

INTERVENTIONS FOR DECREASING POSTPARTUM
DEPRESSION AMONG ADOLESCENT MOTHERS:
AN INTEGRATIVE LITERATURE REVIEW

by

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ABSTRACT

It is suggested that adolescent mothers experience postpartum depression (PPD) at a higher rate than compared to adult mothers (Deal & Holt, 1998). With early detection and proper treatment the effects that PPD has on both maternal and child wellbeing can be reduced (Lanzi et al., 2009). However, at this time the most effective intervention for treating or preventing PPD among adolescent mothers is unknown (Yozwiak, 2010). This integrative literature review was conducted in the hopes of determining an effective intervention used to either prevent or treat PPD among adolescent mothers. The literature search included a total of three strategies: electronic database, hand search, and networking, in which nine articles met inclusion criteria and were utilized in the final review. Only articles that met all of the inclusion criteria and that were from scholarly journals were chosen to be included in the review process. After reviewing the included literature, no clear themes emerged indicating the most effective interventions for reducing or treating depressive symptoms in adolescent mothers. Reviewing the findings from these studies did not produce a clear understanding of one particular intervention that can help prevent or treat PPD in adolescent mothers. However, the four studies that showed a decrease in CES-D scores all utilized a type of intervention that offered the adolescents more contact (either direct or indirect) with trained personnel. There is a lack of literature on this topic, and much more research is needed to determine the best intervention for treating and preventing PPD among these young mothers.

CHAPTER ONE

RESEARCH PROBLEM

Introduction

In 2005, there were 712,620 pregnancies reported among U.S. adolescents aged 15 to 19 years old, of which 58% resulted in live births. Eighty-two percent of these pregnancies were unplanned. Unplanned adolescent pregnancies account for approximately one-fifth of all unintended pregnancies in the U.S. annually and despite the U.S. teen pregnancy rate declining over the past several years, it is still one of the highest rates when compared to other developed countries (Allen Guttmacher Institute, 2012).

Adolescents have unique age-related developmental tasks and demands that make the first postpartum year particularly challenging (Birkeland, Thompson, & Phares, 2005) and that may put them at an increased risk for developing depression (Yozwiak, 2010). It is suggested that adolescent mothers differ from adult mothers in how they experience maternal role transition (Lanzi et al., 2009). Adolescent mothers “are faced with integrating and assimilating their emerging maternal role with a personal identity that may not yet be fully formed,” (Yozwiak, 2010, p. 173). Additionally, adolescent mothers experience higher levels of parenting stress when compared to their adult counterparts (Passino et al., 1993). Adolescent mothers may also be more vulnerable to developing depression because they have unrealistic expectations of motherhood and may not be

prepared for how motherhood can negatively affect their friendships, academic goals, or financial stability (Yozwiak, 2010).

Data from a large national survey suggested that adolescents were significantly more likely to develop postpartum depression (PPD), when compared to adults (Deal & Holt, 1998). As cited in Yozwiak (2010), Chen (1996) found a much higher prevalence of PPD in adolescent mothers (66%) when compared to adult mothers (37.7%). Deal and Holt (1998) found that up to 48% of African American adolescent mothers and 33% of Caucasian adolescent mothers displayed depressive symptoms one year postpartum. In a study conducted by Anderson (2010), the author found that out of a sample of 156 adolescent mothers, one-third of them presented with depressive symptoms within 72 hours post delivery, and one-quarter of the sample had depressive symptoms at three months postpartum. Furthermore, the author noted that adolescents who did not present with depressive symptoms at three months postpartum might still develop depressive symptoms in later postpartum (Anderson, 2010).

PPD is seen as a serious illness and is known to impede upon daily life and routines (Anderson, 2010). Depressed adolescent mothers experience a state of psychological and emotional withdrawal, which may lead to poor interactions with their children and a less positive view of motherhood (Reid & Meadows-Oliver, 2007).

Background and Significance

Postpartum Depression

PPD is defined as a “serious and common mood disorder that emerges within several weeks after delivery and poses significant risks to maternal, infant, and family well-being” (Horowitz & Goodman, 2005, p. 264). PPD can develop anytime during the first postpartum year (Beck & Gable, 2001), but roughly 50% of PPD cases develop within the first three months of the postpartum period (Yozwiak, 2010). Lanzi et al. (2009) found a significantly higher rate of prenatal and postpartum depression among adolescent mothers when compared to adult mothers. Historically, PPD is under-diagnosed and is often unrecognized, even by the mother’s closest friends and family (Beck & Gable, 2001).

One reason that PPD may be under-recognized within this population is because adolescents often do not present with characteristic signs of PPD, and as noted by Beck and Gable (2001), depression is not always the first symptom of women suffering from PPD. In a study by Clemmens (2002), the author noted that adolescent mothers characterized their depressive symptoms as:

feeling changed, different, and scared with the sudden realization of motherhood; feeling torn between the responsibilities of adolescence and motherhood; feeling abandoned and rejected by partners and peers; questioning and not understanding the experience of depression and what was happening to them; feeling like everything was falling down on them; and feeling that they were re-grouping to see a different future. (p. 561)

Because PPD among adolescent mothers may present with these unique characteristics it is vital that health care professionals have a broad understanding of how PPD can present within this vulnerable age group (Clemmens, 2002).

Effects on Children

It has been argued that PPD in new mothers can impair the emotional, social, and cognitive development of their children (Yozwiak, 2010). Research shows that PPD may interfere with an adolescent mother's ability to emotionally and psychologically support her child, as well as to provide adequate nutrition and physical care for her child (Reid & Meadows-Oliver, 2007). Mothers with increased depressive symptoms are more likely to exhibit poor parenting practices and their babies are more likely to display maladaptive behaviors toward the mothers (Lanzi et al., 2009). The effects of poor parenting practices related to depressive symptoms can lead to negative feeding and behavioral interactions, behavioral problems in preschool, and physical health concerns such as lower weight, shorted stature and smaller head circumference (Reid & Meadows-Oliver, 2007).

Maternal Confidence

Some studies have found that adolescent mothers with lower levels of self-esteem tend to have higher levels of depression (Reid & Meadows-Oliver, 2007). An adolescent mother's lack of maternal confidence may contribute to negative interactions with her child (Reid & Meadows-Oliver, 2007). Negative relationships with others, whether with the father of the baby or with her own family members, may also contribute to low maternal confidence, which may actually exacerbate the adolescent mother's depressive

symptoms (Reid & Meadows-Oliver, 2007). Another potential cause of low maternal confidence is too much support from family members or friends, as this may cause the adolescent to feel inadequate in the maternal role (Logsdon et al., 2005).

Social Support

Social support is of great importance to all first-time mothers (Lanzi et al., 2009). Social support is known to improve the health of the adolescent mother and her child (Logsdon et al., 2002), while social isolation has been associated with depression in adolescent mothers (Birkeland, Thompson, & Phares, 2005). Adolescent mothers tend to have restricted social relationships and fewer positive interactions with friends and family than that of adult mothers (Passino & Whitman, 1993). Sources of social support exist anywhere from the adolescent mother's parents and the infant's father to government and welfare personnel and programs (Reid & Meados-Oliver, 2007).

There appears to be a correlation between social isolation and postpartum depression, as adolescent mothers who have supportive relationships with their family members report fewer depressive symptoms (Reid & Meadows-Oliver, 2007). Brown et al. (2012) found that for more depressed adolescent mothers, higher levels of social support were associated with fewer depressive symptoms over the first postpartum year. However, it has also been noted that too much, or unwanted support, may actually potentiate feelings of depression in the adolescent mother (Logsdon et al., 2005). It is important to note that adolescents suffering from PPD may not recognize that they need more social support and they may not have the ability to foster those supportive relationships (Reid and Meadows-Oliver, 2007).

Postpartum Depression Screening

Guidelines for PPD screening across healthcare settings and organizations are inconsistent (Anderson, 2010) and are often not part of standard clinical practices (Horowitz & Goodman, 2005). Routine PPD screening of new, adolescent mothers is imperative, and this screening must be conducted using a reliable and valid screening tool (Beck & Gable, 2001). Educating adolescent mothers about the signs and symptoms of PPD and screening for them are the first steps in early identification of PPD (Meadows-Oliver & Sadler, 2010). However, presently there are no clear recommendations guiding practitioners on which screening tool is most appropriate to use in postpartum adolescents (De Rosa & Logsdon, 2006).

Initial studies have established that the Center for Epidemiologic Studies of Depression (CES-D) and the Edinburgh Postnatal Depression Scale (EPDS) are two screening tools appropriate to use when screening adolescent mothers for depression (Logson & Myers, 2010). In addition to the CES-D and the EPDS, the Beck Depression Inventory-II (BDI-II) and the Postpartum Depression Screening Scale (PDSS) are discussed below in further detail.

Center for Epidemiologic Studies of Depression

The CES-D was originally designed for use in the general population, but has since been used reliably with adolescents and adolescent mothers (Radloff, 1991; Logsdon, Usui, & Nering, 2009). The CES-D scale has high internal consistency, acceptable test-retest stability, and substantial evidence of construct validity (Radloff,

1977) with the general population, and has been shown to have high internal consistency in samples of pregnant adolescents and adolescent mothers (Logsdon et al., 2004). The instrument is a short, structured, self-report measure of depression symptoms, and is comprised of 20 questions, with possible responses ranging from 0 (rarely) to 3 (most of the time), where a higher score (greater than 16) represents more depressive symptoms (Radloff, 1977).

Edinburgh Postnatal Depression Scale

The EPDS was developed specifically to measure symptoms related to postpartum depression (Cox et al., 1987). Cox et al. (1987) found that the EPDS had an overall satisfactory sensitivity and specificity, and was also sensitive to the changing severity of depression over time. The screening tool is self-administered and can be completed in approximately 5 minutes. Some of the advantages to using the EPDS are: its ease of use, strong psychometric properties, and the ability to compare scores with diverse sample (Logsdon, Usui, & Nering, 2009).

Cox et al. (1987) found that an EPDS score of twelve or greater identified 80% of mothers with major depressive disorder, however, Logsdon and Myers (2010) suggested that in order to obtain similar performance measures as in adults, a score of five or greater should be used for adolescent mothers. Decreasing the cutoff for adolescents should be done because the EPDS screening instrument behaves differently in adolescents than it does in adults (Logsdon & Myers, 2010). The EPDS instrument was shown to have the best overall performance for screening adolescents when compared to the CES-D and has been suggested as the best instrument to use when screening

adolescent mothers for PPD (Logsdon & Myers, 2010). Both depressive symptoms and symptoms of anxiety are captured using the EPDS instrument, which may be a reason it has been recommended for use with adolescent mothers (Logsdon, Usui, & Nering, 2009).

Beck Depression Inventory-II

The Beck Depression Inventory (BDI-II) is a 21-item self-report instrument that measures the severity of depression. Each of the 21-items measures certain symptoms that are often associated with depression, such as agitation, worthlessness, concentration difficulty, and loss of energy (Beck & Gable, 2001). This tool can be used for screening adults and adolescents over the age of 13 years, but was not specifically designed to screen for PPD. Rather, the BDI-II was developed to measure symptoms that comprise the criteria for diagnosing depressive disorders according to the DSM-IV. Each item is scored between 0 to 3, with a maximum score of 63. Data on the accuracy of the BDI in screening for PPD has not yet been reported in the literature (Beck & Gable, 2000; Beck & Gable, 2001).

Postpartum Depression Screening Scale

The Postpartum Depression Screening Scale (PDSS) is a 35-item Likert response scale that assesses the following seven dimensions: sleeping/eating disturbances, anxiety/insecurity, emotional lability, cognitive impairment, loss of self, guilt/shame, and contemplating harming oneself (Beck & Gable, 2001). This is a self-report instrument and is considered very easy to read and understand (Beck & Gable, 2000). The responses

are scored on a 1 to 5 scale, where (1) is strongly disagree, and (5) is strongly agree. The instrument is designed to assess for symptoms existing in the past two weeks. The PDSS is based on the conceptual definition of PPD, and therefore screens for many of the symptoms that often accompany PPD, such as loss of control of emotions and/or thought processes (Beck & Gable, 2001). Construct validity and content validity have been confirmed for the PDSS, and high levels of internal consistency reliability were noted (Beck & Gable, 2000). Beck and Gable tested the PDSS on a population of postpartum women aged 18 to 46 years old, and therefore its reliability in screening for PPD in adolescents is unknown (DeRosa & Logsdon, 2006).

Summary

Some research suggests using either the EPDS or the CES-D when screening adolescents for PPD (Yozwiak, 2010), while a study by Beck and Gable (2001) revealed that when detecting minor or major PPD in women, the PDSS had the highest combination of sensitivity and specificity when compared to the EPDS and the BDI-II. Screening for PPD can be easily integrated into each well-child visit during the first year of life in order to accurately detect adolescent mothers who need referral services (Meadows-Oliver & Sadler, 2010), however it is recommended that the cut-off point of any screening tool used with adolescents err on the side of sensitivity as to not miss a potential early diagnosis of PPD (Beck & Gable, 2001). Finally, it is important to note that better outcomes for both mother and child occur when PPD is detected and treated (Meadows-Oliver & Sadler, 2010).

Treatment Options

Significant maternal and child health outcomes have been associated with early detection of maternal depressive symptoms and individualized treatment strategies (Lanzi et al., 2009). PPD is a treatable disorder and when considering treatment, one should assess the severity of the PPD, whether the mother is breastfeeding, and the mother's preferences regarding treatment (Horowitz & Goodman, 2005)

Treatment options for PPD include psychotherapies, pharmacologic therapies, and complementary/alternative medicine (CAM) therapies (Horowitz & Goodman, 2005). Examples of psychotherapies include: cognitive-behavioral therapy, interpersonal therapy, and psychodynamic therapy (Horowitz & Goodman, 2005). Interpersonal therapies have been promising in effectively treating PPD among adults, and studies suggest that this type of therapy may be appropriate for use with adolescents (Yozwiak, 2010). Common pharmacologic therapies come from selective serotonin reuptake inhibitors (SSRIs) such as sertraline and venlafaxine (Horowitz & Goodman, 2005). The efficacy and safety of many CAM therapies for treating PPD have not yet been determined (Horowitz & Goodman, 2005). However, when used in conjunction with standard therapies, CAM therapies, such as bright light therapy, exercise, and massage therapy may be promising (Horowitz & Goodman, 2005). Furthermore, it has been suggested that adolescent mothers may benefit more from a comprehensive treatment plan that includes collaborative care models, systematic practice changes, and a team approach. Collaborative care models include the primary care provider identifying, managing, and coordinating treatment and care with other providers when necessary.

While there are a variety of treatment options available for adolescents with PPD, the studies included in this review only used cognitive-behavioral therapies and psychotherapies. CAM and pharmaceutical therapies were not utilized, and may show promising results if used in future studies. Either way, systemic practice changes, such as universal screening and utilizing evidence-based treatment strategies, need to be in place in order for providers to collaborate and take a team approach to adolescent PPD (Barnet, Liu, & DeVoe, 2008).

Regardless of the treatment approach, it is vital that the effectiveness of any given treatment be measured so that one can document baseline functioning and the response to treatment (Logsdon, 2009). Knowing whether functioning and depressive symptoms are improving from baseline is essential information for the clinician caring for mothers with PPD (Logsdon, 2009).

Theoretical Framework

The theoretical framework chosen to guide this project is Mercer's model of Maternal Role Attainment. This theory was chosen for this project because it specifically addresses adolescents and maternal role attainment. In this theory Mercer (1986) defines role attainment as an:

Interactional and developmental process occurring over a period of time, during which the mother becomes attached to her infant, acquires competence in the caretaking tasks involved in the role and expresses pleasure and gratification in the role. (p. 24)

There are five major assumptions associated with Maternal Role Attainment (Mercer, 1986, pp. 24-25; Marriner-Tomey, 1994, p. 394):

1. A relatively stable “core self,” acquired through lifelong socialization, determines how a mother defines and perceives events; her perceptions of her infant’s and others’ responses to her mothering, along with her life situation, are the real world to which she responds.
2. In addition to the mother’s socialization, her developmental level and innate personality characteristics also influence her behavioral responses.
3. The mother’s role partner, her infant, will reflect the mother’s competence in the mothering role via growth and development.
4. The infant is considered an active partner in the maternal role-taking process, affecting and being affected by the role enactment.
5. Maternal identity develops along with maternal attachment and each depends on the other

Maternal role attainment occurs through a process of four stages, which include anticipatory, formal, informal, and personal (Marriner-Tomey, 1994). The anticipatory stage is defined as the “social and psychological adjustment to the role by learning the expectations of the role” (Marriner-Tomey, 1994, p. 396). In this stage the mother-to-be fantasizes about becoming a mother and about the fetus in utero. The second stage, known as formal, begins with the “assumption of the role at birth” (p. 396) and role behaviors are guided by the societal expectations placed on the mother. The third stage, informal, begins when the mother develops her own maternal characteristics and ways of

functioning in the maternal role. Finally, the fourth stage, called personal, begins when the mother develops a sense of harmony, confidence, and competence in the role as mother. It is in this final stage when maternal role attainment is achieved (Marriner-Tomey, 1994).

The Maternal Role Attainment theory recognizes that there are many factors that affect how a mother attains the maternal role, and one of these factors is becoming a mother during adolescence (Marriner-Tomey, 1994). Mercer (1986) found that the adolescent mothers in her study were “more disadvantaged at the psychological and social levels of adaptation during the first year of motherhood” (p. 329), experienced higher levels of stress from negative life events, and had a decrease in the overall gratification of the maternal role at one year postpartum. In one study, Mercer (1986) found that adolescent mothers were “more handicapped in some areas for fulfilling the very complex mothering role” (p. 321) and that they subsequently “scored at a lower level of adaptation on the continuum of maternal role behaviors” (p. 321). It is important to keep in mind that many developmental changes occur during the transition from adolescence to adulthood, specifically this is a time when the progression from concrete thinking to a more conceptual and abstract way of thinking takes place (Mercer, 1986). Therefore, adolescents may not be able to conceptualize the many different factors that affect one’s maternal role development because they simply cannot yet think in that abstract manner.

Definition of Terms

Postpartum depression (PPD)- Is defined as moderate to severe depression beginning slowly and sometimes undetectably during the second to third week postpartum, increasing steadily for weeks to months and usually resolving spontaneously within a year. Somatic complaints such as fatigue are common. It is intermediate in severity between the mood fluctuations experienced by the majority of new mothers and frank postpartum psychosis (O'Toole, 2003, p. 489).

The American Psychiatric Association's (2000), *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision* (DSM-IV-TR), does not recognize PPD as a distinct diagnosis from other forms of depression. According to the DSM-IV-TR (2000), in order to make a diagnosis of PPD, patients must meet the criteria for both, a major depressive episode and the postpartum onset specifier. Criteria for the postpartum onset specifier is if the onset of a major depressive episode occurs within 4 weeks after delivery (APA, 2000, p. 422). APA criteria for a major depressive episode can be found in Appendix A.

Adolescent- As defined by O'Toole (2003) is:

The period of between the onset of puberty and the cessation of physical growth; roughly from 11 to 19 years of age. Adolescents vacillate between being children and being adults. They are adjusting to the physiologic changes their bodies are undergoing and are working to establish sexual identification and to use these changes for their personal benefit and for the benefit of society. During the period of time between childhood and adulthood, as for other life stages, there are certain developmental tasks to be accomplished before one can move on to the next stage of maturity. The developmental tasks of adolescents include 1) becoming comfortable with their own bodies, 2) working toward independence from parents and other adult authority figures, 3) building

new and meaningful relationships with others of the same and opposite sexes, 4) seeking economic and social stability, 5) developing a personal value system, and 6) learning to verbalize conceptually. (p. 38)

Problem Statement

It is suggested that adolescent mothers experience PPD at a higher rate than compared to adult mothers (Deal & Holt, 1998). PPD not only affects the mother, but research suggests it has direct effects on the infant's emotional, social, and cognitive development (Yozwiak, 2010). With early detection and proper treatment the effects that PPD has on both maternal and child wellbeing can be reduced (Lanzi et al., 2009). However, at this time the most effective intervention for treating or preventing PPD among adolescent mothers is unknown (Yozwiak, 2010).

Purpose of Professional Project

The purpose of this professional project was to conduct an integrated literature review examining the various interventions used in the treatment and/or prevention of PPD among adolescent mothers. In completing this review, the intention was to determine the most effective interventions to treat and/or prevent PPD in this unique population.

Summary

Adolescent mothers are at a higher risk of developing PPD when compared to adult mothers (Deal & Holt, 1998), which may be attributed to their increased difficulty

of adapting to the maternal role (Mercer, 1986). PPD not only negatively affects the adolescent mother, but it may also have drastic effects on the infant's growth and development (Reid & Meadows-Oliver, 2007; Yozwiak, 2010). Therefore, it is crucial that adolescent mothers are screened for PPD so that timely interventions can be implemented in order to restore the adolescent mother to a level of baseline functioning and to minimize negative effects on the child's growth and development (Reid & Meadows-Oliver, 2007; Yozwiak, 2010). There is a lack of evidence evaluating the effectiveness of interventions aimed at treating and/or preventing PPD in adolescent mothers and the most effective intervention for use among adolescent mothers with PPD is unknown at this time (Yozwiak, 2010).

CHAPTER TWO

REVIEW OF LITERATURE

Literature Search

The literature search for this project was done using several search strategies. Whittemore and Knafl (2005) noted that using computerized databases are an effective means of conducting a literature search, however, limitations with this type of search often yield only 50% of eligible studies. Therefore, the authors recommend enhancing the database search with other methods, such as hand searching relevant journal and networking with others (Whittemore & Knafl, 2005). As cited in Whittemore and Knafl, a comprehensive integrative literature review search includes using at least two search strategies. This literature search includes a total of three strategies: electronic database, hand search, and networking.

Inclusion/Exclusion Criteria

The primary inclusion criterion for this project was that the research specifically addressed interventions used for postpartum depression in the adolescent population. Initially, the literature search was limited to studies that were published within the past seven years (2005-2012) and studied adolescent mothers. However, given the limited number of published research articles on this topic, the date (1990-2012) and population (all maternal PPD) parameters were expanded.

In order to ensure high quality research, only peer-reviewed research articles were included in this search, thus omitting any dissertations, theses, or opinion articles. Only research that assessed interventions in PPD among adolescent mothers was included in the search. Several articles reviewed assessed PPD interventions among both adult and adolescent mothers, and these studies were included in the final review, but only the results of the adolescent population were considered in this project.

Search Methods

Databases. The electronic database search included the following databases: Medical Literature On-Line (MEDLINE), the Cumulative Index to Nursing and Allied Health Literature (CINAHL), Cochrane Library, PsycINFO (psychology on-line), and Social Services Abstracts. MEDLINE, CINAHL, and Cochrane Library were databases chosen as a nursing and medicine resource. PsychINFO and Social Services Abstracts were databases chosen as a psychology resource. Nursing, medicine, and psychology resources were chosen in order to broaden the pool of eligible articles.

Search Terms. The following search terms were used in the literature search: *adolescents, adolescent mothers, depression, postpartum depression, interventions, effectiveness, and randomized controlled trial.*

Supplemental Search Methods. The reference lists of all selected articles were hand searched. As well, the author networked with an expert in the field, Dr. Kathleen Schachman, to identify seminal articles.

Findings

MEDLINE. A search in the MEDLINE database using the combined terms *interventions, adolescents* and *postpartum depression* yielded 106 results. This search was then refined using the term *adolescent mothers* in place of *adolescents*, and 50 articles resulted. Of these 50 articles one article (Logson et al., 2010) met the inclusion criteria. Another search, using the terms *randomized controlled trial, adolescent, and postpartum depression* yielded 26 results, of which none met the inclusion criteria. The term *adolescents* was then replaced with *adolescent mothers* and resulted in 14 articles, none of which met the inclusion criteria. MEDLINE yielded a total of one study that was used in this literature review (see Table 1).

Table 1.
Evidence Table of MEDLINE Search Returns that met the Inclusion Criteria

Study Year	Design	Purpose	Sample	Intervention
Logsdon et al., (2010)	Mixed methods	To examine processes and outcomes associated with telephone based depression intervention	N=97 adolescent mothers, 4-6 weeks postpartum	Telephone based DCM intervention lasting 6 months

Cumulative Index to Nursing and Allied Health Literature (CINAHL). The CINAHL database was initially searched using the combined terms *adolescent, postpartum depression, and interventions* and yielded 3 results, of which none met inclusion criteria. The search terms of *randomized controlled trial* and *adolescent mothers* was then used and resulted in 19 articles. The search was then narrowed by including the term *postpartum depression* into the search terms, and 3 articles resulted, of which one (Logsdon et al., 2005) met the criteria.

Finally, a search using the terms *adolescent* and *postpartum depression* resulted in 54 articles, of which one (Koniak-Griffin et al., 2002) met inclusion criteria. A total of two articles were obtained through the CINAHL database and included in this literature review (see Table 2).

Table 2.
Evidence Table of CINAHL Search Returns that met the Inclusion Criteria

Study Year	Design	Purpose	Sample	Intervention
Logsdon et al., (2005)	Repeated measures and randomized controlled trial	To determine effectiveness of social support intervention in preventing postpartum depression in adolescent mothers	N=128 Pregnant adolescents, between 32-36 weeks gestation	Social support pamphlet; social support video; or social support pamphlet and video
Koniak-Griffin et al., (2002).	Randomized controlled trial	To compare effects of an early intervention program to traditional public health nursing on selected maternal outcomes of adolescent mothers	N= 102 pregnant adolescents, at 26 weeks gestation or less, with no previous live births	Early intervention program home visits

Cochrane Library. A literature search using the Cochrane Library database did not produce any articles that met inclusion criteria. The following terms were used in this database search: *interventions*, *postpartum depression*, *adolescent mothers*, *adolescents*, and *randomized controlled trial*.

PsycINFO. The terms *adolescent*, *postpartum depression*, and *interventions* resulted in 45 articles, of which one (Ginsburg et al., 2012) met the inclusion criteria. The terms *effectiveness*, *intervention*, and *adolescent mothers* resulted in 120 articles. This search was then narrowed with the term *depression* and resulted in 25 articles, of which

one article (Thomas & Looney, 2004) met inclusion criteria. The articles found in the PsycINFO databases are summarized below (see Table 3).

Table 3.
Evidence Table of PsycINFO Search Returns that met the Inclusion Criteria

Study Year	Design	Purpose	Sample	Intervention
Ginsburg et al., (2012)	Randomized controlled trial	To evaluate the feasibility of a depression prevention program for pregnant American Indian adolescents	N=47 pregnant adolescents at 28 weeks gestation or less, who had a CES-D score of 16 or higher	Living in Harmony (LIH) sessions; Education Support (ES)
Thomas and Looney, (2004)	Pilot Study, repeated measures design, non-experimental	To evaluate the effectiveness of a psychoeducational intervention on depression, self-esteem, and parenting beliefs of adolescent mothers	N=41 adolescents who are pregnant or have recently given birth and who are enrolled in either RTF or RAS	Two phase parenting education program

Social Services Abstracts. This database revealed one article (Ginsburg et al., 2012) that met inclusion criteria for this review, which was also found using the PsycINFO database. The terms used in this database include *adolescent mothers*, *postpartum depression*, and *interventions*. This article is already summarized in Table 3.

Hand Searches. The reference lists of all selected articles were hand searched for articles that met inclusion criteria, and were not revealed in the electronic database search. Three articles (Koniak-Griffin et al., 2000; Barnet et al., 2002; and Barlow et al., 2006) met inclusion criteria for this literature review and are summarized below (see Table 4).

Table 4.
Evidence Table of Hand Search Returns that met the Inclusion Criteria

Study Year	Design	Purpose	Sample	Intervention
Koniak-Griffin et al., (2000)	Randomized controlled trial, longitudinal study	To evaluate the effects of an early intervention program (EIP) on the health and social outcomes of adolescent mothers and their children	N=121 adolescents who were 26 weeks or less gestation, planning to keep infant, and without serious medical issues	Early intervention program
Barnet et al., (2002)	Randomized controlled trial	To evaluate the effect of a volunteer model home visitation program on adolescent parenting outcomes, including mental health	N=148 adolescents at 28 weeks or more gestation or who had delivered a child within the past 6 months	Home visitation
Barlow et al., (2006)	Randomized controlled trial	To assess the impact of a paraprofessional-delivered home visiting intervention to promote child care knowledge, skills, and involvement	N=41 American Indian adolescents at 28 weeks gestation or less	Healthy Families America home-visits

Networking. One article was obtained through networking with Dr. Schachman.

The article (Ickovics et al., 2011) was found in an electronic database search and passed along to the author (see Table 5).

Table 5.
Evidence Table of Networking Search Returns that met the Inclusion Criteria

Study Year	Design	Purpose	Sample	Intervention
Ickovics et al., (2011)	Randomized controlled trial	To examine the psychological impact of an innovative intervention designed to improve negative birth outcomes, decrease sexual risk, and improve psychosocial outcomes	N=513 adolescent women less than 24 weeks gestation, with no other medical issues	Centering Pregnancy Plus and Centering Pregnant group prenatal care

Summary

A total of nine articles met inclusion criteria and were utilized in this literature review. The review of literature was conducted using a variety of electronic databases including: MEDLINE, CINAHL, Cochrane Library, PsycINFO and Social Services Abstracts. The aforementioned terms were searched using each of these electronic databases. The literature search was supplemented with a hand search of the reference lists from each selected article, and from networking with Dr. Schachman. Only articles that met all of the inclusion criteria and that were from scholarly journals were chosen to be included in the final review process.

CHAPTER THREE

DATA ANALYSIS

Overview

Articles meeting the inclusion criteria were analyzed using principles recommended by Galvan (2006), who developed sixteen guidelines for analyzing research literature. Some of the guidelines that were incorporated into this data analysis included: using a consistent format in the review of each article, looking for explicit definitions of key terms in the literature (i.e. adolescent, postpartum depression), noting methodological strengths and weaknesses, identifying relationships among studies, identifying major trends and/or patterns in the results of the included studies, and evaluating each reference list for currency and coverage. Galvan also advised noting: whether a study is experimental or non-experimental, if participants of a study were randomly assigned to a given intervention, participant demographics, sampling plans, and instrument validity.

An evidence table was created for the nine articles included in this review as a technique for following Galvan's recommended approach to analyzing the included literature. The table organizes each article by purpose, theoretical framework, study design, sample size and characteristics, interventions, methodology, data analysis, findings, and methodological strengths and weaknesses. Due to the limited number of qualifying research articles there was no need to perform a data reduction. Therefore, all

articles meeting the inclusion criteria were included in the data analysis, which can be found in Appendix B.

Identification of Themes and Patterns

Using the tables constructed for each article, a number of themes and patterns emerged. Additionally, the tables allowed for an early analysis of gaps in the literature and strengths and weakness of current research regarding interventions for adolescents with PPD. The data analysis findings are further discussed in chapter four, and the constructed tables can be seen in Appendix B.

CHAPTER FOUR

PRESENTATION OF FINDINGS

Overview

A total of nine studies met the inclusion criteria and were analyzed for the purpose of this project. These studies are displayed in Table 6. In order to analyze the quality of the selected literature, the components of each study were organized into a table with the following categories: purpose, theoretical framework, study design, sample, intervention, methodology, data analysis, findings, methodological strengths and weaknesses. These tables are located in Appendix B.

The presentation of findings from this literature review will be described using the categories mentioned above. By organizing the findings in this manner, certain themes, discrepancies, and gaps in the literature became evident.

Table 6.
Studies Included in Review

Study Year	Design	Purpose	Sample	Intervention
Logsdon et al., (2010)	Mixed methods	To examine processes and outcomes associated with telephone based depression intervention	N=97 adolescent mothers, 4-6 weeks postpartum	Telephone based DCM intervention lasting 6 months
Logsdon et al., (2005)	Repeated measures and randomized controlled trial	To determine effectiveness of social support intervention in preventing postpartum depression in adolescent mothers	N=128 Pregnant adolescents, between 32-36 weeks gestation	Social support pamphlet; social support video; or social support pamphlet and video

Table 6.
Studies Included in Review Continued

Study Year	Design	Purpose	Sample	Intervention
Koniak-Griffin et al., (2002).	Randomized controlled trial	To compare effects of an early intervention program to traditional public health nursing on selected maternal outcomes of adolescent mothers	N= 102 pregnant adolescents, at 26 weeks gestation or less, with no previous live births	Early intervention program home visits
Ginsburg et al., (2012)	Randomized controlled trial	To evaluate the feasibility of a depression prevention program for pregnant American Indian adolescents	N=47 pregnant adolescents at 28 weeks gestation or less, who had a CES-D score of 16 or higher	Living in Harmony (LIH) sessions; Education Support (ES)
Thomas and Looney, (2004)	Pilot Study, repeated measures design, non-experimental	To evaluate the effectiveness of a psychoeducational intervention on depression, self-esteem, and parenting beliefs of adolescent mothers	N=41 adolescents who are pregnant or have recently given birth and who are enrolled in either RTF or RAS	Two phase parenting education program
Koniak-Griffin et al., (2000)	Randomized controlled trial, longitudinal study	To evaluate the effects of an early intervention program (EIP) on the health and social outcomes of adolescent mothers and their children	N=121 adolescents who were 26 weeks or less gestation, planning to keep infant, and without serious medical issues	Early intervention program
Barnet et al., (2002)	Randomized controlled trial	To evaluate the effect of a volunteer model home visitation program on adolescent parenting outcomes, including mental health	N=147 adolescents at 28 weeks or more gestation or who had delivered a child within the past 6 months	Home visitation

Table 6.
Studies Included in Review Continued

Study Year	Design	Purpose	Sample	Intervention
Barlow et al., (2006)	Randomized controlled trial	To assess the impact of a paraprofessional-delivered home visiting intervention to promote child care knowledge, skills, and involvement	N=41 American Indian adolescents at 28 weeks gestation or less	Healthy Families America home-visits
Ickovics et al., (2011)	Randomized controlled trial	To examine the psychological impact of an innovative intervention designed to improve negative birth outcomes, decrease sexual risk, and improve psychosocial outcomes	N=513 adolescent women less than 24 weeks gestation, with no other medical issues	Centering Pregnancy Plus and Centering Pregnant group prenatal care

Summary of Literature

Quality

Each study included in this review of literature was analyzed for quality using the guidelines recommended by Galvan (2006). Because of the lack of available literature on this topic no studies were omitted based solely on quality. In other words, if an article met inclusion criteria then it was included in this project. While the articles were not formally scored based on the quality of research, assessing the general quality of each study helped to determine themes, discrepancies, and gaps in literature relating to interventions for adolescent mothers with PPD.

Study Location

All studies took place within the U.S. in areas ranging from Arizona and New Mexico to southern urban areas and large, Midwestern cities. No studies were conducted in other countries, although some participants were foreign-born.

Study Design

Seven of the nine studies were randomized controlled trials (RCTs) (Logsdon et al., 2005; Koniak-Griffin et al., 2002; Ginsburg et al., 2012; Koniak-Griffin et al., 2000; Barnett et al., 2002; Barlow et al., 2006; Ickovics et al., 2011). One study was a non-experimental pilot study (Thomas & Looney, 2004), and the remaining study was a mixed methods design (Logsdon et al., 2010). The initial goal of this literature review was to only include RCTs, as they are often considered the gold standard in research design. However, as mentioned previously, there was a lack of studies looking at interventions and PPD in adolescents, therefore the search was expanded to include studies other than RCTs. That being said, seven of the nine studies included in this review were RCTs in design (see Table 7).

Table 7.
Study Design

Randomized control trial	Non-experimental pilot study	Mixed methods
Logsdon et al. (2005)	Thomas and Looney (2004)	Logsdon et al. (2010)
Koniak-Griffin et al. (2002)		
Ginsburg et al. (2012)		
Koniak-Griffin et al. (2000)		
Barnet et al. (2002)		
Barlow et al. (2006)		
Ickovics et al. (2011)		

Sample Description

Sample sizes varied between studies, ranging from forty-one participants to over five hundred participants. The range of sample sizes can be seen in Table 8.

Table 8.
Sample Size

N = < 100	N = > 100	N = > 500
Logsdon et al. (2010)	Logsdon et al. (2005)	Ickovics et al. (2011)
Ginsburg et al. (2012)	Koniak-Griffin et al. (2002)	
Thomas and Looney (2004)	Koniak-Griffin et al. (2000)	
Barlow et al. (2006)	Barnet et al. (2002)	

The majority of participants ranged from ages 13 to 19 years old, however Barnet et al. (2002) and Barlow et al. (2006) included 12 year-old participants. Thomas and Looney (2004) included participants between the ages of 14 to 20 years old, and the participants in Ickovics et al. (2011) were aged 14 to 25 years, however data included in

this review was only from those participants aged 14 to 19 years old. For the purpose of this review, the youngest participants were 12 years old, and the oldest were 20 years old.

Four of the studies recruited participants from some type of adolescent parenting program or school (Barnet et al., 2002; Thomas & Looney, 2004; Logsdon et al., 2005; Logsdon et al., 2010). Three studies recruited participants based on referrals from either county health departments or publically funded clinics (Koniak-Griffin et al., 2000; Koniak-Griffin et al., 2002; Ickovics et al., 2011). The remaining two studies recruited their participants directly from the Indian reservations included in each study (Barlow et al., 2006; Ginsburg et al., 2012).

Samples were recruited for each study based on a number of variables, including gestation, having no previous live births, and lack of other medical conditions. Participants in the Barnet et al. (2002) study were at least 28 weeks gestation, or had delivered a baby within the past 6 months, and attended an urban, alternative school for childbearing adolescents throughout the city of Baltimore, MD. The participants were predominantly African American and considered to be low-income students.

Thomas and Looney (2004) included participants who were either pregnant or had given birth at the time of recruitment, and who were enrolled in either a residential treatment facility (RTF) or a rural alternative school (RAS). The RTF provides a variety of residential and support services for high-risk pregnant and parenting adolescents, whereas the RAS does not offer residential services. Participants in both groups came from a large, Midwestern city, and those who attended an RTF were especially at risk for becoming homeless.

In the study by Logsdon et al. (2005) participants were recruited from an alternative school for pregnant and parenting teens and were between 32-36 weeks gestation. Of the participants, 56% were African American, 38% were Caucasian, and 6% were of another race/ethnicity.

In the study by Logsdon et al. (2010) participants were primiparas, who were 4-6 weeks postpartum and who attended a Teenage Parent Program in a southern urban community. In order to receive the telephone-based intervention, participants needed to have a CES-D score greater than or equal to 16 (indicating depression) or a DSM-IV diagnosis of major depressive disorder (MDD).

Participants in both the Koniak-Griffin et al. (2000) and the Koniak-Griffin et al. (2002) studies were adolescents less than 26 weeks gestation, with no previous live births and who were planning on keeping their infant. Participants were not chemically dependent and did not have other serious medical or obstetric problems and were referred from a local community health clinic. Most of the participants were from underserved minority backgrounds (Latina and African American) and had a low socioeconomic status.

Participants in the Ickovics et al. (2011) study were recruited from two publically funded prenatal clinics in New Haven, CT and Atlanta, GA. They were less than 24 weeks gestation, had no other known medical conditions making them “high-risk,” and they spoke either English or Spanish.

Barlow et al. (2006) included participants who were no further along than 28 weeks gestation and were recruited from four American Indian Health Service catchment

areas on Indian reservations throughout New Mexico and Arizona. Potential participants were not eligible if they had co-existing medical, legal or social problems that would inhibit them from fully participating in the study.

Ginsburg et al. (2012) used a CES-D scale score of greater than sixteen (indicating symptoms of depression) but not meeting criteria for MDD as inclusion criteria for their study. Furthermore, participants were Apache American Indians, no more than 28 weeks gestation, and had no other psychiatric disorders or conditions that required immediate attention, such as substance abuse or suicidal intentions.

All of the studies, except for Ginsburg et al. (2012), recruited participants either through a county health department, publically funded prenatal program, or an adolescent mother program. Barlow et al. (2006) and Ginsburg et al. (2012) included only participants who were American Indians.

Interventions

Of the nine studies, five of them used interventions that included home-visits (Barnet et al., 2002; Barlow et al., 2006; Koniak-Griffin et al., 2002; Koniak-Griffin et al., 2000; Ginsburg et al., 2012), two used group interventions (Ickovics et al., 2011; Thomas & Looney, 2004), one study used telephone-based depression care management (Logsdon et al., 2010), and one study used a combination of pamphlets and videos in their intervention (Logsdon et al., 2005). See Table 9 for study interventions.

Barnet et al. (2002) used a home-visiting intervention that utilized the Parent Aides Nurturing and Developing with Adolescents curriculum, which places an emphasis on positive child development through nurturing and empathetic parenting. The

intervention group received weekly, one and one half hour visits from a trained home-visitor. The home-visitor focused on different aspects of parenting, health, and education at each visit, and made referrals for early interventions when necessary. The home visits lasted through the child's first birthday, with the option to continue until the child's second birthday if desired. Structured interviews, which included assessing mental health, took place at baseline and then again at 15 months postpartum. The control group did not receive home-visits; however both groups received the usual care provided by the school the participants were enrolled in, which included health care, academics, parenting classes, and day care.

The intervention group in the Barlow et al. (2006) study received 25 home visits which included a total of 41 lessons covering prenatal care, labor, delivery, breastfeeding, nutrition, parenting, home safety, immunizations, well-baby care, family planning, sexually-transmitted infections prevention, and maternal goal setting for personal and family development. The intervention was modeled after the national program "Healthy Families America" which was created to help ensure quality of home-visiting interventions for at-risk families. Home visits started when the participant was 28 weeks gestation and lasted until she was 6 months postpartum. Each home visit lasted one and one half hours and was conducted by trained educators. The participants in the control group received a breastfeeding program that was designed by John Hopkins Center for American Indian Health, which comprised of 23 home-visits, covering 20 breastfeeding lessons. Each home visit lasted approximately one hour and was conducted by a trained educator.

The Koniak-Griffin et al. (2002) and Koniak-Griffin et al. (2000) studies both used the Early Intervention Program (EIP) as their intervention, and traditional public health nursing care (TPHN) as their control. The EIP was developed to help young mothers manage their lives, and was specifically designed to have a positive impact on prenatal health behaviors and perinatal outcomes of young mothers, infant and maternal health, maternal educational achievement, and social competence. Prior to delivery, each participant in the intervention group attended four “Preparation for Motherhood” classes, which included information on transitioning to motherhood, staying healthy, and parent-child communication. Participants in the intervention group received approximately 17 home-visits from public health nurses (PHNs) starting in the 2nd or 3rd trimester and lasting through the first year of postpartum. During the home-visits, PHNs focused on interventions in the following categories: health, sexuality and family planning, maternal role, life skills, and social support. As well, the PHNs made referrals when necessary for mental health counseling, family planning, or childcare.

The control group received TPHN, which is comparable to services often available in health departments that lack special funding for adolescent programs. The TPHN in this study consisted of 1 to 2 prenatal home-visits and one 6-week postpartum home-visit. The focus of the prenatal home-visits the PHN was on self-care, preparation for childbirth, education plans, and well-baby care, and the 6 week postpartum home-visit centered around postpartum recovery, maternal and infant nutrition, home safety, and family planning.

The goal of the intervention in the Ginsburg et al. (2012) study was to reduce depressive symptoms during pregnancy and prevent the onset of major depressive disorder (MDD) postpartum. The intervention was called Living in Harmony (LIH) and was adapted from Cognitive Behavioral Therapy (CBT) curricula. LIH consisted of eight weekly, 30-60 minute home (or office) sessions with three monthly booster sessions. Home-visits were initiated prior to 29 weeks gestation and lasted through 6 months postpartum. The visits focused on psychoeducation, identifying and modifying depressive conditions and behaviors, problem-solving skills, enhancing social supports, and planning for the future.

The control group received Education-Support Condition (ES), which also included eight weekly, 30-60 minute home (or office) sessions with three monthly booster sessions. These sessions also began prior to 29 weeks gestation and lasted through 6 months postpartum. The content of the ES sessions included: understanding the reproductive system, stages of pregnancy, nutrition and weight gain, understanding gestational diabetes, preparing for delivery, immunizations, American Indian priority diseases, and STIs.

Ickovics et al. (2011) utilized two interventions in their study, the Centering Pregnancy Plus (CP+) and the Centering Pregnancy (CP) programs. The CP+ provided group prenatal care in 10 structured classes, each lasting approximately 2 hours, and led by a trained prenatal care provider (e.g. midwife, obstetrician). Components of the CP+ sessions include: self-care activities, prenatal care, childbirth preparation, postpartum care, HIV prevention, and mental health and psychosocial functioning. Participants

enrolled in the CP sessions received the same contact time and health promotion components seen in the CP+ sessions, however it did not include any HIV, sexual risk reduction, or psychosocial components, which were emphasized in the CP+ program. The control group met on the same schedule and for the same number of times with a health care provider as those in the interventions, however contact time was limited to 10-15 minutes per session. The prenatal care received in the control group was designed to be consistent with traditional prenatal care.

The intervention in the Thomas and Looney (2004) study consisted of a two-phase parenting education program. Phase I, entitled the “Nurturing Program,” was a group intervention that focused on strength-based, relational parenting education, and occurred in weekly sessions for the duration of 12 weeks. Each session was conducted by a trained therapist and parenting expert, who combined psychoeducational and group counseling techniques into each session. Phase II was a follow-up option for those who completed Phase I, and consisted of weekly psychoeducational/counseling parenting support groups, lasting for an additional 12 to 14 weeks. The Thomas and Looney (2004) study was a non-experimental intervention research study, and therefore lacked a control group.

The purpose of the telephone-based depression care management intervention used in the Logsdon et al. (2010) study was to assist adolescent mothers with overcoming barriers to mental health evaluation and/or treatment, and was not a means of providing therapy. Participants received weekly calls of 15-20 minutes each for the first 4 weeks, then calls every 2 weeks for 2 months lasting 10 minutes each, and finally monthly calls

for 2 months lasting 10 minutes each. The total duration of the intervention was 6 months, with a total of 11 phone interactions. The depression care manager (DCM), who was responsible for conducting the telephone interactions, was an experienced child/adolescent psychiatric clinical nurse specialist with extensive knowledge of local community and psychiatric resources for adolescents.

Logsdon et al. (2005) used a social support intervention, consisting of three interventions, including a pamphlet, a video, or the combination of the pamphlet and the video. The pamphlet and video had the exact same content, except that the video had two additional role-playing scenes. The content of the intervention was based on literature that described the social support needed and desired by postpartum adolescents. It included information on how to recognize the need for support, defined what type of support was needed, clarified who can offer the most helpful kind of support, how to ask for help, and how to return the favor. Each intervention was then summarized into key points. The pamphlet was fifteen pages and written at a sixth grade reading level. The video was 8 minutes long and had both a narrator and dialogue. The intervention was delivered to participants between 32 and 36 weeks gestation, and follow-up data was collected at 6 weeks postpartum.

Table 9.
Study Interventions

Home Visits	Group Intervention	Telephone-based	Social Support Intervention
Barnet et al. (2002)	Ickovics et al. (2011)	Logsdon et al. (2010)	Logsdon et al. (2005)
Barlow et al. (2006)	Thomas & Looney (2004)		
Koniak-Griffin et al. (2002)			
Koniak-Griffin et al. (2000)			
Ginsburg et al. (2012)			

Clinical Outcome Measures

All of the studies, except for Barnet et al. (2002) utilized the CES-D to measure depression. Barnet et al. (2002) used the Mental Health Inventory-5 (MHI-5) to assess mental health status, which, according to the authors has been shown to be highly predictive of depressive disorders in adolescents. Ginsburg et al. (2012) used both the CES-D and the EPDS to measure depression in their participants.

Length of Follow-up

As noted earlier by Beck and Gable (2001), PPD can develop anytime during the first year of postpartum, and therefore it makes most sense that studies analyzing PPD in adolescents follow-up throughout at least the first year of postpartum. However, only three of the studies included in this review had follow-up through at least the first postpartum year. Most of the studies had follow-up periods of either 6 months or one year postpartum. Studies with one-year postpartum follow-up periods include: Ickovicks et al. (2011) and Koniak-Griffin et al. (2002). Studies with a six-month postpartum follow-up period include: Thomas and Looney (2004), Ginsburg et al. (2012), Logson et al. (2010),

and Barlow et al. (2006). Barnett et al. (2002) had the longest follow-up at 15 months postpartum and Logsdon et al. (2005) and Koniak-Griffin et al. (2000) had the shortest lengths of follow-up at six weeks each.

Table 10.
Length of Follow-Up

6 weeks postpartum	6 months postpartum	1 year postpartum	15 months postpartum
Logsdon et al. (2005)	Thomas and Looney (2004)	Ickovicks et al. (2011)	Barnet et al. (2002)
Koniak-Griffin et al. (2000)	Ginsburg et al. (2012) Logson et al. (2010) Barlow et al. (2006).	Koniak-Griffin et al. (2002)	

Themes

The majority of studies used the CES-D to evaluate the participants' levels of depression. Eight of the nine studies conducted some type of intervention that involved direct communication, whether it was through home-visits, group counseling, or telephone contact, but not all of these studies showed improvement in depressive symptoms. One clear theme that emerged from this literature review is that not all of the studies that incorporated a home-visit or group intervention showed improvement of depressive symptoms.

Both studies that examined home-visit interventions in the adolescent American Indian population found decreased postpartum depressive symptoms after receiving the intervention. Participants in both the LIH and ES intervention groups from the Ginsburg et al. (2012) study displayed equal rates of reduction in depressive symptoms by six

months postpartum, and Barlow et al. (2006) found that adolescents who received the Healthy Families America home-visiting intervention experienced a larger drop in depressive symptoms at both two months and six months postpartum when compared to the control group.

Koniak-Griffin et al. (2000) found no significant group effect concerning internal social competence (self-esteem, sense of mastery, perceived stress and depression) with the EIP home-visit intervention at 6 weeks postpartum. Koniak-Griffin et al. (2002) used the same data and found no significant improvement in psychological status within one year postpartum for the EIP or TPHN groups. They did note a significant decrease in CES-D scores for both groups at one year postpartum. These findings may suggest that the rate of PPD naturally decreases after the first year of postpartum.

Thomas and Looney (2004) did not find a significant improvement in CES-D scores for participants receiving the two-phase parenting education program. The home-visitation intervention in the Barnett et al. (2002) study did not affect the adolescent mothers' high rates of poor mental health.

Logsdon et al. (2005) found that a social support intervention provided during late pregnancy did not decrease depressive symptoms at 6 weeks postpartum. However, Logsdon et al. (2010) found that depressive symptoms among adolescent mothers improved after receiving the telephone-based DCM intervention. While the use of the telephone as a tool in preventative nursing care has not been widely validated (Koniak-Griffin et al., 2000) this study may support its use preventing or reducing the rate of PPD in adolescents.

Ickovics et al. (2011) discovered that participants who were considered to be more vulnerable and “high-stress” had a significant decrease in depression from baseline to one year postpartum with the CP+ group intervention. It is important to note that as mentioned earlier, adolescents tend to be more vulnerable and may have high stress pregnancies when compared to adults.

In conclusion, no clear themes emerged indicating the most effective interventions for reducing depressive symptoms in adolescent mothers. Only four studies (Logsdon et al., 2010; Ickovics et al., 2011; Ginsburg et al., 2012; Barlow et al., 2006) showed a direct improvement in postpartum depressive symptoms, indicated by decreased CES-D scores. The remaining five studies did not show significant improvement in CES-D scores, even though many of the interventions were similar to those studies that resulted in decreased depressive symptoms.

Discrepancies

The major discrepancies found in this integrative literature review are that not all studies were RCTs that tested specific interventions for at least one year postpartum, and therefore the studies could not be easily compared. While eight out of nine studies used the CES-D to measure depression, not all of the studies screened for depressive symptoms at the same intervals throughout the postpartum period.

Another discrepancy was the length of follow-up for each study. As noted previously, PPD can develop anytime within the first year of postpartum, therefore it would make sense that any research examining PPD be conducted through the first year

of postpartum. However, in this literature review only three of the included studies followed-up for at least one year postpartum.

Theoretical Framework

Many of the authors included in this review recognized theories that guided their research, however none of them used Mercer's model of Maternal Role Attainment (1986) in their research. This theory is a mid-range nursing theory and many of the authors included in this review were not nurses, and therefore were likely unfamiliar with this theory. Mercer's theory recognizes that becoming a mother during adolescence affects how the mother attains the maternal role, and that adolescent mothers often have increased stress and decreased overall gratification during the transition from adolescence to motherhood. Furthermore, Mercer recognizes that the natural transition from adolescence to adulthood may interfere with how an adolescent mother embraces the maternal role (Mercer, 1986). Using this model to further investigate how the developmental tasks and transitions of adolescence affects adolescent mothers in achieving the maternal role would be warranted in future research.

Gaps in Literature

A complete review of the literature on interventions for adolescents with PPD yielded only nine research articles. There is a lack of current research examining appropriate interventions for adolescents with PPD and ways to reduce the prevalence of PPD among this age group. Another gap in the literature is research examining whether

or not PPD is decreased among adolescent mothers who attend an alternative school or teen parenting program.

Conclusions

In conducting this integrative literature review, the hope was to discover an effective intervention used to treat and/or reduce the prevalence of PPD among adolescent mothers. This literature search only revealed nine research articles meeting inclusion criteria, and of those, seven were RCTs. The samples from the research articles were diverse, ranging from adolescent American Indians to high-risk urban adolescents, and the sample sizes varied from 41 participants to over 500 participants.

In examining the results of the various studies, there did not appear to be a clear theme in the effectiveness of a particular intervention. For example, of the five studies that examined a home-visit intervention, only two of them found that the intervention lowered CES-D scores. The two studies that did find decreased CES-D scores with a home-visit intervention were also the only two studies whose samples were comprised of solely adolescent American Indians.

Reviewing the findings from these studies does not produce a clear understanding of one particular intervention that can help prevent or treat PPD in adolescent mothers. However, the four studies that showed a decrease in depression all utilized a type of intervention that offered the adolescents more contact (either direct or indirect) with trained personnel. The question remains, however, as to why other studies did not have the same results even though similar interventions were used.

CHAPTER FIVE

DISCUSSION AND SUMMARY

Discussion

The purpose of this integrative literature review was to determine whether current research supported a specific intervention to help prevent or treat PPD in adolescent mothers. After reviewing the nine research articles that met the inclusion criteria, it was established that there was not sufficient evidence supporting a specific intervention to use among adolescent mothers in the treatment or prevention of PPD. Of the studies included in this review, only four found a decrease in the CES-D score after the intervention (Logsdon et al., 2010; Barlow et al., 2006; Ginsburg et al., 2012; Ickovics et al., 2011). The four interventions that resulted in decreased symptoms of depression were: telephone-based care management, two types of home-visit interventions, and a form of group prenatal care. It is interesting to note that other studies utilizing similar interventions, specifically home-visits, did not reveal the same improvement in depressive symptoms.

Ginsburg et al. (2012) found that prenatal home-visit interventions may help reduce or prevent depressive symptoms that naturally occur during the postpartum period, however all of the home-visit studies, except Barnett et al. (2002), initiated their interventions during the prenatal period and did not see an improvement in CES-D scores. Barnett et al. (2002) attribute the lack of improvement in depression scores to the fact that volunteers conducted the home-visits. Koniak-Griffin et al. (2000) seem to agree

with Barnett et al. (2002), by referring to the importance of having trained personnel conduct home-visits with adolescent mothers, specifically, public health nurses. Perhaps, future studies should examine the effect that home-visits initiated during the prenatal period and conducted by public health nurses have on postpartum depression scores.

Strengths

There were several strengths associated with the research articles included in this integrative literature review. While the quality of each study was not individually scored, the overall quality of the research included in this review was very high. As well, all of the research studies reported using proven valid and reliable instruments to measure levels of depression. Additionally, of the studies that utilized an experimental design, control groups and intervention groups were well matched in terms of demographics, age, and number of participants. Finally, many of the researchers cited one another in their articles, which showed that these researchers are invested and well versed in the topic of PPD among adolescent mothers.

Limitations

One major limitation is that the research articles were gathered from only a handful of databases that were available through the Montana State University library system. Whittemore and Knafl (2005) stated, “computerized databases are efficient and effective; however, limitations associated with inconsistent search terminology and indexing problems may yield only about 50% of eligible studies” (p. 548). Therefore, it is possible that more research on this topic exists, yet was not included in this review.

Ideally, all of the studies included in this review would have been RCTs, as those are the gold standard of research. Only seven of the studies had an RCT design, while the remaining two studies were mixed methods and non-experimental with a repeated measures design. The lack of consistency in the study design of these articles limited the way in which the articles could be compared and made it difficult to draw clear conclusions from their results.

Finally, a major limitation is that the majority of studies included in this review examined rates of depression as only one element of their overall research. In other words, these studies assessed the effects interventions had on several components such as, depressive symptoms, parenting attitudes and outcomes, birth outcomes, and sexual risk. Only three studies (Logsdon et al., 2005; Logsdon et al., 2010; Ginsburg et al., 2012) analyzed the effects on postpartum depression alone.

Implications for Clinical Practice

This integrative review revealed that there are many implications for clinical practice. Research shows that adolescents are significantly more likely to develop PPD when compared to adults (Deal & Holt, 1998). And while this review did not discover empirical data that supported using a specific intervention to prevent or treat PPD among this group, it did show that there are ways in which a practitioner in a clinical setting may assess for early signs and symptoms of PPD.

Those practitioners who work with pregnant adolescents need to determine whether the adolescent has a history of depression or other mental illnesses, and need to screen the adolescent for depression if she presents with symptoms (Reid & Meadows-

Oliver, 2007). Better outcomes are noted for both mother and child when PPD is diagnosed and treated early. One way to achieve this early diagnosis and treatment is by integrating PPD screening into each well child visit during the first year of the child's life (Meadows-Oliver & Sadler, 2010).

Furthermore, clinicians can educate adolescent mothers about PPD and about screening for PPD. Research recommends that health care providers from all disciplines be involved in educating adolescent mothers about PPD during the prenatal and postpartum periods, because this education is essential in ensuring positive outcomes for both the mother and her child (Meadows-Oliver & Sadler, 2010; Reid & Meadows-Oliver, 2007).

Implications for Research

There is a lack of empirical data supporting interventions used in the treatment and prevention of PPD among adolescent mothers. However, this review showed that there may be some promise that interventions utilizing an increased amount of contact with trained professionals, either through home-visits, group prenatal care, or telephone-based care, may decrease depressive symptoms among adolescent mothers. Future research should focus on using these types of interventions to treat and prevent PPD among adolescent mothers. As well, research should be conducted to assess whether teen mothering programs or alternative schools play a role in the prevalence of adolescent PPD. For example, can these types of programs help reduce the rate of PPD among this population? Finally, further research is needed to determine the most appropriate PPD screening tool for use among adolescent mothers.

Summary

In conclusion, this integrative review did not find evidence to support a specific intervention to be used in the prevention or treatment of PPD among adolescent mothers. There is a lack of literature on this topic, and much more research is needed to determine the best intervention for PPD among these young mothers. The literature suggests that adolescent mothers experience PPD at a higher rate, when compared to adult mothers, and that PPD has negative implications for both the mother and her child. It is clear that screening adolescent mothers for PPD is one of the first and most effective ways of diagnosing the illness, and that screening can be done efficiently in the clinic setting with one of the many screening tools available to providers. Although there is not sufficient evidence proving a particular intervention to use with adolescents who have PPD, it is known that early diagnosis of the illness can lead to better outcomes for both the mother and child.

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APPENDICES

APPENDIX A

CRITERIA FOR MAJOR DEPRESSIVE EPISODE

- A. Five (or more) of the following symptoms have been present during the same 2-week period and represent a change from previous functioning; at least 1 of the symptoms is either 1) depressed mood or 2) loss of interest or pleasure.
1. Depressed mood most of the day, nearly every day, as indicated by either subjective report (e.g., feels sad or empty) or observation made by others (e.g., appears tearful). Note: In children and adolescents, can be irritable mood.
 2. Markedly diminished interest in pleasure in all, or almost all, activities most of the day, nearly every day (as indicated by either subjective account or observation made by others)
 3. Significant weight loss when not dieting, weight gain (i.e., change of more than 5% of body weight in one month), or decrease or increase in appetite nearly everyday.
 4. Insomnia or hypersomnia nearly every day
 5. Psychomotor agitation or retardation nearly every day (observable by others, not merely subjective feelings of restlessness or being slowed down)
 6. Fatigue or loss of energy nearly every day
 7. Feelings of worthlessness or excessive or inappropriate guilt (which may be delusional) nearly every day (not merely self-reproach or guilt about being sick)
 8. Diminished ability to think or concentrate, or indecisiveness, nearly every

day (either subjective account or as observed by others)

9. Recurrent thoughts of death (not just fear of dying), recurrent suicidal ideation without a specific plan, or a suicide attempt or a specific plan for committing suicide

- B. The symptoms do not meet the criteria for mixed episode (p. 365 DSM-IV)
- C. The symptoms cause clinically significant distress or impairment in social, occupational, or other important areas of functioning
- D. The symptoms are not due to the direct physiological effects of a substance (e.g., a drug of abuse, medication) or a general condition (e.g., hypothyroidism)
- E. The symptoms are not better accounted for by bereavement, i.e., after the loss of a loved one, the symptoms persist for longer than 2 months or are characterized by marked functional impairment, morbid preoccupation with worthlessness, suicidal ideation, psychotic symptoms, or psychomotor retardation. (APA, 2000, p. 356)

APPENDIX B

INTEGRATIVE LITERATURE REVIEW TABLE

- Reference:** Koniak-Griffin, D., Anderson, N., Verzemnieks, I., & Brecht, M.L. (2000).
A public health nursing early intervention program for adolescent mothers: Outcomes from pregnancy through 6 weeks postpartum. *Nursing Research*, 49(3), 130-138.
- Purpose:** To evaluate the effects of an early intervention program (EIP) that uses a public health nursing model on health and social outcomes of adolescent mothers and their children and on the quality of mother-child interaction.
- Theoretical Framework:** Public health nursing model
- Study Design:** RCT, longitudinal study.
- Sample:** N=121. Adolescents were between the ages of 14-19 years old with no prior live births, 26 weeks or less gestation, planning to keep infant, not chemically dependent, and without serious medical or obstetric problems. Participants were referred by the local county health department.
- Variables:** The EIP (17 home-visits, plus 4 preparation for motherhood classes), or traditional public health nursing (TPHN) consisting of 2-3 home-visits in total.
- Methodology:** Data for depression was collected using the CES-D Scale at baseline and 6 weeks postpartum.
- Data Analysis:** Data analyzed using a repeated measures analysis of variance (ANOVA)

Findings:	No significant group effect for the internal social competence measure, which includes self-esteem, sense of mastery, perceived stress, and depression.
Strengths/Weaknesses:	PPD is not directly studied in this research. Rather, depression is one single component that helps make up the "internal social competence." Because depression is not singled out, the validity of these results is questionable. Length of follow-up is only 6 weeks.
Reference:	Barnet, B., Duggan, A.K., Devoe, M., Burrell, L. (2002). The effect of volunteer home visitation for adolescent mothers on parenting and mental health outcomes: A randomized trial. <i>Archives of Pediatrics & Adolescent Medicine</i> , 156, 1216-1222.
Purpose:	To evaluate the effect of a volunteer model home visitation program on adolescent parenting outcomes, including mental health status.
Theoretical Framework:	Intervention based on human ecology, attachment, and social support theories.
Study Design:	Randomized controlled trial
Sample:	N= 148 in the final intention-to-treat analysis. Sample includes adolescents between ages 12-18, at 28 or more weeks gestation, or had delivered a baby in the past 6 months. Recruited an alternative school for childbearing adolescent between February 1996 and August 1999.

Variables:	Weekly 1.5 hour home visits for 1 year, or control group (no home visits)
Methodology:	Mental Health Inventory-5 (MHI-5) was used to measure mental health at baseline and again at 15 months postpartum.
Data Analysis:	Intention-to-treat analysis was used to measure effectiveness of intervention
Findings:	Intervention did not affect the adolescent mothers' high rates of poor mental health. Support provided by the volunteers in the home visitation group did not affect adolescent depression. Intervention and control groups showed no differences in mental health.
Strengths/Weaknesses:	Participants attended an alternative school for adolescents, from a community that is of low socioeconomic status and predominantly African American. Intervention did not specifically address mental health.
Reference:	Koniak-Griffin, D., Anderson, N.L.R., Brecht, M.L., Verzemnieks, I., Lesser, J., & Kim, S. (2002). Public health nursing care for adolescent mothers: Impact on infant health and selected maternal outcomes 1 year postbirth. <i>Journal of Adolescent Health, 30</i> , 44-54.
Purpose:	To compare effects of an early intervention program (EIP) of intense home visitation by public health nurses (PHNs) with effects of traditional public health nursing care (TPHN) on infant health and selected maternal outcomes of adolescent mothers.

Theoretical Framework:	None mentioned.
Study Design:	Randomized controlled trial
Sample:	N= 102. Participants were between ages of 14-19 years, at 26 weeks gestation or less, planning on keeping the infant, had no previous live births, and had no other medical issues or drug addictions. Recruited from county health department.
Variables:	Early intervention program (intense home visits), TPHN (control)
Methodology:	CES-D Scale was used to collect data on depression at baseline, 6 weeks postpartum, 6 months postpartum, and 12 months postpartum.
Data Analysis:	Repeated measures of variance (ANOVA)
Findings:	No significant difference in depression symptoms between adolescents in the two groups from pregnancy through 1 year postpartum. A significant decrease in CES-D scores was noted in both groups at one year postpartum.
Strengths/Weaknesses:	Sample represents poor, unmarried ethnic minority. Results cannot be generalized. The component of depression was part of a larger study, where the intervention is not specifically designed to treat depression.

Reference:	Barlow, A., Varipatis Baker, E., Speakman, K., Ginsburg, G., Friberg, I., Goklish, N.,... Walkup, J. (2006). Home-visiting intervention to improve child care among American Indian adolescent mothers: A randomized trial. <i>Archives of Pediatrics & Adolescent Medicine</i> , 160, 1101-1107.
Purpose:	To assess the impact of a paraprofessional-delivered home visiting intervention to promote child care knowledge, skills, and involvement among pregnant American Indian adolescents.
Theoretical Framework:	None mentioned
Study Design:	Randomized controlled trial
Sample:	N= 41 in final analysis. Participants were between ages 12 to 19 years at time of conception, at 28 weeks gestation or earlier, and were recruited from 4 American Indian health service catchment areas on Indian reservations in New Mexico and Arizona.
Variables:	Healthy Families America home-visiting intervention, which includes 25 home visits and 41 lessons until 6 months postpartum. Control group received 23 home visits covering 20 breastfeeding lessons.
Methodology:	CES-D Scale given at baseline, 2 months and 6 months postpartum.
Data Analysis:	T-tests and X2 tests for continuous and categorical variables
Findings:	Mothers in the intervention group experienced a larger drop in depressive symptoms at both 2 months and 6 months postpartum.

Strengths/Weaknesses:	Small sample size, results cannot be generalized because participants were all of same ethnicity and had similar disadvantaged demographics, and therefore may be at higher risk of developing depression. However, results are significant and therefore may be an appropriate intervention for decreasing PPD.
Reference:	Logsdon, M.C., Birkimer, J.C., Simpson, T., Looney, S. (2005). Postpartum depression and social support in adolescents. <i>Journal of Obstetric, Gynecologic, and Neonatal Nursing</i> , 34, 46-54.
Purpose:	To determine effectiveness of social support intervention in preventing postpartum depression in adolescents.
Theoretical Framework:	Dual coding theory
Study Design:	Repeated measures, randomized controlled trial
Sample:	N=128. Participants were ages 13-19 years old, 32-36 weeks gestation, and from an alternative school for pregnant and parenting teens.
Variables:	Pamphlet, pamphlet and video, video, or nothing (control group)
Methodology:	CES-D Scale was used to measure depression at baseline and 6 weeks postpartum.
Data Analysis:	Analysis of variance (ANOVA) and analysis of covariance (ANCOVA)

Findings:	An isolated intervention in pregnancy to strengthen social support is not sufficient to prevent PPD. A social support intervention provided at late pregnancy did not decrease their symptoms of depression at 6 weeks post partum.
Strengths/Weaknesses:	Sample taken from one school. Had a control group that did not receive any intervention, other than what is provided from the alternative school.
Reference:	Thomas, D.V., & Looney, S.W. (2004). Effectiveness of a comprehensive psychoeducational intervention with pregnant and parenting adolescents: A pilot study. <i>Journal of Child and Adolescent Psychiatric Nursing, 17</i> (2), 66-77.
Purpose:	To evaluate the effectiveness of a psychoeducational intervention on depression, self-esteem, and parenting attitudes/beliefs of at-risk and parenting adolescents in a treatment center and alternative school.
Theoretical Framework:	Cognitive learning theory, social learning theory
Study Design:	Non-experimental service intervention with a repeated measures design
Sample:	N=41. Subjects between 14-20 years old, who are either pregnant or have given birth at the time of recruitment, and who were enrolled in either a residential treatment facility or rural alternative school. Participants from a residential treatment facility were considered to be high-risk.

Variables:	The two phase parenting education program: The nurturing program lasting 12 weeks and a follow-up group lasting and additional 12-14 weeks.
Methodology:	Data for depression was collected using the CES-D Scale at baseline and again at 6 months, after completion of the parenting program intervention.
Data Analysis:	Normal-theory repeated measures analysis and repeated-measures analysis
Findings:	70% of participants were identified as being depressed by the CES-D Scale at 6 months. The two phase parenting education program was not an effective intervention for treating depression.
Strengths/Weaknesses:	Small, convenient sample. No control or comparison group. Intervention was not specifically designed as an intervention for depression. Sample does not represent general adolescent mother population because sample is considered high-risk.
Reference:	Ickovics, J.R., Reed, E., Magriples, U., Westdahl, C., Schindler Rising, S., & Kershaw, T.S. (2011). Effects of group prenatal care on psychosocial risk in pregnancy: Results from a randomized controlled trial. <i>Psychology and Health, 26</i> (2), 235-250.
Purpose:	To examine the psychosocial impact of an innovative intervention (Centering Pregnancy Plus) designed to reduce negative birth outcomes, decrease sexual risk and improve psychosocial outcomes.

Theoretical Framework:	None mentioned
Study Design:	Randomized controlled trial
Sample:	N=1047. Participants were between ages of 14-25 years, and were recruited from two publicly funded clinics, between Sept. 2001 and December 2004. Participants were less than 24 weeks gestation, with no other medical issues N=513 for those between ages 14-19.
Variables:	CP+ group prenatal care; CP group prenatal care; standard care (control)
Methodology:	CES-D Scale used to assess depression at baseline, third trimester pregnancy, 6 months postpartum, and 12 months postpartum.
Data Analysis:	Effectiveness of intervention measured through a series of random effects regression analyses. Population subgroups measured independently of one another to determine effects of interventions.
Findings:	For participants considered to be "high stress" there was a significant decrease in depression from baseline to 1 year postpartum after receiving the CP+ intervention.
Strengths/Weaknesses:	Sample represents a primarily low socioeconomic and ethnic minority group. Results show that CP+ may be advantageous for "high-stress" pregnant women, not necessarily adolescent women.

Reference:	Ginsburg, G.S., Barlow, A., Goklish, N., Hastings, R., Varipatis Baker, E., Mullany, B., Tein, J.Y., & Walkup, J. (2012). Postpartum depression prevention for reservation-based American Indians: Results from a pilot randomized controlled trial. <i>Child Youth Care Forum</i> , 41, 229-245.
Purpose:	To evaluate the feasibility of a depression prevention program for pregnant American Indian adolescents.
Theoretical Framework:	None mentioned.
Study Design:	Randomized controlled trial
Sample:	N=47. Participants were between ages 15-19 years, at a gestational age of 28 weeks or less, and had a CES-D score of 16 or higher.
Variables:	Living in Harmony (LIH) sessions and Education Support (ES) condition.
Methodology:	CES-D Scale and EPDS were used to collect data on depression at baseline, post-intervention, and 4, 12, & 24 weeks postpartum.
Data Analysis:	Analysis of covariance (ANCOVA)
Findings:	Participants in both the LIH and ES groups showed equal rates of reduction in depressive symptoms by 6 months postpartum, and only a total of 6% of sample met criteria for postpartum depression.
Strengths/Weaknesses:	Small sample size, of only American Indian adolescents- results cannot be generalized. Mothers who scored in the clinical range for depression were referred to a mental health provider, but stayed in the trial.

Reference:	Logsdon, M.C., Pinto Foltz, M., Stein, B., Usui, W., & Josephson, A. (2010). Adapting and testing telephone-based depression care management intervention for adolescent mothers. <i>Archives of Women's Mental Health, 13</i> , 307-317.
Purpose:	To examine processes and outcomes associated with telephone based depression intervention.
Theoretical Framework:	Transtheoretical model was used to develop intervention
Study Design:	Mixed methods
Sample:	N= 97. Participants were adolescent mothers 4-6 weeks postpartum, between ages 13-18 years old, and who had CES-D score greater than or equal to 16 or had diagnosis of MDD. Participants attended a teenage parenting program.
Variables:	Telephone-based DCM intervention lasting 6 months
Methodology:	CES-D Scale used to measure depression was given at baseline, 3 and 6 months postpartum.
Data Analysis:	Descriptive analysis
Findings:	Depressive symptoms in intervention group improved by 6 months postpartum.
Strengths/Weaknesses:	No control group, therefore threats to validity exist. Provides promising lead to a depression care management specifically for adolescent mothers who have PPD.