal attachment, maternal-infant attachment with self esteem, social support, parenting sense of competence, parenting orientation and postnatal depression, during adolescent pregnancy and then in motherhood.
CHAPTER FOUR
RESULTS

Data are presented in relation to follow up rates for the 6 week and 6-12 months interviews, reasons for dropout, characteristics of the pregnant adolescents and maternal birth outcome to introduce the chapter. Quantitative results will be followed by qualitative results in sequence of pregnancy, motherhood at 6 weeks and motherhood at 6-12 months. The main variables for the study in relation to attachment will be reported: maternal-foetal attachment, maternal-infant attachment, self esteem, social support, parenting sense of competence and postnatal depression and hypotheses testing. The qualitative section will follow outlining the results of the content analysis identifying the themes of pregnancy and motherhood. Support from professional care givers, rural and remote issues will then be addressed. The chapter will conclude with a brief summary of the findings. Discussion and interpretation of the results are presented in Chapter Five and the significance that these findings hold for midwifery and nursing practice are presented in Chapter Six.

4:1 RESPONSE RATE

In total 122 pregnant adolescents participated in the study. All subjects approached to be in the study consented, with the exception of one adolescent who did not have parental consent as she was planning to have the baby adopted. Based on information obtained from the New South Wales Health Department (1996/97) the 122 adolescent women surveyed in 1995/96 represented 59% of adolescent women who gave birth at Wagga Wagga Base Hospital, 23% in the Greater Murray Health Service area and 1.5% in New South Wales for the same time period.
4.1.1 Follow Up Rate

The original plan for the study was to interview the first group of mothers at 6 months after the birth of their infant. Locating the mothers proved very difficult, however, with many having moved from their original address up to seven times. Forty five adolescents in this study were located six to twelve months after the birth (average nine months). It was decided to reinterview the second group of adolescents at 6 weeks and 6 months after delivery. It was hoped they would be easier to locate and possibly that they could be used as a comparison group to determine if there is a difference in attachment between six week and twelve months after delivery (See Table 4).

Number of Subjects Who Participated in Each Data Collection Period.

<table>
<thead>
<tr>
<th>Table 4. FOLLOW UP RATES</th>
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<tbody>
<tr>
<td>PREGNANCY</td>
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<tr>
<td>GROUP 1</td>
</tr>
<tr>
<td>GROUP 2</td>
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<tr>
<td>Total</td>
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4.1.2 Reasons For Dropouts

**Group 1**

The reasons for those five of Group One not being reinterviewed were as follows: i) #1 had a stillbirth at 34 weeks gestation, ii) #8 moved to Western New South Wales after the birth of the baby at Wagga Wagga Base Hospital, iii) #12 moved to Southern New South Wales prior to the birth, iv) #24 had a termination of pregnancy and v) #41 moved prior to
birth, location unknown.

Group 2

Of the 72 in group two interviewed during pregnancy in 1996, 68 were reinterviewed six weeks after delivery. Four were not interviewed: i) #73 moved to Queensland after delivery at Wagga Wagga Base Hospital, ii) #96 moved to Western Australia prior to the birth, iii) #97 had a spontaneous miscarriage at 12 weeks gestation and iv) #99 moved to the Australian Capital Territory prior to the birth. These subjects were unable to be followed up at 6 weeks and also for the 6 month interview. The six subjects who moved away prior to birth or immediately post delivery demonstrate the mobility of some adolescents and the ability to move great distances from their home.

The following section discusses both groups in relation to adolescent characteristics during pregnancy.

4.2 PSYCHOSOCIAL PROFILE

4.2.1 Characteristics: Pregnant Adolescents

The 122 pregnant adolescents had an age range of 15 to 19 years (mean age of 17.8) and a gestation range of 6 to 41.6 weeks (mean gestation of 25 weeks) when first interviewed. Fifteen percent of participants were 16 years of age or younger, with sixty three percent being either 18 or 19 years old. In relation to ethnic origin, most adolescents were Australian Caucasian with some being Australian Aboriginal (Ethics Committee requested removal of Ethnic Origin from questionnaire) and one French. Ten adolescents (8.2%) had deceased fathers and two adolescents (1.6%) had deceased mothers. Fifty nine (48%) adolescents were unemployed, Twenty nine (24%) adolescent were studying and the remaining quarter were employed in either full or part-time work. Those who were not
employed full time were on some form of welfare, either to supplement their part time wage or as a full unemployment benefit. Average fortnightly income was $297 (range $0 - $650), with 72% rating their income as inadequate. Only one third of the sample had currently completed schooling beyond Year 10, yet half the sample had completed a post-school vocational course or certificate. Further analysis of those who had completed post-school vocational training indicated that over half (54%) were currently unemployed. Those who were currently in employment were typically working in unskilled or semi-skilled occupations such as a waitress, shop assistant, labourer, gardener. Others were serving an apprenticeship as a bank teller, chef, and hairdresser.

With respect to their pregnancy, 68% of the sample were pregnant for the first time, and only 19% had living children. Only 26% of the current pregnancies were planned, however 90% reported attending sex education classes which included information on contraception. The majority of pregnancies were due in part to contraceptive failure: 62% were using the contraceptive pill, and 20% were using condoms. Only 18% reported using no contraceptive. Most (87%) were in the second or third trimester when interviewed.

Only seven adolescents were married, yet three quarters (75%) identified themselves as being in a steady relationship. Of those in a relationship, 64% had been in this relationship for longer than one year. One third of partners were adolescents, with 27% being between 25 and 45 years of age. Only one partner did not know about the pregnancy at the time. Half of the sample were living with their partner, approximately one third with their parents and the rest were with others or alone (See Table 5).
TABLE 5. Characteristics of pregnant adolescents (N=122)

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>3</td>
<td>2.5</td>
</tr>
<tr>
<td>16</td>
<td>15</td>
<td>12.3</td>
</tr>
<tr>
<td>17</td>
<td>27</td>
<td>22.1</td>
</tr>
<tr>
<td>18</td>
<td>40</td>
<td>32.8</td>
</tr>
<tr>
<td>19</td>
<td>37</td>
<td>30.3</td>
</tr>
<tr>
<td>MARITAL STATUS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>57</td>
<td>46.7</td>
</tr>
<tr>
<td>Married</td>
<td>7</td>
<td>5.7</td>
</tr>
<tr>
<td>Defacto</td>
<td>58</td>
<td>47.5</td>
</tr>
<tr>
<td>PARTNER’S AGE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16 - 19</td>
<td>39</td>
<td>32.2</td>
</tr>
<tr>
<td>20 - 24</td>
<td>49</td>
<td>40.5</td>
</tr>
<tr>
<td>25 - 29</td>
<td>20</td>
<td>16.5</td>
</tr>
<tr>
<td>30 - 45</td>
<td>13</td>
<td>10.7</td>
</tr>
<tr>
<td>LIVING ARRANGEMENTS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Live alone</td>
<td>16</td>
<td>13.1</td>
</tr>
<tr>
<td>Friends</td>
<td>15</td>
<td>12.3</td>
</tr>
<tr>
<td>Parents</td>
<td>38</td>
<td>31.1</td>
</tr>
<tr>
<td>Partner</td>
<td>53</td>
<td>51.6</td>
</tr>
<tr>
<td>EDUCATION COMPLETED</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Years 8-10</td>
<td>85</td>
<td>69.7</td>
</tr>
<tr>
<td>Years 11-12</td>
<td>37</td>
<td>30.3</td>
</tr>
<tr>
<td>EMPLOYMENT STATUS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employed</td>
<td>34</td>
<td>27.9</td>
</tr>
<tr>
<td>Student</td>
<td>29</td>
<td>23.8</td>
</tr>
<tr>
<td>Unemployed</td>
<td>59</td>
<td>48.4</td>
</tr>
<tr>
<td>GRAVIDA (number of pregnancies)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>First pregnancy</td>
<td>82</td>
<td>68.0</td>
</tr>
<tr>
<td>Second</td>
<td>35</td>
<td>28.7</td>
</tr>
<tr>
<td>3+</td>
<td>4</td>
<td>3.3</td>
</tr>
<tr>
<td>PARITY (number of living children)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>99</td>
<td>81.5</td>
</tr>
<tr>
<td>1</td>
<td>22</td>
<td>18.0</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>0.8</td>
</tr>
<tr>
<td>SMOKING STATUS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Smoker</td>
<td>67</td>
<td>54.9</td>
</tr>
<tr>
<td>Non-smoker</td>
<td>55</td>
<td>45.1</td>
</tr>
</tbody>
</table>
Data collected were analysed utilising statistical computer-based packages, JMP, SPSS and Statview. To facilitate the development of the psychosocial profile, the sample was divided into high and low groups based on the self esteem and social support measures. Since distribution of The Support Behaviour Inventory (SBI, Brown, 1986) was not normal, the average rather than median score was used to divide the sample as this more accurately reflected high vs low support. Consistent with an Australian study (McVeigh, 1995), the mean score on the SBI was 100 (SD = 28.65, range 45-132). A score of 100 represents an average response of 4.5 on the 1-6 SBI scale, and falls between “somewhat satisfied” (score 4) and “satisfied” (score 5). The RSE was normally distributed with a mean score of 33 and median score of 34 (SD = 5.10, range 15-44), which was also the mean score in another Australian study which was representative of non-adolescent childbearing women (McVeigh, 1995). The data were split at the median self esteem score. Because of the age of the participants, in all analyses of work status ‘employment’ was defined as consisting of either paid work or continuing education, and ‘unemployment’ as the absence of work or study.

Those living with their family or with their partner were more likely to have higher social support compared with those living alone or with friends. Table 5 gives a breakdown of characteristics of adolescents living at home or with a partner compared with those who lived alone or with friends.

In regard to smoking status, 55% of the sample smoked. Of those who were nonsmokers, the vast majority were living with their family or partner, as compared to those living alone or with friends $X^2 (3, N=122) = 12.67, p = 0.01$ (See Table 6).
TABLE 6. Relationship between living arrangements and percentage of adolescents in the high self esteem group, percentage of adolescents in the high social support, and percentage of adolescents in the non-smoking group.

<table>
<thead>
<tr>
<th>Living Arrangements</th>
<th>High self esteem</th>
<th>High social support</th>
<th>Non-smoker</th>
</tr>
</thead>
<tbody>
<tr>
<td>With parents or partner</td>
<td>78</td>
<td>84</td>
<td>91</td>
</tr>
<tr>
<td>Alone or with friends</td>
<td>22</td>
<td>16</td>
<td>9</td>
</tr>
</tbody>
</table>

Interestingly, 56% of pregnant adolescents had mothers who were themselves pregnant in adolescence. Those in this group also had significantly higher social support ratings $X^2 (1, N=122) = 4.95, p = 0.03$, presumably in part because their mothers were more empathic and accepting of pregnancy during adolescence and thus gave more support.

Those who were unemployed were more likely to have one or more living children $X^2 (1, N=122) = 6.20, p = 0.01$. Of those adolescents who already had babies, 26% were employed and 74% unemployed. The employed adolescents had approximately one more year of education compared to those who were unemployed, $F (1,120) = 13.06, p = .00$. The unemployed pregnant adolescent’s partner was typically older in age by 6 years, $F (1,120) = 10.38, p = .00$. The characteristics of pregnant adolescents are presented in Table 4.

4:3 MATERNAL BIRTH OUTCOME

One adolescent in each of the two groups, subject number 26 and subject number 104 had a set of twins. Both had normal vaginal deliveries and both had female infants. Fifty seven adolescents had a
male infant and 59 had a female infant. One adolescent gave birth to a baby with an extensive bilateral cleft lip and palate. Results for maternal birth outcome in relation to obstetric outcome, type of delivery and infant characteristics for the subjects in the study were compared to 1995/96 births to New South Wales adolescent women (aged 12-19).

4.3.1 Obstetric Outcome

Obstetric complications were: antepartum haemorrhage, gestational diabetes, pregnancy induced hypertension, prolonged rupture of membranes, threatened premature labour and blood group isoimmunization. The following section will compare the results for obstetric complications of the study subjects (N=116) with NSW adolescents.

Study Subjects =116 vs NSW adolescents

In relation to obstetric complications the distribution for this Wagga Wagga Cohort was not significantly different from NSW adolescents, $X^2 = 3.75$, $p = .58$ (116 adolescent subjects, 8,800 NSW adolescents). There were higher rates for N=116 in relation to antepartum haemorrhage, 22.2% v 10.6%, gestational diabetes, 11.1% vs 5.5%, pregnancy induced hypertension, 55.6% vs 27.0% while other variables occurred less frequently than for NSW adolescents. Prolonged rupture of membranes, occurred in 11.1% of cases vs 16.8% and there no episodes of threatened premature labour, .0% vs 19.1% or blood group isoimmunization, .0% vs 1.0% (116 adolescent subjects, 8,800 NSW adolescents). In relation to obstetric complications the study sample was found to be representative of NSW adolescents (See Table 6).
### Table 7: OBSTETRIC OUTCOME

<table>
<thead>
<tr>
<th>Complication</th>
<th>N = 116</th>
<th></th>
<th>N.S.W.</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>No.</td>
<td>%</td>
<td>No.</td>
<td>%</td>
<td></td>
</tr>
<tr>
<td>Antepartum Haemorrhage</td>
<td>2</td>
<td>22.2</td>
<td>156</td>
<td>10.6</td>
</tr>
<tr>
<td>Gestational Diabetes</td>
<td>1</td>
<td>11.1</td>
<td>80</td>
<td>5.5</td>
</tr>
<tr>
<td>Pregnancy Induced Hypertension</td>
<td>5</td>
<td>55.6</td>
<td>689</td>
<td>47.0</td>
</tr>
<tr>
<td>Prelabour Rupture of Membranes &gt; 24 hrs</td>
<td>1</td>
<td>11.1</td>
<td>246</td>
<td>16.8</td>
</tr>
<tr>
<td>Threatened Premature Labour</td>
<td>0</td>
<td>.0</td>
<td>280</td>
<td>19.1</td>
</tr>
<tr>
<td>Blood Group</td>
<td>0</td>
<td>.0</td>
<td>14</td>
<td>1.0</td>
</tr>
<tr>
<td>Iso-immunisation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Column</td>
<td>9</td>
<td>.6%</td>
<td>1465</td>
<td>99.4%</td>
</tr>
</tbody>
</table>

#### 4.3.2 Type of Delivery

Type of delivery as per NSW Midwives Data Collection were: normal vaginal delivery, forceps, forceps rotation, vacuum extraction, vaginal breech, elective caesarean section and emergency caesarean section. The following section will compare the results for type of delivery of the study subjects (N =116) with NSW adolescents.

**Study Subjects =116 vs NSW adolescents**

The distribution for this Wagga Wagga Cohort was significantly different than for NSW adolescents, $X^2 = 37.08$, p=.00. There were lower rates of normal vaginal deliveries, 67.2% vs 80.8% and vacuum extraction .0% vs 2.4% and higher rates for N=116 in relation to forceps delivery, 12.3% v 4.7%, forceps rotation, 4.1% vs .9%, vaginal breech delivery, 1.6% vs 1.2%, elective caesarean section, 4.1% vs 3.7% and emergency caesarean section, 10.7% vs 6.2% (116 adolescent subjects, 8,800 NSW adolescents). During the collection period Wagga Wagga Base Hospital did not have
vacuum extraction equipment and this may have influenced the higher rates of forceps and forceps rotation deliveries for the study sample (See Table 8).

### Table 8 TYPE OF DELIVERY

<table>
<thead>
<tr>
<th>Delivery</th>
<th>N = 116 12-19 No.</th>
<th>%</th>
<th>N.S.W. 12-19 No.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal Vaginal</td>
<td>82</td>
<td>67.2</td>
<td>7108</td>
<td>80.8</td>
</tr>
<tr>
<td>Forceps</td>
<td>15</td>
<td>12.3</td>
<td>415</td>
<td>4.7</td>
</tr>
<tr>
<td>Forceps Rotation</td>
<td>5</td>
<td>4.1</td>
<td>80</td>
<td>.9</td>
</tr>
<tr>
<td>Vacuum Extraction</td>
<td>0</td>
<td>.0</td>
<td>210</td>
<td>2.4</td>
</tr>
<tr>
<td>Vaginal Breech</td>
<td>2</td>
<td>1.6</td>
<td>104</td>
<td>1.2</td>
</tr>
<tr>
<td>Elective Caesarean Section</td>
<td>5</td>
<td>4.1</td>
<td>327</td>
<td>3.7</td>
</tr>
<tr>
<td>Emergency Caesarean Section</td>
<td>13</td>
<td>10.7</td>
<td>545</td>
<td>6.2</td>
</tr>
<tr>
<td>Not Stated</td>
<td>0</td>
<td>.0</td>
<td>11</td>
<td>.1</td>
</tr>
<tr>
<td><strong>Column</strong></td>
<td><strong>122</strong></td>
<td><strong>1.4%</strong></td>
<td><strong>8800</strong></td>
<td><strong>98.6%</strong></td>
</tr>
</tbody>
</table>

### 4.3.3 Infant Characteristics

Infant characteristics were: an Apgar score of 0-6 at 5 minutes, Apgar score of 7-10 at 5 minutes, birth weight of less than 2500 grams, a birth weight of more than 2500 grams, a gestational age of less than 37 weeks and greater than 37 weeks at birth. For the study sample the birth gestation range of 34-42 weeks produced a median 40, mean 39.64 and SD 1.52, for an Apgar Score range of 0-10 at 5 minutes the median was 8, the mean was 7.62, and the SD was 1.83 and for the birth weight of the infant a range 1920-4940 grams resulted in a median of 3290 grams, mean of 3362.0, and SD of 578.68. These results were then compared to 1995/96 births to women aged 12-19 years for New South Wales.
Study Subjects = 116 vs NSW adolescents

The distribution for the Wagga Wagga Cohort was representative of those for NSW adolescents, $X^2 = 3.50$, $p=.62$. There were slightly higher rates for N=116 for an infant with an Apgar score of 0-6, 1.2% vs 1.1% and an Apgar score of 7-10, 32.5% vs 32.2%, slightly lower rates for a birth weight of greater than 2500 grams, 30.4% vs 30.8% and less than 2500 grams, 2.3% vs 2.6%. For birth gestation of greater than 37 weeks there were higher rates, 32.5% vs 30.7% and lower rates for birth gestation of less than 37 weeks gestation 1.2% vs 2.7% (116 adolescent subjects, 8,800 NSW adolescents) (See Table 9).

<table>
<thead>
<tr>
<th>Table 9</th>
<th>INFANT CHARACTERISTICS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N = 116</td>
</tr>
<tr>
<td></td>
<td>12 - 19</td>
</tr>
<tr>
<td>Apgar 0 - 6 at 5 minutes</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>1.2%</td>
</tr>
<tr>
<td>Apgar 7 - 10 at 5 minutes</td>
<td>112</td>
</tr>
<tr>
<td></td>
<td>32.5%</td>
</tr>
<tr>
<td>Birth Weight 2500g +</td>
<td>105</td>
</tr>
<tr>
<td></td>
<td>30.4%</td>
</tr>
<tr>
<td>Birth Weight &lt; 2500</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>2.3%</td>
</tr>
<tr>
<td>Gestational Age 37 +</td>
<td>112</td>
</tr>
<tr>
<td></td>
<td>32.5%</td>
</tr>
<tr>
<td>Gestational Age &lt; 37 weeks</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>1.2%</td>
</tr>
</tbody>
</table>

Column 345 26380
Total 1.3% 98.7%

4.3.4 Obstetric Outcome, Type of Delivery, Infant Characteristics

Maternal-foetal attachment and maternal-infant attachment were compared with obstetric outcome, type of delivery and infant characteristics.
Maternal-foetal attachment in pregnant adolescents was not associated with obstetric complications, $F (1,114) = 0.15, p = .69$ or at 6 weeks after the birth of the baby, $F (1, 66) = 1.16, p = .28$, or at 6-12 months, $F (1,111) = 0.31, p = .57$.

Maternal-infant attachment in adolescent mothers was not associated with delivery complications at 6 weeks after the birth of the baby, $F (1, 66) = 0.05, p = .81$, or at 6-12 months, $F (1,111) = 0.41, p = .52$.

Maternal-infant attachment in adolescent mothers was not associated with a baby experiencing complications. For an Apgar Score of less than 7 at 5 minutes, 6 weeks after the birth of the baby, $F (1,66) = 0.53, p = .46$, at 6-12 months, $F (1,111) = 0.02, p = .86$. For a baby with a birth weight of less than 2,500 grams, 6 weeks after the birth of the baby, $F (1,66) = 0.71, p = .40$, at 6-12 months, $F (1,111) = 0.31, p = .57$. For a baby born before 37 weeks gestation, 6 weeks after the birth of the baby, $F (1,66) = 0.27, p = .60$, at 6-12 months, $F (1,111) = 0.10, p = .75$.

4.3.5 Summary: Maternal Birth Outcome

No relationship was found between attachment in adolescents in pregnancy and early motherhood to obstetric complications, delivery complication or infant with complications.

4.3.6 Breastfeeding

On discharge from hospital 100 (86%) of the 116 adolescents who birthed at Wagga Wagga Base Hospital, including two adolescents with sets of twins, were breastfeeding, as per the hospital copy of the Midwives Data Collection Form. The FRQ Questionnaire revealed that at the 6 weeks interview of 68 adolescent mothers, 9 were breastfeeding representing 13%. At the 6-12 month interview only 1 adolescent mother of the 113 interviewed was breastfeeding. The remaining
adolescents were bottle feeding their baby on formula. One adolescent was feeding her baby full strength cows milk with strawberry flavouring added to it.

Prior to the administration of any questionnaires the adolescent mothers were asked, “What are the good and the bad things for you on a personal level at the moment?”. Breastfeeding was obviously an issue for a number of adolescent mothers.

For some adolescents at the 6 week interview breastfeeding was, “going well” while other adolescents were experiencing problems. Subject Number 54 stated:

“Well the bad things have been breastfeeding troubles...not knowing whether he was going to put on weight, it felt, it made me feel inadequate that I couldn’t feed him properly even although I’d feed him all the time he wasn’t puttin’ on weight so that made me feel, yeah, you know, that it was, I wasn’t going to be able to do it”.

Another adolescent commenced bottle feeding and this is what Subject Number 100 stated:

“The good things are, bub’s more settled now she’s on the bottle. The bad things were I starved her for the first month. Um, and she was constantly screaming and always wantin’ to feed so everything’s good now”.

Subject 117 continued to persevere with breastfeeding and commented:
"The baby lost a lot of weight because he was not latching on properly to breast feed. His tongue was right back and not coming forward. A Lactation Consultant has been wonderful, helping me with feeds. I now breastfeed and bottle feed. He is now starting to put his tongue forwards and the suction is now stronger. He is now starting to put on weight and there is a big improvement”.

Subject Number 56 found that,

"the good and the bad was when I had to change baby on to formula. With the formula, unsettled, kept throwin’ up and now I’ve changed him over he’s more contented, he’s over to cow’s milk”.

Subject Number 104 felt upset as

"some one came out from the welfare to see me and told me that it was said that I was not coping and leaving mould in the bottles. I don’t even have enough bottles for the girls to leave any length of time for that to happen”.

It is clear that there is a range of issues experienced by the adolescent in relation to breastfeeding or bottle feeding their infant and that there is a need for support from health professionals in this area.
4.3.7 Breastfeeding Results: Motherhood 6 Weeks & 6-12 Months

While not a hypothesis for testing in this study, maternal-foetal attachment and maternal-infant attachment at 6 weeks and 6-12 months were examined in relation to breastfeeding and bottle feeding. No relationship was found between maternal-infant attachment and breastfeeding at 6 weeks, $F(1,66) = 0.26, p = .60$ or 6-12 months, $F(1,111) = 0.28, p = .59$. There was no relationship between breastfeeding and higher maternal-infant attachment scores at 6 weeks and 6-12 months after the birth of the baby possibly due to the low breastfeeding rates.

The next section focusses on the hypotheses generated by this study for testing: maternal-foetal attachment, maternal-infant attachment, self esteem, social support, parenting sense of competence and postnatal depression. The quantitative results are presented in sequence of pregnancy, motherhood at 6 weeks and motherhood at 6-12 months.

4.4 QUANTITATIVE RESULTS

A) PREGNANCY

4.4.1 Maternal-Foetal Attachment

Two measures of prenatal attachment were used, i) the Maternal-Foetal Attachment Scale (MFAS) and the ii) Prenatal Attachment Inventory (PAI). The Maternal-Foetal Attachment Scale (MFAS) had a mean score of 3.7 (SD = 0.46, range 2.2-4.7) with a Cronbach alpha for this study of .79. This scale was used for 122 subjects while the PAI was used for a sub sample of 27 subjects as the researcher did not receive the instrument until after 93 subjects had been interviewed. The Prenatal Attachment Inventory (PAI) had a mean score of 56.37 (SD = 9.53, range 40-72) with a Cronbach alpha for this study of .81. The Prenatal Attachment Inventory (PAI) was used to check the validity of the
Maternal-Foetal Attachment Scale and the relationship was found to be significant ($r = .59, p = .001$) which suggests both scales are measuring the same thing.

**HYPOTHESIS FOR TESTING:**

**HYPOTHESIS 1:** Maternal-foetal attachment in pregnant adolescents is positively associated with maternal-infant attachment in adolescent mothers.

### 4.4.2 Results: Maternal-Foetal and Maternal-Infant Attachment

No relationship was found between maternal-foetal attachment (using the MFAS) and maternal-infant attachment at 6 weeks, $r = -.07, p = .58$ and at 6-12 months, $r = -0.15, p = .10$ as indicated by the How I Feel About My Baby Now Scale (FAB). These results were further supported by The Maternal Attachment Inventory (MAI), at 6 weeks, $r = -.17, p = .15$ and at 6-12 months, $r = -0.10, p = .51$.

**Hypothesis 1 was not supported:** Maternal-foetal attachment in pregnant adolescents was not associated with maternal-infant attachment in adolescent mothers as measured by the Maternal-Foetal Attachment Scale and The Prenatal Attachment Inventory.

This study found that the Maternal-Foetal Attachment Scale scores increased as the gestation increased ($r = 0.50, p = 0.000$), (See Figure 2). The Prenatal Attachment Inventory supported the findings of the Maternal-Foetal Attachment Scale in regard to the period of gestation ($r = 0.58, p = 0.001$).

Given the high correlation between maternal-foetal attachment and gestation period, the results created interest and concern that part of the Maternal-Foetal Attachment Scale was not measuring psychological attachment, but merely the effect of gestation over time.
After looking at the Maternal-Foetal Attachment Scale items it was discovered that items 3, 6, 9, 16, 17, 20, 21 and 24 reflected foetal behaviour (Fb) and were in fact more related to foetal movement and growth rather than attachment per se. These Fb items are summarised in Table 10.

**Figure 2. Maternal-Foetal Attachment vs Gestation In Weeks.**

<table>
<thead>
<tr>
<th>Table 10. Foetal Behaviours (Fb) of the Maternal-Foetal Attachment Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>3. I enjoy watching my tummy jiggle as the baby kicks inside.</td>
</tr>
<tr>
<td>4. I wonder if the baby feels cramped in there.</td>
</tr>
<tr>
<td>9. I can almost guess what the baby’s personality will be from the way she/he moves around.</td>
</tr>
<tr>
<td>16. It seems my baby kicks and moves to tell me it’s eating time.</td>
</tr>
<tr>
<td>17. I poke my baby to get him/her to poke back.</td>
</tr>
<tr>
<td>20. I stroke my tummy to quiet the baby when there is too much kicking.</td>
</tr>
<tr>
<td>21. I can feel that the baby has hiccoughs.</td>
</tr>
<tr>
<td>24. I grasp my baby’s foot through my tummy to move it around.</td>
</tr>
</tbody>
</table>
The Maternal-Foetal Attachment Scale was rescored excluding these Fb items and again the relationship between gestation was examined. The results confirmed the suspicions: with the Fb items removed, the correlation of the remaining items with gestation was now non significant: \( r = 0.143 \). To confirm the predictions, the relationship between gestation and Fb items alone was looked at: the relationship was high \( r = 0.70, p = 0.000 \). This suggests a possible problem in the Maternal-Foetal Attachment Scale, with the inclusion of items that relate more to physical gestation than psychological factors. In addition, the analyses comparing maternal foetal attachment and maternal infant attachment were rerun excluding the foetal behaviour items. The results revealed at 6 weeks ( \( r = 0.00, p = .98 \) ) and 6 to twelve months motherhood ( \( r = -0.08, p = .37 \) ) no relationship existed between the behaviour of the mother to increased scores for maternal foetal or maternal infant attachment.

The following section presents the results in relation to maternal-foetal attachment and the variable, self esteem.

### 4.4.3 Maternal-Foetal Attachment and Self Esteem

During pregnancy, the Rosenbergs Self Esteem Scale (RSE) was normally distributed with a mean score of 33 and a median score of 34 (SD = 5.10, range 15-44). Cronbach alpha for the RSE used in this study was .85. Only one adolescent had a score of 15 and the remaining adolescents had a score of 21-44. The pregnant adolescent who had a score of 15 did not reflect a poor self esteem in the tape recorded interview although when the interview ceased she then talked about the problems experienced. She stated that she felt guilt over being forced to have an abortion by her family last year, felt upset to find out she had an adopted sister somewhere, was not speaking to her mother and felt trapped by the
current pregnancy.

**HYPOTHESIS FOR TESTING:**

**HYPOTHESIS 2:** Maternal-foetal attachment is positively associated with high self esteem.

### 4.4.4 Results: Maternal-Foetal Attachment and Self Esteem

The results from Rosenberg's Self Esteem Scale (RSE) found no relationship between self esteem and maternal-foetal attachment using the Maternal-Foetal Attachment Scale ($r = .14$, $p = .12$).

**Hypothesis 2 was not supported:** maternal-foetal attachment was not associated with higher self esteem scores.

The next variable to be considered is social support received by the pregnant adolescent.

### 4.4.5 Maternal-Foetal Attachment and Social Support

Since the distribution of the results of the Social Support Behaviour Inventory (SBI) was not normal, the average rather than the median score was used since this more accurately reflected high vs low support. The mean score was 100 ($SD = 28.65$, range 45-132). Social support was tested in relation to SBI Corrected (average score for overall support, the combined score of partner and other), SBI Total (combined scores of support from partner and other people), SBI Partner (support from partner) and SBI Other (support from others). Cronbach alpha for the SBI Total used in this study was .92 and for SBI Partner .91 and SBI Other .93. Social support was also tested in relation to social support measure in the questionnaire: SS no (number of supportive people), m+ (perceived support from own mother), f+ (perceived support from father) and P week (times during the week sees or speaks to partner).
HYPOTHESIS FOR TESTING

HYPOTHESIS 3: Maternal-foetal attachment is positively associated with the amount and quality of social support during pregnancy.

4.4.6 Results: Maternal-Foetal Attachment and Social Support

The results from the Social Support Behaviour Inventory (SBI) showed that there was a significant relationship between maternal-foetal attachment using the Maternal-Foetal Attachment Scale and SBI Corrected (r = 0.20, p = 0.03) and SBI Total (r = 0.22, p = 0.01). There was no relationship found between maternal-foetal attachment and SBI partner (r = 0.13, p = 0.22) and SBI other (r = 0.13, p = 0.14). Analysis of the support measures in the questionnaire found a positive relationship between SS no (r = 0.32, p = 0.00), the total number of people perceived by the pregnant adolescent as supportive but no relationship was found with m+, f+ or P week. From this it can be seen that the measure of the total Social Support Behaviour Inventory score is correlated with the Social Support Dispersion (ss no) of the questionnaire. The results demonstrate that quality of social support and total number of people perceived as supportive by the pregnant adolescent is associated with positive maternal-foetal attachment.

Hypothesis 3 was supported: Higher maternal-foetal attachment scores were associated with the amount and quality of social support.

A summary of the findings in relation to maternal-foetal attachment and the variables maternal-infant attachment, self esteem, the amount and quality of social support follows.

4.4.7 SUMMARY OF PREGNANCY

Maternal-foetal attachment in pregnant adolescents was not associated with maternal-infant attachment in adolescent mothers at
either 6 weeks or 6-12 months after the birth of the baby, nor was it found to be associated with higher self esteem scores. However maternal-foetal attachment was associated with the amount and quality of social support.

The next section presents the results for attachment in motherhood at six weeks in association with the variables of self esteem, social support, parenting sense of competence and postnatal depression. Motherhood orientation, while not a hypothesis for this study, is included to assist in the understanding of the adolescent’s parenting style in association with the variables tested.

B) MOTHERHOOD AT 6 WEEKS

4.4.8 Maternal-Infant Attachment

The instruments used to assess maternal-infant attachment were the How I Feel About My Baby Now Scale (FAB) and the Maternal Attachment Inventory (MAI).

Maternal-infant attachment results are now presented with each variable for which a hypothesis has been generated for testing: self esteem, social support, postnatal depression for motherhood at 6 weeks.

4.4.9 Maternal-Infant Attachment and Self Esteem

Rosenberg’s Self Esteem Scale (RSE) was previously compared with attachment of the pregnant adolescent to her unborn baby. It is now compared with maternal-infant attachment as measured using the (FAB) scale and the (MAI) inventory in adolescent motherhood at 6 weeks after the birth of the baby.

HYPOTHESIS FOR TESTING

HYPOTHESIS 4: Maternal-infant attachment in adolescent mothers is positively associated with high self esteem.
4.4.10 Results: Maternal-Infant Attachment and Self Esteem

The results from Rosenberg’s Self Esteem Scale (RSE) did not find a significant relationship between high self esteem and maternal-infant attachment using the How I Feel About My Baby Now Scale (FAB), \( r = .20, p = .09, N = 113 \) and the Maternal Attachment Inventory (MAI), \( r = .14, p = .25, N = 68 \).

**Major Hypothesis 4 was not supported:** No relationship was found between higher maternal-infant attachment scores and higher self esteem scores at 6 weeks.

The following section presents the findings regarding social support received by the adolescent mother at 6 weeks after the birth of the baby.

4.4.11 Maternal-Infant Attachment and Social Support

The amount and quality of social support received during early motherhood was compared with level of maternal-infant attachment. It was assessed using the Social Support Inventory (SBI) with How I Feel About My Baby Now Scale (FAB) and the Maternal Attachment Inventory (MAI).

**HYPOTHESIS FOR TESTING**

**HYPOTHESIS 5:** Maternal-infant attachment is positively associated with the amount and quality of social support received during early motherhood.

4.4.12 Results: Maternal-Infant Attachment and Social Support

The results from the Social Support Behaviour Inventory (SBI), for the amount of social support found no relationship to maternal-infant attachment scores \( r = -0.34, p = .77 \). Further there was no relationship between quality of social support and maternal-infant attachment \( r = \)
0.16, p = .16).

**Hypothesis 5 was not supported:** Higher maternal-infant attachment scores in motherhood at 6 weeks were not related to the amount and quality of social support received in early motherhood.

The following section presents the results for maternal-infant attachment and parenting sense of competence, another main variable of the study.

**4.4.13 Maternal-Infant Attachment & Parenting Sense of Competence**

The Parenting Sense Of Competence Scale (PSOC) for the 6 weeks postnatal interview had a mean score of 77.07 and a median score of 77 (SD 2.74, range 54-94). Cronbach alpha for the Parenting Sense of Competence Scale (PSOC) used in this study was .87.

**HYPOTHESIS FOR TESTING**

**HYPOTHESIS 6:** High maternal-infant attachment scores are associated with positive parenting sense of competence.

**4.4.14 Results: Maternal-Infant Attachment & Parenting Sense of Competence**

Results showed that there was a positive relationship between parenting sense of competence and maternal-infant attachment using the FAB scale (r = .52, p = .000). There was a significant relationship between perceived competence in the parenting role and high self esteem (r = .47, p = .000) thus supporting the view that the Parenting Sense of Competence Scale (PSOC) also measures self esteem and there is a relationship between the two variables.

**Hypothesis 6 was supported:** High scores of maternal-infant attachment were associated with positive parenting sense of competence.
The next section deals with that of maternal-infant attachment in association with postnatal depression in early motherhood.

### 4.4.15 Maternal-Infant Attachment and Postnatal Depression

The Edinburgh Postnatal Depression Scale (EPDS) at 6 weeks after delivery had a median score of 8 (SD = 3.92, range 1-21). With a cut off point of 11 on the postnatal depression scale, 14 (20%) subjects were identified in the clinical range of postnatal depression. Using a cut off point of 12, 9 (13%) subjects were in the clinical range of postnatal depression for the 68 subjects interviewed. During the development of the Edinburgh Postnatal Depression Scale (EPDS) by Cox, Holden and Sagovsky (1987) to screen for depression, a threshold score of 12/13 identified women with symptoms which suggested a clinical diagnosis of depression. More recent literature use a cut off score of 12 to identify symptoms which suggest clinical depression (Brown, Lumley & Small, 1994; Stamp, 1994). Cronbach alpha for the EPDS used in this study was .86.

**HYPOTHESIS FOR TESTING**

**HYPOTHESIS 7:** Maternal-infant attachment is inversely related to postnatal depression.

### 4.4.16 Results: Maternal-Infant Attachment and Postnatal Depression

At 6 weeks postpartum, those subjects who were in the clinical range of postnatal depression according to the Edinburgh Postnatal Depression Scale with a score of greater than 11, were found to have lower maternal-infant attachment scores using the About My Baby Now Scale (FAB), $F (1, 66) = 13.66, p = .0004$. These results were further supported by the Maternal Attachment Inventory (MAI), $F (1, 66) = 12.32,$
p = .0008. An inverse relationship existed between symptoms which suggest a clinical range of postnatal depression and self esteem (r = -.34, p = .00), as self esteem decreases, depression increases.

**Hypothesis 7 was supported:** those adolescents in the clinical range of postnatal depression had lower maternal-infant attachment scores.

The next section presents the findings in association with motherhood orientation. While no hypothesis regarding motherhood variation was formulated for this study, nevertheless the results provide insight into the relationship between the adolescent mother and her baby.

**4.4.17 MOTHERHOOD ORIENTATION**

The Facilitators and Regulators Questionnaire (FRQ) for the 6 week postnatal interview had a mean score of 5.02 and a median score of 5 (SD 2.30, range 0-10). Cronbach alpha for the Facilitators and Regulators Questionnaire (FRQ) used in this study was .35. Because of the low reliability of the test, only percentage scores were inspected, not chi square analysis. Motherhood has been summarised according to sex of the baby and orientation (See Table 11).

**Table 11**

<table>
<thead>
<tr>
<th>Motherhood Orientation</th>
<th>Adolescent Mothers N = 68</th>
<th>Male Baby</th>
<th>Female Baby</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
<td>No.</td>
</tr>
<tr>
<td>Extreme Facilitator</td>
<td>9</td>
<td>13.2</td>
<td>7</td>
</tr>
<tr>
<td>Moderate Facilitator</td>
<td>32</td>
<td>47.0</td>
<td>15</td>
</tr>
<tr>
<td>Intermediate Group</td>
<td>27</td>
<td>40.0</td>
<td>15</td>
</tr>
<tr>
<td>Moderate Regulator</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Extreme Regulator</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
</tbody>
</table>

**Total Scores:**
- Extreme Facilitator: 0 - 2
- Moderate Facilitator: 3 - 5
- Intermediate Group: 6 - 10
- Moderate Regulator: 11 - 13
- Extreme Regulator: 14 - 16
4.4.18 Results: Motherhood Orientation

Most adolescent mothers (60.2%) were in the facilitator groups. Only 13.2% of adolescent mothers were in the Extreme Facilitator Group, while most (47%) fell in the Moderate Facilitator Group, at 6 weeks after the birth of the baby. Twenty two adolescent mothers had a male baby and nineteen had a female baby in the Facilitator Groups.

The next section presents a summary of the findings in relation to maternal-infant attachment in adolescent mothers 6 weeks after the birth of the baby.

4.4.19 SUMMARY OF MOTHERHOOD AT 6 WEEKS

Higher maternal-infant attachment in adolescent mothers was not associated with high self esteem nor amount and quality of social support in motherhood at 6 weeks. However high scores of maternal-infant were associated with positive parenting, sense of competence. The degree of postnatal depression was inversely associated with maternal-infant attachment scores.

Adolescent mothers were more likely to have a facilitator motherhood style (mother adapting to the baby) than a regulator motherhood style (baby adapting to the mother). No other study has been found with which to compare the results of the current study except for an Israeli study of adult mothers. The adult mothers were more likely to have a regulator motherhood style. This will be further be addressed in the discussion section.

The next section presents the results for attachment in motherhood at 6-12 months in association with the same variables tested previously.
C) MOTHERHOOD AT 6-12 MONTHS

4.4.20 Maternal-Infant Attachment

This section presents the findings for maternal-infant attachment at 6-12 months after the birth of the baby in association with the variables: self esteem, social support, parenting sense of competence and postnatal depression.

4.4.21 Maternal-Infant Attachment and Self Esteem

At 6 weeks maternal-infant attachment in adolescent mothers was not associated with higher levels of self esteem. Hypothesis 4 was again tested for motherhood at 6-12 months.

HYPOTHESIS FOR TESTING

HYPOTHESIS 4: Maternal-infant attachment in adolescent mothers is positively associated with high self esteem.

4.4.22 Results: Maternal-Infant Attachment and Self Esteem

The results from Rosenberg’s Self Esteem Scale (RSE) found a significant positive relationship between high self esteem and maternal-infant attachment using the How I Feel About My Baby Now Scale (FAB), \( r = .38, p = .000, no = 113 \) and the Maternal Attachment Inventory (MAI), \( r = .55, p = .000, no = 68 \) in motherhood at 6-12 months. High self esteem scores correlated with increased maternal-infant attachment behaviours.

Hypothesis 4 was supported: higher maternal-infant attachment scores were associated with high self esteem.

The following section presents the results for the variable, social support in association with maternal-infant attachment at 6-12 months.

4.4.23 Maternal-Infant Attachment and Social Support

At 6 weeks after the birth of the baby, the amount and quality of
social support had no relation to higher maternal-infant attachment scores in motherhood. Hypothesis five was again tested to determine if support at 6-12 months after the birth of the baby influences the degree of attachment in the adolescent mother towards her baby.

**HYPOTHESIS FOR TESTING**

**HYPOTHESIS 5:** Maternal-infant attachment is positively associated with the amount and quality of social support received during early motherhood.

**4.4.24 Results: Maternal-Infant Attachment and Social Support**

The results showed that there was no relationship between quality of social support ($r = 0.18, p = .07$) scores or amount of social support ($r = 0.16, p = .07$) measures with maternal-infant attachment. There was a positive relationship between sbi total and self esteem ($r = .29, p = .004$), those with high self esteem were more likely to have greater sbi total scores.

**Hypothesis 5 was not supported:** Higher maternal-infant attachment scores were not related to the amount and quality of social support received.

The results for another main variable of the study, parenting sense of competence in relation to maternal-infant attachment, are presented in the next section.

**4.4.25 Maternal-Infant Attachment & Parenting Sense of Competence**

The results at 6 weeks showed that there was a positive relationship between maternal-infant attachment and parenting sense of competence. Hypothesis 6 was again tested to determine if the results were different at 6-12 months after the birth of the baby.
HYPOTHESIS FOR TESTING

HYPOTHESIS 6: High maternal-infant attachment scores are associated with positive parenting sense of competence.

4.4.26 Results: Maternal-Infant Attachment & Parenting Sense of Competence

The results for motherhood 6-12 months found a positive relationship between parenting sense of competence and maternal-infant attachment (r = .54, p = .000, no 113). The results also showed a significant relationship between perceived competence in the parenting role and high self esteem (r = .60, p = .000) thus supporting the results of motherhood at 6 weeks after the birth of the baby.

Hypothesis 6 was supported: High scores of maternal-infant attachment were associated with positive parenting sense of competence in motherhood at 6-12 months.

The results for the variable postnatal depression in association with maternal-infant attachment at 6-12 months follows.

4.4.27 Maternal-Infant Attachment and Postnatal Depression

Those adolescent mothers at 6 weeks after the birth of their baby who were in the clinical range of postnatal depression had lower maternal-infant attachment scores. Hypothesis 7 was further tested for the motherhood period of 6-12 months.

The Edinburgh Postnatal Depression Scale (EPDS) at 6-12 months after delivery had a median score of 9 (SD = 5.14, range 1-26). With a cut off point of 11 on the postnatal depression scale, 31 (27%) subjects were identified as having symptoms suggestive of a clinical range of postnatal depression. Using a cut off point of 12, 21 (18.6%) subjects were in the clinical range of postnatal depression for the 113 subjects interviewed.
For a cut off score of 13, 15 (13%) subjects had a score above 13.

**HYPOTHESIS FOR TESTING**

**HYPOTHESIS 7:** Maternal-infant attachment is inversely related to postnatal depression.

### 4.4.28 Results: Maternal-Infant Attachment and Postnatal Depression

Using a cut off point of 11 the result were \( F(1,11) = 33.11, p = .000 \), showing a negative relationship with maternal-infant attachment, this was supported by the overall results without a cut off point. There was a significantly negative correlation between depressive symptoms measured by the EPDS and maternal-infant attachment measured by the FAB scale at 6-12 months (\( r = -.53, p = .000 \)). The exclusion of 5 outliers gave similar results (\( r = -.57, p = .000 \)). As the adolescents became more depressed, their attachment behaviour deteriorated.

Further an inverse relationship existed between symptoms of depression and SBI total corrected (\( r = -.38, p = .000 \)), SS no (\( r = -.31, p = .000 \)), father support (\( r = -.23, p = 0.01 \)), indicating that as the score for support decreases, depression increases. An inverse relationship also existed between depression and self esteem (\( r = -.60, p = .000 \)), so that as self esteem decreases depression increases. No relationship was found between postnatal depression and the following variables considered to be risk factors: age of the adolescent mother, unplanned pregnancy, no partner or an older partner. Further, no association was found between postnatal depression with smoking behaviour, sex of baby or breastfeeding.

**Hypothesis 7 was supported:** Lower maternal-infant attachment scores were found in adolescent mothers who were in the clinical ranges
of postnatal depression at 6-12 months after the birth of their baby. In addition, those with symptoms suggestive of postnatal depression at 6 weeks still had it at 6-12 months.

4.4.29 MOTHERHOOD ORIENTATION

The Facilitators and Regulators Questionnaire (FRQ) for the 6-12 months postnatal interview had a mean score of 5.27 and a median score of 5 (SD 2.87, range 0-10, no 68). Motherhood has been summarised according to sex of the baby and orientation for 6-12 months (Table 12).

<table>
<thead>
<tr>
<th>Table 12</th>
<th>Motherhood Orientation 6 - 12 Months</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motherhood Orientation</td>
<td>Adolescent Mothers N = 68</td>
</tr>
<tr>
<td>Extreme Facilitator</td>
<td>12 17.6</td>
</tr>
<tr>
<td>Moderate Facilitator</td>
<td>27 40.0</td>
</tr>
<tr>
<td>Intermediate Group</td>
<td>25 37.0</td>
</tr>
<tr>
<td>Moderate Regulator</td>
<td>4 6.0</td>
</tr>
</tbody>
</table>
| Extreme Regulator | * | * | * | *

**Total Scores:**

- Extreme Facilitator: 0 - 2
- Moderate Facilitator: 3 - 5
- Intermediate Group: 6 - 10
- Moderate Regulator: 11 - 13
- Extreme Regulator: 14 - 16

4.4.29 Results: Motherhood Orientation

At 6-12 months most adolescents mothers 57.6% were in the facilitator groups. For the Extreme Facilitator Group, 17.6% of adolescent
mothers fell within that group while most (40%) were in the Moderate Facilitator Group. Twenty three adolescent mothers had a male baby and sixteen had a female baby in the Facilitator Groups.

Most adolescent mothers had either an extreme or moderate facilitator orientation to motherhood at 6-12 months supporting the findings at 6 weeks. The next section presents a summary of the findings in relation to maternal-infant attachment in adolescent motherhood at 6-12 months after the birth of the baby.

4.4.31 SUMMARY OF MOTHERHOOD AT 6-12 MONTHS

Higher maternal-infant attachment in adolescent mothers was associated with higher self esteem scores, and positive parenting sense of competence but not associated with the amount and quality of social support received. Those adolescent mothers in the clinical range of postnatal depression had lower maternal-infant attachment scores.

Adolescent mothers were more likely to adapt to the needs of the baby and were less likely to have a strict routine in caring for the baby.

The next section presents serendipitous data from within the demographic questionnaire which serves to highlight and deepen the findings associated with with the adolescents perceived social support from professional caregivers. These will again be presented in the sequence of during pregnancy, motherhood at 6 weeks and motherhood at 6-12 months.

4.5 SERENDIPITOUS DATA: SOCIAL SUPPORT FROM PROFESSIONAL CAREGIVERS

Research has provided evidence of the benefits of support provided by care givers/lay women in reducing intervention and improving the outcome for the mother and child. The following section
presents findings related to the perceived support for the adolescent in pregnancy and motherhood by professional caregivers such as a Midwife, Registered Nurse, Early Childhood Nurse, Local Doctor, Social Worker, School Teacher, School Counsellor, Priest/Minister nominated by the adolescent as supportive. While this study did not set out to investigate for this particular issue, these results are an important guide for how the adolescent perceived the support they received. The adolescent had the opportunity to select or nominate professional caregivers support within the demographic questionnaire if they chose to. Not all adolescents chose to nominate professional support.

4.5.1 Professional Support: Pregnancy

Findings from the study reveal that 46 (38%) of the pregnant adolescents who nominated the midwife as a support person scored the midwife a mean score of 8.2 (range 5 to 9) which indicates perceived support as "very supportive". Eight (6.5%) adolescents scored Registered Nurses or Certified Midwives as very supportive (mean 8.0, range 6 to 9), 45 (36.8%) adolescents rated Local Doctors as supportive (mean 6.9, range 1 to 9), 34 (27.8%) adolescents recorded Social Workers supportive (mean 7.7, range 5 to 9), 10 (8.2%) adolescent stated that School Teachers were supportive (mean 7.0, range 5 to 9), 4 (3.3%) adolescents found School Counsellors were supportive (mean 6.7, range 5 to 8), and 3 (2.4%) adolescents nominated the Priest/Minister as supportive (mean 7.3, range 5 to 9).

4.5.2 Professional Support: Motherhood 6 Weeks

At the six week interview 9 (13%) of the 68 adolescent mothers nominated the midwife as very supportive (mean 8.4, range 5 to 9). Thirty seven (54%) adolescents nominated the Early Childhood Nurse as
a support person with a score of 6.9 (range 1 to 9) supportive. Two (3%) adolescents scored Registered Nurses or Certified Midwives as very supportive (mean 8.0, range 7 to 9); 20 (29%) adolescents rated Local Doctors as very supportive (mean 8.1, range 5 to 9), 6 (8.8%) adolescents recorded Social Workers supportive (mean 7.3, range 5 to 9), 1 (1.5%) adolescent stated that a School Teacher was supportive (mean 9.0, score of 9), no adolescents nominated the School Counsellors and 6 (8.8%) adolescents nominated the Priest/Minister as supportive (mean 6.0, range 1 to 9).

4.5.3 Professional Support: Motherhood 6-12 Months

A total of 113 adolescent mothers were reinterviewed at 6 to 12 months after delivery of their baby. Three adolescents nominated the midwife as a very supportive person (mean 8.0, range 8 to 9). Twelve (10.6%) adolescents nominated the Early Childhood Nurse as a support person with a score of 6.9 (range 1 to 9) supportive. Eight (7%) adolescents scored Registered Nurses or Certified Midwives as very supportive (mean 8.0, range 7 to 9), 25 (22%) adolescents rated Local Doctors as supportive (mean 7.5, range 3 to 9), 5 (4.4%) adolescents recorded Social Workers very supportive (mean 8.8, range 8 to 9), 4 (3.5%) adolescents stated that School Teachers were supportive (mean 7.7, range 6 to 9), three (2.6%) adolescents nominated the School Counsellors as very supportive (8.0, range 6 to 9) and 7 (6.2%) adolescents nominated the Priest/Minister as close on very supportive (mean 7.8, range 6 to 9).

In order to gauge and compare the degree of professional support perceived by the adolescents, the score was weighted. The mean was multiplied by the number of adolescents who nominated that particular person then divided by the sample number to obtain a weighted score.
Thus a more accurate rating was achieved with a range of 0.13 to 3.75 (Table 13). During pregnancy, the Midwife was perceived as most supportive and the Priest/Minister as least supportive. At the six weeks motherhood interview, the Early Childhood Nurse was found to be most supportive while the School Teacher was least supportive. Motherhood at 6-12 months revealed the Local Doctor as most supportive and the School Counsellor along with the Midwife least supportive. However, the change in perceived professional support reflects possibly the alteration in the adolescents lifestyle and circumstances. Nevertheless, these scores provide a glimpse of the adolescents’ perception of support from the professional caregiver. Possibly, this information may challenge

Table 13  
Weighted Score of Support Provided by Professional Caregivers During Pregnancy and Early Motherhood.

<table>
<thead>
<tr>
<th>Number</th>
<th>122</th>
<th>68</th>
<th>113</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pregnancy</td>
<td>6 Weeks</td>
<td>6-12 Months</td>
</tr>
<tr>
<td>Midwife</td>
<td>3.09</td>
<td>1.11</td>
<td>0.21</td>
</tr>
<tr>
<td>*Other RN/CM</td>
<td>0.53</td>
<td>0.24</td>
<td>0.57</td>
</tr>
<tr>
<td>**ECN</td>
<td>.</td>
<td>3.75</td>
<td>0.73</td>
</tr>
<tr>
<td>Medical Doctor</td>
<td>2.55</td>
<td>2.38</td>
<td>1.66</td>
</tr>
<tr>
<td>Social Worker</td>
<td>2.15</td>
<td>0.64</td>
<td>0.39</td>
</tr>
<tr>
<td>School Teacher</td>
<td>0.57</td>
<td>0.13</td>
<td>0.27</td>
</tr>
<tr>
<td>School Counsellor</td>
<td>0.22</td>
<td>.</td>
<td>0.21</td>
</tr>
<tr>
<td>Priest/Minister</td>
<td>0.18</td>
<td>0.53</td>
<td>0.48</td>
</tr>
</tbody>
</table>


**ECN = Early Childhood Nurse.

Weighted Score = mean \times \frac{\text{number of adolescents}}{\text{sample number}}

Range of Scores: 0.13 to 3.75
and encourage each professional caregiver to create a more supportive environment for the pregnant adolescent and adolescent mother and in turn enhance the attachment process.

The next section presents the qualitative data which serves to highlight and deepen the quantitative findings associated with maternal-foetal attachment and maternal-infant attachment in relation to the variables of self esteem, social support, parenting sense of competence and postnatal depression. These will again be presented in the sequence of during pregnancy, motherhood at 6 weeks and motherhood at 6-12 months.

4:6 QUALITATIVE RESULTS

The data presented in this section is associated with the variables investigated in this study related to pregnancy, such as: attachment, self esteem and social support. Motherhood at 6 weeks and 6-12 months will follow on from pregnancy and the variables of attachment, self esteem, social support and postnatal depression will be discussed. Further, results are presented in relation to other themes not associated with the variables in this study. Nevertheless, these other themes are important in providing a profile of the adolescent’s life during pregnancy and motherhood. These issues may have an influence or impact on the adolescents attachment, self esteem, social support and feelings of depression.

A) PREGNANCY

4.6.1 Maternal Foetal Attachment

The next section includes material from interviews related to foetal movement, viewing the foetus on ultrasound, hearing the foetal heartbeat, feelings about the unborn baby and other thoughts on the
foetus expressed by the pregnant adolescent. These comments were in response to the question asked during the tape recorded interview, “How do you feel about your baby?” to further assess maternal-foetal attachment. These comments are related to maternal-foetal attachment scores (range 2.2 to 4.7) and the foetal behaviour scores (range 12 to 40) and period of gestation.

4.6.2 Maternal-Foetal Attachment: Foetal Movements & Ultrasound

The interview comments reflect the influence of foetal movement and ultrasound on positive scoring of maternal-foetal attachment by the pregnant adolescent.

4.6.3 Interview Comments: Foetal Movements

Even early in gestation, maternal-foetal attachment may be high for some mothers as the following comment demonstrates. One wonders whether the foetus was moving and kicking at 16 weeks gestation. However in the mind of this adolescent it was and these thoughts may have influenced the early maternal-foetal attachment score.

MFAS Score 4.2; Fb 29; Gestation 16 weeks

"Um, I feel it growing inside of me and I think, oh it's really weird and I love it and love the idea of being pregnant and just getting up in the morning and it's kicking and it's just moving around and you can just feel it and it's great but I wouldn't recommend it for people that are really young”.

The next comments reveal a high maternal-foetal attachment score in association with foetal movements and progression of gestation.
MFAS Score 4.4; Fb 28; Gestation 33.4 weeks:  
"I'm very clucky, like I just look at me belly every day and I think gee, I wish it would hurry up and come 'cause like havin' a baby inside ya is a beautiful feeling bein' able to feel it kickin' and that. It's really beautiful. It's someone that a woman gets to experience and men never experience ever".

MFAS Score 4.8; Fb 28; Gestation 33.4 weeks:  "Goin' pretty good though, feel the baby moving constantly every day which is good, get a little kick out the side or you can feel a big lump out the side of your belly and it's a foot or hand or something".

These comments highlight the influence of foetal movements on maternal-foetal attachment and suggest that maternal-foetal attachment for these pregnant adolescents may be positively associated with foetal movements or behaviours. Combining this raw data with maternal-foetal attachment scores and Fb (Foetal Behaviour) scores, demonstrates the influence of foetal movement on positive scoring of maternal-foetal attachment in the pregnant adolescent. Further, these findings support the quantitative results which found a relationship between foetal movements and higher maternal-foetal attachment scores in association with length of gestation.

The next section demonstrates the influence of seeing the foetus on ultrasound.
4.6.4 Interview Comments: Ultrasound of the Foetus

Even early in gestation seeing the foetus on ultrasound may have an impact on maternal-foetal attachment scores as demonstrated by the next comment.

MFAS Score 3.2; Fb 12; Gestation 12 weeks:

“T was pretty hesitant about it for the start. I, um sort of like you couldn’t get me to agree with anything but once I found, once I seen the ultrasound I was pretty proud of it sort of thing. I seen little limbs move and everything and I was quite proud of it, so yep”.

MFAS Score 3.9; Fb 22; Gestation 20.6 weeks:

“I’ve had my ultrasound and seen it movin’ around and I know it’s in there now and I’ve just started feeling it kick and stuff”.

Maternal-foetal attachment in pregnant adolescents suggests a positive association with seeing the foetus on ultrasound even when the foetal movement scores are lower. Overall, maternal-foetal attachment scores and Fb (Foetal Behaviour) scores, demonstrates the influence of seeing the foetus on ultrasound to positive scoring of maternal-foetal attachment by these particular pregnant adolescent.

The next section reviews some of the comments about the baby in association with maternal-foetal attachment scores.

4.6.5 Interview Comments: Foetus

The following comment made by the adolescent at 11.6 weeks
gestation suggest that mothers who talked about their baby had higher 
maternal-foetal attachment scores.

MFAS Score 3.9; Fb 19; Gestation 11.6 weeks:

"I love it already...It's, it's just part of me".

MFAS Score 4.2; Fb 27; Gestation 19.5 weeks:

"It's exciting waitin' for the baby to be born and just 
watching yourself get bigger and your body 
changin'".

Comments by these particular pregnant adolescents suggest that 
foetal movement and seeing the unborn baby on ultrasound increases 
scores of maternal-foetal attachment even early in gestation.

Five adolescents considered abortion or adoption but once they felt 
the baby move or heard the heartbeat they were unable to follow through 
with either option. These are two comments made by the pregnant 
adolescents.

i) "At first I was going to get it aborted and I was 
going to adopt it out but, but it moves so you can't 
hurt anything like that".

ii) "I had a ticket to go to Sydney to have an 
abortion when I found out I was pregnant this 
time but I couldn't bring myself to do it. I got as far 
as the Railway Station, the train came into the 
Wagga train station and I just couldn't do it".
The following section presents some of the qualitative results in relation to self esteem during pregnancy.

4.6.6 Pregnancy: Self Esteem

Prior to the administration of Rosenberg’s Self Esteem Scale (RSE) the participants were asked the question, "What are the good and the bad things for you on a personal level at the moment?" Some of these comments support the results found using the Rosenberg’s Self-Esteem Scale. The following interview comments illustrate low or high self esteem during pregnancy and are presented in conjunction with the Rosenberg’s Self Esteem Scale scores (range 21 to 44).

4.6.7 Low Self Esteem

Self Esteem Score: 22.

"Um, there is no good thing about it at the moment...I guess I’m too young. I haven’t lived my life. I want to do so much, I want to travel...I think that’s just about it. Just life itself, it’s wrong time. Completely wrong time but I mean you make a mistake and it happens, I guess".

4.6.8 High Self Esteem

Self Esteem Score: 37.

"Oh, the good is that just the feeling that I’ve got a baby on the way”.

For this pregnant adolescent high self esteem was associated with being pregnant. This is supported by some of the literature which found high self esteem associated with adolescent pregnancy.
Self Esteem Score: 44.

"Um, well I have heaps of support from everyone".

These extracts demonstrate a variety of perspectives on self esteem. Adolescents who made negative comments were more likely to have low self esteem while those who made positive comments were more likely to have high self esteem. Further, for some adolescents, high self esteem was associated with good social support. The link between high self esteem and good social support is well documented in the literature. Some adolescents were confused, with self doubt and apprehension for the future. Such feelings could well be expected to interfere with attachment. Other adolescents, in contrast, were optimistic and felt their self was enriched by pregnancy. While high self esteem in the quantitative results in the current study was not associated with positive maternal-foetal attachment scores, nevertheless, high self esteem is important in the adolescents' adaption to the developmental tasks of pregnancy and attachment to the unborn baby.

4.6.9 Pregnancy: Social Support

To elicit comments related to social support, pregnant adolescents were asked the question, "Will you have support from anyone?". This question was asked prior to the administration of the Support Behaviour Inventory (range 22 to 66), and prior to the social support rating scale in the questionnaire. These are some of their comments related to support given to illustrate low social support and high social support during pregnancy.
4.6.10 Low Social Support

SBI corrected: 22.5.

"Me Mum wasn’t talking to me and me and me boyfriend was havin’ hassles... Um, yeah, me boyfriend if he stays around... Um, na, I just used to doin’ everything on me own now so it doesn’t matter. I may as well do everything”.

This adolescent has a low score of social support and this is reflected further in the comments made in association with support networks.

4.6.11 High Social Support

SBI corrected: 51.6.

“I don’t speak to my father anymore. My father was just. I don’t know we fought like nothing else. Yeah, I’ll have um, I’ll have my family, I know I will. Um...friends, my boyfriend. Yeah, I’ll have support”.

This adolescent may not have support from her own father but has support from family, friends and boyfriend. The scoring of social support possible does not correspond to the number of people perceived as supportive. This suggests that for the adolescent, support from her own father was very important. The next comment reflects the number of people perceived supportive in a higher SBI score.
SBI corrected: 58.

"Um, oh my boyfriend, he's the father and Mum, Dad and my family and friends, heaps of friends that keep saying, "I'll babysit for you, I'll babysit for you". It's good."

The following comment presents a contradiction between what the adolescent is saying about perceived support and the high SBI score.

SBI corrected: 61.5.

"He didn't want to be a Dad and when he told his Mum, she turned around and didn't believe me and then when I went into hospital she said, "Well I hope it dies" and she was just really mean and my Mum wasn't real nice."

These comments from the adolescents show a variety of perspectives on social support. Some reveal loss of friends, lack of support from or conflict with their mother or father, while others spoke of high support from family or friends. The quantitative data in the current study found that the quality of social support and the number of people who provide social support was important in enhancing maternal-foetal attachment in the pregnant adolescent. Nevertheless there are some contradictions between the social support score and what the adolescent is saying about support.

B) MOTHERHOOD AT 6 WEEKS

4.6.12 Motherhood 6 Weeks: Maternal-Infant Attachment

To elicit comments related to attachment or bonding at the six
weeks postnatal interview, the adolescent mother was asked, "How do you feel about your baby?". One adolescent had a high score of 3.2 for maternal-foetal attachment then a high score of 39 for maternal-infant attachment demonstrating the link between attachment in the pre and postnatal period. An example of maternal-foetal and maternal-infant attachment was expressed by this particular adolescent mother in her comment.

"Magazines talk about women who have babies they don’t connect with but I did before he even came out".

Comments from adolescent mothers indicating good maternal-infant attachment include: “I’m enjoying bonding with her one hundred percent” while another said, “just bonding with him really well”. Other comments described the baby in affectionate terms as, “a little doll”, “beautiful creatures” and “fascinates me”. One adolescent mother with a high maternal-infant attachment score of 37 said of her baby,

“I think he’s the most beautiful thing in the world. Um, just can’t describe it. I can’t see how any mother could feel like a failure by bringing a beautiful small person into the world”.

There were no negative comments in relation to feelings about the baby although five adolescent mothers stated that they “love him/her to death” which possibly suggests a conflict in feelings. This section has presented the findings associated with maternal-infant attachment and is
followed by that of self esteem in adolescent motherhood at six weeks.

4.6.13 Motherhood 6 Weeks: Self Esteem

During the parenting interviews, to further investigate self esteem, the question was asked of the adolescent mother, “What are the good and the bad things for you on a personal level at the moment?” The range of scores for the Rosenberg Self Esteem Scale at 6 weeks motherhood was 25 to 44. Some comments may not reflect the scoring of the Rosenberg’s Self Esteem Scale (RSE). While some adolescents were very clear on their feelings others were guarded or did not express their true feelings. Comments may have been quite different to the actual score given. For example, one adolescent mother had a score of 25 in the middle self esteem range and in the interview presented a positive perspective in considering motherhood fun,

“Um, you’ve got this little person that you can bring up and they’re fun, like he’s laughing and giggling already and it’s, it’s so cute”.

4.6.14 Lower Self Esteem

Self Esteem Score: 29.

“Um, just less, less social life sorta thing, you just, you’re bound to the house a lot because you can’t just take him wherever you want to go”.

4.6.15 High Self Esteem

The next comment is quite contradictory in that the adolescent feels confident yet this is not reflected in a very high self esteem score.
Self Esteem Score: 31.

"Feeling more confident with this one knowing what to do".

The next comment demonstrates that social support boosts self esteem.

Self Esteem Score: 36.

"Everyone keeps tellin' me how I'm suited to bein' a Mum but I don't know maybe they are just tellin' me to make me feel better but I think I'm doin' alright so that's the main thing".

Adolescents with a higher self esteem reflected on such issues as: feeling confident in the role as a mother, happier within self, suited to being a mother, playing by the rules thereby increasing self esteem. Some adolescents with a lower self esteem reflected on being "house bound" or experiencing a "loss of freedom" thus suggesting loss of control while other adolescents felt they were too young to be a parent. These are some issues related to self esteem.

The next section presents some comments relating to social support.

4.6.16 Motherhood 6 Weeks: Social Support:

The adolescent mothers were asked the question, "Will you have support from anyone?" prior to the administration of the Social Support Behaviour Inventory and prior to the social support rating scale in the questionnaire. The SBI corrected score had a range of 40 to 66. with a median score of 59. Low social support is indicated by a score of 40 -59
(lowest score to median score) and high social support form 59-66 (median score to highest score). These are some of their comments related to perceived support given to the adolescent to illustrate low vs high social support.

4.6.17 Lower Social Support

The following comment demonstrates a contradiction between not perceiving any social support and the reasonably high SBI score.

SBI corrected: 55.

“I wouldn’t have the faintest idea, hopefully good. Um, I don’t know, couldn’t say”.

The next comment reveals a conflict between the support available and the lower social support score.

SBI corrected: 45.5.

“I know Mum will support me no matter what happens so, and anybody else like midwives and people like that”.

SBI corrected: 56.

“Mum is neither supportive or unsupportive and does not understand my situation of wanting the baby’s father involved in his life. She thinks I am shit stirring. I wish she could be more supportive and understanding. The Aboriginal Nurse at the centre is very supportive”.

4.6.18 High Social Support

SBI corrected: 66.

"I live with Mum and Dad and they’re a really good help to me and my brothers they just love her and help out when they can and that...and the father, it’s good that he’s not around ‘cause he’s a bit of a pain”.

These comments illustrate the range of perceived support or lack of perceived support given to the adolescent mother during the early period of motherhood. Social support during early motherhood was not found to influence maternal-infant attachment in the quantitative data of the current study. The next section presents the results of the adolescent’s perceived parenting sense of competence.

4.6.19 Motherhood 6 Weeks: Parenting Sense of Competence

There were a number of questions asked in the taped recorded interview to elicit further information on the adolescent mother’s perceived parenting sense of competency. These were: i) “How has your life changed by becoming a parent?”, ii) “What has been better?”, iii) “What has been worse?” and iv) “Tell me how you feel about being a parent?”. The following comments provide some of the responses given to these questions. They are divided into low vs high parenting sense of competency scores. Low relates to those with a score of 54-77 from the lowest score to the median score and high relates to those with a score of 78-90, median to the highest score.

Not all interviews reflect low vs high scores as some adolescent mothers made positive comments and yet have scored lower Parenting
Sense of Competence Scale (PSOC) scores.

4.6.20 Low Parenting Sense of Competence

Parenting Sense of Competence Score: 63.

"I feel like choking her to death but other than that she’s fine"... The responsibility and oh... no sleep, no freedom, stress worrying about, you know, like what mistakes you gunna make 'cause you just know that you're going to".

Parenting Sense of Competence Score: 76.

"Worries me when he’s cryin’, don’t know what’s wrong, whether it’s pains in the belly, or he needs a cuddle. Gets colic at night, very unsettled, cryin’ all the time".

4.6.21 High Parenting Sense of Competence

Parenting Sense of Competence Score: 80.

"Oh, I feel as if I’m twenty years older, I just feel like I grew up twenty years all at once. It’s a big job, twenty four hours, never ending but it’s good though ‘cause you get to spend a lot of time with ‘em”.

Parenting Sense of Competence Score: 88.

"Um, um, oh well just you gotta get into a whole routine so you‘ve got to get up every night and feed and change and that’s what’s um, oh, it’s a
good experience and I love bein' a parent, it's a good feeling knowin' that ya got a baby”.

The comments presented for low and high parenting sense of competence reflect some of the items of the Parenting Sense of Competence Scale (PSOC) such as problems of taking care of the baby, the rewards of parenting, feelings of not accomplishing a lot, parenting as manageable, not knowing whether you are doing a good job or a bad job, feeling familiar with the role (example of a second time mother), feeling tense or anxious and the skills needed to care for a baby.

The next section presents the findings related to postnatal depression and motherhood at 6 weeks.

4.6.22 Motherhood 6 Weeks: Postnatal Depression

Adolescent mothers were asked the question, “what are the good and the bad things for you on a personal level at the moment?”, prior to the administration of any of the assessment instruments. Some adolescents recognised that they were experiencing symptoms suggestive of depression and referred to it in their interviews. Other adolescents who scored high on the Edinburgh Postnatal Depression Scale (range 1-21, median 8) either did not recognise that they had symptoms suggestive of depression or preferred not to mention it in the interviews. Scores above 12 are suggestive of the symptoms of depression. Two adolescents who spoke about feeling depressed commented:

EPDS Score: 19.

“I still have a bit of depression too, so when the bubbly went into hospital it was, oh, I sad, I felt I was a bad Mum, it was my fault but um, they told
me it wasn’t my fault”.

EPDS Score: 21.

“I have been severely postnatally depressed. Had an emergency caesarean ‘cause the baby’s heart rates were very low and I’ve found it very hard coming to terms with having an emergency caesarean...I’m not takin’ anything for the depression but I talk to the Social Worker, the Adolescent Social Worker on occasions. I am a failure because I could not deliver vaginally or continue to breast feed until the baby was much older”.

These interviews provide some insight into the experiences of the adolescent mother suffering from depression. Further, the EPDS scores in association with the comments made by these particular adolescents suggest that they are in the high range suggestive of the symptoms of depression. Depression in the quantitative data of the current study, was found to have a negative influence on maternal-infant attachment scores. The following section presents comments related to motherhood orientation.

4.6.23 Motherhood 6 Weeks: Motherhood Orientation

Question one of the Facilitators and Regulators Questionnaire (FRQ) asked: “Do you have a daily routine for your youngest child?” Most replies were very brief although one adolescent wrote the following comment:
"Not really, due to not having spent a lot of time together at home, being sick made it difficult. In the first week we attempted a routine but going back and forwards to the doctors made it hard".

Adolescents who scored in the Extreme Facilitator Group mostly had no routine for their baby. Ten (15%) adolescent mothers stated that they just "go with the flow", a further four (6%) adolescent mothers have "no routine". There were many variations of the previous comments. For those who scored in the Moderate Facilitator Group adolescent mothers made these comments: "we try to have a routine", "not much of a routine", "slowly getting into a routine", "whatever she makes of it" and one had a "fairly strict routine" while six (9%) adolescent mothers had a "routine with flexibility". For the Intermediate Group adolescent mothers made these comments: "I'm always on the alert for her all the time", "whenever I get around to it, sort of routine", "organise everything that needs to be done", "trying to" and seven (10.3%) adolescent mothers stated they had "some routine".

The orientation of motherhood results show an interesting trend in the adolescent mother towards unstructured early mothering style. None of the mothers interviewed showed a tendency towards the regulator orientation.

These 6 week motherhood interviews provide insight into the experiences of the adolescent mother. The following section presents the qualitative data for adolescent motherhood 6-12 months in association with maternal-infant attachment, self esteem, social support, parenting sense of competence, postnatal depression and motherhood orientation.
C) MOTHERHOOD AT 6-12 MONTHS

4.6.24 Motherhood 6-12 Months: Maternal-Infant Attachment

To elicit information related to attachment or bonding at the 6-12 months interview adolescent mothers were asked the question, “How do you feel about your baby?” A few of these comments are included to provide examples of attachment or bonding, in conjunction with the How I Feel About My Baby Now Scale (FAB) scores (range 13-40, median 36). There were no negative comments in relation to feelings about the baby although 17 (15%) adolescent mothers stated that they “love him/love her to death”. This suggests that maternal-infant attachment scores are more likely to be higher rather than lower and this is further supported by comments by the adolescents.

FAB Score: 31.

"Just having the baby, just, it’s amazing, yeah it’s really good. It doesn’t, like my personal life is really nothing compared to having a child, it’s beautiful, yeah. She’s the most beautiful thing I could have ever done”.

FAB Score: 37.

“Oh, how do parents feel about their baby? It’s just, it’s just a miracle how for nine months they’re in your stomach and then suddenly “pop” they’re there and love him to death. He’s a beautiful little boy, he can get on your nerves but um, what you know you can’t really explain it, really”.

FAB Score: 37.

"Oh, heaps a love, yes heaps of love. I couldn’t, like I couldn’t see myself without her anymore, like you, I just couldn’t. Her life is my life, you know. Like I couldn’t live without her, she’s part of my life, it wouldn’t be, I wouldn’t be able to do it, I wouldn’t be able to live if I never had her now so she’s part of me now so just couldn’t see meself without her”.

FAB Score: 40.

"The way I feel about “Tamah” is like the way a flower feels towards water. “Tamah” depends on me and really I depend on her a bit towards, cannot explain the way I feel about “Tamah”. I love her very much and I know she feels the same way”.

These comments provide some understanding of the relationship between the adolescent mother and her baby. While some of the scores may be considered in the lower range for attachment, nevertheless the comments by the adolescent are positive which suggests a developing attachment to the baby.

4.6.25 Motherhood 6-12 Months: Self Esteem

During the parenting interviews for the 6-12 months interview the adolescent mothers were asked, “What are the good and the bad things for you on a personal level?”, as a means of investigating self esteem. The Rosenberg Self Esteem Scale for 6-12 months motherhood had a
range of 11-34. The following comments provide insight into self esteem although on some occasions the comments do not reflect the scoring of the Rosenbergs Self Esteem (RSE) scale.

4.6.26 Low Self Esteem

Self Esteem Score: 11.

"I should never have done this. I’m too young to be a parent. I’ve been unable to cope with the pressure put on me by my husband as he has beaten me down and forced me to do escort work, I’m so depressed”.

The next comment could be considered to be in the mid to upper range for self esteem.

Self Esteem Score: 31.

"Sometimes I worry and wonder about being a parent on my own. I feel sorry for all those girls who are pregnant out there and will be rearing a baby on their own. Hopefully I’ve learnt from my mistakes. They depend on you and only have you to care for them”.

4.6.27 High Self Esteem

The quantitative data in the current study identified high self esteem as important for higher maternal-infant attachment to take place. The next comment illustrates this point well.

Self Esteem Score: 40.

"Makes you feel better. Makes you feel heaps
better about yourself knowin' that like you well not finishin' school you think you're a bum but then you've achieved something 'cause you're raisin' a beautiful child so I reckon that's the best part about it”.

Adolescents with a higher self esteem reflected on such issues as: feeling good about being a mother, a sense of achievement by becoming a mother, having responsibility and being in control. Some adolescents with lower self esteem considered issues of being too young to be a parent, loss of freedom and loss of control over their life as impacting on self esteem.

The next variable to be considered is social support during motherhood at 6-12 months.

4.6.28 Motherhood 6-12 Months: Social Support

To further assess social support, the adolescent mothers were asked, “Will you have support from anyone?”, prior to the administration of the Social Support Behaviour Inventory and prior to the social support rating scale in the questionnaire. The following comments illustrate low vs high social support using the Social Support Behaviour Inventory (SBI) scores. Low social support is indicated by a range of 27-59 (lowest to the median score) and high social support, a range of 59-66 (median score to the highest score).

4.6.29 Low Social Support

The next subject had good family support but obviously peer support was more important for this particular adolescent. The SBI score was quite low compared with the comments about perceived support.
"A lot of friends seem to drop off once you become a parent. They just seem to don’t want to know you anymore and they just go, so that’s about it...
Mum and Dad, my sister, my grandmother, they’re all really good support for me”.

"Um, I think me Mum and that will help me if I haven’t got anybody”.

4.6.30 High Social Support

The next comments present a reverse picture to the earlier subject who had good family support but lacked peer support. It also demonstrates the impact of peer support on the SBI support score and the importance peer support is to the adolescent mother.

"I have more friends now. Before I was very lonely when we first moved here and did not know anyone. I’ve joined up with a Play Group so see other Mums and their kids. So, more friends is better”.

"I've made more friends with people who have children but we lost friends we had who have no children. They are often at the pub across the road
but don’t visit and that hurts”.

These comments illustrate the type of perceived support given to the adolescent mother and the change in nature of that support. Many had “lost” previous friends but were finding new friends and attending support groups specific to the area of motherhood. While some adolescents commented on good support this was not always reflected in the support scores. The next section presents the results of the adolescent’s perceived parenting sense of competence at 6-12 months.

4.6.31 Motherhood 6-12 Months: Parenting Sense of Competence

Not all interviews reflected the low vs high score as some adolescent mothers presented positive comments and yet scored lower on the Parenting Sense Of Competence Scale (PSOC). The range for the PSOC Scale was 26-98 for motherhood 6-12 months.

4.6.32 Lower Parenting Sense of Competence

Parenting Sense of Competence Score: 63.

“My role as a mother is very demanding and I cannot go out and socialise with friends. The worse thing are my moods as I get tense with teething, sick of the crying and then take it out on Andrew and then he takes it out on me, we have arguments”.

4.6.33 High Parenting Sense of Competence

The following two comments by adolescent mothers’ suggest a link between parenting sense of competence and self esteem. One adolescent reflects on feeling very important as a parent while the second adolescent
always wanted to be a mother, feels ecstatic and loves being a mother.

**Parenting Sense of Competence Score: 83.**

"My life has changed heaps since I have become a parent. Everything in my life has had to be put on hold. I always have to stop and drop everything when Tamah cries etc. Being a parent makes me feel really important. My daughter depends on me in everything she does. For example, I have to feed her, change her, bath her etc. I feel like I have a gift."

**Parenting Sense of Competence Score: 87.**

"Um, I’m ecstatic, I love being a parent. I think that’s, that’s all, all I’ll ever want to be really, ever. Since as long as I can remember I’ve wanted to be a Mum and looking after a house. I think that’s the way that my mother brought me up."

The comments presented for low and high parenting sense of competence, reflect some of the items of the Parenting Sense of Competence (PSOC) scale such as: problems of taking care of a baby, actions that solve these problems, the rewards of being a parent, feeling in control, becoming tense or anxious and interest in being a mother. Further, the quantitative data in the current study found that positive parenting sense of competence was associated with higher maternal-infant attachment scores. and some of these comments reflect that
association.

The next section presents some of the comments of adolescent mothers who expressed a sense of depression in conjunction with the postnatal depression scores.

4.6.34 Motherhood 6-12 Months: Postnatal Depression

Adolescent mothers were asked the question, “what are the good and the bad things for you on a personal level at the moment?”. To this question some adolescents identified depression as an issue for them. The Edinburgh Postnatal Depression Scale had a range of 1-26 with a median score of 9. Scores above 12 are suggestive of the symptoms of depression. The following comments by the adolescent mothers demonstrate their acknowledgement of experiencing symptoms suggestive of postnatal depression and the distress of it in their life. Further, issues considered as contributing to their condition are identified.

EPDS Score 26:

“We were married when I was 6 months pregnant...We were short of money and he said, “I have kept you for 3 months now its time for you to keep me”. There was no work and he forced me to work as a prostitute while I was pregnant. I’m so screwed up in the head, I couldn’t cope... felt I could end up in a mental asylum... Had to keep working as a prostitute and was too tired and depressed to care for the baby. I’ve lost my confidence”.
EPDS Score 24:

“I get the shits all the time...and over nothing. Well I’ve been diagnosed with postnatal depression and I was 26 out of 30 which I thought was pretty bad”.

This mother had refused to accept help in the form of medication, counselling or being involved in a postnatal depression support group. She stated that her own mother had spent two years in bed with severe postnatal depression after the birth of each of her children and expressed the belief that her depression would get better after two years, as in her mother’s case, without “drugs”.

EPDS Score 19:

“A bit of stress and panic attacks, hyperventilation, very often crying, crying. Its like a rock between my breasts. I keep punching my chest. I am seeing a counsellor”.

These comments clearly show the pain experienced by the adolescent mother with depression. The quantitative data from the study identified that postnatal depression has a negative affect on positive maternal-infant attachment. The following section presents motherhood orientation at 6-12 months.

4.6.35 Motherhood 6-12 Months: Motherhood Orientation

Question one of the Facilitators and Regulators Questionnaire (FRQ) questionnaire asked: “Do you have a daily routine for your youngest child?” Most replies were brief although two adolescents wrote...
the following comment:

i) "Yes on most days but if he is unsettled the routine is reorganised".

ii) "Yes, she gets up with Mum and after a while I get up then I feed her and then I bath her. That's our routine for the morning".

Adolescents who scored in the Extreme Facilitator Group mostly had no routine. Ten (15%) adolescent mothers stated that they had "no routine", a further three (4.4%) "go with the flow". There were many variations of these comments. The adolescent mothers who scored in the Moderate Facilitator Group gave these responses: "some routine", "routine but varies", "routine with flexibility", "not a strict routine" and "routine regular but may vary". For the Intermediate Group adolescent mothers made these comments:

"he does what he wants when he wants, when he screams I change his nappy or feed him"

"more into a routine" and "sort of routine"

It is noticeable that there is quite a contrast in the routines described by the mothers in the Intermediate Group.

The next section presents the other themes evident from the tape recorded interviews during pregnancy, motherhood at 6 weeks and 6-12 months as identified by using content analysis.
4:7 OTHER THEMES

4.7.1 Other Themes: Pregnancy

Other themes in pregnancy not associated with the variables of attachment, self esteem and social support are presented in association with the questions of the interview schedule. These themes from the pregnancy interview related to i) reaction to the news of pregnancy, ii) concerns about the unborn baby, iii) physical changes and iii) affective symptoms of pregnancy (See Table 14).

Question 1.

**What are the good and the bad things for you on a personal level at the moment?**

Forty eight (39%) pregnant adolescents considered the physical (32 adolescents, 26%) and affective (16 adolescents, 13%) changes during pregnancy as "bad things". For the words expressed by the adolescent in association with these changes see Table 14. Forty (33%) pregnant adolescents expressed concern about the lack of money and referred to this as having a "struggle money wise" and "money hassles". Most adolescents viewed the changes associated with being pregnant as having a major impact on their lives. Also noted were their concerns about their financial situation. Relationship issues, either positive or negative, were mentioned. Some adolescents viewed breaking up with the father of the unborn baby as a good thing while others felt "upset" as the child/children would not have a father.

Question 2.

**What was your life like around the time you found out you were pregnant?**

There were many replies to this question, thirteen (11%)
adolescents were either at school or pursuing further education, twelve adolescents (10%) were employed either part time or full time and ten (8%) adolescents were unemployed. Other replies given by the adolescents were, "partying", "socialising", "never home", "busy", 

**TABLE 14 PREGNANCY THEMES & SUB THEMES**

<table>
<thead>
<tr>
<th>Reaction to News of Pregnancy</th>
<th>Physical Changes</th>
<th>Affective Changes</th>
<th>Concerns for Unborn Baby</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive</td>
<td>Normal</td>
<td>Physical</td>
<td>Health</td>
</tr>
<tr>
<td>- really wrapped</td>
<td>- sickness</td>
<td>- feel tired</td>
<td>- baby has a</td>
</tr>
<tr>
<td>- over the moon</td>
<td>- morning</td>
<td>- tired a lot</td>
<td>- harelip &amp; cleft palate</td>
</tr>
<tr>
<td>- spun me out</td>
<td>- sickness</td>
<td>- cranky</td>
<td></td>
</tr>
<tr>
<td>- clucky</td>
<td>- being sick</td>
<td>- cravings</td>
<td></td>
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<tr>
<td>- happy</td>
<td>- vomiting</td>
<td>- feel fat</td>
<td></td>
</tr>
<tr>
<td>- excited</td>
<td>- indigestion</td>
<td>- nervous</td>
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<tr>
<td>- good</td>
<td>- heartburn</td>
<td>- emotional</td>
<td></td>
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<tr>
<td>- chuffed</td>
<td>- weight gain</td>
<td>- depressed</td>
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<tr>
<td>- overjoyed</td>
<td>- Abnormal</td>
<td>- feel scared</td>
<td></td>
</tr>
<tr>
<td>- thrilled</td>
<td>- bleeding</td>
<td>- panicky</td>
<td></td>
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<tr>
<td>Mixed</td>
<td>- placenta praevia</td>
<td>- lonely</td>
<td></td>
</tr>
<tr>
<td>- mixed emotions</td>
<td>- urinary tract infections</td>
<td>- worried</td>
<td></td>
</tr>
<tr>
<td>- stunned</td>
<td>- kidney trouble</td>
<td>-</td>
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<tr>
<td>- weird</td>
<td>- high blood pressure</td>
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<tr>
<td>Negative</td>
<td>Normal</td>
<td>Physical</td>
<td>Health</td>
</tr>
<tr>
<td>- screamed</td>
<td>- sickness</td>
<td>- feel tired</td>
<td>- baby has a</td>
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<tr>
<td>- yelled</td>
<td>- morning</td>
<td>- tired a lot</td>
<td>- harelip &amp; cleft palate</td>
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<tr>
<td>- chucked a temper tantrum</td>
<td>- sickness</td>
<td>- cranky</td>
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<tr>
<td>- devastated</td>
<td>- being sick</td>
<td>- cravings</td>
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<tr>
<td>- cried/upset</td>
<td>- vomiting</td>
<td>- feel fat</td>
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<td>- shocked</td>
<td>- indigestion</td>
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<td>- placenta praevia</td>
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<td>- Abnormal</td>
<td>- Concerns for</td>
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<td>- high blood pressure</td>
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<td></td>
<td>- Abnormal</td>
<td>- Healthy</td>
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<td></td>
<td>- bleeding</td>
<td>- baby has a</td>
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<td></td>
<td>- placenta praevia</td>
<td>- harelip &amp; cleft palate</td>
<td></td>
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<td></td>
<td>- urinary tract infections</td>
<td>- palate</td>
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<td></td>
<td>- kidney trouble</td>
<td>- as long as it is</td>
<td></td>
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<tr>
<td></td>
<td>- high blood pressure</td>
<td>- healthy</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Abnormal</td>
<td>- hopefully a</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- bleeding</td>
<td>- normal healthy baby</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- placenta praevia</td>
<td>- raising baby.</td>
<td></td>
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<td>- urinary tract infections</td>
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<td></td>
<td>- high blood pressure</td>
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</tr>
</tbody>
</table>
“hectic”, “on holidays”, “life was normal”, “stressed out” and “I can’t remember”.

Was the pregnancy expected?

Ninety (74%) adolescents did not plan or expect their pregnancy while thirty two (26%) did. Most adolescents did not expect their pregnancy and this was reflected in the replies when asked of their reaction to the news of pregnancy in the next section.

How did you feel about the news?

The replies to this question could be categorised under positive, neutral and negative. The specific words used by the adolescents are listed in Table 14 under the heading “Reaction to News of Pregnancy”. There were fifty one (42%) adolescents considered in the positive range from “really rapt” to “thrilled”, while twelve (10%) were in the neutral range of “mixed emotions”, “stunned” and feeling “weird”. Fifty nine (48%) could be considered in the negative range from “screamed” to “hurt”. Most adolescents had a negative reaction to the news of being pregnant at the time of the interview. One adolescent stated that she was “too young” and the pregnancy was occurring at the “completely wrong time” and “a mistake” while another adolescent felt she had “lost identity”. Others loved the idea of pregnancy, one felt it was “magic”, another referred to the unborn baby as a “precious angel”.

Question 3.

How do you feel about your baby?

Ten (8%) adolescents when asked this question expressed health concerns about their unborn baby (see Table 14), while seventy six (62%) expressed words such as “love” towards the unborn baby or “feeling good”, “happy” or “I love the idea”. Twenty eight (23%) adolescents did
not know how they felt about their baby and used phases such as, "I don't really know" or "I do not have a clue". Five (4%) considered having an abortion while only one adolescent replied to the question of "how do you feel about you baby" as "depressing. The remaining adolescents expressed ownership of the baby using the term, "it's mine" rather than saying how they felt about their baby. Most pregnant adolescents had positive feelings about their unborn baby.

**Question 4.**

*What do you think life will be like in ten months time?*

Thirty (24%) adolescents thought that life would be "exhausting" "hectic" or "busy" in ten months time while thirty (24%) adolescents said they "wouldn't have a clue" or had "no idea". Seventeen (14%) adolescents thought life would be either "better" or "good" and sixteen (13%) thought it would be "harder" or "difficult". The remaining pregnant adolescents gave a range of answers such as life in ten months time would be "tiring", "stressful", "nerve racking", "scary", "noisy", "hell", "no social life" or "the same" as it is now.

**Will you have support from anyone?**

Eighty six (70%) adolescents expected to have support after the birth of the baby while twenty six (21%) were unsure and ten (8%) did not expect to have any support. Though some adolescents did not expect support from the father of the baby they stated that they expected support would be provided by their family, extended family, friends and health care givers after the birth of the baby.

The other issues identified by the adolescent during pregnancy were: the physical and affective changes occurring in pregnancy as well as lack of money. The study indicated that most adolescents did not expect
their pregnancy but felt love or had positive feelings towards their unborn baby. The majority of adolescents either expected that life would be harder or had no idea what life would be like after the birth of the baby. Most adolescents in the study expected to have some support at this time.

The next section presents the interview themes from motherhood at 6 weeks after the birth of the baby.

4.7.2 Other Themes: Motherhood 6 Weeks

The themes in motherhood at six weeks not associated with the variables of attachment, self esteem, social support and postnatal depression are presented in association with the questions of the interview schedule. The themes identified for the 6 weeks postnatal interview were: i) "lifestyle changes", ii) "concerns about the baby", iii) "affective changes" and iv) "relationship changes". For a summary of the other interview themes see Table 15.

Question 1.

What are the good and the bad things for you on a personal level at the moment?

Thirty eight (56%) adolescent mothers thought health problems associated with the baby were a bad thing. These were diverse but had an impact on the new mother, and may have contributed to the affective changes experienced by forty five (66%) such as worry, stress, depression and tiredness. Early in motherhood, relationship changes had taken place and while twelve (18%) adolescents had more stable or close relationships seven others (10%) were involved in "custody battles" or "custody fights" with the father of the baby.

One adolescent said, "He told me he is going to take the baby off me and that frightens me. I don't know what I can do". When the study
**TABLE 15**  MOTHERHOOD THEMES: 6 WEEKS

<table>
<thead>
<tr>
<th>Lifestyle Changes</th>
<th>Baby Concerns</th>
<th>Affective Changes</th>
<th>Relationship Changes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Positive</strong></td>
<td><strong>Normal</strong></td>
<td><strong>Physical</strong></td>
<td><strong>Positive</strong></td>
</tr>
<tr>
<td>good times with baby</td>
<td>breastfeeding problems</td>
<td>really tired</td>
<td>stable relationship</td>
</tr>
<tr>
<td>grown up a lot</td>
<td>breastfeeding troubles</td>
<td>tired all the time</td>
<td>closer relationship</td>
</tr>
<tr>
<td>matured me</td>
<td>baby constantly screaming, crying</td>
<td>irritable</td>
<td>got engaged</td>
</tr>
<tr>
<td>more responsibility</td>
<td>Abnormal</td>
<td><strong>Emotional</strong></td>
<td>got married</td>
</tr>
<tr>
<td>a routine</td>
<td>cleft lip &amp; palate</td>
<td>depression</td>
<td>new friends</td>
</tr>
<tr>
<td>can’t be lazy</td>
<td>hernia</td>
<td>postnatal depression</td>
<td><strong>Negative</strong></td>
</tr>
<tr>
<td>never bored</td>
<td>underactive thyroid</td>
<td>worry</td>
<td>lost a few friends</td>
</tr>
<tr>
<td><strong>Neutral</strong></td>
<td>convulsions</td>
<td>stress</td>
<td>not bein’ with the father</td>
</tr>
<tr>
<td>busier</td>
<td>reflux</td>
<td>feel a failure</td>
<td>lost touch with mum</td>
</tr>
<tr>
<td>new experiences</td>
<td>plaster to hips</td>
<td>scared</td>
<td>fights with mum</td>
</tr>
<tr>
<td>changed my perspective on life</td>
<td>adverse reaction to immunisation</td>
<td></td>
<td>custody battles/ fights</td>
</tr>
<tr>
<td>huge changes</td>
<td>baby stopped breathing</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Negative</strong></td>
<td>kidney problems</td>
<td></td>
<td></td>
</tr>
<tr>
<td>late nights</td>
<td>cysts in kidney</td>
<td></td>
<td></td>
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<tr>
<td>lack of sleep</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>no sleep</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>sleepless nights</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>broken sleep</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>feel 20 years older</td>
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<td></td>
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<tr>
<td>not going out</td>
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<tr>
<td>no freedom</td>
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<tr>
<td>bound to house</td>
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<td></td>
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<tr>
<td>restricted socially</td>
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<td></td>
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<tr>
<td>can’t drink with friends</td>
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<td></td>
<td></td>
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<tr>
<td>less social life</td>
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</table>
examined friendships, some mention is made of making new friends while other adolescent mothers had "lost a few friends".

**How has your life been changed by becoming a parent?**

Lifestyle changes focussed on those occurring in the process of becoming a mother for thirty one (45%) mothers such as being busier. Mention was also made by thirty one (45%) adolescent mothers of social isolation and loss of freedom (See Table 15).

**What has been better?**

Twenty eight (41%) adolescents identified growing up, maturity and more responsibility as a positive aspect of their life and eleven (16%) adolescents identified developing a closer relationship with their husband/partner.

**What has been worse?**

Twenty eight (41%) adolescent mothers found sleep deprivation as being a problem and therefore a negative aspect to their lifestyle. Further, four (6%) adolescents felt "inadequate" to care for their baby and for twenty seven (40%) adolescents "being unable to go out with friends", "feeling restricted" and "house bound" was an issue. Eight (12%) of adolescents in the study identified the worst difficulty, as being a parent on their own without support from the father of the baby.

**Question 2.**

**Tell me how you feel about being a parent?**

Forty six (68%) adolescent mothers gave a positive response to the question on how they felt about being a parent e.g. "good", "happy", "I love it", "excellent" and "absolutely wonderful". Nine (13%) adolescent mothers were unsure or did not know how they felt. The remainder of the adolescents in the study felt "shocked", "weird", "nervous", "it
hasn’t sunk in yet”, “wished I’d waited” or “wished I had of waited till I was older”. One of the adolescents expressed a dislike of being a parent.

Question 3.

How do you feel about your baby?

Sixty three (93%) adolescent mothers gave a positive reply to this question and used words such as “I love him/her” while five adolescent mothers stated that they “love him/her to death”. None expressed a negative reply to their feeling about their baby.

Question 4.

What do you think life will be like in 5 years time?

Further themes from the postnatal interview at six weeks were elicited by the question, “What do you think life will be like in 5 years time?”. Replies by fifteen (22%) adolescents to this question ranged from: finishing the Higher School Certificate, attending Technical And Further Education courses, commencing a University program in nursing studies, midwifery or working. Ten (14%) adolescents focussed on travel overseas or having a “proper” house. Thirty four (50%) adolescent mothers spoke of their child’s attending school giving them the opportunity to either return to work or begin working.

A comment in relation to the child attending school:

“She’ll be goin’ to school and I’ll be workin’ so I suppose that’s when you get little cute pictures and the swear words and you know, the teeth and you know, when they get new teeth and the other ones fall out. Um, school kids goin’ to plays and can I stay at this one’s house and oh, gettin’ up at six o’clock of a mornin’”
Life for the adolescent mother revolved around the infant attending school rather than being self directed.

**Will you have support from anyone?**

The support identified by the adolescent mother could be assigned to partner/husband, family, friends and professional care givers.

In summary, issues identified by the adolescent mother at six weeks were: health problems associated with the baby either normal or abnormal, the affective changes in motherhood both physical and emotional, relationship and lifestyle changes, either positive or negative. Most adolescents felt good about being a parent and expressed positive feelings towards their baby. Some adolescents focussed on future events such as employment, further education and their child attending school. A variety of support was perceived by the adolescent as available.

The next section presents the themes from motherhood at 6-12 months after the birth of the baby.

### 4.7.3 Other Themes: Motherhood 6-12 Months

The other themes in motherhood at six to twelve months are presented in association with the questions of the interview schedule. The other themes followed on from those identified at the six weeks postnatal interview: i) "lifestyle changes", ii) "concerns about the baby", iii) "affective changes" and iii) "relationship changes". For a summary of the other interview themes see Table 16.

**Question 1.**

**What are the good and the bad things for you on a personal level at the moment?**

The good and the bad issues on a personal level for the adolescent mother at the six to twelve month interview were very diverse. The major issues are categorised under lifestyle changes, baby health concerns,
### TABLE 16  MOTHERHOOD THEMES: 6 - 12 MONTHS

<table>
<thead>
<tr>
<th>Lifestyle Changes</th>
<th>Baby Concerns</th>
<th>Affective Changes</th>
<th>Relationship Changes</th>
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</thead>
<tbody>
<tr>
<td><strong>Positive</strong></td>
<td><strong>Normal</strong></td>
<td><strong>Physical</strong></td>
<td><strong>Positive</strong></td>
</tr>
<tr>
<td>24 hour care of baby</td>
<td>teething</td>
<td>very, very tired</td>
<td>new partner</td>
</tr>
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<td>whole lifestyle</td>
<td>babys healthy</td>
<td>being tired</td>
<td>new boyfriend</td>
</tr>
<tr>
<td>more mature</td>
<td>baby sick</td>
<td>Emotional</td>
<td>havin’ another baby</td>
</tr>
<tr>
<td>overprotective</td>
<td>dislocated hip</td>
<td>panic attacks</td>
<td>Negative</td>
</tr>
<tr>
<td>more responsability</td>
<td>pneumonia</td>
<td>depressed</td>
<td>not many friends</td>
</tr>
<tr>
<td>early mornings</td>
<td>measles</td>
<td>postnatal depression</td>
<td>lost a lot of friends</td>
</tr>
<tr>
<td>up early</td>
<td>pyloric stenosis</td>
<td>worrying</td>
<td>relationship problems</td>
</tr>
<tr>
<td><strong>Neutral</strong></td>
<td>bronchial asthma</td>
<td>stress</td>
<td>got rid of baby’s father</td>
</tr>
<tr>
<td>never bored</td>
<td>flu</td>
<td>can’t cope</td>
<td>left partner</td>
</tr>
<tr>
<td>busier</td>
<td>virus</td>
<td>feel screwed up in the head</td>
<td>threats from boyfriend</td>
</tr>
<tr>
<td>extra washing</td>
<td>ear infections</td>
<td></td>
<td>fightin’ with father</td>
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<tr>
<td>more mature</td>
<td>nerve damage to arm</td>
<td></td>
<td>custody battles/fights</td>
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<tr>
<td>grown up heaps</td>
<td>diarrhoea</td>
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<td>domestic violence</td>
</tr>
<tr>
<td><strong>Negative</strong></td>
<td>vomiting</td>
<td></td>
<td>hassles with father</td>
</tr>
<tr>
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<td>constipated</td>
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<td>facing court</td>
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<tr>
<td>sleepless nights</td>
<td>cluster of veins under her arm</td>
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<td>possibly deaf</td>
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<td></td>
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<td></td>
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<tr>
<td>less freedom</td>
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<td></td>
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<tr>
<td>loss of freedom</td>
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<td></td>
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<tr>
<td>no time to myself</td>
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<td>not much spare time</td>
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<td>can’t go to Uni</td>
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<tr>
<td>no social life</td>
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</tr>
<tr>
<td>no parties</td>
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<td></td>
</tr>
<tr>
<td>dirty nappies</td>
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<td></td>
</tr>
<tr>
<td>pretty lonely</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>very lonely</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>forced into prostitution</td>
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</table>
affective changes and relationship changes in Table 16. Many of the issues identified by the adolescent mother overlap in a number of the questions.

**How has your life been changed by becoming a parent?**

Lifestyle changes focussed on those occurring in the process of motherhood for seventy four (65%) adolescent mothers such as more responsibility, the twenty four hour care of the baby and activities associated with the care of a baby e.g dirty nappies, extra washing, “run off your feet”, hard work or extra work. Forty nine (43%) adolescents identified loss of freedom, lack of social life and loneliness. Thirty five (31%) adolescents expressed concern about the health problems of the baby. These were diverse and possibly influenced the affective changes experienced by fifty one (45%) adolescent mothers such as tiredness, stress, depression, worrying and feeling an inability to cope. Relationship changes had occurred and seven (6%) adolescents had new partners or boyfriends in place of the father of the baby. For seventeen (15%) adolescent mothers domestic violence at this period became an issue as well as court hearings associated with custody of the baby. Twenty nine (26%) adolescents found conflict featured in their relationships, relationships between the adolescent mother and the father of the baby, the families and friends.

**What has been better?**

Twenty four (21%) adolescent mothers were unsure of the positive aspects of motherhood and replied to this question, “I dunno” or “I don’t know”. The remaining adolescents did not respond to this question as to what was better about being a parent.
Chapter 4 Results

What has been worse?

Twenty (18%) cited lack of money as one of the worse things for the adolescent mother e.g. "forever gettin' bills", "gettin' money" and "its a struggle tryin' to get money off his father". Other concerns expressed by twenty (18%) adolescent mothers were associated with that of the health of their baby and also affective changes to themselves.

Question 2.

Tell me how you feel about being a parent?

Ninety five (84%) adolescent mothers had positive feelings about being a parent and used terms to describe how they felt such as, "I love being a parent", "love it", "ecstatic", "exciting", "fun", "pleasurable", "excellent", "good" and "proud". Five (4%) adolescent mothers did not know how they felt while others expressed their views in terms such as, "an experience I'll never forget", "doesn't worry me", "it has its ups and downs" and "different". One adolescent mother stated, "I'm too young to be a parent".

Question 3.

How do you feel about your baby?

One hundred and one (89%) adolescent mothers expressed positive feelings about their baby and stated, "I love him/her", while twelve (11%) adolescent mothers stated "I love him/her to death". There were no negative responses to this question.

Question 4.

What do you think life will be like in 5 years time?

Further themes from the postnatal interview at 6-12 months were elicited using the question, "What do you think life will be like in 5 years time?". The main themes were similar to those identified at the six week
postnatal interview such as education for seventeen (15%) adolescents, work for thirteen (12%), travel for seven (6%) adolescents, housing for twelve (11%) adolescents and seventeen (15%) adolescent mothers expected to have more children by then. Fifty three (47%) adolescent mothers spoke of their child attending school in five years time.

One adolescent mother commented on behavioural changes in her baby now and predicted in the future:

"Sometimes it’s not worth it but then she just smiles at ya or she just bees really cute and you just think, oh, how could you even think that, so it’s not too bad. She’s pretty good, she’s a happy baby but she’s got a temper on her, it’s feral, the legs stomp, the arms go flyin’ the breath, oh, she’s gunna be shockin’ when she’s three. I can just see a big temper tantrum in The Mall. Oh, I’m not lookin’ forward to that”.

Will you have support from anyone?

The question was asked, “Will you have support from anyone?“. The support identified by the adolescent mother could be assigned to partner/husband, family, friends and professional care givers.

The other issues identified by the adolescent mother at six to twelve months were: lifestyle changes, baby concerns, affective changes associated with motherhood and the care of the baby. There were relationship changes not only with family and friends but also with the father of the baby and in some instances there was domestic violence.
Some adolescents had a new partner or boyfriend who was not the father of the baby. Most adolescent mothers expressed positive feelings about being a parent and positive feelings about their baby and perceived that they had adequate support from a variety of sources.

Finally, the other themes identified from pregnancy through to motherhood at 6 weeks and 6-12 months are presented.

4.7.4 Summary Other Themes: Pregnancy To Motherhood

The other themes from pregnancy were: i) reactions to the news of pregnancy, ii) physical changes, iii) affective changes and iv) unborn baby concerns. There was an alteration in the themes between pregnancy and motherhood. Pregnancy for the adolescents was self directed with the total focus on issues associated with the pregnancy while motherhood included issues associated with motherhood it further extended to relationship changes. During motherhood the themes were: i) lifestyle changes, ii) baby health concerns, iii) affective changes and iv) relationship changes.

The issues identified in pregnancy revolved around the the unexpected news of pregnancy, for some this was positive, while for others it was negative and others were unable to provide an answer either way. Other concerns were associated with the physical changes which occurred as a result of the pregnancy and the feelings and symptoms associated with these physical changes. Some adolescents reflected on the health of the unborn baby or the problems which had been identified by ultrasound as having an affect on the future health of the baby.

During motherhood the focus on baby health issues continued and the affective changes associated with being a mother. At this time
lifestyle changes and relationship changes emerged as important issues. Lifestyle changes were reflected in the form of isolation and loneliness emerging with the adolescent mother having no time for self. Fatigue continued and for some adolescent mothers increased with the demands of infant care as time progressed. A second baby may have had to be considered and this created "stress". Many relationship changes occurred from pregnancy to early motherhood and while some of these were positive others created conflict and as time progressed the conflict seemed to escalate. For example, some relationships with the father of the baby came to involve either domestic violence or court hearings associated with custody of the baby. Three fathers were incarcerated in the Junee Correctional Centre for breaching Apprehended Violence Orders taken out against them by the adolescent mothers. Some adolescent mothers had a new partner and this is consistent with research (Unger & Wandersman, 1988) which found at 8 months after the birth of the baby, most (53%) adolescent mothers had a partner who was not the biological father of the baby. For a number of adolescents there was a loss of friends but some adolescent mothers had found new friends and support groups were a means of meeting perceived needs.

The next section presents some of the issues faced by the rural adolescents in this study during pregnancy and motherhood

4:8 RURAL AND REMOTE ISSUES

It is well documented that those living in a rural area experience greater hardship geographically than those living in an urban area. Distance and isolation from professional services, health facilities, lack of services or specialised city services are features of living in a rural area and can be an issue. Those in rural areas are further disadvantaged as
they contend with lack of finance, lack of transport, cost to travel to the services required, lack of choice, information and often poorly serviced towns. Other issues may be associated with the closeness of the community in relation to privacy (Bull et al., 1997), high rural petrol prices, limited farm incomes or no income (Cullen, Dunn & Lawrence, 1989). A discussion of rural issues is central to concerns of this thesis as the study subjects lived in a rural area and for some this had an impact on their lives, creating stress and possibly influencing the attachment variables presented in this study. This information was obtained during the taped recorded interviews when the adolescent was asked, "What are the good and the bad things for you on a personal level at the moment?".

The following section provides an insight into the issues experienced by some adolescents during pregnancy and motherhood which are specific to living in a rural area.

4.8.1 Rural Issues: Adolescent Pregnancy

Subject Number 8 found that a move from place of residence, health, travel and finance were issues:

"bad things, health, um, had high blood pressure the whole way through. Kidney trouble at three months and I was hospitalised. Um, I had to move closer to doc, ah, what do you call it, better services, um, from Condobolin to Junee to be closer to Wagga. I've been hospitalised for blood pressure being too high in the last, in the last, in the eight months. I really can't think, how money but I can't think how to say it. Travelling to Wagga, um, for Clinic every Wednesday makes
money a bit tighter than usual, ten dollars sixty every time we come together. That was before we got concession, it cost twenty dollars, double whatever ten dollars sixty is, twenty one dollars something”.

Subject Number 80 was transferred on three occasions during pregnancy to a city hospital creating isolation from the family:

“goin’ to Canberra with placenta praevia. Um, havin’ a blood clot between the cervix and the placenta. I think I lost that before I went to Canberra though. Having been in hospital for three weeks not having any family around in Canberra and bein’ flown up there and just startin’ to bleed again. Don’t know when you’re goin’ to bleed again”.

4.8.2 Rural Issues: Adolescent Motherhood

Subject Number 92 had an infant with an extensive bilateral cleft lip and palate and then a hernia was discovered by the adolescent mother before the six week postnatal interview. She expressed her concern for her baby and regarding travel to the city.

“The worst bit was when he, I found the hernia and we rushed to Sydney that was scary, very scary because I didn’t know what it involved and whether he’d be alright or not, so, it was pretty scary, the hernia bit...I’d never been on an
aeroplane before when we went down with his hernia and I wouldn't have been prepared except for the nurse and the pilot as well, telling me what was going to be happening and when it would get rough...it was scary in a way...went in an Air Ambulance to Mascot Airport and from there we caught an Ambulance to Westmead, The New Children’s Hospital and oh, they went straight to emergency and they took all details and then the doctors came around and looked at him... They knew that I was there by myself and there was always someone there that was coming up and talking to me so I wasn’t just left by myself which I thought was good”.

The same subject further expressed concern at the expense and short notice given to her to take her baby to Sydney for surgery to correct his cleft lip and palate.

“We are only given two days notice and that is very stressful to find money to pay for the trip. We often have to borrow money and then we feel like we are not coping. Once we took Benjamin down to have surgery then they cancelled it as he had a urinary tract infection. We were only there five minutes after a long drive from Wagga and had to turn around and drive home again...All the stress with his operations would have to be worse.
All the stress and worry with his operations and travelling”.

This section has identified some of the issues experienced by pregnant adolescents and adolescent mothers related to living in a rural area, namely isolation from services or lack of specialised services, lack of finance or transport to the services required.

4:9 SUMMARY

This chapter has presented the findings from the study, both quantitative and qualitative results. The findings from the study are summarised in point form and briefly in Table 17 according to the sequence of hypotheses for pregnancy and motherhood.

4:10 HYPOTHESES FINDINGS:

- Maternal-foetal attachment in pregnant adolescents was not associated with maternal-infant attachment in adolescent mothers at six weeks or six to twelve months after the birth of the baby.
- Maternal-foetal attachment was not associated with higher self esteem scores.
- Higher maternal-foetal attachment was associated with the amount and quality of social support.
- Higher maternal-infant attachment scores was not associated with high self esteem at six weeks after the birth of the baby. At six to twelve months of motherhood high self esteem was associated with higher maternal-infant attachment scores.
- Higher maternal-infant attachment was not associated with the amount and quality of social support in motherhood six weeks or six to twelve months.
TABLE 17. HYPOTHESES FINDINGS

<table>
<thead>
<tr>
<th>Hypotheses</th>
<th>Tests</th>
<th>Outcome</th>
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<tr>
<td>1. maternal-foetal attachment influences maternal-infant attachment</td>
<td>MFAS + FAB</td>
<td>not supported, 6 weeks</td>
</tr>
<tr>
<td></td>
<td></td>
<td>not supported, 6-12 months</td>
</tr>
<tr>
<td>2. self esteem influences maternal-foetal attachment</td>
<td>MFAS + RSE</td>
<td>not supported, pregnancy</td>
</tr>
<tr>
<td>3. social support influences maternal-foetal attachment</td>
<td>MFAS + SBI</td>
<td>supported, pregnancy</td>
</tr>
<tr>
<td>4. self esteem influences maternal-infant attachment</td>
<td>FAB + RSE</td>
<td>not supported, 6 weeks</td>
</tr>
<tr>
<td></td>
<td></td>
<td>supported, 6-12 months</td>
</tr>
<tr>
<td>5. social support influences maternal-infant attachment</td>
<td>FAB + SBI</td>
<td>not supported, 6 weeks</td>
</tr>
<tr>
<td></td>
<td></td>
<td>not supported, 6-12 months</td>
</tr>
<tr>
<td>6. parenting sense of competence influences maternal-infant attachment</td>
<td>FAB + PSOC</td>
<td>supported, 6 weeks</td>
</tr>
<tr>
<td></td>
<td></td>
<td>supported, 6-12 months</td>
</tr>
<tr>
<td>7. postnatal depression negatively influences maternal-infant attachment</td>
<td>FAB + EPDS</td>
<td>supported, 6 weeks</td>
</tr>
<tr>
<td></td>
<td></td>
<td>supported, 6-12 months</td>
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</table>

KEY:

MFAS = Maternal-Foetal Attachment Scale
FAB = How I Feel About My Baby Now Scale
RSE = Rosenberg Self-Esteem Scale
SBI = Support Behaviours Inventory
PSOC = Parenting Sense of Competence Scale
EPDS = Edinburgh Postnatal Depression Scale
Chapter 4 Results

- Higher maternal-infant attachment was associated with positive parenting sense of competence in motherhood at six weeks and six to twelve months.
- Those adolescents in the clinical range of postnatal depression had lower maternal-infant attachment scores at six weeks and six to twelve months after the birth of the baby. Those with postnatal depression at six weeks still had it at six to twelve months.

4.10.1 Hypotheses Summary

The current study found that self esteem, social support and postnatal depression were the main variables impacting on attachment in adolescents during pregnancy and early motherhood. The quality of support and number of people perceived supportive by the adolescent influences greater attachment behaviours in pregnancy. High self-esteem influenced greater attachment behaviours at 6-12 months after the birth of the baby but not at 6 weeks after delivery. Positive parenting sense of competence was associated with high maternal-infant attachment and higher self esteem at 6 weeks and 6-12 months during motherhood. Symptoms suggestive of postnatal depression were associated with lower attachment scores and lower self esteem. Maternal-foetal attachment in pregnant adolescents was not associated with maternal-infant attachment in adolescent mothers at 6 weeks or 6-12 months.

The next chapter discusses the results of the study and addresses the main attachment issues for the adolescent in pregnancy and early motherhood.
CHAPTER FIVE
DISCUSSION

Throughout this study, psychosocial correlates of attachment in adolescents in pregnancy and early motherhood have been investigated in relation to self esteem, social support and postnatal depression. Other variables such as parenting sense of competence, motherhood orientation, characteristics of the pregnant adolescent, maternal birth outcome plus breastfeeding have also been considered. In this chapter the results of this study are discussed and relevant links made to the current literature. The use of the Maternal-foetal Attachment Scale (MFAS), The Prenatal Attachment Inventory (PAI), How I Feel About My Baby Now Scale (FAB) and The Maternal Attachment Inventory (MAI) as outcome measures are addressed. The limitations of this study and implications for further research are presented.

5.1 MAJOR RESULTS OF THIS STUDY

This section addresses the main attachment issues for adolescents in pregnancy and early motherhood in this study. These are: maternal-foetal attachment, maternal-infant attachment at 6 weeks and 6-12 months after the birth of the baby, self esteem, social support, parenting sense of competence, postnatal depression and motherhood orientation.

5.1.1 Attachment: Maternal-Foetal

The results of this study suggest that the maternal-foetal attachment scores increase as the gestation progressed (without deletion of the foetal behaviours, Fb). The increase in attachment was further supported by comments made by twelve (10%) pregnant adolescents in a recorded interview. This finding is similar to results reported in the literature, which indicates that maternal-foetal attachment increased as
the birth date approached (Wayland & Tate, 1993; Zachariah, 1994).

Wayland and Tate (1993) examined maternal-foetal attachment in 61 culturally diverse pregnant adolescents in North America, using Cranley's (1981) Maternal-Foetal Attachment Scale. Maternal-foetal attachment scores increased as the birth date approached which suggests that, both pregnant adolescents like pregnant adults are influenced by these factors. This study of North American pregnant adolescents confirms the findings of the current Australian rural study which found that, progression of pregnancy influences maternal-foetal attachment scores.

In 1994, Zachariah investigated maternal-foetal attachment and the influence of mother-daughter and husband-wife relationships on attachment. The sample consisted of 115 Caucasian pregnant women, 28 weeks gestation or greater, attending prenatal classes. The women were aged 19 to 33 years, expecting their first infant, married and living with their husbands, and had been reared by their own mother. The Cranley Maternal-Foetal Attachment Scale (MFAS, 1981) was used to assess attachment with the foetus. No relationship was found between maternal-foetal attachment with mother-daughter and husband-wife relationships. However, maternal-foetal attachment scores were positively correlated with the number of weeks gestation. The limitations for this study may be the lack of a control group, failure to include adolescent women, or those who had been reared by a person who was not their birth mother, and those who were not married.

Nevertheless, this study has shown a link between maternal-foetal attachment and the progression of pregnancy. These findings support the current study which also found that maternal-foetal attachment scores
increased in pregnant adolescents as the birth date approached. Although, the current study included a very different sample to that of Zachariah in relation to age and marriage status in particular.

An earlier study (Lerum, Major and LoBiondo-Wood, 1989), reported that quickening, as well as the degree and frequency of foetal movements, were correlated to maternal-foetal attachment. The Cranley Maternal-Foetal Attachment Scale, was used to assess attachment in 80 primigravidae and multigravidae, 19 - 32 years, attending a clinic in North America. While no relationship was found between maternal age and maternal-foetal attachment, this may not reflect all age groups as 91% of the sample were 19 - 32 years of age, thus excluding both adolescents and older adults.

The current study did not specifically investigate the effects of foetal movements on maternal-foetal attachment. However, it was interesting to see that those adolescents experiencing foetal movements, had higher attachment scores in the tape recorded interviews.

Cranley (1981a) suggests that the expectant mothers attachment is associated with the developmental tasks of pregnancy rather than being influenced by other variables such as seeing the baby on sonogram. Kemp and Page (1987) support the theory that accomplishment of the developmental tasks is associated with maternal-foetal attachment.

Although the general trend in pregnant adolescents was towards an increase in maternal-foetal attachment as the pregnancy progressed, there were some who showed strong attachment quite early. One fifteen year old at 21 weeks gestation scored high on the Maternal-foetal Attachment Scale (MFAS) with a mean score of 4.3. This is supported by the literature which states that a strong attachment feeling can occur prior
to conception, immediately after conception and early in pregnancy (Gibson, 1986).

Interview comments further reflected the influence of foetal movements and ultrasound on the high scoring of maternal-foetal attachment by twelve (10%) pregnant adolescent. In a number of studies clinicians have suggested factors that influence and increase maternal-foetal attachment scores such as foetal movement (Brazelton & Cramer, 1990; Heidrich & Cranley, 1989; Lerum, Major & LoBiondo-Wood, 1989), seeing the unborn baby on an ultrasound scan (Crouch & Manderson, 1993; Fletcher & Evans, 1983) and foetal movement counting by the pregnant woman.

Heidrich and Cranley (1989) investigated the relationship of maternal-foetal attachment with foetal movements in 91 women with an average age of 28.5 years, during the second trimester of pregnancy, using the Maternal-Foetal Attachment Scale (Cranley, 1981). Foetal movements were significantly associated with increased maternal-foetal attachment scores. This study failed to identify the age range of the sample, therefore it is unknown whether it included adolescents in the sample.

Fletcher and Evans (1987) reported two case studies of maternal-foetal attachment in relation to ultrasounds. Both were adult women, one with a normal foetus and the second with possible genetic abnormalities. They agreed to be interviewed and responded to the question, "How do you feel about seeing what is inside of you?". The first subject was interviewed during the ultrasound procedure while viewing the foetus, the second subject was interviewed after the procedure. Despite possible genetic abnormalities, the second subject decided to continue with her pregnancy and refused further tests, to clarify results,
which may have caused a spontaneous abortion. Both subjects claimed the foetus as belonging to them, and not wanting to place their baby at risk. The first subject felt it made you think about not having an abortion after seeing the baby on ultrasound. While this early study provided no measurable evidence, nevertheless, it challenged the professionals of the day, and encouraged further research into the influence of ultrasound on maternal-foetal bonding.

Mikhail, Freda, Polizzoto, Mazloom & Merkatz (1991) investigated the effect of counting foetal movements on maternal-foetal attachment in two hundred and thirteen women, aged 17 - 37 years with singleton pregnancies at 28 to 32 weeks gestation. Sixty three women used the Sadovsky Chart, 62 the Cardiff Chart, and 88 were in the control group. Cranley's (1981) Maternal-Foetal Attachment Scale was used to measure attachment in all women, one month after foetal movement counting commenced. This study found that foetal movement counting may enhance maternal-foetal attachment. Subjects came from The Bronx in New York City and most were Hispanic (48.1%). The remaining subjects were not identified in relation to cultural background. Further, over 60% were unmarried, and 77% were unemployed. Findings may be different amongst cultural groups and foetal counting may not be acceptable by some women. However, foetal counting may create more awareness of the foetus and promote attachment. Women who count the movements of the foetus have higher attachment scores compared to women who did not count foetal movement (Mikhail, Freda, Merkatz, Polizzoto, Mazloom & Merkatz, 1991). Earlier studies provide inconsistent results in relation to the influence of seeing the unborn baby via ultrasound on maternal-foetal attachment. Some studies found that seeing the unborn
baby on ultrasound scan promoted maternal feelings of attachment (Crouch & Manderson, 1993; Fletcher & Evans 1983), while another study found no influence on maternal-foetal attachment scores (Heidrich & Cranley, 1989). These studies present conflicting and contradictory findings in relation to maternal-foetal attachment with gestation, ultrasound and foetal movements. Further research is needed for clarification of this topic.

The current study found that maternal-foetal attachment scores increased as gestation progressed. Foetal movements and seeing the unborn baby on ultrasound for twelve (10%) pregnant adolescents suggests an association to the high maternal-foetal attachment scores they achieved. However, as the sample was small more research is needed to investigate the relationship between maternal-foetal attachment with foetal movements and seeing the baby on ultrasound to determine whether this is an important variable for attachment in pregnant adolescents.

5.1.2 Attachment: Maternal-Infant at 6 Weeks and 6-12 Months

No relationship was found between reported maternal-foetal attachment in pregnant adolescents and maternal-infant attachment in adolescents mothers in early motherhood using the Maternal-Foetal Attachment Scale and the How I Feel About My Baby Now Scale. For a subsample, the Prenatal Attachment Inventory and the Maternal Attachment Inventory further validated the findings. The findings of the current study in relation to attachment are at odds with some of the literature which identifies a link between maternal-foetal and maternal-infant attachment. The majority of studies focus on adult mothers rather than adolescent mothers.
Bloom (1995), found that a positive relationship existed between maternal-foetal attachment using the Maternal-Foetal Attachment Scale (Cranley, 1981), in the third trimester and affectionate behaviours towards the newborn baby in a study related to the development of attachment behaviours in pregnant adolescents. These findings are supported by other researchers who investigated the relationship between attachment in pregnancy and subsequent attachment in early motherhood (Fuller, 1989; Grace, 1989; Mercer, 1985; Mercer & Ferketich, 1990) and found foetal attachment was a direct predictor of maternal attachment during the early postnatal period. However, the current study did not find a direct relationship between maternal-foetal attachment in pregnant adolescents and maternal-infant attachment in adolescent mothers. This may in part be related to the instruments used to assess attachment. Although many studies used these particular instruments.

A study conducted by Fuller (1989), found a positive relationship between maternal-foetal attachment behaviours and maternal-infant interaction in a group of thirty two women who were involved in the study at 35 to 40 weeks gestation then on the second or third day after the birth of their baby. The Maternal-Foetal Attachment Scale (Cranley, 1981) was administered to measure maternal-foetal attachment. The Nursing Child Assessment Feeding Scale and the Funke Mother-Infant Interaction Assessment was used to measure interactive behaviours on the second and third postpartum day. The findings indicated a positive relationship between maternal-foetal attachment behaviours and mother-infant interaction. This study included both adolescent and adult mothers. Limitations of the study relate to the sample size and possibly the assessment instruments. Of concern is the different style of assessment
tools used in this study. Maternal-foetal attachment was assessed by using a scale, whereas maternal-infant interaction was scored by an observer. The current study used assessment instruments to measure attachment in the pre and postnatal period similar to each other, in an endeavour to eliminate observer bias.

Mercer and Ferketich (1990) investigated predictors of parental attachment during early parenthood in 121 high risk women, 61 partners of high risk women, 182 low risk women, and 117 partners of low risk women. Data were collected during the antepartum period, the first postpartum, week 4 and 8 months after the birth of the baby. However, only the data for the first week and 8 months postpartum were reported. Attachment was measured using Leifer’s (1977) How I Feel About My Baby Now Scale, self-esteem was assessed using Rosenberg’s (1979) Self Esteem Scale and parental competence was measured using the Parenting Sense of Competence Scale (Gibaud-Wallston & Wandersman, 1978). These three scales were also used in the current study to assess infant attachment, self esteem, and parenting sense of competence. Mercer and Ferketich used two social support measures rather than one, the first was the Inventory of Socially Supportive Behaviours (Barrera, 1981), to measure received support and the second social support scale used, was an adaption of a scale used by Wandersman, Wandersman & Kahn (1980) to measure perceived support. The current study used the Support Behaviours Inventory (Brown, 1986), which was considered appropriate for the adolescents as it is: easy to administer, takes little time to complete, measures support from partners separate from others, as well as total support (combining both scores). Depression was measured in the Mercer and Ferketich (1990) study, using a 20 item, Centre for
Epidemiologic Studies Depression Scale (Radloff, 1977), designed to measure depressive symptoms in the general population. The current study used the Edinburgh Postnatal Depression Scale (Cox, Holden & Sagovsky, 1987) which was designed specifically to assess for symptoms suggestive of depression in postnatal women.

In relation to attachment, Mercer and Ferketich (1990) found that: i) parental competence assessed by the Parenting Sense Of Competence Scale was the major predictor of attachment at both test periods for all groups, ii) self esteem was found to predict parental competence, iii) high risk pregnancy was associated with higher attachment at 8 months, iv) maternal-foetal attachment was associated with maternal-infant attachment in the early postpartum period, and v) higher maternal-foetal attachment and a low socioeconomic status were associated with higher maternal-infant attachment at 8 months.

Many inconsistencies exist in this study focussed on parents. For example, the high risk group involved 121 women with 61 partners. Thus only half the partners from this group were studied. It does not clarify whether the remaining high risk women had a partner or not. Therefore, this may bias the study as high risk women without partners may have more stress. In the low risk group, partners represented 64% which may also influence results. Further, the study did not include younger adolescents, aged 15-17 years. This article is very complex, difficult to read and understand, as it contains excessive information. It may have been more appropriate to report findings in several papers rather than one. This study supports the current study which found higher maternal-infant attachment was associated with positive parenting, sense of competence, and higher self esteem predicts
for parenting sense of competence. It further supports the use in the current study of the assessment instruments: How I Feel About My Baby Now Scale, Rosenberg’s Self Esteem Scale and the Parenting Sense of Competence Scale.

Carter-Jessop (1981) in an experimental study, found that encouraging the mother to daily interact with her unborn baby enhanced maternal-infant attachment. A later study (Carson & Virden, 1984) attempted to replicate the Carter-Jessop study but found discrepancies in their findings in that maternal-infant attachment behaviours were no different between a group who received the prenatal intervention compared to a second group who received directions on relaxation techniques in labour. The study conducted by Carter-Jessop had many limitations, in that it included a small sample size and the lack of tests for validity and reliability for the postnatal test used to assess attachment.

A further study (Koniak-Griffin & Verzemnieks, 1991) led to the suggestion that an intervention program involving maternal-foetal interactive activities, recording of foetal movements and maintaining a maternal diary was beneficial to the adolescents’ achievement of the maternal role through enhancement of maternal-foetal attachment. Muller (1990) cautions that interference with a natural process by way of promoting high level of prenatal attachment can be detrimental to the woman and may cause self blame, disappointment and stress in her attempt to achieve these levels.

The findings from these studies in relation to the influence of maternal-foetal attachment on maternal-infant attachment behaviours are inconclusive. Many believe that maternal-infant attachment is an extension of maternal-foetal attachment.
While no relationship was found between maternal-foetal attachment in pregnant adolescents and maternal-infant attachment in adolescent mothers in the current study, further investigation is needed as the instruments used may have not measured attachment. This point is later expanded upon in this chapter. Attachment scores in the current study during pregnancy were quite high so there may have been a ceiling effect. Two different instruments were used to measure attachment, one during pregnancy and the second during motherhood. It may be that there is a relationship between attachment levels at the two points, but the two instruments are too different from each other in what they are measuring to show this relationship. However, an attempt was made to include instruments in the prenatal and postnatal periods which were similar to each other in relation to a checklist style. Further, the previous literature in this section reveals the use of both the Maternal-Foetal Attachment Scale and the How I Feel About My Baby Scale used to assess attachment. This then raises another issue, were the tests suitable for use to assess attachment in Australian adolescents living in a rural area? Further, there are no other studies conducted in Australia with which to compare the current study.

5.1.3 Attachment: Self Esteem

The results from this study using Rosenberg’s Self-Esteem Scale (RSE) indicated that there was no significant relationship between maternal-foetal attachment or maternal-infant attachment and self esteem at 6 weeks after the birth of the baby. However the 6-12 months postnatal interview revealed that high self esteem was associated with higher maternal-infant attachment scores.

A study conducted by Koniak-Griffin (1988) into the relationship
between social support, self-esteem and maternal-foetal attachment in adolescents did not find a relationship between maternal-foetal attachment and self esteem. This supports the finding of the current study that self esteem was not a key factor in influencing maternal-foetal attachment. Gaffney (1986) and Cranley (1981a) were unable to confirm a relationship between self esteem and maternal-foetal attachment in their studies which also support this idea. Gaffney (1986), found that an overall level of maternal-foetal attachment had no relationship with self concept, while Lindner (1984) in a study of pregnant adolescents found a positive relationship between self esteem and attachment scores, indicating that the more positively the adolescent viewed herself the greater was her attachment to the foetus.

Gaffney (1986) did not identify the age of the pregnant women involved in the study, although, Cranley's (1981a) study included women aged 20-33 years. One may only assume that the Gaffney's (1986) study included adult mothers. Their findings of maternal-foetal attachment with self esteem were opposite that to Lindner's (1984) study of pregnant adolescent. Further demonstrating the importance of self esteem in the life of the adolescent.

The finding, from the current study at the 6-12 months postnatal interview, that high self esteem was associated with higher maternal-infant attachment scores is supported by other researchers (Diehl, 1997; Dubow & Luster, 1990; Mercer and Ferketich, 1990) who identified that for adolescent mothers high self esteem is associated with positive maternal-infant interaction.

While low self esteem has been linked to adolescent pregnancy and motherhood, some studies have found the opposite. Matsushashi &
Felice (1991) reported higher self esteem in pregnant than non pregnant adolescents. Self esteem was not related to pregnancy status in a further study comparing pregnant and non pregnant adolescents (Connelly, 1998) while a study (Alpers 1998) related to the self concept of pregnant and parenting teens found that pregnant and parenting adolescents had a higher self concept than non pregnant adolescents. An explanation for higher levels of self concept in pregnant and parenting adolescents was given by Alpers (1998). Firstly, self concept may be enhanced secondary to pregnancy or being a mother. Secondly, society has changed and has a more accepting attitude towards adolescent pregnancy and motherhood with many people viewing it as the norm rather than an unusual event. This then may contribute to a more positive self concept of these adolescents.

Studies related to self esteem have been inconclusive and contradictory. While some have found a positive correlation others have found no relationship between adolescent pregnancy and motherhood.

The current study found that self esteem was not associated with attachment in pregnancy or at 6 weeks but was associated with higher maternal-infant attachment scores at 6-12 months after the birth of the baby. This suggests that the relationship between the mother and baby may improve overtime as the adolescent mother adjusts to the baby.

5.1.4 Attachment: Social Support

Social Support: Pregnancy. The results from the Social Support Behaviour Inventory (SBI) showed a significant relationship to maternal-foetal attachment using the Maternal-foetal Attachment Scale (MFAS). With SBI corrected and SBI total scores, a positive relationship was found with the number of people perceived as supportive by the pregnant
adolescent. No relationship was found between maternal-foetal attachment and support from their partner, mother or father.

The amount and quality of support found to be associated with higher maternal-foetal attachment scores in the adolescent included both friend and family support and were not necessarily specific to partner, mother or father. This suggests that the adolescents who were receiving good support from families and friends were more likely to have higher maternal-foetal attachment. It may be that the study did not find a relationship between maternal-foetal attachment and supportiveness from the mother because almost all mothers were rated as highly supportive, thus there may be a "ceiling" effect using this measure.

In a study conducted into the relationship between social support, self-esteem and maternal-foetal attachment in adolescents, Koniak-Griffin (1988) found total functional support and total size of social support network to be predictors of prenatal attachment. Earlier research in relation to social support and maternal-infant attachment led to similar findings (Armantrout, 1983; Gaffney, 1986). These findings support those of the current study which found that total support and number of supportive people influenced attachment behaviours towards the unborn baby.

The finding in relation to support from partner, mother and father is at odds with the literature. Some studies have found a positive relationship between support from the partner and mother of the pregnant adolescent and development of attachment to the unborn baby (Lindner, 1984; Wayland & Tate, 1993). May (1992), reported that the adolescent identified support from the father of the unborn baby and her own mother as most important during pregnancy.
Social Support: Motherhood. At 6 weeks after the birth of the baby, results of the Social Support Behaviour Inventory (SBI) found no association with higher maternal-infant attachment scores and no relationship was found with other social support variables, the number of supportive people, support from mother, father or partner. At 6-12 months no relationship was found between social support and maternal-infant attachment scores or the other social support variables. These findings are at odds with some of the literature. The lack of an association between social support and maternal-infant attachment may appear to contradict literature which suggests the importance of social support as an important predictor to facilitate positive maternal-infant attachment. It is also at odds with the positive relationship found in this sample while still pregnant. Adolescents in this study, however were generally affiliated with supportive networks such as being in school, further education centres, work place and receiving assistance from health care agencies and social services apart from family and peer support.

Social support has been found to have an influence on adaption to motherhood by the adolescent and the development of parent-infant interaction and reciprocity. Available social support predicts a more positive attitude of the adolescent mother towards her infant as well as a sense of competence in the role of motherhood (Dormire, Strauss & Clarke, 1988) and improving maternal-infant interaction and attachment (vonWindeguth & Urbano, 1989). Perceived support was found to be a frequent predictor of maternal-infant attachment and had either direct or indirect positive effects (Mercer & Ferketich, 1990).

Social support given to the adolescent mother is an important
factor in buffering parenting stress (Richardson, Barbour & Bubenzer, 1995) thus enhancing maternal-infant attachment. Some research has identified the father of the baby, rather than family or friends as a significant source of support for the adolescent mother, and having an impact on positive maternal-infant attachment (Bloom, 1997; Thompson, 1986) while other studies have found no relationship. Social and emotional support from peer relations is sometimes perceived as more important to the adolescent mother than family support, and isolation from peers has been cited as having a negative impact on parenting (Richardson, Barbour & Bubenzer, 1995). The adolescent mothers in the current study spoke of the loss of friends and expressed the hurt they felt from this occurring. Rural adolescents have less opportunity for social interaction and often no transport or access to public transport.

Social support was found to be a positive factor in relation to attachment in pregnancy but not in early motherhood at 6 weeks or at 6-12 months after the birth of the baby in the current study.

5.1.5 Attachment: Parenting Sense of Competence

The results using the Parenting Sense Of Competence Scale (PSOC) it was found that positive parenting sense of competence was associated with high self esteem and positive maternal-infant attachment at 6 weeks and 6-12 months after the birth of the baby. There is an obvious link between parenting sense of competence and self esteem. However, to assess for self esteem on its own may have been insufficient for the current study. Rosenberg’s Self Esteem Scale did not detect self esteem to be associated with higher maternal-infant attachment scores at 6 weeks although it was a factor at 6-12 months.
These findings are supported by some literature which found higher self esteem is a good indicator of the adolescent mother's competence as a parent and a predictor of positive parenting (Hurlburt, Culp, Jambunathan & Butler, 1997) thus enhancing positive maternal-infant attachment. Mercer and Ferketich (1990) found that parenting competence and high self esteem were major predictors of maternal-infant attachment in the first week and eight months after the birth of the baby for both high and low risk pregnant women. In a study comparing high risk with low risk pregnant women in relation to attachment and parenting sense of competence at one, four and eight months after the birth of the baby, it was found that maternal competence scores did not differ significantly at any test period although higher attachment scores were reported for the high risk women during hospitalisation (Mercer & Ferketich, 1994b). Confidence in being able to care for the baby was frequently associated with maternal-infant attachment and the mother's responsiveness to the baby (Crouch & Manderson, 1993). In other research, however, no correlation between adolescent perceived maternal role competence and infant care taking was found. This suggested that perceptions and attitudes are inconsistent with behaviour (Julian, 1983).

The current study found that parenting sense of competence is an important predictor for high maternal-infant attachment scores. Further parenting sense of competence and self esteem are related and both predict for maternal-infant attachment, thus enhancing the outcome for the infant and having a positive impact on future life. Possibly, both the Parenting Sense of Competence Scale and the Rosenberg’s Self Esteem Scale were needed in the current study.

The next section discusses postnatal depression in adolescent
mothers at six weeks and 6-12 months after the birth of the baby.

5.1.6 Attachment: Postnatal Depression

The results from this study using the Edinburgh Postnatal Depression Scale (EPDS) found that 20% of 68 adolescent mothers were exhibiting symptoms suggestive of postnatal depression at 6 weeks after the birth of the baby. For the 6-12 months 27% of 113 adolescent mothers exhibited symptoms suggestive of postnatal depression. These results reveal a higher incidence than that identified in the literature, usually 12-14% overall, in all mothers (Morse, 1993). One of the few studies examining depression among adolescent mothers found 14.9% depressed at the time of the birth of the child and 17.48% at one year postpartum (McKendry, Browne, Kotch & Symons, 1990). Both sets of data regarding adolescent depression are therefore in excess of the incidence cited by Morse (1993).

The Edinburgh Postnatal Depression Scale was preferred in this study for its perceived sensitivity and specificity to identify a depressed mood postnatally. Other depression instruments have been found to be unsuitable for the screening of postnatal depression because of their emphasis on somatic symptoms of psychiatric disorders. With such a high rate of adolescents in the current study with symptoms suggestive of postnatal depression, could the Edinburgh Postnatal Depression Scale over-predict for postnatal depression? However, it may be sensitive and accurate in predicting depression in the postnatal period. Further, is it an appropriate screening for use with adolescent mothers? Further research is needed to answer these questions.

Those adolescent mothers in the clinical range for depression 6 weeks after the birth of the baby still had depression at 6-12 months. A
study of adolescent postnatal depressive symptomatology found that those adolescent mothers with depressive symptoms at one month predicted depressive symptoms at six months (Sharps, 1988). Adolescent mothers who were depressed at the time of the birth of the baby were found to be depressed at one year postpartum (McKendry et al., 1990). These studies support the findings of the current study. These findings suggest that adolescent motherhood may significantly increase the risk for depression. No relationship was found between postnatal depression and infant feeding style (breastfeeding or bottle feeding).

The current study found that as support from the adolescent’s own father and the amount and quality social support decreased, symptoms suggestive of depression increased for the adolescent mother and lower infant attachment scores were reported. This suggests that adolescent mothers who have a supportive father are less likely to experience postnatal depression and more likely to have greater maternal-infant attachment scores. This perception of the adolescent’s relationship with her own father is important. Self esteem also decreased as depression increased. These findings have been supported by a study conducted by Koniak-Griffin, Walker & de Traversay (1996) on the predictors of depressive symptoms in pregnant adolescents. They identified an association between poor self esteem, inadequate levels of social support and depression. Mothers with low self esteem were 39 times more likely to experience high depressive symptoms than those with high self esteem according to Hall, Kotch, Browne & Rayens (1996), while adolescent mothers who received significantly more support from their mother than their father had lower levels of depression (Davis, Rhodes & Hamilton-Leaks, 1997). Support from a male partner, caseworker contact
and being part of a support group decreased psychological distress and depression in a group of black adolescent mothers (Thompson & Peeble-Wilkins, 1992), demonstrating the importance of social support in reducing depression.

Most studies that examine depression focus on the adult mothers rather than the adolescent mother or non childbearing adolescents (Koniak-Griffin, Walker & de Traversay, 1996) making these findings particularly important as there are few studies with which to compare the current study.

Maternal depression is well documented as having an impact on maternal-infant attachment behaviours and a moderate to high adverse effect on mother-infant interaction (Beck, 1998) supporting the current study which found that as depression scores increased, maternal-infant attachment scores decreased. Depression has a negative effect on parenting and the outcomes for the infant of the adolescent mother, (Hurlburt, Culp, Jambunathan & Butler, 1997) and long term adverse effects on maternal-infant bonding (Morse, 1993).

A number of risk factors for postnatal depression have been identified. These include: young age, unplanned pregnancy, no partner when the baby arrives, economic demands, not ready to resume the role of mother, demands of mothering, sleep deprivation, twenty four hour care of an infant, demands of the infant, no experience with child care, stressful life events, loss of social support from partner, family or friends, lack of control over life, restrictions, loss of freedom, no time to oneself, loneliness and isolation (Beck, 1998; McIntosh, 1993; Morse, 1993).

Comments made during the interviews revealed that many of the adolescents in the current study experienced a number of these risk
factors. Findings from the current study that 27% of the adolescents were experiencing symptoms suggestive of depression are a cause for concern, given that it is double the rate of that identified in some literature. Although one study (McKendry, Browne, Kotch & Symons, 1990) which examined depression in adolescents during pregnancy and motherhood found a higher percentage than that suggested for the overall population. This area needs further investigation as adolescent mothers may be at greater risk of symptoms suggestive of depression than the overall population.

5.1.7 Attachment: Motherhood Orientation

The results from this study using The Facilitators and Regulators Questionnaire (FRQ) found no relationship between maternal-infant attachment and motherhood orientation at 6 weeks and 6-12 months after the birth of the baby. However, the low reliability of this scale brings the usefulness/validity of The Facilitators and Regulators Questionnaire (FRQ) into question. Most adolescent mothers (60%) fell into the Facilitator Groups, at 6 weeks after the birth of the baby. At 6-12 months most adolescents (57.6%) remained in the Facilitator Groups. At 6 weeks there were no adolescent mothers in the Regulator Group although at 6-12 months four adolescent mothers were in the Moderate Regulator Group.

Raphael-Leff (1993), identifies a Facilitator as more likely to adapt to the baby while the Intermediate Group negotiates and the Regulator expects the baby to adapt. The Facilitator is most likely to welcome the baby’s dependence upon her, often dedicating herself to this cause, craving total immersion in her baby. Many of the adolescent mothers in the current study reflected these attributes in the interview with
comments such as “my baby depends on me and I depend on her”, “whatever she makes of it”. Having a baby can be exciting for the Facilitator (Raphael-Leff, 1993) and this was supported by the findings of the current study.

An Israeli study found that a Regulator orientation was more common among first time adult mothers (Scher & Blumberg, 1992). These findings do not support that of the current study, however there may be a difference between i) Israeli vs Australian mothers and ii) adult and adolescent mothers in relation to orientation of motherhood.

A study related to the vulnerability to postnatal disturbance found that the Regulator is more likely to experience undermined self esteem, depression and concern at the baby’s incessant demands upon her as she attempts to establish a routine for the baby. The Facilitator is less likely to experience depression (Raphael-Leff, 1985).

There is limited research literature using this assessment instrument for motherhood orientation and none was located in relation to adolescent mothers. Further, the use of this instrument in the current study elicited a Cronbach alpha of .35, suggesting poor validity and reliability as a Coefficient of reliability of 0.70 or higher are desirable. The validity of an instrument is limited by its reliability. Further it may not be appropriate for assessment of adolescent motherhood orientation, although further research needs to be conducted in this area. It was not as useful as it promised to be for this study.

5:2 OTHER PSYCHOSOCIAL FACTORS

5.2.1. Characteristics: Pregnant Adolescents

This study focussed on attachment but also aimed to document the psychosocial issues of pregnant adolescents in a large Australian rural
area. A proportion of the adolescents in this study were doing well psychosocially in their pregnancy. These adolescents generally had high self esteem, were less likely to smoke, were employed or engaged in education, had good social support and were in a steady relationship for two or more years, had a partner who was similar in age, and lived with the partner or with family. This group was more likely to have planned the pregnancy, to have a mother who was pregnant in adolescence, to have a supportive father and to have more education. For example, one 18 year old was married to a 19 year old and already had one child, had a very supportive mother and father who lived close by, had finished high school and was doing further education.

Conversely, some adolescents were in a prognostically poor group. These adolescents were more likely to smoke and to have poor self esteem, have poor social support and be single, to live alone or with friends, and to have either no partner or to have been with one for a shorter time, and for there to be a greater disparity in age between themselves and their partner. For example, one 19 year old reported that she felt “trapped” by her pregnancy and was very unsure about whether she could “handle being a mother”. Her partner at the time was 26 years old (although not the father of her unborn baby), and she suffered very poor self esteem and guilt over being “forced” by her family into having a previous termination. She was unemployed and had dropped out of school in year 11.

It is of social concern that the fathers of some of the babies were much older than the mother. A number of studies have identified this phenomenon (Lindberg, Sonenstein, Ku & Martinez, 1997). Bloom (1997), reported the age range of the father as 14-34 years, while Hardy,
Duggan, Masnyk & Pearson (1989) reported the age range for the father as 14-50 years. Larson, Hussey, Gillmore & Gilchrist (1996), found 27% of adolescents aged 15-17 years of age had a partner at least five years older than themselves. Taylor, Chavez, Cabra & Boggess's (1997), study found adult fathers aged 20 to 30 years were responsible for 49.2% of births to adolescent mothers aged 14 to 17 years. Further, adult males aged 20 to 60 years fathered 51.8% of infants to adolescent mothers aged 16 to 17 years. These studies support the findings of the current study for the older age of the father of the baby. The current study found that 40.5% were aged 20-24 years, 16.5% were aged 25-29 years and 20.7% were aged 30-45 years of age with only 32.2% adolescent fathers, aged 16-19 years.

Some studies found these older fathers “tend to be controlling, self absorbed, and likely to use violence in problem solving” (Clarke, Kenny, Waterlow & O’Sullivan, 1995, p. 250) having a profound influence on the adolescent mother and creating loss of locus of control. It was not unusual in this group for the pregnancy to be unplanned and for there to be other children, and for the mother to have had less education, to have a less supportive father and for her own mother to be less likely to have had a pregnancy during adolescence. The current study also found domestic violence and older partners an issue with three partners incarcerated for breaching Apprehended Violence Orders. Seventeen (15%) adolescent mothers were involved in domestic violence issues and a further twenty nine (26%) spoke of conflict in their relationship.

In general, those pregnant adolescents who had supportive families and partners, and lived at home or with their partner had the best prospects for their transition to motherhood. The role of the pregnant woman’s father in general is a widely neglected area in
maternity research, but clearly deserves greater attention. Also of interest was the large number of pregnant women who had mothers who were themselves pregnant as adolescents, which is consistent with other research. A Baltimore study investigating patterns of early childbearing in two generations conducted by Furstenberg, Levine and Brooks-Gunn (1990) found a direct comparison of the daughters who became adolescent mothers with their own mothers at a comparable age. Kiernan, (1997), used longitudinal data on adolescent parents from the National Child Development Study in Great Britain to investigate the social, economic, and educational backgrounds. Findings reveal that adolescent mothers were more likely to have mothers who had a child during adolescence. Another study by Manlove (1997), using nationally representative data from Great Britain examining the fertility patterns of daughters of adolescent mothers found that daughters of adolescent mothers were more likely to have a baby in their adolescent years or early twenties. These three extensive studies found a "direct link" between adolescent pregnancy and the mother pregnant as an adolescent support the findings of the current study. Raphael-Leff (1991) suggests that intergenerational role modelling may be influencing the decisions of some of the adolescents with regard to early pregnancy and childbirth, and may also represent a premature attempt to achieve an adult identity. This may also be the case in the current study as well. Although most (74%) pregnant adolescents stated they had not planned their pregnancy. The current study reveals that 82% of adolescents were using some form of contraception, either the pill or condom. The question then arises, did they take adequate precautions to prevent an unplanned pregnancy, or did they choose to reply in a socially acceptable way?
Five (4%) pregnant adolescents were in a conflict relationship with their mother and this was expressed in the recorded interviews. Perceived lack of support received from the mother of the adolescent during pregnancy improved in some cases once the mother had adjusted to the news of the pregnancy, and also after the birth of the baby. With some mothers and adolescent mothers there continued to be conflict between them even at the last interview, 6-12 months after the birth of the baby. If there is conflict between the mother and daughter this then results in a decline of psychological support and important information that the mother may be able to give to her daughter as she proceeds through pregnancy and then on to motherhood. The current study found that social support influenced maternal-foetal attachment but not maternal-infant attachment. Koniak-Griffin (1988) found total functional support and total size of support network significant predictors of maternal-foetal attachment in pregnant adolescents. Further, Thompson (1986) believes that support from the adolescents mother is important in assisting with decisions in the prenatal period, returning to school, care during the postnatal period and care of the new infant. This support then enhances attachment and personal development of the adolescent.

5.2.2 Maternal Birth Outcome

For obstetric outcome and infant characteristics the study sample was found to be representative of all adolescent births in New South Wales for the same collection period. The type of delivery was different as there was a higher rate of forceps, forceps rotation delivery for the study sample. This rate was influenced by the hospital not having vacuum extraction delivery equipment during the collection period. Further, elective and emergency caesarean rates were also greater than for
New South Wales. Increased delivery intervention rates may have been influenced by those who were pregnant for the first time and those pregnant for the second time but had no children (81.5%). The findings from this study found no relationship between obstetric outcome, delivery type and infant characteristics and either maternal-foetal or maternal-infant attachment. These findings do not support those studies which have identified pregnancy and childbirth complications as having either a positive or negative/delayed influence on maternal attachment to the baby in pregnancy or early motherhood (Ferketich & Mercer, 1990; Mercer & Ferketich, 1990; Rubenstein, Panzarine & Lanning, 1990).

Support from professional care givers was identified and nominated as important by the adolescent during pregnancy and motherhood in this study. This support may have influenced positive attachment, as some studies have revealed a link between support from care givers and the reduction of pregnancy and childbirth complications (Hodnett, 1998b).

Professional care givers during pregnancy for the adolescent were perceived as supportive to very supportive (range 0.13 to 3.75), the Priest/Minister having the lowest score of 0.18 with the Midwife having the highest score of 3.09. In relationship to support from professional care givers, at six weeks after the birth of the baby, overall support was perceived by the adolescent mother as supportive to very supportive. The School Teacher had the lowest score of .13 while the Early Childhood Nurse had the highest score of 3.75. However, the professional caregiver's support continued to be perceived by the adolescent mother as supportive to very supportive, with the highest score designated to the Local Doctor, 1.66 and lowest to the Midwife and School Counsellor, .21 for both. Not
all adolescents were exposed to every professional caregiver during pregnancy, motherhood at 6 weeks or 6-12 months, however it provides an important glimpse of the adolescents perceived support of professional care in the community. Support is an important factor in enhancing the adaption of the adolescent mother to the parental role and reducing the risk of depression. Support directed towards the adolescent may not be perceived by the adolescent as support. In fact support from various others may have remained unchanged overtime but perceived differently by the adolescent. It is obvious from the data that at 6-12 months after the birth of the baby that at least 4 (3.5%) adolescents who nominated School Teachers as supportive were continuing with their education. Of concern is that the Early Childhood Nurse, who cares for the adolescent during motherhood, was scored much lower by the adolescent mother at this time. This suggests that the support needs to be in a form that the adolescent mother perceives as accessible, helpful or beneficial. Studies need to investigate what the adolescent mother actually wants in the way of support required.

5.2.3 Breastfeeding

On discharge from hospital, 100 (86%) out of 116 adolescent who birthed at Wagga Wagga Base Hospital, including two adolescents with sets of twins, were breastfeeding. At the 6 weeks interview of 68 adolescent mothers, 9 were breastfeeding, representing 13%. At the 6-12 month interview, of the 113 adolescents interviewed, only one was breastfeeding. The remaining adolescents were bottle feeding their babies on formula. There are no rural total population studies of either adult or adolescent mothers with which to compare the results of the current study to determine percentage of breastfeeding vs bottlefeeding mothers.
The results reveal that there was no relationship between maternal-foetal attachment and maternal-infant attachment to feeding method for each interview period. A number of studies found that mothers who breastfeed their newborn baby in the first 28-90 hours and are still breastfeeding six weeks later appear to exhibit more behaviours which suggest optimal maternal-infant attachment than do mothers and infants who terminate breastfeeding within the first six weeks (Brandt, Andrews & Kvale, 1998; Lawson & Tulloch, 1995). Breastfeeding is considered to establish a more direct and intimate biologic relationship between the infant and the mother, thus is more likely to influence quality maternal-infant interactions and attachment, building a foundation for a positive relationship between the mother and infant (Renfrew, Fisher & Arms, 1990). While some studies focus on the advantages of breastfeeding in relation to enhancing closeness and improved bonding, not all studies support the view of the importance of breastfeeding as the essential element for greater bonding between the mother and the baby (Crouch & Manderson, 1993).

Reasons suggested for a lower rate of breastfeeding in adolescent mothers have included their self consciousness, preoccupation with the maturing body and self image complicated by the physical and physiological changes associated with pregnancy and lactation (Littlejohn, 1992). A lack of accurate knowledge about breastfeeding has been cited as one of the reasons few adolescents elect to breastfeed (Mercer, 1986). Other literature identified that breastfeeding may be perceived to be simply distasteful, disfiguring to breasts, confining and too tiring, while some mothers feel too shy to expose their breasts or dislike their own body (Renfrew, Fisher & Arms, 1990). Some adolescents feel when
breastfeeding that their body is no longer their own to do with as they please, and that sexuality and freedom may be curtailed (Raphael-Leff, 1994).

This study identified a high rate of adolescent mothers who smoked and this factor has been well documented in the literature as having an influence on continuing to breastfeed. Bodribb (1990, p. 143) comments "few smokers at any socioeconomic level continue to breastfeed for three months."

Another factor which may have some importance is the influence of the older partner over the adolescent. A study which reported on the control that some older partners have over the adolescent mother, found a baby was admitted to hospital with failure to thrive as it was fed a diet of strawberry milk drink on the instructions of the father (Clarke, Kenny, Waterlow & O'Sullivan, 1995). It is also interesting to find in the current study that one adolescent was bottle feeding her baby strawberry flavoured cows milk.

A lactation study entitled "Lactation: A Study of Initiation and Continuation in a Rural Centre" was conducted by Dr Geraldine Duncan in Wagga Wagga in 1992-1993. Mavis Smith collected the data for this study on three occasions: i) in hospital prior to discharge, ii) 6 months and iii) 12 months after the birth of the baby. Breastfeeding women identified a need for a Community Lactation Consultant to visit them in the home to assist with breastfeeding problems as many of them did not have transport to services in order to obtain assistance (Duncan, 1995). Possibly this also would be of benefit to adolescent mothers as a way of increasing the duration of breastfeeding rates. This in turn could assist in reducing the financial expenses related to the purchase of formula to feed
their baby.

Twenty (28%) adolescent mothers in the current study commented that the cost of formula was expensive and felt that the government should supply formula free of charge. Their limited financial resources may be used primarily for their own purposes thus creating a monetary deficit for the basic needs of their baby, including milk formula (Stoppard, 1986). While breastfeeding may improve financial resources, and increase self esteem and positive maternal feelings, thus enriching maternal-infant attachment, an overemphasis may exert a negative effect. It is therefore important to support the adolescent mother in her decision of feeding style and provide information and education on appropriate feeding practices for the good nutrition of the baby.

The next section discusses the limitations of the study in relation to attachment assessment instrument and other issues identified from the study.

5.3 STUDY LIMITATIONS

The following two sections discuss the use of the instruments used in this study to assess maternal-foetal and maternal-infant attachment.

5.3.1 MFAS And PAI As An Outcome Measure

Strong validity and reliability of the Maternal-foetal Attachment Scale are reported by Cranley (1981a, 1984). However concerns about the "validity of the instrument and its ability to represent the dimension of prenatal attachment" have been expressed (Muller, 1992, p. 18). Many studies using the Maternal-foetal Attachment Scale have revealed inconsistent and sometimes conflicting results. Validity is supported when the outcomes of the research are "consistent with the theory supporting a construct" (Muller, 1992, p. 14).
Further shortcomings related to the scale are identified by Cranley (1992, p. 23). The first is that “subscales while relating to to her variables, have never been shown to have satisfactory reliability estimates”. However, Cranley (1992) believes that the Maternal-Foetal Attachment Scale (MFAS), despite its shortcomings does measure behaviour and feelings of the mother towards her unborn baby but she cautions against using the subscales separately. However, the current study found that when items associated with foetal movements were removed from the Maternal-Foetal Attachment Scale (MFAS), the correlation of the remaining items with gestation was non significant. This then suggests that the MFAS may be measuring the effect of gestation rather than maternal-foetal attachment. This further suggests that there may be a problem with the inclusion of items that relate more to physical gestation rather than psychological factors. The qualitative data in conjunction with the MFAS score in the current study suggests that maternal-foetal attachment is associated with the progression of gestation rather than attachment.

The Prenatal Attachment Inventory (PAI) was developed by Muller (1993) to measure maternal attachment. It was used as a second instrument to check the validity of the Maternal-Foetal Attachment Scale (MFAS). In the current study the Maternal-Foetal Attachment Scale (MFAS) was compared to the Prenatal Attachment Inventory (PAI) during pregnancy and the correlation was found to be highly significant, which suggests that both scales were measuring the same thing. Maternal-foetal attachment increases over time with progression of gestation. Further, as the PAI is a recent instrument and has not been extensively used in studies it is difficult to determine whether it may
have some of the same problems as the MFAS.

5.3.2 FAB And MAI As An Outcome Measure

The Leifer (1977) How I Feel About My Baby Now Scale (FAB) developed to measure maternal attachment has been cited as one of the two most commonly used instruments in nursing studies (Coffman, 1992). A study into maternal-infant attachment found shortcomings in using the FAB self reported measure, suggesting that social desirability may influence high scores. These researchers also question whether a bond of love is measurable (Mercer & Ferketich, 1994).

The Maternal Attachment Inventory (MAI) was developed to measure maternal attachment and demonstrated evidence of validity through significant correlations with the How I Feel About My Baby Now Scale (FAB) and was found to have internal consistency and reliability at three time points, one month, four and eights months after the birth of the baby (Muller, 1994).

The How I Feel About My Baby Now Scale (FAB) has been extensively used in research while the recently developed Maternal Attachment Inventory (MAI) has had limited use.

In the current study the How I Feel About My Baby Now Scale (FAB) was compared to the Maternal Attachment Inventory (MAI) at six weeks and 6-12 months after the birth of the baby and the correlation was found to be highly significant, which suggests that both scales were measuring the same thing.

5.3.3 Other Limitations

Some of the adolescent mothers were difficult to locate and were interviewed between 6-12 months. The results may have been different if the group were interviewed at the same time after the birth of the baby.
The range in time may have affected the responses of the adolescent to the instruments used.

A possible limitation of the present study is that it did not include adolescents accessing privately-funded antenatal services. However, the private hospital servicing the study area reported only one pregnant adolescent using their services during the study data collection period (Pat Irilli, Medical Records, Calvary Hospital, personal communication, 09.03 98), which suggests that at least for this area the sample can be considered representative of those adolescents who decided to continue with their pregnancy.

This study had limitations in that it did not investigate a sense of mastery, the extent to which a person has control over one’s life as opposed to fate. The adolescent’s sense of mastery could well be relevant to this study as perceived sense of control has been associated with cognitive adaption in motherhood (Ferketich & Mercer, 1990).

A further possible limitation of the present study is not using an instrument to assess anxiety. During pregnancy the woman is sometimes more readily anxious, often with greater intensity. She may be emotionally labile with an altered sense of self. Lindeberger (1987, p. 181) describes this aspect, “the mere idea of “carrying a child” and the extreme value of the unborn can produce anxiety in many pregnant women”. Some research has found that the adolescent mother may experience more stress and anxiety in raising her child than an adult mother (Lindeberger, 1987), thus maternal-foetal attachment and maternal-infant attachment may be compromised.

Another limitation of the study was possibly the lack of a control or comparison group, for example adolescent and adult women during
pregnancy and early motherhood, rural versus urban adolescents, Australian adolescents versus American adolescents. It is acknowledged that a sample including other groups may have offered vastly different findings. Further, the researcher of the current study was unable to locate literature on either Australian rural or urban adolescents with which to compare the correlates of attachment.

The key findings of the current study would therefore appear to be depression in adolescent mothers (27%) as having a negative influence on attachment to the infant. Further, parenting sense of competence at both 6 weeks and 6-12 months was associated with positive maternal-infant attachment while social support only influenced attachment during pregnancy. Self esteem only at the 6-12 month motherhood interview appeared to influence maternal-infant attachment. Serendipitous key findings were associated with 55% adolescents smoking during pregnancy. One hundred (86%) adolescent mothers were breastfeeding on discharge from hospital but by 6-12 months after the birth of the baby only one was breastfeeding. Adolescents (82%) were either using the pill or condom to prevent pregnancy, thus contraceptive failure was an issue. The father of the adolescents' baby was more likely to be much older, in fact 68% were aged 20 to 45 years and domestic violence was an issue with seventeen (15%) adolescent mothers involved in court hearings and a further twenty nine (26%) reported living in a conflict relationship. The final key finding is associated with living in a rural area.

5:4 IMPLICATIONS FOR FURTHER RESEARCH

The purpose of this study was to investigate the psychosocial correlates of attachment in adolescents living in a rural area during
pregnancy and early motherhood. While caution must be taken in generalising the findings of this study, the results may provide information that can be used in specific planning and implementing care for the pregnant adolescent as it has identified a number of areas that require further investigation and research.

There is limited information in the literature in relation to psychosocial correlates of attachment in adolescents during pregnancy and early motherhood. More research is needed related to the complex issues of adolescent psychosocial development, maternal-foetal attachment in the pregnant adolescent, maternal role attainment, maternal-infant attachment in adolescent mothers, depression and the influence of attachment across the lifespan.

5.4.1 Depression

Of concern is the high incidence of depression in adolescent mothers identified in this study. As social support and self esteem decreased, postnatal depression increased and had a negative affect on maternal-infant attachment as measured by the How I Feel About My Baby Now Scale (FAB). More research is required into adolescent mothers with postnatal depression and also those living in rural areas and the difficulties they face in accessing services. Further information is required concerning identifying ways of reaching this population and supporting those who are depressed. Research into symptoms suggestive of postnatal depression in adult mothers living in rural areas identified the need for home based support in the form of access to telephone counselling and home visits by maternal and child health nurses and other services associated with child care and home help (Griepsma, Marcollo, Casey, Cherry, Vary & Walton, 1994). Similar services may
benefit adolescent mothers.

5.4.2 Social Support

A relationship was found between lack of support from the adolescent mother's own father, the amount and quality of social support suggesting the need for further investigation of this subject. These findings are confirmed by other studies identifying lack of support as a risk factor for postnatal depression (Barnett, 1990; Ferketich & Mercer, 1990; Williams & Searle, 1989) and the importance of support from the father of the adolescent (Smith, 1995). Other risk factors such as, young age of the pregnant female, unplanned pregnancy or no partner identified by these authors were not found to have an association with postnatal depression in this study. Thus much more information is required in relation to adolescent postnatal depression as very little literature is available targeting this age group.

5.4.3 Smoking

No relationship was found between smoking in either pregnancy or motherhood to attachment. However, the finding that over half of the sample currently smoke is also a cause for concern in itself, and suggests that maternity and adolescent groups need to particularly target this group with smoking cessation programs. Further investigation is needed to identify issues specific to the pregnant adolescent or adolescent mother that influence them to smoke. This may then assist with the development of an appropriately structured cessation intervention program to meet the needs of the adolescent.

5.4.4 Breastfeeding

Further information is needed to address the issue of breastfeeding and the adolescent mothers failure to continue with breastfeeding once
they leave the care of the hospital. Based on the information found in the literature on breastfeeding practices, older women are not only more likely to begin breastfeeding their infants but usually continue longer than younger women. It is believed that adolescent mothers lacked knowledge about the benefits of breastfeeding and are therefore less likely to commence breast feeding or to continue with breastfeeding (Mercer, 1986). Further the adolescent mother may feel that breastfeeding "ties me down" and prefers to bottle feed so that others may take over some of the care of the baby and allow some free time independent of the baby. Assessing why adolescent mothers are less likely to breastfeed their infants is beyond the scope of this study.

5.4.5 Contraceptive Failure and Older Partner

Other interesting findings from this research identified that only 26% of the pregnancies were planned with 82% of adolescents using either the contraceptive pill or condom. Further, it is a cause for concern that one third of the partners were adolescents while the remaining were 20 to 45 years of age (68% were between 25 and 45 years). Additional research is needed to improve our understanding of adolescent unplanned pregnancy, contraceptive failure and why adolescent females engage in sexual relationships with men significantly older than themselves. Further, domestic violence involving adolescent mothers needs to be investigated.

5.4.6 Rural Issues

Research needs to address specific issues associated with the pregnant adolescent or adolescent mothers living in a rural area such as isolation, lack of services, lack of specialised services, lack of transport to services, lack of finance or costs associated with transport to access
required services or support services. In fact, this study was carried out on Australian rural adolescents and there was not an urban control group. It was not practical to compare a rural and urban sample because of the geographical distance involved. However, it would have been useful to do so.

Continued research of the psychosocial correlates of attachment in adolescents in pregnancy and early motherhood will provide greater understanding of the subject, thus providing information to plan and implement programs specific to this population.

5:5 CONCLUSIONS

The current study found that maternal-foetal attachment scores increased as gestation progressed and for twelve (10%), foetal movements and seeing the unborn baby on ultrasound suggests an association to the high maternal-foetal attachment scores they achieved.

The total number of perceived supportive people and quality of social support had an influence on increased maternal-infant attachment scores at 6 weeks after the birth of the baby and a moderate association with maternal-infant attachment at 6-12 months.

Parenting sense of competency was associated with elevated self esteem and positive maternal-infant attachment by the adolescent mother at 6 weeks and 6-12 months after the birth of the baby.

A high incidence of the symptoms suggestive of postnatal depression was identified in this study of adolescents early in motherhood, at six weeks and at 6-12 months. As self esteem and social support decreased, depression increased and the adolescent mother scored lower on the infant attachment scale.

This chapter has discussed and interpreted the results of this study
in relation to the psychosocial correlates of attachment in rural adolescent pregnancy and early motherhood. The next chapter presents implications for midwifery and nursing practice.
CHAPTER SIX

IMPLICATIONS FOR MIDWIFERY AND NURSING PRACTICE

This study has revealed issues which have either a direct or indirect impact on attachment in rural adolescent pregnancy and early motherhood. Other issues identified by the rural adolescent provide insight into the perceptions and views of their experience in pregnancy and motherhood. The information gained from this study is invaluable and will assist midwives and other health care professionals in planning and implementing care for the adolescent living in a rural area. Midwives are in a unique position as they are able to provide antenatal education during pregnancy and postnatal care after delivery. There is a need for the midwife to carefully assess the needs and attitudes of the rural pregnant adolescent. The midwife in the early postpartum period needs to be perceptive and sensitive to the adolescent mother, particularly those who are in a risk group for depression.

The next section addresses issues that have not previously been the domain of the midwife, however they impact on the health and future well being of the young female adolescent. This will then be followed by the areas of care that the midwife is directly involved in with regard to the adolescent during pregnancy and early motherhood.

6:1 IMPLICATIONS FOR MIDWIFERY PRACTICE

Midwives need to be proactive in improving the health and well being for the adolescent pre pregnancy, and during pregnancy and early motherhood. There are a number of areas identified in this study that need involvement by health professionals such as Midwives, Family Planning Nurses and Early Childhood Nurses.
6.1.1 Pre Pregnancy

The high rate of adolescent pregnancy in this rural area suggests the need for improved sex education by a Midwife/Family Planning Nurse in schools. Health professionals can provide clear, accurate information on adolescent sexuality and guidance about how to avoid pregnancy, different methods of contraception, emergency contraception and the services that supply contraception. Possibly midwives could actively seek to be involved in providing sex education in schools commencing in late primary levels.

Problems involving contraception need to be addressed. The rural adolescent needs information on the effective use of whatever contraceptive method is chosen in order to protect herself against pregnancy and sexually transmitted diseases. This study found that contraceptive failure occurred through inappropriate use, for example, forgetting to take the pill one night then taking two the next night. Adolescents did not know that taking some medication such as antibiotics, or a bout of diarrhoea or vomiting rendered contraceptive coverage ineffective. An unplanned pregnancy may comprise maternal-foetal attachment and future maternal-infant attachment.

Adolescents need to be realistically informed about the ongoing demands of motherhood. The program, “Baby Think it Over” (Virtual Parenting, 1994) could be used as part of the rural school education on the care of the newborn baby. This program involves the adolescent caring for a computerised doll that cries at random realistic intervals, allowing the carer to explore the physical, psychological and social aspects of motherhood.

Most programs focus on assisting adolescents once they become
pregnant or mothers. The views of the researcher of this study in promoting programs to prevent or delay adolescent pregnancy are supported by literature. Montessoro and Blixen (1996), identified that countries with a lower rate of adolescent pregnancy and childbirth have a policy of consistent sex education, contraception and affordable health care. This suggests that consistent sex education lowers adolescent birthrates. In the current rural setting this needs to be investigated, to assess whether current sex education programs are adequate, providing clear information on contraception, and whether this information and contraception is accessible to the adolescent.

The next section presents the implications of professional practice in relation to adolescent pregnancy.

6.1.2 Pregnancy

Young people often present late during pregnancy or do not attend mainstream services as they feel intimidated by other adults. During the interviews for this study a number of adolescent mothers stated they did not return to the Early Childhood Centre after adult mothers commented to them that they were too young to be a mother. These attitudes undermine the self esteem and confidence of the adolescent and may influence attachment to the baby. The need is evident for an adolescent-only health service with a drop-in component to be established where adolescents pre pregnancy, pregnancy and motherhood could access a team of health workers to enhance physical and psychological well being of the adolescent and her baby. The personnel would need to be specifically skilled to meet the adolescents’ needs and provide programs in all aspects of preventing pregnancy, pregnancy and motherhood.

The midwife and other health professionals need to provide a
family-centred approach, actively involving not only the pregnant adolescent but also her family. She also needs to be able to assess the gap between the support desired by the pregnant adolescent and the actual available support.

Prenatal education and childbirth classes should be specific to meet the needs of the pregnant adolescent’s stage of developmental maturity and if necessary the midwife may need to provide information and counselling on a one-to-one basis or do home visits. However, to involve the pregnant adolescent with significant other people in her life, attendance at childbirth classes with other adolescents could enhance and develop further support systems. Involvement in a peer group of other pregnant adolescents provides not only greater support but also more acceptable prenatal care. Prenatal programs can become another source of social support for the adolescent, particularly where families may be unable to provide the support desired by the adolescent. The present research revealed that strengthening social support networks may promote higher levels of maternal-foetal attachment. Research has identified that specialised prenatal adolescent programs enhance positive perinatal outcomes and thus lead to a reduction in pregnancy and birth complications (Slager-Earnest, Hoffman & Anderson Beckmann, 1987).

Even although the current study did not identify a link between maternal-foetal and maternal-infant attachment, maternal-foetal attachment has been identified by other studies as an important aspect of the developmental tasks of pregnancy and may influence maternal-infant attachment. Early exchanges between the mother and her infant provide a positive foundation on which to build relationships across the lifespan. Prenatal classes provide the opportunity for the midwife to promote
maternal-foetal attachment concepts by weaving these concepts into teaching about parenting as well as about labour and delivery. Methods for developing a relationship with the unborn baby such as stroking or patting the abdomen, talking to the foetus, feeling and identifying foetal parts and keeping a journal, can be facilitated and explored during these classes.

The midwife’s antenatal clinic based within a hospital provides a personal service to the pregnant adolescents attending prenatal care and childbirth classes. Findings from this study show that pregnant adolescents perceived the midwife as someone they could talk to about their pregnancy. There is a clear need for midwives to maintain and increase their profile as carers of pregnant women. The pregnant adolescent needs to feel comfortable with the contact she has with midwives in all aspects of care. She needs to be provided the opportunity and be allowed the freedom to discuss situations and fears. By developing a trusting relationship with the pregnant adolescent the midwife can encourage, assist and provide guidance in pregnancy, thus increasing maternal self esteem and self confidence, a factor found in research to be predictive of maternal-foetal attachment.

Another issue identified by this study was the high rate of pregnant adolescents who smoked. The midwife is in a unique position to implement smoking cessation programs during the antenatal period to encourage cessation or reduction of smoking, in order to enhance the health and well being of the mother and the unborn baby. The midwife may need additional training in facilitation techniques of a stop smoking program as a study conducted in Australia of antenatal clinic staff and some perceived barriers to promoting smoking cessation during
pregnancy found that staff lacked the time and the skills to counsel smokers (Bishop, Panjari, Astbury & Bell, 1998). A study conducted by Gebauer, Kwo, Haynes and Wewers (1998) found that a midwife-managed smoking cessation intervention with further telephone contact may be effective in assisting pregnant women to reduce or cease smoking. Midwives are urged to actively promote smoking cessation during pregnancy.

This section on pregnancy has presented implications for midwives regarding the main issues identified in this study as having an impact on the health and well being of the rural adolescent and the unborn baby and possibly an influence on attachment. The next section presents some of the issues associated with early motherhood.

6.1.3 Early Motherhood

The Early Childhood Nurses provide health care, advice and some infant education for the adolescent mother and her baby until the child attends school. The current study identified that adolescent mothers perceived support from this professional caregiver, declined over time, from 3.7 at 6 weeks to 0.7 at 6-12 months. Further, at 6 weeks, 37 (54%) of adolescent mothers were attending the clinic, while at 6-12 months only 12 (10.6%) attended. Thus a dramatic drop in attendance rates. Perceived support from the Early Childhood Nurse needs further investigation. These findings raise questions such as: i) is the service user friendly?, ii) is the service accessible?, iii) does the service provide information appropriate to the adolescent, taking into account their developmental maturity?, and iv) does the service meet the needs of the adolescent? There is a need for Early Childhood Nurses to increase their profile as carers of adolescent mothers, as through their care and concern they may
be able to enhance the adolescent’s self esteem by building a confident relationship, a factor found in this research to be predictive of positive maternal-infant attachment.

Consideration needs to be given to supporting and assisting adolescent mothers in the early postpartum period to breastfeed and to continue breastfeeding as a way of fostering optimal maternal-infant attachment behaviours.

With regards to the high proportion of subjects with symptoms suggestive of postnatal depression found, Early Childhood Nurses are in a unique position to be sensitive and alert to this condition to assist the adolescent mother through this difficult period. The current study found that symptoms suggestive of postnatal depression have a negative influence on adolescent maternal-infant attachment.

It is a cause for concern that seventeen (15%) adolescent mothers reported living in domestic violence situations or in custody battles over the baby with the father. A further twenty nine (26%) found conflict a feature of their relationship. Most fathers of the baby were much older than the mother. Midwives and Early Childhood Nurses need to be vigilant for indicators of domestic violence as not only the adolescent but also her baby may be at risk. This then may have an influence on positive maternal-foetal and maternal-infant attachment. However, it may also increase maternal attachment. Midwives and Early Childhood Nurses need to support the adolescent in seeking assistance from domestic violence officers or with access to legal advice and possibly a refuge for women.

Currently, in Wagga Wagga, one Adolescent Support Midwife working in a part time position cares for adolescents during pregnancy
and during early motherhood. Her role includes providing support and care, antenatal classes and parenting programs for the many adolescent in this rural community. It is of concern, that for such a high population of pregnant adolescent and adolescent mothers, that there is only a part time midwife available to meet their needs. This limited service places pressure on the midwife who currently spends much unpaid time attempting to care for the adolescents. The midwife position needs to be upgraded to a full time position to more adequately address the issues faced by the adolescent.

The next section provides an overview of the needs of pregnant adolescents and adolescent mothers who live in a rural area.

**6.2 SUMMARY**

There is a need in prenatal assessment to investigate the psychosocial profile of the pregnant adolescent and to provide programs to enhance the quality of life for both the adolescent and her baby, particularly for those having one or more of the prognostically poor factors identified in this study. Pregnant adolescents who live alone or with friends are particularly in need of additional support. Adolescent-only services can go a long way to providing this much needed support, which can include having specifically designated adolescent antenatal checkup clinics. These might ideally be community based, for example attached to a drop in centre. Home visits by a certified midwife for those who are particularly isolated in small rural towns can be an important part of care, similarly adolescent antenatal classes, which can continue into postnatal play and support groups. The midwife may need to organise transportation to the prenatal classes, find a place for the adolescent to live or liaise with a social worker regarding these issues.
These groups can include education and help with self esteem and relationship issues, baby care and first aid, strategies to continue education and training, financial budgeting, healthy nutrition and contraceptive education. The problem of smoking during pregnancy is a cause for concern and indicates that maternity and adolescent services need to target this group for smoking cessation programs.

6.3 CLOSING REMARKS

The aim of this research project was to investigate the psychosocial correlates of attachment in rural adolescents during pregnancy and early motherhood.

The review of the literature presented studies which investigated attachment in adolescents during pregnancy and early motherhood. This important process of attachment in adolescents has implications for maternal-foetal attachment and maternal-infant attachment, which may in turn influence attachment across the lifespan, and attachment transmitted through generations.

The consequence of pregnancy and motherhood for the adolescent is that she is not only involved in the establishment of identity experienced by a first time mother but she is also dealing with the struggle for individual identity with personal autonomy as she negotiates the difficult transition to adulthood.

The pregnant adolescent and adolescent mother needs the support, both physical and psychological, of her family and friends for a positive maternal-foetal attachment and future maternal-infant attachment to occur. Positive feedback and encouragement increases the adolescent’s self esteem which in turn influences positive attachment.

Maternal-foetal attachment is an important developmental task of
pregnancy and it appears that there may be a measurable relationship between the pregnant adolescent and the unborn baby. Further, maternal-infant attachment is an important aspect of the transition to motherhood by the adolescent and is vital to the future well being of the infant.

The journey from adolescence through pregnancy to early motherhood has taken place for these rural adolescents: Subject 32, "He always comes first before anything, that’s about it. I’ve grown up, I’ve become mature and realise there’s more to life than just what there used to be" and Subject 57, "Grown up a lot more than I had been... my life’s changed ‘cause I’ve got a baby to look after, not just myself anymore".

May this journey be one that has been enhanced by midwives and nurses in promoting the physical and psychological well being of the rural adolescent and her baby and supporting a positive a relationship between mother and infant.


References


References


NSW Health Department, NSW Midwives Data Collection, Epidemiology Branch, Confinements by Maternal Age, Wagga Wagga 1988 and 1990 to 1993.


APPENDIX A

Adolescent Pregnancy Consent Form
University of Wollongong
Human Research Ethics Committee

Consent Form

Adolescent Pregnancy Study

Researcher: Mavis Smith
Supervisor: Brin Grenyer
Lecturer
Department of Nursing

This research programme is designed to identify issues related to the pregnant teenager.

Your involvement in this questionnaire and interview may provide valuable information which may help nurse midwives in the care of pregnant teenagers. The information you volunteer may also assist towards my Ph D (Nursing) degree under the supervision of Brin Grenyer in the Department of Nursing at the University of Wollongong.

This interview is to help us learn more about your experience of pregnancy. We will be inviting you to tell us a little about how you are experiencing your pregnancy, the good and the bad, how it is for you. We will ask you to complete some questionnaires, and with your permission we would like to tape record some of the interview to help us remember what you have said so that we can develop an understanding of your experiences along with other pregnant women we have interviewed.

The information you give us will be treated with strict confidence and only the interviewer and lecturer will have access to the questionnaire and tape. Your name will not be used on the tape, nor will you be identified in the results of the study. The tape will be destroyed after a period of 5 years in accordance with the University’s Code of Practice - Research. In the event of any future report your anonymity will be protected by not revealing any personally identifiable information you choose to give us.

If you have any enquiries regarding the conduct of the research please contact the Secretary of the University of Wollongong Human Research Ethics Committee on (042) 213079.

You are free to withdraw from the research at anytime.

I understand that the data collected will be used to help the interviewer and lecturer to learn more about the experience of pregnancy and I consent for the data to be used in that manner.

Signature: .................................................................

Parent/Guardian: .............................................................
(If under 16 years)
APPENDIX B

Adolescent Pregnancy Questionnaire
WAGGA WAGGA
ADOLESCENT PREGNANCY
QUESTIONNAIRE

Compiled by:
MAVIS SMITH

PhD (Nursing) Student
Department of Nursing
University of Wollongong
1996
INSTRUCTIONS: Please tick (✓) a box or provide answer/answers to the question.

1a) Date of Birth _____________________________

1b) What is your age? _________________________ YEARS

2) When is your baby due? _________________ DATE

3) What is your PRESENT marital status?
   1. NEVER MARRIED .................................. □
   2. MARRIED ......................................... □
   3. DEFACTO ......................................... □
   4. SEPARATED ...................................... □
   5. DIVORCED ....................................... □
   6. WIDOWED ....................................... □

4) Which suburb are you living in?
   SUBURB _________________________________

LIVING ARRANGEMENTS

5) Where were you living when you became pregnant?
   (Please tick (✓) as many boxes as apply.)
   1. ALONE IN YOUR FLAT OR HOUSE .................. □
   2. WITH YOUR PARENT(S) ......................... □
   3. WITH HIS PARENT(S) ............................. □
   4. WITH BOYFRIEND/PARTNER/HUSBAND ...... □
   5. WITH FRIENDS .................................. □
   6. OTHER .............................................. □
   (Please specify ________________________________)
SCHOOLING

6A) What level of education have you completed?

- PRIMARY SCHOOL ........................................... □
- SECONDARY SCHOOL
  1. YEAR 8 ........................................... □
  2. YEAR 9 ........................................... □
  3. YEAR 10 .......................................... □
  4. YEAR 11 .......................................... □
  5. YEAR 12 .......................................... □

WHICH HIGH SCHOOL DID YOU ATTEND?

6B) TERTIARY STUDIES

- 1. TAFE ................................................... □
- 2. UNIVERSITY ......................................... □
- 3. CES COURSE .......................................... □

7) Did you attend sex education classes in school? YES □ NO □

EMPLOYMENT

8) At the time you became pregnant, were you:

- 1. EMPLOYED
  - Full-time ........................................... □
  - Part-time .......................................... □
  - If you work what do you do?

- 2. UNEMPLOYED ........................................ □
- 3. A STUDENT .......................................... □
INCOME

9a) What is your fortnightly (take home) income?

$100 - $200  □
$201 - $300  □
$301 - $400  □
$401 - $500  □
$501 - $600  □
More than $600  □

9b) How adequate is your income?
(Please circle number)

very inadequate inadequate neither adequate or inadequate adequate very adequate

1 2 3 4 5 6 7 8 9

9c) How much money do you believe is satisfactory each fortnight? ___________

PREGNANCY

10a) How many times, have you been pregnant (including this pregnancy)? _______

10b) How many living children do you have now? _______________

11) Which of the options below best describes what you want to do about your pregnancy?

1. KEEP THE BABY.................................□
2. HAVE THE BABY ADOPTED......................□
3. DON'T KNOW......................................□
12) Who have you talked to about your pregnancy?
   (Please rate how supportive they have been (please circle number))

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<th>unsupportive</th>
<th>neither supportive or unsupportive</th>
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BOYFRIEND/PARTNER .......... ☐ 1  2  3  4  5  6  7  8  9
YOUR MOTHER ................ ☐ 1  2  3  4  5  6  7  8  9
YOUR FATHER ............... ☐ 1  2  3  4  5  6  7  8  9
YOUR SISTER ............... ☐ 1  2  3  4  5  6  7  8  9
YOUR BROTHER .............. ☐ 1  2  3  4  5  6  7  8  9
OTHER RELATIVES ........... ☐ 1  2  3  4  5  6  7  8  9
FRIEND 1 .................. ☐ 1  2  3  4  5  6  7  8  9
FRIEND 2 .................. ☐ 1  2  3  4  5  6  7  8  9
BOYFRIENDS MOTHER .......... ☐ 1  2  3  4  5  6  7  8  9
BOYFRIENDS FATHER .......... ☐ 1  2  3  4  5  6  7  8  9
PRIEST/MINISTER ..........  ☐ 1  2  3  4  5  6  7  8  9
SCHOOL COUNSELLOR .......... ☐ 1  2  3  4  5  6  7  8  9
SOCIAL WORKER ............ ☐ 1  2  3  4  5  6  7  8  9
TEACHER ................... ☐ 1  2  3  4  5  6  7  8  9
MIDWIFE .................... ☐ 1  2  3  4  5  6  7  8  9
LOCAL DOCTOR ............. ☐ 1  2  3  4  5  6  7  8  9
                          ☐ 1  2  3  4  5  6  7  8  9

MOTHER AND FATHER

13) Is your Mother living? YES ☐ NO ☐

14) Is your Father living? YES ☐ NO ☐
15) If both your parents are living, are they still together? _______________

IF NO, how old were you when they separated?
YEARS ______________________

16) How many children does your Mother have (including yourself)? ____________

17) If you know, how old was your Mother, when she had her first child?
_________________________________________ YEARS

18a) Does your Mother know that you are pregnant? YES □ NO □

18b) If your Mother knows about your pregnancy, would you describe your Mother's attitude to your pregnancy - (please circle number)

<table>
<thead>
<tr>
<th>not helpful</th>
<th>moderately helpful</th>
<th>very helpful</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>7</td>
<td>8</td>
<td>9</td>
</tr>
</tbody>
</table>

19a) Does your Father know that you are pregnant? YES □ NO □

19b) If your Father knows about your pregnancy, would you describe your Father's attitude to our pregnancy - (please circle number)

<table>
<thead>
<tr>
<th>not helpful</th>
<th>moderately helpful</th>
<th>very helpful</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>7</td>
<td>8</td>
<td>9</td>
</tr>
</tbody>
</table>

PARTNER/BOYFRIEND

20a) Do you have a steady relationship? YES □ NO □

IF YES, how many months have you been with this person? ______________

20b) How old is he? _______________ YEARS

21a) Does he know you are pregnant? YES □ NO □ DON'T KNOW □

21b) If he does not know, will you tell him? YES □ NO □ DON'T KNOW □
22) How often does he see or speak to you at the present time? (please circle number)

<table>
<thead>
<tr>
<th>less than once</th>
<th>once every week</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

22b) How many times over the last 4 weeks? ________________

CONTRACEPTION:

23) Is your pregnancy planned or unplanned?

- PLANNED ........................................... □
- UNPLANNED ........................................... □

24) What type of contraceptive method have you used in the last 12 months?
(Please tick (✓) as many boxes as apply.)

1. THE PILL ........................................... □
2. I.U.D. (i.e. Coil, Copper 7) ...................... □
3. CONDOM (i.e French letter Rubber)......... □
4. FOAM SPERMICIDE ONLY...................... □
5. DIAPHRAGM AND SPERMICIDE ............... □
6. DIAPHRAGM ONLY ................................ □
7. WITHDRAWAL ..................................... □
8. RHYTHM ........................................... □
9. OTHER ............................................. □
10. NONE ............................................... □

25) Were you using a contraceptive method at the time you became pregnant?

- YES □  NO □

26) Do you feel that responsibility for contraception is -

1. YOUR RESPONSIBILITY ................................ □
2. YOUR PARTNER'S RESPONSIBILITY ............. □
3. SHARED RESPONSIBILITY ........................... □
APPENDIX C

Maternal-foetal Attachment Scale
PREGNANCY

Please respond to the following items about yourself and the baby you are expecting. There are no right or wrong answers. Your first impression is usually the best reflection of your feelings.

*Make sure you mark only one answer per sentence.*

**I think or do the following:**

<table>
<thead>
<tr>
<th></th>
<th>definitely</th>
<th>yes</th>
<th>uncertain</th>
<th>no</th>
<th>definitely</th>
<th>no</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>I talk to my unborn baby.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>I feel all the trouble of being pregnant is worth it.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>I enjoy watching my tummy jiggle as the baby kicks inside.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>I picture myself feeding the baby.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>I'm really looking forward to seeing what the baby looks like.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>I wonder if the baby feels cramped in there.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>I refer to my baby by a nickname.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>I imagine myself taking care of the baby.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>I can almost guess what my baby's personality will be from the way she/he moves around.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>I have decided on a name for a girl baby.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>I do things to try to stay healthy that I would not do if I were not pregnant.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td>I wonder if the baby can hear inside of me.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.</td>
<td>I have decided on a name for a boy baby.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14.</td>
<td>I wonder if the baby thinks and feels &quot;things&quot; inside of me.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15.</td>
<td>I eat meat and vegetables to be sure my baby gets a good diet.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16.</td>
<td>It seems my baby kicks and moves to tell me it's eating time.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17.</td>
<td>I poke my baby to get him/her to poke back.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18.</td>
<td>I can hardly wait to hold the baby.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19.</td>
<td>I try to picture what the baby will look like.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20.</td>
<td>I stroke my tummy to quiet the baby when there is too much kicking.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21.</td>
<td>I can tell that the baby has hiccoughs.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22.</td>
<td>I feel my body is ugly.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23.</td>
<td>I give up doing certain things because I want to help my baby.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24.</td>
<td>I grasp my baby's foot through my tummy to move it around.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX D

The Prenatal Attachment Inventory
The Prenatal Attachment Inventory

The following sentences describe thoughts, feelings, and situations women may experience during pregnancy. We are interested in your experiences during the past month. Please circle the letter under the word that applies to you.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>almost</th>
<th></th>
<th></th>
<th>always</th>
<th>often</th>
<th>sometimes</th>
<th>never</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>I wonder what the baby looks like now</td>
<td>a.</td>
<td>b.</td>
<td>c.</td>
<td>d.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>I imagine calling the baby by name</td>
<td>a.</td>
<td>b.</td>
<td>c.</td>
<td>d.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>I enjoy feeling the baby move</td>
<td>a.</td>
<td>b.</td>
<td>c.</td>
<td>d.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>I think that my baby already has a personality</td>
<td>a.</td>
<td>b.</td>
<td>c.</td>
<td>d.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>I let other people put their hands on my tummy to feel the baby move</td>
<td>a.</td>
<td>b.</td>
<td>c.</td>
<td>d.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>I know things I do make a difference to the baby</td>
<td>a.</td>
<td>b.</td>
<td>c.</td>
<td>d.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>I plan the things I will do with my baby</td>
<td>a.</td>
<td>b.</td>
<td>c.</td>
<td>d.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>I tell others what the baby does inside me</td>
<td>a.</td>
<td>b.</td>
<td>c.</td>
<td>d.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>I imagine what part of the baby I’m touching</td>
<td>a.</td>
<td>b.</td>
<td>c.</td>
<td>d.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>I know when the baby is asleep</td>
<td>a.</td>
<td>b.</td>
<td>c.</td>
<td>d.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>I can make my baby move</td>
<td>a.</td>
<td>b.</td>
<td>c.</td>
<td>d.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td>I buy/make things for the baby</td>
<td>a.</td>
<td>b.</td>
<td>c.</td>
<td>d.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.</td>
<td>I feel love for the baby</td>
<td>a.</td>
<td>b.</td>
<td>c.</td>
<td>d.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14.</td>
<td>I try to imagine what the baby is doing in there</td>
<td>a.</td>
<td>b.</td>
<td>c.</td>
<td>d.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15.</td>
<td>I like to sit with my arms around my tummy</td>
<td>a.</td>
<td>b.</td>
<td>c.</td>
<td>d.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16.</td>
<td>I dream about the baby</td>
<td>a.</td>
<td>b.</td>
<td>c.</td>
<td>d.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17.</td>
<td>I know why the baby is moving</td>
<td>a.</td>
<td>b.</td>
<td>c.</td>
<td>d.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18.</td>
<td>I stroke the baby through my tummy</td>
<td>a.</td>
<td>b.</td>
<td>c.</td>
<td>d.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19.</td>
<td>I share secrets with the baby</td>
<td>a.</td>
<td>b.</td>
<td>c.</td>
<td>d.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20.</td>
<td>I know the baby hears me</td>
<td>a.</td>
<td>b.</td>
<td>c.</td>
<td>d.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21.</td>
<td>I get very excited when I think about the baby</td>
<td>a.</td>
<td>b.</td>
<td>c.</td>
<td>d.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX E

Rosenberg Self-Esteem Scale
FEELINGS

INSTRUCTIONS
We all have some kind of "picture" of ourselves we carry with us. Please circle the number that best indicates how much you agree or disagree that each of the statements describe yourself.

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Feel that you're a person of worth, at least on an equal basis with others.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>2.</td>
<td>Feel that you have a number of good qualities.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>3.</td>
<td>All in all, feel that you are a failure.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4.</td>
<td>Feel you are able to do things as well as most other people.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>5.</td>
<td>Feel you do not have much to be proud of.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>6.</td>
<td>Take a positive attitude toward yourself.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>7.</td>
<td>On the whole, feel satisfied with yourself.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>8.</td>
<td>Wish you could have more respect for yourself.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>9.</td>
<td>Feel useless at times.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>10.</td>
<td>At times think you are no good at all.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>11.</td>
<td>Feel like you have control over your life.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

Thank you for filling out this questionnaire.
Are there any comments you would like to make?

Comments:
APPENDIX F

Support Behaviours Inventory
SUPPORT:

The next set of questions asks how satisfied you are with the amount of support you receive from your partner and/or other people.

First of all, do you have a partner? NO ( )

YES ( )

Please read the list of statements describing different types of support. Please circle the number which applies to the support you receive from your partner and other people.

<table>
<thead>
<tr>
<th>PARTNER</th>
<th>OTHER PEOPLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Dissatisfied</td>
<td>Very Satisfied</td>
</tr>
<tr>
<td>1. Shares similar experiences with me</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>2. Helps keep up my morale</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>3. Helps me out when I'm in a pinch</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>4. Shows interest in my daily activities</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>and problems</td>
<td></td>
</tr>
<tr>
<td>5. Goes out of his/her way to do special</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>or thoughtful things for me</td>
<td></td>
</tr>
<tr>
<td>6. Allows me to talk about things that are</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>very personal and private</td>
<td></td>
</tr>
<tr>
<td>7. Lets me know I am appreciated for the</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>things I do for him/her</td>
<td></td>
</tr>
<tr>
<td>8. Tolerates my ups and downs and unusual</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>behaviour</td>
<td></td>
</tr>
<tr>
<td>9. Takes me seriously when I have concerns</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>10. Says things that make my situation</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>clearer and easier to understand</td>
<td></td>
</tr>
<tr>
<td>11. Lets me know that he/she will be around</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>if I need assistance</td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX G

Adolescent Pregnancy Interview Schedule
Adolescent Pregnancy Interview Schedule.

Question No. 1.
What are the good and the bad things for you on a personal level at the moment?

Question No. 2.
What was your life like around the time you found out you were pregnant?
Prompts: Was the pregnancy expected?
   How did you feel about the news?

Question No. 3.
How do you feel about your baby?

Question No. 4.
What do you think life will be like in ten months time?
Prompt: Will you have support from anyone?
APPENDIX H

Adolescent Parenting Consent Form
This research programme is designed to identify issues related to adolescent mothers.

Your involvement in this questionnaire and interview may provide valuable information which may help nurse midwives in the care of adolescent mothers. The information you volunteer may also assist towards my Ph D (Nursing) degree under the supervision of Brin Grenyer in the Department of Nursing at the University of Wollongong.

This interview is to help us learn more about your experience of parenting. We will be inviting you to tell us a little about how you are experiencing your parenting, the good and the bad, how it is for you. We will ask you to complete some questionnaires, and with your permission we would like to tape record some of the interview to help us remember what you have said so that we can develop an understanding of your experiences along with other adolescent mothers we have interviewed.

The information you give us will be treated with strict confidence and only the interviewer and lecturer will have access to the questionnaire and tape. Your name will not be used on the tape, nor will you be identified in the results of the study. The tape will be destroyed after a period of 5 years in accordance with the University's Code of Practice - Research. In the event of any future report your anonymity will be protected by not revealing any personally identifiable information you choose to give us.

If you have any enquiries regarding the conduct of the research please contact the Secretary of the University of Wollongong Human Research Ethics Committee on (042) 213079.

You are free to withdraw from the research at anytime.

I understand that the data collected will be used to help the interviewer and lecturer to learn more about the experience of adolescent parenting and I consent for the data to be used in that manner.

Signature: .................................................................

Parent/Guardian: ............................................................
(If under 16 years)
APPENDIX I

Adolescent Parenting Questionnaire
WAGGA WAGGA
ADOLESCENT PARENTING QUESTIONNAIRE

Compiled by:
MAVIS SMITH

PhD (Nursing) Student
Department of Nursing
University of Wollongong
1996
INSTRUCTIONS: Please tick (✓) a box or provide answer/answers to the question.

1a) Date of Birth ____________.
1b) What is your age? ____________ YEARS
2a) When was your baby born? ____________ DATE
2b) How old is your Baby? ____________

3) What is your PRESENT marital status?

1. NEVER MARRIED .......................................................... □
2. MARRIED ................................................................. □
3. DEFACTO ................................................................. □
4. SEPERATED ............................................................. □
5. DIVORCED ............................................................... □
6. WIDOWED ............................................................... □

LIVING ARRANGEMENTS

4) What is your current living arrangements?
(Please tick (✓) as many boxes as apply.)

1. ALONE IN YOUR FLAT OR HOUSE ......... □
2. WITH YOUR PARENT(S) ......................... □
3. WITH HIS PARENT(S) .......................... □
4. WITH BOYFRIEND/PARTNER/HUSBAND ...... □
5. WITH FRIENDS .......................................... □
6. OTHER ................................................................. □

EDUCATION

5a) What level of education have you completed?

PRIMARY SCHOOL .......................................................... □

SECONDARY SCHOOL
1. YEAR 8 ............................................................... □
2. YEAR 9 ............................................................... □
3. YEAR 10 ............................................................. □
4. YEAR 11 ............................................................. □
5. YEAR 12 ............................................................. □
5b) TERTIARY STUDIES

1. TAFE .................................................................
2. UNIVERSITY ....................................................
3. CES COURSE ....................................................

EMPLOYMENT

6) Are you currently employed?

1. EMPLOYED
   Full-time .........................................................
   Part-time .........................................................
   If you work, what do you do?

2. UNEMPLOYED ..................................................
3. A STUDENT .....................................................

CHILDREN

7) How many living children do you have (including the current child)? __________________
8) Who have you talked to about your role as a parent?
Please rate how supportive they have been (please circle number)

<table>
<thead>
<tr>
<th></th>
<th>very supportive</th>
<th>neither supportive</th>
<th>unsupportive</th>
<th>unsupportive</th>
<th>very supportive</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>BOYFRIEND/PARTNER</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>YOUR MOTHER</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>YOUR FATHER</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>YOUR SISTER</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OTHER RELATIVES</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FRIEND 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FRIEND 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BOYFRIENDS MOTHER</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BOYFRIENDS FATHER</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PRIEST/MINISTER</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SCHOOL COUNSELLOR</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOCIAL WORKER</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TEACHER</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MIDWIFE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LOCAL DOCTOR</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
MOTHER AND FATHER

9a) Is your mother still living? YES ☐ NO ☐

9b) Is your father still living? YES ☐ NO ☐

10) If both parents are living, are they still together? ______________________

11) Does your mother know you are a parent? YES ☐ NO ☐

12) Would you describe your mother's attitude to your role as a parent- (please circle number)

not helpful | moderately helpful | very helpful
---|---|---
1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9

13) Does your father know you are a parent? YES ☐ NO ☐

14) Would you describe your father's attitude to your role as a parent- (please circle number)

not helpful | moderately helpful | very helpful
---|---|---
1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9

PARTNER/BOYFRIEND

15) Do you have a steady relationship? YES ☐ NO ☐

16) Does he know you are a parent? YES ☐ NO ☐ DON'T KNOW ☐

17) If he does not know, will you tell him? YES ☐ NO ☐ DON'T KNOW ☐

18) How often does he see or speak to you at the present time? (please circle number)

less than once
1 x per week
every week
day

0 | 1 | 2 | 3 | 4 | 5 | 6 | 7

19) How many times over the last 4 weeks? _____________________________
APPENDIX J

How I Feel About My Baby Now Scale
**FEELINGS ABOUT THE BABY**

**Instructions**
Please answer all of the following items in terms of how you feel now about the baby. Please **circle the number** that indicates how much you agree or disagree with the statement which best expresses how you feel.

<table>
<thead>
<tr>
<th></th>
<th>Often</th>
<th>Sometimes</th>
<th>Rarely</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>I feel tenderly towards my baby</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>I feel annoyed at my baby</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>I feel not one way or the other</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>I feel protective towards my baby</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>I feel giving towards my baby</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>I feel playful towards my baby</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>I feel disinterested in my baby</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>I feel drained by my baby</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>I feel curious about my baby</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>I feel unaware of my baby</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
APPENDIX K

The Maternal Attachment Inventory
The Maternal Attachment Inventory

The following sentences describes thoughts, feelings, and situations new mothers may experience. Circle the letter under the word that applies to you.

<table>
<thead>
<tr>
<th></th>
<th>almost</th>
<th>always</th>
<th>often</th>
<th>sometimes</th>
<th>never</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>I feel love for my baby</td>
<td>a. almost</td>
<td>b. always</td>
<td>c. often</td>
<td>d. never</td>
</tr>
<tr>
<td>2.</td>
<td>I feel warm and happy with my baby</td>
<td>a. almost</td>
<td>b. always</td>
<td>c. often</td>
<td>d. never</td>
</tr>
<tr>
<td>3.</td>
<td>I want to spend special time with my baby</td>
<td>a. almost</td>
<td>b. always</td>
<td>c. often</td>
<td>d. never</td>
</tr>
<tr>
<td>4.</td>
<td>I look forward to being with my baby</td>
<td>a. almost</td>
<td>b. always</td>
<td>c. often</td>
<td>d. never</td>
</tr>
<tr>
<td>5.</td>
<td>Just seeing my baby makes me feel good</td>
<td>a. almost</td>
<td>b. always</td>
<td>c. often</td>
<td>d. never</td>
</tr>
<tr>
<td>6.</td>
<td>I know my baby needs me</td>
<td>a. almost</td>
<td>b. always</td>
<td>c. often</td>
<td>d. never</td>
</tr>
<tr>
<td>7.</td>
<td>I think my baby is cute</td>
<td>a. almost</td>
<td>b. always</td>
<td>c. often</td>
<td>d. never</td>
</tr>
<tr>
<td>8.</td>
<td>I'm glad this baby is mine</td>
<td>a. almost</td>
<td>b. always</td>
<td>c. often</td>
<td>d. never</td>
</tr>
<tr>
<td>9.</td>
<td>I feel special when my baby smiles</td>
<td>a. almost</td>
<td>b. always</td>
<td>c. often</td>
<td>d. never</td>
</tr>
<tr>
<td>10.</td>
<td>I like to look into my baby's eyes</td>
<td>a. almost</td>
<td>b. always</td>
<td>c. often</td>
<td>d. never</td>
</tr>
<tr>
<td>11.</td>
<td>I enjoy holding my baby</td>
<td>a. almost</td>
<td>b. always</td>
<td>c. often</td>
<td>d. never</td>
</tr>
<tr>
<td>12.</td>
<td>I watch my baby sleep</td>
<td>a. almost</td>
<td>b. always</td>
<td>c. often</td>
<td>d. never</td>
</tr>
<tr>
<td>13.</td>
<td>I want my baby near me</td>
<td>a. almost</td>
<td>b. always</td>
<td>c. often</td>
<td>d. never</td>
</tr>
<tr>
<td>14.</td>
<td>I tell others about my baby</td>
<td>a. almost</td>
<td>b. always</td>
<td>c. often</td>
<td>d. never</td>
</tr>
<tr>
<td>15.</td>
<td>Its fun being with my baby</td>
<td>a. almost</td>
<td>b. always</td>
<td>c. often</td>
<td>d. never</td>
</tr>
<tr>
<td>16.</td>
<td>I enjoy having my baby cuddle with me</td>
<td>a. almost</td>
<td>b. always</td>
<td>c. often</td>
<td>d. never</td>
</tr>
<tr>
<td>17.</td>
<td>I'm proud of my baby</td>
<td>a. almost</td>
<td>b. always</td>
<td>c. often</td>
<td>d. never</td>
</tr>
<tr>
<td>18.</td>
<td>I like to see my baby do new things</td>
<td>a. almost</td>
<td>b. always</td>
<td>c. often</td>
<td>d. never</td>
</tr>
<tr>
<td>19.</td>
<td>My thoughts are full of my baby</td>
<td>a. almost</td>
<td>b. always</td>
<td>c. often</td>
<td>d. never</td>
</tr>
<tr>
<td>20.</td>
<td>I know my baby's personality</td>
<td>a. almost</td>
<td>b. always</td>
<td>c. often</td>
<td>d. never</td>
</tr>
<tr>
<td>21.</td>
<td>I want my baby to trust me</td>
<td>a. almost</td>
<td>b. always</td>
<td>c. often</td>
<td>d. never</td>
</tr>
<tr>
<td>22.</td>
<td>I know I am important to my baby</td>
<td>a. almost</td>
<td>b. always</td>
<td>c. often</td>
<td>d. never</td>
</tr>
<tr>
<td>23.</td>
<td>I understand my baby's signals</td>
<td>a. almost</td>
<td>b. always</td>
<td>c. often</td>
<td>d. never</td>
</tr>
<tr>
<td>24.</td>
<td>I give my baby special attention</td>
<td>a. almost</td>
<td>b. always</td>
<td>c. often</td>
<td>d. never</td>
</tr>
<tr>
<td>25.</td>
<td>I comfort my baby when he/she is crying</td>
<td>a. almost</td>
<td>b. always</td>
<td>c. often</td>
<td>d. never</td>
</tr>
<tr>
<td>26.</td>
<td>Loving my baby is easy</td>
<td>a. almost</td>
<td>b. always</td>
<td>c. often</td>
<td>d. never</td>
</tr>
</tbody>
</table>
APPENDIX L

Rosenberg Self-Esteem Scale
**FEELINGS**

**INSTRUCTIONS**
We all have some kind of "picture" of ourselves we carry with us. Please circle the **number** that best indicates how much you agree or disagree that each of the statements describe yourself.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Feel that you're a person of worth, at least on an equal basis with others.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>2. Feel that you have a number of good qualities.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>3. All in all, feel that you are a failure.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4. Feel you are able to do things as well as most other people.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5. Feel you do not have much to be proud of.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>6. Take a positive attitude toward yourself.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>7. On the whole, feel satisfied with yourself.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>8. Wish you could have more respect for yourself.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>9. Feel useless at times.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>10. At times think you are no good at all.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>11. Feel like you have control over your life.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

Thank you for filling out this questionnaire.
Are there any comments you would like to make?

Comments:
APPENDIX M

Support Behaviours Inventory
**SUPPORT:**

The next set of questions asks how satisfied you are with the amount of support you receive from your partner and/or other people.

First of all, do you have a partner?  NO ( )  YES ( )

Please read the list of statements describing different types of support. Please circle the number which applies to the support you receive from your partner and other people.

<table>
<thead>
<tr>
<th>PARTNER</th>
<th>OTHER PEOPLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Dissatisfied</td>
<td>Very Satisfied</td>
</tr>
<tr>
<td>Shares similar experiences with me</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>Helps keep up my morale</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>Helps me out when I'm in a pinch</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>Shows interest in my daily activities and problems</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>Goes out of his/her way to do special or thoughtful things for me</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>Allows me to talk about things that are very personal and private</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>Lets me know I am appreciated for the things I do for him/her</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>Tolerates my ups and downs and unusual behaviour</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>Takes me seriously when I have concerns</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>Says things that make my situation clearer and easier to understand</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>Lets me know that he/she will be around if I need assistance</td>
<td>1 2 3 4 5 6</td>
</tr>
</tbody>
</table>
APPENDIX N

Parenting Sense Of Competence Scale
## "BEING A PARENT"

### Instructions
Listed below are a number of statements. Please respond to each item, indicating your agreement of disagreement by placing a circle around the number.

<table>
<thead>
<tr>
<th></th>
<th>Strongly agree</th>
<th>Agree</th>
<th>Mildly agree</th>
<th>Mildly disagree</th>
<th>Disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>2.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>3.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>4.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>5.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>6.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>7.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>8.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>9.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>10.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>11.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>

1. The problems of taking care of a baby are easy to solve once you know how your actions affect your baby, an understanding I have acquired.

2. Even though being a parent could be rewarding, I am frustrated now while my child is only an infant.

3. I go to bed the same way I wake up in the morning -- feeling I have not accomplished a whole lot.

4. I do not know why it is, but sometimes when I'm supposed to be in control, I feel more like the one being manipulated.

5. My mother was better prepared to be a good mother than I am.

6. I would make a fine model for a new mother to follow in order to learn what she would need to know in order to be a good parent.

7. Being a parent is manageable, and any problems are easily solved.

8. A difficult problem in being a parent is not knowing whether you're doing a good job or a bad one.

9. Sometimes I feel like I'm not getting anything done.

10. I meet my own personal expectations for expertise in caring for my baby.

11. If anyone can find the answer to what is troubling my baby, I am the one.
<table>
<thead>
<tr>
<th></th>
<th>Strongly agree</th>
<th>Agree</th>
<th>Mildly agree</th>
<th>Mildly disagree</th>
<th>Disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>12. My talents and interests are in other areas, not in being a parent.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>13. Considering how long I've been a mother, I feel thoroughly familiar with this role.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>14. If being a mother of an infant were only more interesting, I would be motivated to do a better job as a parent.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>15. I honestly believe I have all the skills necessary to be a good mother to my baby.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>16. Being a parent makes me tense and anxious.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>17. Being a good mother is a reward in itself.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>
APPENDIX O

Facilitators and Regulators Questionnaire
FRQ Questionnaire

1. Do you have a daily routine for your youngest child?

When did it begin? ..................

2a. In general, which do you believe (about breast or bottle) during the first 3 months. **Tick one box.**

- Babies should be fed whenever and for as long as they want
- Babies should be allowed unrestricted sucking including night feeds but the idea of ‘mealtimes’ should be introduced
- Babies should be fed when they are clearly hungry
- Babies should be fed adjustable quantities at specified times but not at night
- Babies should be fed a set amount by schedule (3-4 hourly with no ‘snacking’ in between)

2b. Ideally, when should weaning occur? ..................

3. When do you believe the baby begins **trying** to communicate with you?

- During pregnancy/before birth
- At birth
- Within the first 2 weeks
- Next 6 weeks
- After 2 months
How does the baby try to communicate with you?

4. Which best describes your feelings during the first weeks:
   - My baby seemed still part of me
   - My baby seemed an outgoing sociable person
   - My baby seemed separate but not yet sociable

5. How would you describe your interaction with your baby:
   - I adapt myself to my baby
   - We negotiate between us
   - The baby adapts to the household routine
APPENDIX P

Edinburgh Postnatal Depression Scale
Edinburgh Postnatal Depression Scale (EPDS).

As you have recently had a baby we would like to know how you are feeling. Please **UNDERLINE** the answer which comes closest to how you have felt **IN THE PAST 7 DAYS**, not just how you feel today.

---

1. I have been able to laugh and see the funny side of things
   - As much as I always could
   - Not quite so much now
   - Definitely not so much now
   - Not at all

2. I have looked forward with enjoyment to things
   - As much as I ever did
   - Rather less than I used to
   - Definitely less than I used to
   - Hardly at all

3. I have blamed myself unnecessarily when things went wrong
   - Yes, most of the time
   - Yes, some of the time
   - Not very often
   - No, never

4. I have been anxious or worried for no good reason
   - No, not at all
   - Hardly ever
   - Yes, sometimes
   - Yes, very often

5. I have felt quite scared or panicky for no very good reason
   - Yes, quite a lot
   - Yes, sometimes
   - No, not much
   - No, not at all
6. Things have been getting on top of me
   Yes, most of the time I haven't been able to cope at all
   Yes, sometimes I haven't been coping as well as usual
   No, most of the time I have coped quite well
   No, I have been coping as well as ever

7. I have been so unhappy that I had difficulty sleeping
   Yes, most of the time
   Yes, sometimes
   Not very often
   No, not at all

8. I have felt sad or miserable
   Yes, most of the time
   Yes, quite often
   Not very often
   No, not at all

9. I have been so unhappy that I have been crying
   Yes, most of the time
   Yes, quite often
   Only Occasionally
   No, never

10. The thought of harming myself had occurred to me
    Yes, quite often
    Sometimes
    Hardly ever
    Never
APPENDIX Q

Adolescent Parenting Interview Schedule
Adolescent Parenting Interview Schedule.

Question No. 1.
What are the good and the bad things for you on a personal level at the moment?
Prompts: How has your life been changed by becoming a parent?
What has been better?
What has been worse?

Question No. 2.
Tell me how you feel about being a parent.

Question No. 3.
How do you feel about your baby?

Question No. 4.
What do you think life will be like in 5 years time?
Prompt: Will you have support from anyone?
APPENDIX R

N.S.W. Midwives Data Collection Form
### N.S.W. MIDWIVES DATA COLLECTION

**PLEASE PRESS FIRMLY WHEN COMPLETING THIS FORM**

<table>
<thead>
<tr>
<th><strong>Unit Record Number</strong></th>
<th><strong>Family Name</strong></th>
<th><strong>Address</strong></th>
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**HOSPITAL CODE**

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<tr>
<th><strong>Hospital</strong></th>
<th><strong>Family Name</strong></th>
<th><strong>Address</strong></th>
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**Patient Classification**

<table>
<thead>
<tr>
<th><strong>Country of Birth (Mother)</strong></th>
<th><strong>Ethnic Origin (Mother)</strong></th>
</tr>
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<tbody>
<tr>
<td>Australia</td>
<td>Caucasian</td>
</tr>
<tr>
<td>England</td>
<td>(Aust) Aboriginal</td>
</tr>
<tr>
<td>Lebanon</td>
<td>Asian</td>
</tr>
<tr>
<td>New Zealand</td>
<td>Other</td>
</tr>
<tr>
<td>Philippines</td>
<td>Vietnamese</td>
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**Marital Status**

<table>
<thead>
<tr>
<th><strong>Has mother had a previous pregnancy greater than 20 weeks?</strong></th>
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<tr>
<td>Yes</td>
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**THIS PREGNANCY**

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<thead>
<tr>
<th><strong>Date of LMP</strong></th>
<th><strong>Maternal medical conditions</strong></th>
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<tbody>
<tr>
<td></td>
<td>Diabetes mellitus</td>
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<tr>
<td></td>
<td>Essential hypertension</td>
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**Obstetric complications**

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<thead>
<tr>
<th><strong>Type of delivery</strong></th>
<th><strong>Other procedures</strong></th>
</tr>
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<tbody>
<tr>
<td>Normal</td>
<td>Epidual block</td>
</tr>
<tr>
<td>Vaginal</td>
<td>Episiotomy</td>
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**Labour onset**

<table>
<thead>
<tr>
<th><strong>Complications</strong></th>
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<tbody>
<tr>
<td>PPH (600 ml)</td>
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<table>
<thead>
<tr>
<th><strong>Baby's date of discharge or transfer</strong></th>
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**MOTHER**

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<tr>
<th><strong>Baby's date of discharge or transfer</strong></th>
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**BABY**

<table>
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<tr>
<th><strong>Place of birth (baby)</strong></th>
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<tr>
<td>Hospital theatre/labour ward</td>
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**Birthdate:**

<table>
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<tr>
<th><strong>Estimated gestation age (weeks):</strong></th>
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<table>
<thead>
<tr>
<th><strong>Was the baby born before the onset of labour?</strong></th>
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<tbody>
<tr>
<td>Yes</td>
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**BIRTH DEFFECTS**

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**Office use only:**

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<tr>
<th><strong>Discharge status — Mother and Baby</strong></th>
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**Research question**

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<td>Not booked (tick if applicable)</td>
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<td>Not booked (tick if applicable)</td>
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<table>
<thead>
<tr>
<th><strong>Before labour onset (elective):</strong></th>
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<tr>
<td>In labour (emergency)</td>
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**Antenatal care**

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<tr>
<th><strong>Procedures and operations</strong></th>
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<tbody>
<tr>
<td>Cervical suture</td>
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<tr>
<td>Amnioncentesis (≤ 20 weeks)</td>
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<tr>
<td>CVS (≤ 20 weeks)</td>
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<table>
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**Transfered**

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**Died**

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Please complete and forward to
Data Collections Unit
Locked Bag 961, North Sydney NSW 2059

Form No.
MR44/PR16

Health Department Copy

Public Health Act 1991

9/96