

THESIS

BECOMING FATHERS: FEASIBILITY, ACCEPTABILITY AND EXPLORATORY
EFFICACY OF A GROUP INTERVENTION

Submitted by

Stephanie Rayburn

Department of Human Development and Family Studies

In partial fulfillment of the requirements

For the Degree of Master of Science

Colorado State University

Fort Collins, Colorado

Summer 2019

Master's Committee:

Advisor: J. Douglas, Coatsworth

Kelley Quirk
Samantha Brown

Copyright by Stephanie Rebecca Rayburn 2019

All Rights Reserved

ABSTRACT

BECOMING FATHERS: FEASIBILITY, ACCEPTABILITY AND EXPLORATORY EFFICACY OF A GROUP INTERVENTION

The transition to parenthood brings changes to identity and relationships for new parents. Increasing expectations for father involvement in childcare are emphasizing the importance of the father role, but social supports for new fathers remain scarce. Emerging fathers experience stresses such as identity and role transitions, changes in their relationships, and challenges in developing caregiving skills and father-infant attachment representations.

I conducted initial feasibility testing for a novel group intervention at the transition to fatherhood that provides expectant and new fathers with mindfulness-based coping skills, education on relevant topics, and an opportunity to connect with other new fathers. I also administered surveys at pre-test and post-test to assess for potential efficacy trends in the areas of stress, depressive symptoms, measures of father involvement, mindfulness, and relationship satisfaction.

Results indicated strong feasibility and high acceptability among the participants. Participants highly valued the group discussion components of the intervention and noted that being able to learn about and process their experiences with other men in the same life stage was unique and important to them. Initial efficacy trends suggest reductions in stress and depressive symptoms, increases in the mindfulness constructs of nonjudgment and nonreactivity, and increases in father representations of attachment. Perinatal intervention specific to fathers remains a promising avenue for further inquiry.

ACKNOWLEDGMENTS

I would like to acknowledge the contributions of my committee in assisting with developing ideas for the curriculum and study methods. I would especially like to acknowledge my advisor's contributions to the development and implementation of the Becoming Fathers curriculum. I appreciate his confidence in my ability to carry out this project, his reassurance, and his help along the way. I also want to acknowledge the extraordinary contributions of my family in working together to support my pursuit of this degree, even when it meant me being home far less than they would like. My husband's support and contributions to our family life are especially appreciated. Conducting this research has highlighted my appreciation for having a partner who is an involved father. I would further like to acknowledge the support and encouragement of friends and classmates along the way. You helped me to keep going even when I worried the scope of this project would be too great to complete.

DEDICATION

To Opal and Orion. Thank you for encouraging me to chase my dreams, even though you missed me more than most.

TABLE OF CONTENTS

ABSTRACT.....	ii
ACKNOWLEDGMENTS.....	iii
DEDICATION.....	iv
LIST OF TABLES.....	vii
LIST OF FIGURES.....	viii
Chapter 1 – Introduction.....	1
Chapter 2 – Review of the Literature.....	3
New Fatherhood and Stress.....	3
Potential Intervention.....	7
Chapter 3 – Research Questions and Hypotheses.....	12
Chapter 4 – Methods.....	14
Participants.....	14
Measures.....	15
Procedures.....	19
Efficacy Analyses.....	22
Chapter 5 – Results.....	23
Feasibility.....	23
Acceptability.....	26
Exploratory Efficacy Outcomes.....	31
Chapter 6 – Discussion.....	40
Is Becoming Fathers Feasible and Acceptable?.....	40
How Might Becoming Fathers Be Effective?.....	42
Limitations and Future Directions.....	46
Chapter 7 – Conclusion.....	48
REFERENCES	50

LIST OF TABLES

TABLE 1 – BECOMING FATHERS WEEKLY CURRICULUM.....	21
TABLE 2 – MEANS, STANDARD DEVIATION, AND RANGE OF POST-TEST EVALUATION DATA.....	26
TABLE 3 – MEANS, STANDARD DEVIATION, AND RANGE OF WEEKLY SATISFACTION DATA BY CONTENT AREA.....	27
TABLE 4 – QUALITATIVE CODES AND SUBCODES.....	28
TABLE 5 – CORRELATIONS OF MEASURES AT PRE-TEST.....	32
TABLE 6 – PRE-TEST TO POST-TEST EFFICACY OUTCOMES.....	33

LIST OF FIGURES

FIGURE 1 – CHANGE IN PERCEIVED STRESS.....	34
FIGURE 2 – CHANGE IN PERCEIVED STRESS WITHOUT HAVING A BABY.....	35
FIGURE 3 – CHANGE IN DEPRESSIVE SYMPTOMS.....	36
FIGURE 4 – CHANGE IN NONJUDGMENT OF INNER EXPERIENCE	37
FIGURE 5 – CHANGE IN NONREACTIVITY TO INNER EXPERIENCE.....	39

INTRODUCTION

Parenthood is a life event that most people expect to experience at some point in their lives, yet few socially typical life events cause the degree of change that occurs for new parents. For men and women, becoming a parent brings new responsibilities, new behavioral expectations, new norms to follow, and often a change in social status (Kushner, Pitre, Williamson, Breitzkreuz, & Rempel, 2014). People who are making the transition to parenthood may find themselves experiencing role conflict and feeling overwhelmed as they attempt to understand and navigate new responsibilities and expectations (Kushner et al., 2014). The transition to parenthood requires a focus on learning to meet the needs of an infant, but becoming a parent is also associated with significant emotional and relational challenges that individuals and couples must navigate, and for which they may be underprepared. Both men and women experience psychological and psychosocial challenges beginning in the prenatal period (Durkin, Morse, & Buist, 2001), and heightened stress in the perinatal period may impact adult health trajectories (Saxbe, Rossin-Slater, & Goldberg, 2018). New parents navigate stressors such as decreased relationship satisfaction (Doss, Rhoades, Stanley, & Markman, 2009), identity stress (Knoester & Petts, 2017), fatigue (Loutzenhiser, McAuslan, & Sharpe, 2015; Wilson, Lee, & Bei, 2019), and mood disorders (Whisman, Davila, & Goodman, 2011; Wilson et al., 2019). Such personal and relational challenges occur at a sensitive time when infants are in need of responsive caregivers (Trevvarthen & Aitken, 2001), which may compound later difficulties in child and family functioning.

While it is clear that both parents undergo life changes over the transition to parenthood, expectant fathers experience a more ambiguous rite of passage and receive little cultural support

during this time (Draper, 2003; Ives, 2014). Only about a third of new fathers participate in any kind of childbirth or parenting class (Hofferth, 2003), and in childbirth classes, men may find themselves marginalized in the process (Kowlessar, Fox, & Wittkowski, 2015b). Father adjustment is a significant contributor to family well-being (Trillingsgaard, Baucom, & Heyman, 2014), but fathers have had little access to social supports and intervention aimed at helping them to adjust. Worldwide, parenting interventions are aimed overwhelmingly towards mothers (Panter-Brick et al., 2014). It may be that early-intervention during the transition to fatherhood with a focus on developing positive coping and relational skills will also positively support overall family functioning. The literature on fathers' experiences and needs over the transition to parenthood is reviewed here with a focus on possible stressors including identity, father-infant attachment, and the coparenting relationship. In addition, the potential for intervention is presented.

REVIEW OF THE LITERATURE

New Fatherhood and Stress

Cultural ideals of father involvement in family life have been undergoing a shift in recent generations, from father as provider to father as involved caregiver (Gerson, 2010; Draper, 2003). These changing expectations have brought about new intra- and interpersonal stressors for fathers as they adapt to the role, and the lack of social supports around fathering can contribute considerably to the stress fathers are experiencing (Machin, 2015). Workplace pressure, traditional roles, and perceptions of male hegemony are sometimes at odds with changing perceptions of what it means to be an involved father, and there is considerable variability in how fathers perceive their roles (Kowlessar, Fox, & Wittkowski, 2015a; Kowlessar et al., 2015b). Actual fathering practices include less caregiving than fathers profess to believe they should be providing (McLaughlin & Muldoon, 2014), suggesting that men are struggling to adapt to their own expectations. Consistent with symbolic interaction theory (White, Klein, & Martin, 2015), men feel role conflict when their own expectations do not align with social expectations (Kowlessar et al., 2015b). Lack of a supportive network and limited education about childbearing can increase psychological distress for new fathers (Boyce, Condon, Barton, & Corkindale, 2007). Higher paternal parenting stress during the preschool years has been shown to predict higher paternal alcohol use and decreased father engagement (Halme, Tarkka, Nummi, & Astedt-Kurki, 2006), suggesting that without positive stress management skills fathers are likely to cope in ways that may negatively impact the family. Transitions are accompanied by intrapersonal and interpersonal changes (Draper, 2003), and emerging fathers face stressors as they adapt to potential changes in their identity, mood, and relationships.

Changing identity: An ambiguous rite of passage. The birth of a baby happens in a moment, but the developmental change from non-father to father extends across the perinatal period and beyond. The developmental shift into fatherhood is a significant point in the life course. The life course perspective emphasizes the importance of a historical time and place (Elder, 1998), which is notably relevant to the current trend of shifting fathering ideals.

Expectant fathers are developing into a new life stage at a time when the cultural understanding of what it means to be a father is also developing. This larger cultural context impacts the experience of expectant fathers early on, as men lack role models and social supports while they navigate both role ambiguity and biological detachment from the prenatal experience when they are not yet able to see, feel, or interact with the baby (Draper, 2003; Kowlessar et al., 2015b).

The lack of support during this transition can increase the stress new fathers feel and may contribute to identity stress. In a metasynthesis of data from 13 qualitative studies, men expressed a universal experience of worry over the impending changes in experience and responsibility (Kowlessar et al, 2015b). Men also identified a feeling of being external to the experience of pregnancy but started to feel more connected to the process once they could feel the baby move. This developing sense of connection helped men to begin participating in changing roles, during which they considered their own upbringing and the kinds of fathers they wanted to be (Kowlessar et al., 2015b). Men's experiences of being fathered influence their own parenting involvement (Beaton & Doherty, 2007). Men also report looking to the baby's mother as a helpful role model to learn caregiving skills (Kowlessar et al., 2015a). Fathers who are able to establish confidence in caregiving early on experience benefits such as a higher sense of parental effectiveness and higher perceived involvement from their partner (Tremblay & Pierce, 2011). Father involvement early on in infancy seems to be critical to the father's developing

sense of identity, and fathers may benefit from increased support and guidance as they adjust to new responsibilities.

Paternal postpartum mood disorders. Biological mothers are not the only parents who experience hormonal shifts and postpartum mood disorders. It is well-established in the literature that men who are involved in fatherhood can experience decreases in testosterone production (Gettler, 2016). More recent research has focused on the potential for men to experience prenatal and postpartum mood disorders as they undergo the stress of role transition, changes in the couple relationship, and physiological stressors such as reduced sleep (Da Costa et al., 2017). Men frequently describe a feeling of depression during their partner's pregnancy (Kowlessar et al., 2015b), and a recent meta-analysis found a paternal postpartum depression rate of 8% (Cameron, Sedov, & Tomfohr-Madsen, 2016). It has also been found that depressive symptoms increase on average by 68% through the first 5 years of fatherhood for fathers who are living in the home with their children (Garfield et al., 2014). Ethnic minority fathers are also more likely to experience depression after the birth of a child (Garfield et al., 2014).

The mental well-being of the father has important implications for the family. Paternal depression has been found to worsen maternal depressive symptoms (Paulson, Bazemore, Goodman, & Lieberman, 2016), decrease father attachment to the infant (Wynter, Rowe, Tran, & Fisher, 2016), and correlate with poorer developmental outcomes for children at age 3.5 (Ramchandani, Stein, Evans, O'Connor, & ALSPAC team, 2005). Paternal depression at age 3.5 is partially mediated by family stressors such as maternal mood disorders and couple conflict (Gutierrez-Galve, Stein, Hanington, Heron, & Ramchandani, 2015). Mental health has also been found to be a mediator between parenting stress and couple adjustment (Rolle et al., 2017), highlighting the need for health professionals and researchers to consider the potential for and

implications of paternal perinatal mood disorders in family functioning.

The father-infant relationship. Early attachment research focused primarily on infant attachment to the mother (Ainsworth, 1964; Bowlby, 1969). Bowlby conceptualized fathers as secondary attachment figures, but the progression of research has begun to highlight fathers as playing a more significant role in infant attachment than previously thought (Bretherton, 2010). Although infants may form a primary attachment relationship with either parent, paternal attachment has been theorized to play a more exploration-focused role in child development than the typical maternal role of providing a secure base (Grossman et al., 2002). This difference in parenting roles has been statistically supported (Jeynes, 2016). In the secure-exploration role, fathers challenge and support their children in taking appropriate risks. Some fathers begin facilitating child adjustment to uncertainty in infancy as well by engaging in frightening play behaviors with their infants (Hazen, McFarland, Jacobvitz, & Boyd-Soisson, 2010).

In both frightening play behavior and encouraging exploration, paternal sensitivity is paramount. Paternal frightening behavior that is paired with sensitive caregiving does not predict poorer child outcomes (Hazen et al., 2010). Toddlers explore more when their fathers provide a sense of safety and sensitivity during risk-taking (Grossman et al., 2002).

Father attachment to the infant may also be valuable to the fathers themselves. Fathers who rated high on attachment to their infants had lower depressive and anxiety symptoms and reported a higher quality relationship with their partners (Wynter et al., 2016). Paternal attachment representations can even begin before birth, with prenatal fetal attachment positively correlated with postpartum attachment to the infant (Condon, Corkindale, Boyce, & Gamble, 2013). Supporting fathers in building strong relationships with their infants may help them to transition successfully into the role and increase their well-being.

The father-partner relationship. Parenting demands affect the amount of time and energy that couples have for each other, which may contribute to the sharp decline in relationship satisfaction after the birth of a child (Doss et al., 2009). This decline levels off over time and eventually matches that of couples who did not have children (Doss et al., 2009). Sexual intimacy after the birth of a child declines for a time as attention shifts toward the baby, and men report the importance of finding other ways to maintain closeness and connection with their partners as well as keeping open communication about issues related to sex (Olsson, Robertson, Björklund, Nissen, 2010). Fathers are less likely to report distress about postpartum sexual activity when they feel satisfied in their relationship (Schlagintweit, Bailey, & Rosen 2016).

In support of the new ideal of father as caregiver, Durtschi, Soloski, and Kims (2017) found that when fathers reported higher levels of coparenting involvement, stressed mothers were less likely to report decreased relationship quality, and low-stress couples reported higher relationship quality when coparenting was higher. Newkirk, Perry-Jenkins, and Sayer (2017) found that mothers were less likely to report conflict when fathers performed more childcare tasks, and interestingly, fathers preferred to help with childcare tasks over household tasks. Additionally, father involvement in childcare during infancy and early childhood is linked to increases in mother-reported relationship satisfaction, and father involvement in childcare reduced a couples' likelihood of divorce in the first year by 20% (Schober, 2012). Given the findings of these studies, supporting new fathers in finding ways to take on more childcare tasks may meet with little resistance and might be expected to reduce conflict and increase satisfaction for the couple.

Potential for Intervention

Kowlessar et al. (2015a) summarize their study on the experiences of first-time fathers by

saying that “despite increasing public awareness and socio-political changes affecting paternal parenting culture, fathers still seem to feel undervalued and unsupported when it comes to antenatal support” (p. 4). As expectant fathers attempt to navigate such a significant life transition, they may benefit greatly from prenatal preparation that specifically addresses their needs. Community intervention for men becoming fathers may help them to connect with others in a similar life stage while learning how to manage the array of potential stressors and better understand and prepare for their transition to parenthood. Opportunities to learn skills in positive stress-management, infant care, and partnership while clarifying roles and identities may serve to address formerly unmet needs in this population.

Mindfulness for stress-management. Mindfulness is described as a state of awareness of the present moment in which a person notices what is happening without judgment (Kabat-Zinn, 2015). The state of mindfulness can occur spontaneously, but more typically it is an intentional activity requiring practice to master (Kabat-Zinn, 2015). Mindfulness has increasingly been the focus of research as a valuable skill for reducing stress and regulating emotion, leading to a variety of secular mindfulness training programs (e.g., Mindfulness-Based Stress Reduction; Mindfulness-Based Cognitive Therapy).

As new fathers face identity changes and novel challenges, mindfulness may support them in managing related stress. Mindfulness training has shown promise in increasing self-compassion in addition to reducing stress for those in caring professions (Van Wietmarschen, Tjaden, van Vlient, Battjes-Fries, & Jong, 2018). Mindfulness and self-reflection have also been shown to predict a more integrated sense of self (Viskovich & de George-Walker, 2019), which may aid emerging fathers in developing a more cohesive identity and reduce identity-related stress.

Mindfulness has also been shown to improve interpersonal connection and is used as a therapeutic intervention to improve couple functioning (Lord, 2017). An intervention only for fathers would not be expected to have the same effectiveness in improving the couple relationship as a couple-specific intervention would, but supporting fathers in gaining mindfulness skills may indirectly support the couple relationship. Individuals who use mindfulness during couple conflict demonstrate faster cortisol recovery and reduced conflict engagement (Laurent, Hertz, Nelson, & Laurent, 2016). Mindfulness is also associated with increased relationship satisfaction (Kozlowski, 2013).

Mindfulness has recently been utilized as a parenting intervention, with success. Women who learn mindfulness as part of their childbirth preparation have reduced rates of mental health symptoms (Duncan & Bardacke, 2010). Prenatal mindfulness practice has also been associated with decreased cortisol levels in women (Matvienko-Sikar & Dockray, 2017), and mindfulness-based cognitive therapy has shown promise in preventing depressive symptoms over the postpartum period for women who had previously experienced postpartum depression (Dimidjian, Goodman, Felder, & Gallup, 2016). A prenatal mindfulness intervention has not yet been tested in fathers, but other studies support mindfulness intervention for fathers. Fathers who participated in a mindful parenting intervention have reported improved interaction with their children and better emotion regulation skills than fathers who participated in a parenting intervention that did not include mindfulness (Coatsworth et al., 2015). Mindful parenting has also been found to be associated with a child's sense of well-being through the mediator of secure attachment (Medeiros, Gouveia, Canavarro, & Moreira, 2016). Additionally, paternal mindfulness predicts increased involvement in parenting tasks (MacDonald & Hastings, 2010). Mindfulness may serve the additional function of decreasing attachment to conflicting social and

family role expectations fathers may face.

Education. Skills-based education is a primary component of parenting interventions. Given parenting and relationship challenges new fathers face, education about baby care and relational skills may decrease stress and improve outcomes for new fathers. Parent-education interventions significantly increase parenting self-efficacy (Liyana Amin, Wilson, & Shefaly, 2018). Fathers who feel more confident in their caregiving skills prior to their baby's birth are more likely to be involved in parenting at one month postpartum (Barry, Smith, Deutsch, & Perry-Jenkins, 2011). Skills-based parenting interventions have also been effective in supporting infant attachment (Wright & Edington, 2016). Male-only group interventions have also been effective at improving communication and relationship skills in primary partner relationships (Bartholomew, Hiller, Knight, Nucatola, & Simpson, 2000).

Group Process. A key component of a father-focused perinatal intervention is the potential benefit of reducing stress by developing more positive fathering attitudes in participants. Fathers who have more positive parenting attitudes experience decreased parenting stress at 1-year postpartum (Knoester & Petts, 2017) and are more likely to take on parenting responsibilities (Hofferth, 2003; McGill, 2014). Fathering attitudes may be influenced by family, social, and cultural context. One method for facilitating understanding of one's context is through group process, which increases individual understanding through group dynamics (Peled & Perel, 2012). Dialogue is the process of creating shared meaning between people by utilizing open-minded conversation on a given subject and suspending attempts at persuasion (Bohm, 1996) and has been included as a mechanism of group process for therapeutic and educational group intervention as a method for participants to learn from each other (Prior, 2015; Webb, 2009). Group dialogue may be a valuable way for expectant and new fathers to explore the

influence of their personal, family, and cultural narratives on their attitudes around fathering and learn from the views of others. Group process has been identified as an important component of mindfulness-based interventions (Cormack, Jones, & Maltby, 2018) and may strengthen the development of mindfulness-based coping skills for transitioning fathers. Education on the importance of father involvement for family functioning paired with group processing of cultural and intrapersonal attitudes around fatherhood may help men to clarify their desires and intentions around the fathering role.

RESEARCH QUESTION AND HYPOTHESES

This study is a first step to develop a program of research that can help answer the question of whether fathers can be better supported over the transition to parenthood. More specifically, I am interested in whether an intervention can be designed and shown to be efficacious that reduces stress for new fathers by increasing stress management, supporting father identity development, and developing relevant relational skills in infant care and partner communication. I developed an innovative community-based intervention, Becoming Fathers, for first-time expectant fathers that incorporates elements of mindfulness training, self-reflection, group discussion, and relational skills. As an initial stage in this process of developing and testing an intervention, I first sought to determine the feasibility and acceptability of the Becoming Fathers Program as a potential means of decreasing paternal stress and improving mental health over the transition to fatherhood. Feasibility studies provide the opportunity to assess whether an intervention and study design can work and allow for initial challenges to be addressed prior to implementing a larger scale randomized controlled trial (Orsmund & Cohn, 2015). Feasibility and acceptability analyses provide key information about recruitment efforts, participation, and measure selection in order to develop a more robust study. Orsmund & Cohn (2015) recommend evaluating five key components in a feasibility study: (1) recruitment ability and sample characteristics, (2) evaluation of data collection procedures and measures, (3) evaluation of acceptability and suitability of the intervention, (4) evaluation of required resources and implementation, and (5) preliminary efficacy.

Given the lack of other father-oriented community resources during pregnancy and infancy, I hypothesized that expectant fathers would be interested in attending the Becoming

Fathers Program such that I would be able to recruit sufficient participants for a group. I also hypothesized that fathers would demonstrate interest by attending regularly. I additionally hypothesized participants in the intervention would find a class focused on increasing coping and relational skills to be valuable and acceptable such that they would be likely to express moderate-to-high satisfaction with the class, would rate it moderate to high in subjective value, and would recommend it to other expectant or new fathers.

Efficacy trends in measures of father stress, depressive symptoms, and measures of father involvement were also assessed. I hypothesized participants in the Becoming Fathers Program would show decreases in measured stress and depressive symptoms from pre-test to post-test. I defined father involvement as consisting of responsive caregiving behaviors, positive appraisal of the child, and involvement in parenting responsibilities and decision-making. I hypothesized that participants in the Becoming Fathers Program would demonstrate increases in measures of father involvement as operationalized by father involvement attitude, caregiver identity, and paternal-infant attachment representations. Since the intervention utilizes a mindfulness framework, I also hypothesized that fathers would demonstrate an increase in self-report mindfulness from pre-test to post-test. With a limited sample, I chose a 0.1 level of significance to identify potential efficacy trends worth further exploration and reduce the likelihood of a type II error. Due to previous findings showing a significant decrease in relationship satisfaction at the transition to parenthood, I also assessed participants' relationship satisfaction to look for any correlations of interest.

METHODS

Participants

Expectant and new fathers were recruited using convenience and snowball sampling with flyers distributed locally at obstetric clinics, childbirth classes, social media, and new parent groups. Participants were also recruited via email using university listservs. Inclusion criteria were that participants must identify as male and be in a cohabiting relationship with their romantic partner who is expecting a baby or recently had a baby. The age of the fetus / baby must have been between 20 weeks gestation to 3 months postpartum at study onset. Participants must have been expecting or newly parent to their first child, have no prior experience fathering another infant, and must expect to take on a fathering role for the infant. As the intervention was only offered in English, participants were required to be able to read and speak English fluently.

For this study, I ran two cohorts (N1 = 13, N2 = 6). Minimal changes were made to the intervention manual between cohorts, and I combined their data (N=19). Participants were primarily White (89.5%). One participant identified as both White and Latino, one as both White and Asian, and one as Latino. The average age of participants was 32 (*SD*, 4.92; Range, 23 – 42). Most participants had a bachelor's degree (N = 11, Range = some college – doctoral degree). All participants reported being full-time employees. Estimated household incomes were higher than the local population, with an average of 87,105 (*SD* = 37,797) and a mode of 100,000-150,000 (N=8). Relationship length was categorized by year with a range of 1 year or less to 9 years or more. Relationship length was reported as follows: 2 years (N = 1), 3 years (N = 2), 5 years (N = 3), 6 years (N = 2), 7 years (N = 3), 8 years (N = 3), and 9 or more years (N = 5).

Participants completed online surveys at three time points over about three months: Prior

to the start of the group intervention, the week following completion of the group intervention, and at follow-up approximately 6 weeks later or after the birth of his baby, whichever was later. At the time of this writing, follow-up data were only available for the first cohort. Participants were also invited to a focus group after the conclusion of the intervention. Participants were compensated with gift cards for completing surveys and attending the focus group, up to \$35 total.

Measures

Feasibility. Feasibility assessment is operationalized by recruitment and attendance numbers, value of inclusion criteria, successful curriculum implementation, retention in the program, participation in pre-test and post-test assessments, and appropriateness of the measures. Data on recruitment, attendance, and retention were kept during the study as well as reasons for missing class when provided.

Acceptability. Participants were given brief satisfaction surveys at the end of each group session. Surveys asked open-ended questions (e.g., “What did you like most about this group meeting?”, “What did you dislike or like least about this group meeting?”) and asked participants to rate how much time they think should be spent on each component of that session on a scale from 1 (*much less*) to 5 (*much more*), with 3 equaling the same amount of time. For the purposes of program evaluation, satisfaction data was categorized into general content types to evaluate participant satisfaction with the class structure. General content categories were: Mindfulness, practical knowledge, individual process (e.g., writing, art), group process, structure, and ritual. The mindfulness category was further divided into in-class mindfulness practices and closing compassion practices. Group process was similarly subdivided into small-group (dyad or triad discussion) and large-group process (full group discussion).

At post-test, participants were asked open-ended and sliding-scale questions regarding their opinions and satisfaction with the skills learned in the intervention. Examples are “Would you recommend the Becoming Fathers Program to other expectant fathers? Why or why not?” and “On a scale of 0 to 10, how valuable did you find the following components of the Becoming Fathers program, where 0 is not at all valuable, and 10 is very valuable?” Post-test satisfaction scale questions were asked about the intervention as a whole and about specific topics and skills covered in the intervention program.

Stress and mental health symptoms. The Perceived Stress Scale (PSS) is a 10-item self-report measure of general life stress (Cohen, 1994). The PSS measures stress as a construct of how overwhelming, uncertain, and out-of-control life has seemed for the respondent with questions such as “In the last month, how often have you felt that things were going your way?” and “In the last month, how often have you been able to control irritations in your life?” Scores range from 0 (*never*) to 4 (*very often*), and a higher score on the scale indicates higher overall perceived stress. In previous studies, the PSS has demonstrated good test-retest reliability ($r = 0.85$), high internal consistency ($\alpha = 0.84$ to 0.86), and valid correlations with related constructs (Cohen, Kamarck, & Mermelstein, 1983). In this study, the PSS had a Cronbach’s alpha of 0.89 at pre-test. Post-test was similar.

The Edinburgh Postnatal Depression Scale (EPDS) is a scale for postpartum depression that has been validated for men as well as women (Matthey, Barnett, Kavanaugh, & Howie, 2001). The 10-item scale asks participants to rate themselves on how they have been feeling over the past week with questions such as “I have looked forward with enjoyment to things” and “I have been so unhappy that I have been crying.” (Cox, Holden, & Sagovsky, 1987). Item answers are ranked from 0 to 3 with a higher overall score indicating more depression symptoms. When

tested for men, the EPDS demonstrated an internal consistency of $\alpha = 0.81$, strong split-half reliability ($r = 0.78$), and correlates well with the Center for Epidemiologic Studies Depression Scale ($r = 0.62$; Matthey et al., 2001). In this study, the EPDS had a Cronbach's alpha of 0.83 at pre-test.

Father involvement attitudes. The Becoming Fathers Program will be assessed as the independent variable. Multiple functionally interval/ratio Likert measures will operationalize the dependent variables related to father involvement. The Father Involvement Attitudes Scale (FIAS) is an 8-item self-report measure of the degree to which fathers believe their involvement can have a positive impact on child development (Hofferth, 2003). The scale includes items such as "A father should be as heavily involved in the care of his child as the mother," and "Fathers are able to enjoy children more only when the children are older." Responses range from 1 (*disagree a lot*) to 4 (*agree a lot*). The scale was found to have good Cronbach's internal consistency for fathers of older children ($\alpha = 0.70$), and positive fathering attitudes demonstrated an association with actual father involvement (Hofferth, 2003). In this study, the FIAS items did not demonstrate strong internal consistency ($\alpha = 0.47$ at pre-test).

The Caregiver Identity Scale (CIS) is a subscale of the Caregiver and Breadwinner Identity and Reflected Appraisals Inventory (Maurer, Pleck, & Rane, 2001) that seeks to measure the importance of caregiving behaviors to a father's self-concept. The CIS is a 14-item measure that asks questions such as "I would like to be remembered for the quality of care I gave my child" and "How should the caregiving for your family be divided?" Answers are on a 5-point Likert scale, with response options varying depending on the question being asked. The CIS has been shown to have good Cronbach's internal consistency for fathers ($\alpha = 0.70$) and is positively correlated with measures of parenting behaviors (Maurer et al., 2001). In this study, the CIS as a

whole demonstrated acceptable consistency at pre-test ($\alpha = 0.67$) but was very low at post-test ($\alpha = 0.24$). No subscales in this study demonstrated high internal consistency.

The Paternal Antenatal Attachment Scale (PAAS) is a 16-item self-report scale that measures the quality of attachment feelings toward the fetus and preoccupation with thinking about the fetus (Condon, 2015a). Responses vary by question and are Likert-type with five levels per question. The PAAS correlates significantly with the Paternal Postnatal Attachment Scale (Condon, Corkindale, & Boyce, 2008), which will be assessed at the third time point. In this study, the PAAS demonstrated high internal consistency at pre-test ($\alpha = 0.86$). Both subscales had reasonably good internal consistency, with quality of attachment at $\alpha = 0.73$ and time spent in attachment mode at $\alpha = 0.76$ at pre-test.

The Paternal Postnatal Attachment Scale (PPAS) is a 19-item self-report scale that measures paternal patience and tolerance, pleasure in interaction with the infant, and affection and pride for the infant (Condon, 2015b). Responses vary by question, are Likert-type and range from two to five levels per question. A high score on the PPAS is indicative of an internal feeling of affection towards the infant leading to behaviors that support the paternal-infant bond (Condon et al., 2008). The PPAS has been shown to have high Cronbach's internal consistency ($\alpha = 0.80$) and demonstrated strong test-retest reliability between 6 and 12 months with correlations for subscales ranging from $r = 0.65$ to $r = 0.70$. Convergent validity was demonstrated with significant and strong correlations found between the PPAS and multiple related constructs, such as mental well-being, positive affect, and infant temperament (Condon et al., 2008). In this study, the PPAS had an overall internal consistency of $\alpha = 0.83$ and reasonably good internal consistencies for the subscales of patience and tolerance ($\alpha = 0.75$) and pleasure in interaction ($\alpha = 0.63$). The affection and pride subscale measured at a low internal consistency of

$\alpha = 0.44$. In the original validation study for the PPAS, the affection and pride subscale had an internal consistency of $\alpha = 0.71$ at 6 months postpartum (Condon et al., 2008).

Mindfulness. The 15-item Five-Factor Mindfulness Questionnaire (FFMQ-15) is a short-form version of the 39-item Five-Factor Mindfulness Questionnaire. The FFMQ-15 is a self-report measure of activities related to mindfulness in the domains of observation, description, awareness, non-judgement, and non-reactivity (Gu et al., 2016a) with questions such as “I pay attention to the wind in my hair or the sun on my face.” Answers are provided on a scale from 1 (*Never or very rarely true*) to 5 (*Very often or always true*). Internal consistency ranges from 0.64 – 0.83, and scores for the FFMQ-15 strongly correlate to scores for the FFMQ-39 (Gu et al., 2016b). In the present study, internal consistency for the FFMQ-15 was $\alpha = 0.76$. Reasonably good reliabilities were found for subscales observing ($\alpha = 0.64$), describing ($\alpha = 0.75$), acting with awareness ($\alpha = 0.82$), and nonjudging of inner experience ($\alpha = 0.74$). The subscale of nonreactivity to inner experience had a low consistency in this study ($\alpha = 0.34$).

Additional scales. The Relationship Assessment Scale (RAS) is a brief 7-item measure of overall satisfaction in the relationship and includes statements regarding satisfaction, quality, emotional investment, and appraisal of the relationship (Hendrick, 1988). These items are rated on a 5-level Likert scale. The RAS has been found to have high internal consistency ($\alpha = 0.91$) and a strong correlation with the longer Diadic Attachment Scale ($r = 0.84$), demonstrating convergent validity (Vaughn & Matyastik Baier, 1999). Internal consistency of the RAS for the present study was high ($\alpha = 0.90$ at pre-test).

Procedures

This study utilized a mixed-methods descriptive feasibility design that included a single-group intervention with pre-test, post-test, and follow-up intra-individual comparisons. All

procedures were approved by the internal review board of Colorado State University.

Consent. Participants were informed of the expected risks and benefits of being involved in the survey study. Consent was sought prior to the initial baseline survey using an emailed consent form that contained the link to the survey. Participants were also involved in a secondary informed consent process related to the expected risks and benefits of the intervention prior to the start of the program.

Online Surveys. Surveys were completed online using a secure Qualtrics electronic survey platform. Surveys for all participants were given at three time-points: baseline (pre-test), after the implementation of the intervention (post-test, approximately seven weeks later), and approximately six weeks after post-test or following the birth of their baby, whichever came later (follow-up). The first two time-points were chosen to allow for a pre-post intervention comparison both within and between groups. The third time-point allowed for a post-birth follow-up to assess potential changes in mental health and functioning of the partner relationship.

Intervention Curriculum. The Becoming Fathers curriculum was administered over five weeks, one hour each week. Each week included a combination of mindfulness practice, small and large group discussion around topics specific to fatherhood (e.g., participants' ideas of what it means to be a father, the role of their own fathers in their lives, and factors in their relationships), and skills-based education on the topics of baby care (e.g. responsive parenting, basic infant care, and soothing a crying baby), partner communication, and mental health. See Table 1 for a list of intervention topics by week. The intervention was co-facilitated by a female graduate-level student marriage and family therapist and a male faculty member of the research team.

Confidentiality. Participant data was kept on a confidential research server accessible

only by the research team. Intervention participants were also asked to keep the confidences of

Table 1

<i>Becoming Fathers Weekly Curriculum</i>		
Session	Theme	Topics / Activities
1	Attitudes and Expectations of Fatherhood	<ul style="list-style-type: none"> • Introductions and group rules • What it means to be a father self-reflection and group discussion • “The Importance of Fathers” education • Intentional breathing for stress relief • Compassion practice: Considering those who are becoming fathers
2	Family of Origin, Caregiving	<ul style="list-style-type: none"> • Considering my father journaling and group discussion • Baby care skills • Focused attention: just do one thing • Compassion practice: The lineage of fathers
3	Maintaining the Partner Relationship	<ul style="list-style-type: none"> • Thoughts and stress: noticing thoughts • Reflective listening dyad practice • Postpartum intimacy – rituals of connection and transition • Compassion practice: Wishes for partner
4	Attachment, Soothing Baby	<ul style="list-style-type: none"> • Crying baby: Noticing thoughts and feelings • Education on father-infant attachment • Soothing baby brainstorm and group discussion • Self-compassion: Taking a break • Compassion practice: Wishes for baby
5	Mental Health and Self Care	<ul style="list-style-type: none"> • Education about postpartum depression in fathers • Self-compassion discussion and loving kindness meditation • The Good Enough Father art process and discussion • Re-evaluation of goals • Closing ritual: Sharing intention and receiving parting gift

the group, but all participants were informed that confidentiality cannot be guaranteed in a group setting. Participants were also informed of the potential for required breach of confidentiality associated with mandatory reporting laws. At the conclusion of the intervention, participants

were asked if they would like to stay in contact with other members of the group. Group facilitators shared contact information within the group of participants who asked to stay in contact with each other for each cohort.

Efficacy Analyses

The sample size for the exploratory efficacy analyses was especially small and underpowered to detect statistically significant effects, so the alpha level for statistical analyses was set at a conservative 0.1 level. This helped protect against type II errors. Unless otherwise noted, paired samples t-tests were used to identify within-participant differences between pre-test and post-test. See Table 5 for pre-test correlations and Table 6 for exploratory efficacy outcomes. Scatterplots of participant change were also used to identify reliable change for individual participants in the areas of stress (Figures 1 and 2), depressive symptoms (Figure 3), and mindfulness (Figures 4 and 5). Reliable change is the chance that variation in pre-test to post-test scores for an individual is not likely to be due to natural measurement variation alone and is likely to indicate actual change in the individual (Jacobson & Truax, 1991). Confidence intervals at 1.96 standard errors of the measurement ($p < 0.05$) were graphed around the line of no change in a scatterplot to determine individuals who are likely to have demonstrated real change beyond measure variation.

RESULTS

Results are presented in order of hypotheses: feasibility, acceptability, exploratory efficacy in mental health measures, exploratory efficacy in father involvement measures, and mindfulness efficacy.

Feasibility

Recruitment. Over six months, 40 interested men contacted the study about participating. Of these, 12 fell outside of inclusion criteria and were ineligible (five had babies older than three months, three had partners who weren't pregnant yet, two had fetuses earlier than 20 weeks gestation, one was adopting, and one was a second-time father). Five interested participants were not able to join the study due to time conflicts with the intervention. Four people did not respond after receiving more information following their initial inquiry. 19 total participants were accepted into the study initially.

I expected most participants would find out about the program indirectly through their partners or word of mouth and that some participants would learn about it directly through their childbirth classes. Initial recruitment using this strategy was less successful, with most interested participants hearing about the study directly from their partner's healthcare provider or from a childbirth educator. I restructured the recruitment strategy to include more direct methods, primarily through emails sent through university listservs. These emails proved to have a snowball effect, with some participants having had the email forwarded to them. Direct and electronic methods of recruitment proved to be much more effective. 21 interested participants (53%) replied directly to the email, whether they had received it themselves or had it forwarded to them by somebody else. Five interested participants (12.5%) heard about the program directly

from a childbirth educator or midwife, and two (5%) reported seeing the flyer. Only three interested participants (7.5%) reported having heard about the program from their partners (via email or flyer). One interested participant heard about the study from another participant. The referral source is unknown for six interested participants.

Sample characteristics. While university listserv recruitment provided the highest number of participants, it also likely skewed the sample towards full-time employed, higher income participants. Nevertheless, inclusion criteria were appropriate and functional, such that we were successfully able to recruit first-time prenatal and early postpartum fathers. The study also generated interest from men who fell outside of our inclusion criteria due to expecting a second child, having an infant older than 12 weeks, or whose partners were earlier in their pregnancies. While recruiting for the first cohort, the men whose partners were at an earlier gestational stage were contacted again during recruitment for the second cohort. Three men also expressed interest in the study whose partners were not pregnant yet but who were interested in attending to learn more about fatherhood prior to initiating pregnancy. The range of interested participants suggests that the experience of transitioning to fatherhood includes a wider time frame than our study included.

Participation. The intervention was offered for two cohorts totaling 19 participants. The first cohort included 13 participants, one of whom dropped out after the second week of the program and did not complete the post-test survey. One participant completed both pre-test and post-test surveys but did not attend any weeks of the intervention. The second cohort included 6 participants, all of whom participated in the intervention and both surveys. On average, participants attended 3.42 weeks of the intervention ($SD = 1.47$; Range, 0 – 5). Six participants (31.58%) attended all five weeks of the intervention. 13 participants (68.42%) attended at least 3

weeks of the intervention. The most common reason participants gave for absences was because of the birth of their baby or other family responsibilities (44.00%). The second most common reason given for absences was work commitments (12.00%). Participants who missed a session were provided with a written recap of the session via email and encouraged to practice activities at home. 94.73% of participants completed surveys at both time points.

Ability to deliver the curriculum. Each weekly session has an outline for facilitators to follow that includes a list of needed materials, themes for the class, detailed session topics, and suggested wording. Facilitators had copies of the printed curriculum during each session to follow. Participants were also provided with pronged folders containing weekly session materials and handouts. Participant materials for each week included a simple outline of the week's class topics, suggested home practice, and additional resources (website links or printed materials) related to that week's class. Participants who missed a session were sent an email with a written session recap and materials for that session.

Facilitators were required to be generally familiar with mindfulness practices, issues relevant to expectant and new fathers, and baby care and relational skills. Required facilitator expertise was limited to sufficient familiarity with class topics to lead discussion and the ability to manage group dynamics in a safe and supportive way. Facilitators met weekly to determine who would deliver which parts of each class session and discuss any preparation needed for class topics. During weekly sessions, facilitators balanced their time leading sections to maintain a co-leader environment.

The facilitators for the two initial cohorts were both trained psychotherapy clinicians experienced with mindfulness practice and teaching, but the curriculum does not require clinical therapy skills or educator experience. Future program facilitators would require some minimal

training, such as with a workshop, and a more detailed program manual. It is possible interested fathers in the community could successfully implement this type of intervention with sufficient training.

Successful implementation. Facilitators successfully implemented the primary components of the curriculum, although the 1-hour time for each class was difficult to maintain with the larger cohort due to participants wanting more time for discussion. It may be that extending the planned class time to 1.5 hours per session would allow for a smoother flow when larger classes invite more group discussion.

Acceptability

Satisfaction. Post-test evaluation ratings for the program as a whole and particular core components of the intervention are available in Table 2.

Table 2

Means, Standard Deviation, and Range of Post-Test Evaluation Data

Topic	<i>M</i>	<i>SD</i>	Range
Overall Value	8.66	1.64	4.0 - 10
Intentional Breathing	7.86	2.55	0.0 - 10
Group Discussion	8.78	1.37	6.0 - 10
Thinking about Your Father	7.95	1.99	3.0 - 10
Baby Care Skills	7.62	2.26	4.0 - 10
Awareness of Thoughts and Feelings	7.29	2.61	0.0 - 10
Soothing a Crying Baby	7.71	2.37	2.0 - 10
Learning about Infant Attachment	8.05	2.33	2.0 - 10
Connecting with Your Partner Discussion	7.72	1.79	4.0 - 10
Mental Health Discussion	8.06	1.68	5.0 - 10
Weekly Handouts	7.99	1.85	4.2 - 10

Note: Possible scores ranged from 0 to 10 on a 0.1 slider.

Averages of individual components all fell above 7, though ranges vary. Group discussion rated

the highest, followed by learning about infant attachment and then mental health. 100% of participants who took the post-test satisfaction survey (N=17) said they would recommend the program to other expectant fathers.

In weekly satisfaction surveys, participants rated group process most highly as something they wanted to spend more time on in class, followed closely by practical education (Table 3).

Table 3

Means, Standard Deviation, and Range of Weekly Satisfaction Data by Content Area

Content Area	<i>M</i>	<i>SD</i>	Range
Group Process	3.56	0.71	2 - 5
• Small group	3.74	0.72	2 - 5
• Large group	3.40	0.67	2 - 5
Practical Education	3.56	0.69	2 - 5
Individual Process	3.21	0.80	2 - 5
Mindfulness	3.10	0.67	1 - 5
• Skills practice	3.06	0.67	2 - 5
• Closing compassion	3.15	0.67	1 - 5
Ritual	3.45	0.69	3 - 5
Group Rules	2.50	0.70	1 - 3

Note: Possible scores ranged from 1 to 5 in increments of 1.

Participants indicated a slightly higher preference for spending time in small-group process than large group process. On average, participants rated closing compassion practices slightly higher than other class mindfulness practices. There were also cohort differences in preference for spending time in mindfulness practices, with Cohort 1 on average wanting to spend less time in mindfulness ($M=2.79$; $SD=0.60$) and Cohort 2 wanting to spend slightly more time on mindfulness practices ($M=3.36$; $SD=0.49$). This may be due to minor curriculum adjustments to the integration and presentation of mindfulness elements that were made for cohort 2 based on feedback from cohort 1.

Themes. Qualitative data from satisfaction surveys regarding what participants liked most and least about each session were coded and analyzed by two coders independently to identify themes around fathers' perceived value or needs in the program. Themes were identified from individual codes to also indicate the direction (liked or didn't like) of those codes. Qualitative data were read in their entirety first and a coding scheme was developed (Table 4).

Table 4

<i>Qualitative Codes and Subcodes</i>	
Code	Subcode
Mindfulness	
Community	<ul style="list-style-type: none"> • Positive / Supportive
Information/Learning	<ul style="list-style-type: none"> • Concrete Learning / Science • Practice • Redundant
More time	
Openness / vulnerability	<ul style="list-style-type: none"> • Safety
Culture of Fatherhood	<ul style="list-style-type: none"> • Masculinity / patriarchy • Lack of Support • Generational Differences • Unhelpfulness of available resources
Self-knowledge	
Differences Between Prenatal and Postpartum Fathers	
Value of Diversity	
Importance of the Partner Relationship	

Coders assigned common codes to text segments 87% of the time. Kappa statistics for the most frequently used codes (more than 10 codes assigned) showed excellent interrater reliability ranging from .80 to .91. Coding discrepancies were discussed and resolved. One rater coded

qualitative program evaluation data from the post-test survey and focus group. Five primary themes coalesced from the most frequently used codes. These themes indicated high value placed on group interaction, vulnerability, and learning with a desire for more time in the intervention. Participants varied in their evaluation of mindfulness practices presented in the program.

Theme 1: The importance of community. Mentions of group discussion, connection with other participants, and networking were coded as community. Community was the most frequently used code and was universally in a positive direction (e.g. liked most). Participants mentioned the importance of being able to talk with other men more often than any other component of the intervention in the satisfaction surveys and post-test questions. One participant wrote, “Community with other fathers is fantastic.” Another wrote “It was great to meet other dads and soon to be dads to share my experience,” and others shared similar sentiments.

Theme 2: Value of being open / vulnerable with other men. Facilitated group dialogue provides an opportunity to reflect and share with others in a way that is fundamentally different from discussion among coworkers or friends. Structured discussion and an emphasis placed on the value of group differences allows for an environment in which participants can share their thoughts or feelings without fear of being shamed. During the focus group, one participant mentioned how the group provided a safe space to be open with the other men that was different from his experience going out with his buddies. Openness and vulnerability were a primary theme in the satisfaction and post-test evaluation, and it was often paired with mentions of community. One wrote that he liked “openness” and the “opportunity to share and learn from others’ experiences.” Participants also mentioned that hearing from the other dads was important to their learning, and expectant fathers expressed value in learning from the fathers whose babies had already been born. One participant wrote liking “hearing personal stories of others’ babies

and things I had no idea about.” Some participants mentioned wanting more time in the group specifically so there would be enough time to hear from everyone and develop more closeness, which ties into the third theme of wanting more time overall.

Theme 3: More time. The primary criticism participants had of the group was that they felt it was too short. Most participants reported wanting each session to go on longer. One participant reported feeling disappointed there weren’t more classes after the fifth session. The larger group cohort mentioned wanting longer class sessions more often than the smaller group cohort, suggesting the sense of time limitations is related to a need for sufficient group process. Some participants recommended making the class an extra half hour.

Theme 4: Information is helpful. Consistent with prior research describing a lack of father-focused information for fathers-to-be (Entsieh & Hallstrom, 2016), the participants in this group assigned value to the information and education components of the class. Indeed, it would be expected that the education components are why most fathers would seek out a father preparation class. Many participants described the information they received in the class as being helpful. Education topics participants specifically mentioned liking included tangible ways to care for and bond with their babies, how to connect with their partners, and learning about postpartum mental health for dads. A few mentioned some of the information was redundant with other classes they had taken, but reported it was reinforcing to hear about it in this class. Some valued scientific information and others highlighted hands-on practice as being helpful to their learning. One father said he would recommend the class to others because they can “add some excellent skills and resources to the new fatherhood toolkit.” Many others mentioned the helpfulness of having more information as reasons why they would recommend the class.

Theme 5: Not sure about mindfulness. Mindfulness components were controversial in

the data. Cohort 1 mentioned mindfulness negatively about as often as they did positively. Cohort 2 found the mindfulness components less controversial and were more likely to mention it positively. Fathers assigned higher value to particular mindfulness practices, specifically reflective listening and intentional breathing. The simplicity of intentional breathing allowed participants to begin practice right away, and many mentioned week-to-week during group sessions that they were using it for stress relief. Fathers overwhelmingly liked the reflective listening exercise, perhaps because it paired mindful listening with the experience of being open and vulnerable with another father. One participant said of the program that he “appreciated the emotional and mindful component.” Others expressed wanting more information on how to be successful at certain practices. One said he “could have used more information,” about how to not get caught up in his thoughts, and another said he felt the reflective listening exercise “could have gone more in depth on how.” These illustrate the relative newness of mindfulness practices for some participants as well as the unexpectedness of learning mindfulness practices in a class focused on skills for fatherhood.

Overall, these primary themes reflect the core components of the class with education, mindfulness for stress management, and group process. Of the class as a whole, one father wrote “It was welcoming, informative, and unique” and another stated “I really enjoyed the discussion, the psychological aspects of what we are going through, and I learned a lot more than I expected.” Qualitative data emphasize participant acceptability of the Becoming Fathers program and provide important information about what emerging fathers want in interventions targeted to them.

Exploratory Efficacy Outcomes

Efficacy outcomes are detailed here by type. See Table 5 for pre-test correlations and

Table 5

Correlations of Measures at Pre-Test

	<i>M</i> (<i>SD</i>)	Father Involv.	Caregiver Identity	Antenatal Attach.	Postnatal Attach.	Perceived Stress	Depressive Symp.	Relationship Assessment	Mindful.
Father Involvement	28.37 (2.29)	—							
Caregiver Identity	51.68 (5.21)	0.22	—						
Antenatal Attachment	58.60 (8.74)	0.32	-0.05	—					
Postnatal Attachment	66.77 (7.27)	-0.01	0.52	NaN ^a	—				
Perceived Stress	14.00 (6.16)	-0.13	-0.53	0.25	-0.64	—			
Postnatal Depression	5.526 (3.73)	-0.25	-0.55	0.06	-0.50	0.67*	—		
Relationship Assessment	4.263 (0.63)	0.26	0.39	0.46	0.91	-0.21	-0.16	—	
Mindfulness	55.00 (4.67)	0.19	0.50	-0.11	0.52	-0.50	-0.60	-0.05	—

Note. ^aN too low to calculate; * $p < .05$, ^a Number of pairwise observations < 2

Table 6 for exploratory efficacy outcomes.

Table 6

Pre-Test to Post-Test Efficacy Outcomes

Measure	N	Pre <i>M</i> (<i>SD</i>)	Post <i>M</i> (<i>SD</i>)	<i>t</i>	<i>d</i>
Perceived Stress all participants	18	13.94 (6.33)	12.11 (5.40)	1.32	0.31
Perceived stress baby not born	10	15.70 (5.58)	11.70 (3.43)	2.22*	0.86
Edinburgh Postnatal Depression	18	5.39 (3.79)	4.11 (3.39)	1.69	0.35
Depression baby not born	10	6.20 (3.61)	3.90 (2.68)	2.04*	0.72
Father Involvement Attitudes	18	3.54 (0.29)	3.58 (0.24)	-0.64	0.15
Caregiver Identity	18	3.67 (0.38)	3.62 (0.28)	0.84	0.15
- Independent Items	18	4.51 (0.54)	4.61 (0.41)	-1.19	0.21
- Partner Competitive Items	18	3.19 (0.44)	2.97 (0.52)	1.91*	0.46
- Role Competitive Items	18	3.65 (0.49)	3.60 (0.43)	0.48	0.11
Paternal Antenatal Attachment	7	58.57 (9.57)	63.57 (2.62)	-3.58**	0.71
- Quality of Attachment	7	29.42 (3.78)	31.29 (2.43)	-1.66	0.59
- Time in Attachment Mode	7	20.29 (5.09)	22.71 (3.90)	-5.05***	0.53
Paternal Postpartum Attachment	4	66.77 (7.27)	69.73 (6.98)	-1.64	0.42
- Patience and Tolerance	4	26.13 (2.18)	26.23 (3.32)	-.10	0.04
- Pleasure in Interaction	4	24.70 (3.99)	25.20 (2.62)	-0.52	0.15
- Affection and Pride	4	15.95 (1.66)	18.3 (1.50)	-9.95***	1.49
Relationship Assessment	18	4.33 (0.58)	4.10 (0.44)	2.20**	0.45
Five-Factor Mindfulness 15Q	18	3.66 (0.32)	3.68 (0.49)	-0.22	0.05
- Observing	18	3.31 (0.90)	3.11 (0.80)	0.93	0.23
- Describing	18	3.85 (0.78)	3.78 (0.86)	0.54	0.09
- Nonjudging of inner exp.	18	3.83 (0.77)	4.07 (0.78)	-1.69	0.31
- Nonreactivity to inner exp.	18	3.63 (0.82)	3.93 (0.72)	-2.25**	0.39

Note: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Mental health. While overall participant mean stress-levels decreased from pre-test to

post-test, this difference was non-significant with a small effect size. Several participants' babies were born between pre-test to post-test, however. Stress levels would be expected to increase at the immediate transition to parenthood, regardless of intervention. Given this expected group difference, we decided to also test for change in perceived stress in a sample that excluded participants whose babies were born between pre-test and post-test. Stress levels declined significantly between pre-test and post-test for those whose babies were born before pre-test or after post-test and the effect size for this group was large. Six participants demonstrated reliable decreases in stress in the total group (Figure 1).

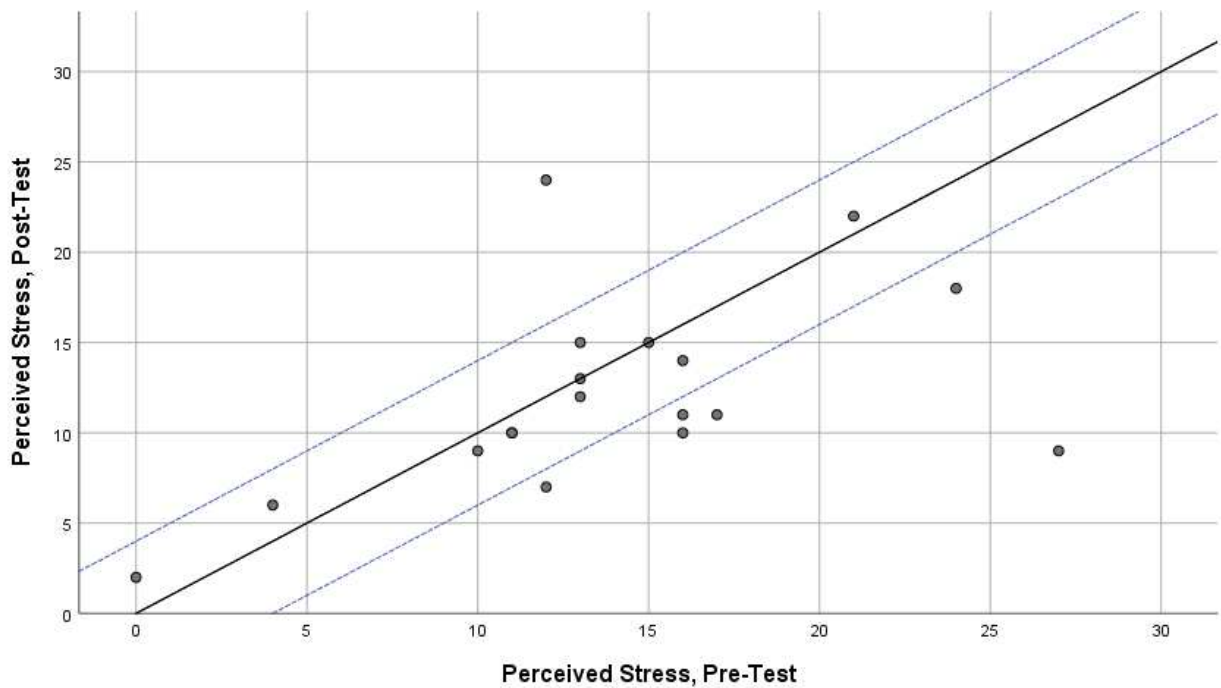


Figure 1. Change in perceived stress for all participants with band of reliable change ($SE_{MEAS} = 2.04$). Dots above the line of no change represent increased scores, and dots below the line of no change represent decreased scores. The blue dotted lines represent reliable change confidence intervals set at 1.96 ($p < 0.05$) standard errors of the measure

Five participants in the group of those whose babies were not born between pre-test and post-test demonstrated reliable decreases in perceived stress (Figure 2).

The Edinburgh Postnatal Depression Scale sets the level of possible depression at a score of 10 or higher (out of 30 possible). Only two participants scored high enough at pre-test to fall

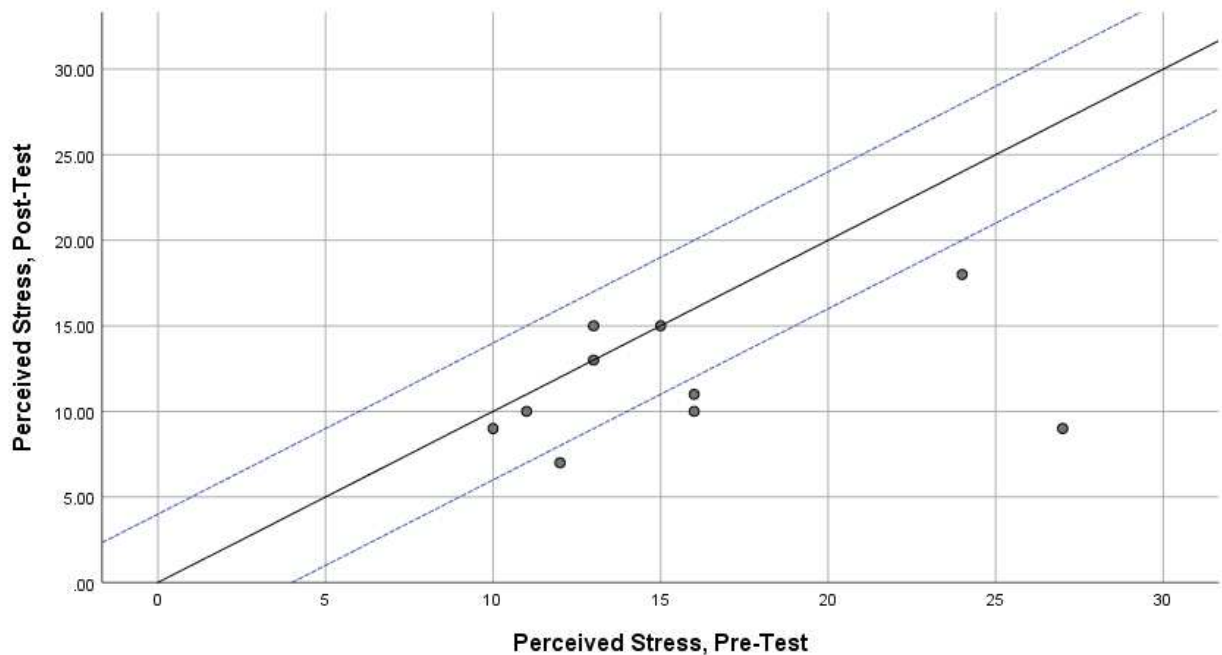


Figure 2. Change in perceived stress for participants who did not have a baby between pre-test and post-test.

within clinical levels of depression. All other participants scored below 10 at pre-test. No participant scored higher than 15 at any time. Participant mean depression decreased overall from pre-test to post-test but fell outside the level of significance with a small effect size. Similar to stress, I decided to also analyze change excluding those participants whose babies were born between pre-test and post-test. It is worth noting this excluded both participants with clinically elevated levels of depressive symptoms. Depressive symptoms decreased significantly between pre-test and post-test for those who did not have a baby in that time-frame. Effect sizes for those who did not have a baby between pre-test and post-test were large and easier to detect.

Depressive symptoms were low overall for the sample. Two participants with moderate depressive symptoms demonstrated reliable change to decreased depressive symptoms. Two participants with very low depressive symptoms at pre-test demonstrated reliable increases in depressive symptoms, though still subclinical, at post-test. Figure 3 depicts reliable change in

depressive symptoms.

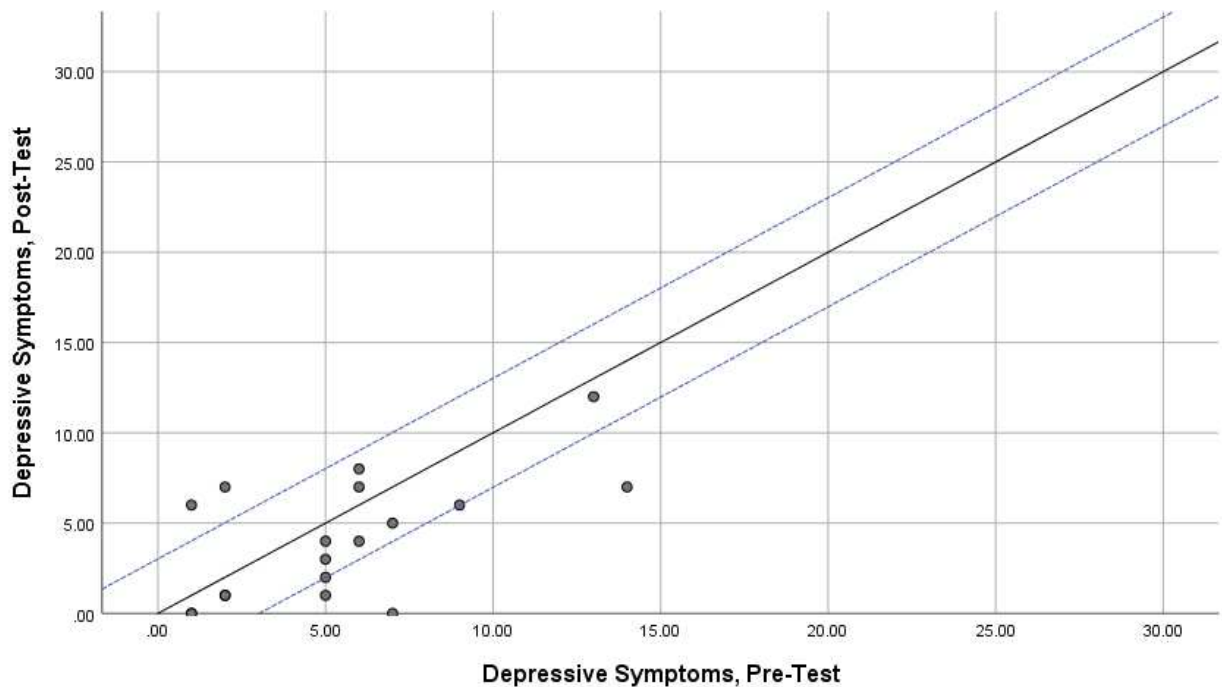


Figure 3. Change in depressive symptoms with band of reliable change ($SE_{MEAS} = 2.18$).

Changes in stress and depression were significantly correlated ($r=0.61$, $p=0.01$) for the sample as a whole, as expected. Interestingly, the correlation between change in stress and change in depressive symptoms was non-significant for participants whose babies were born between pre-test and post-test ($r=0.25$, $p=0.59$). This was an unexpected finding.

Father involvement. Two measures related to father involvement did not show any significant change. Father involvement attitudes demonstrated an increased overall mean between pre-test and post-test, but this increase was non-significant with a small effect size. With a high score for each item at 4 and individual means clustered above 3 at both pre-test and post-test, there may be a ceiling effect on this measure.

Caregiver identity unexpectedly declined between pre-test to post-test, although not significantly. Subscales also showed declining scores, though non-significant for independent items and role competitive items. The partner-competitive subscale showed a significant decline,

meaning participants increased in their comfort with their partners taking on more caregiving, though the difference in means was slight with a medium effect size.

The paternal antenatal attachment scale and all subscales increased in the positive direction despite smaller sample sizes due to the sample being split to include only those whose babies hadn't yet been born after post-test. Overall scale sample mean increased, and this increase was significant. The time spent in attachment mode subscale also showed a significant increase. The quality of attachment subscale sample mean increased, though non-significantly with a medium effect size. The paternal postnatal attachment scale had a very small sample size as only 4 participants babies had already been born at pre-test. PPAS sample means increased non-significantly with a small-to-medium effect size. Two subscales also had nonsignificant increases – the patience and tolerance subscale and the pleasure in interaction subscale, both of which had very small effect sizes. The affection and pride subscale increased significantly and had an effect size greater than one standard deviation above the mean.

Relationship satisfaction. Relationship satisfaction declined between pre-test to post-test at a significant level with a medium effect though remained generally high. Relationship satisfaction scores were skewed towards higher scores. For the first cohort, relationship satisfaction continued to decline at follow-up but non-significantly. At post-test, relationship satisfaction was positively correlated with caregiver identity ($r = 0.49$) and negatively correlated with depressive symptoms ($r = -0.64$).

Mindfulness. I also measured mindfulness to assess the effectiveness of the mindfulness components of the intervention. Overall mindfulness did not change significantly from pre-test to post-test, and mindfulness effect sizes were very small to small. The subscale of nonjudgement of inner experience increased approaching significance, and four of the participants demonstrated

reliable increases (Figure 4).

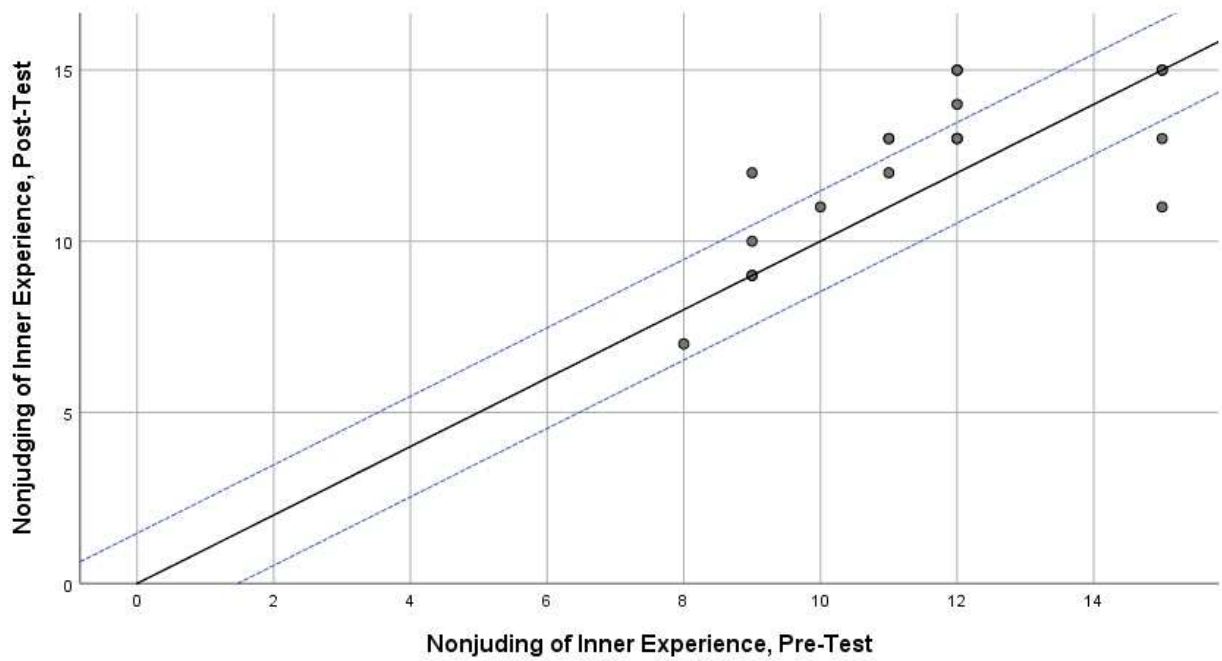


Figure 4. Change in nonjudging of inner experience with band of reliable change ($SE_{MEAS} = 0.75$).

The subscale of nonreactivity to inner experience increased significantly. Lower reliability for this subscale meant a wider confidence interval for reliable change. Two participants demonstrated reliable change for nonreactivity to inner experience (Figure 5).

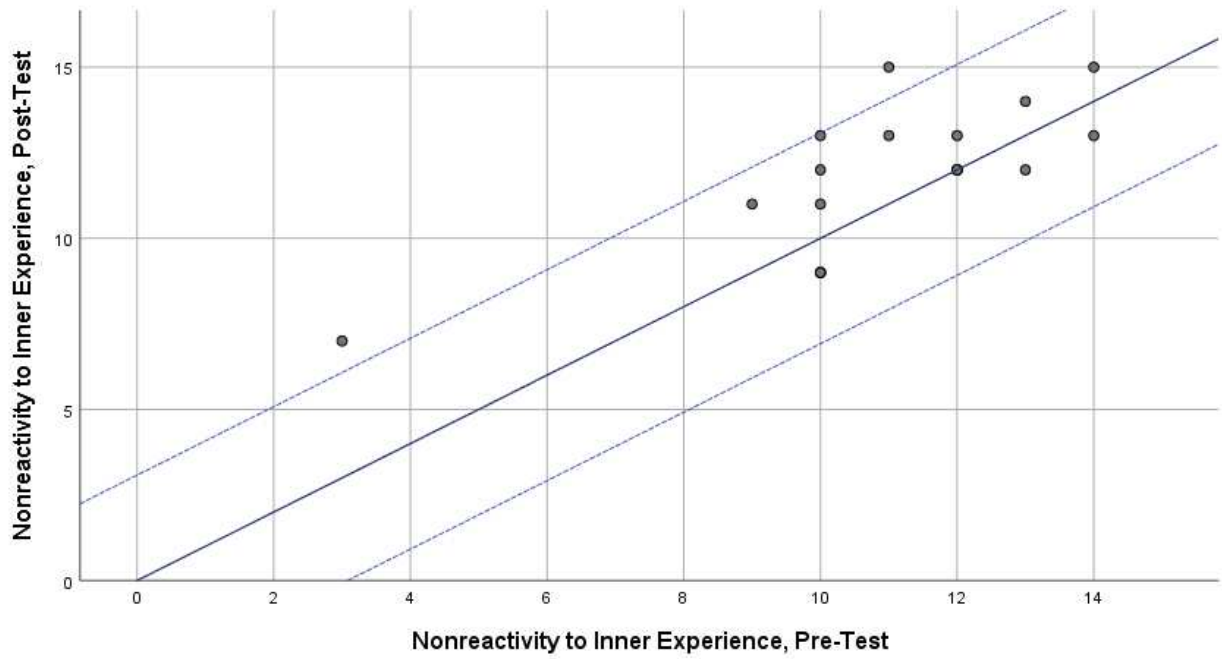


Figure 5. Change in nonreactivity to inner experience with reliable change band ($SE_{MEAS} = 1.57$).

DISCUSSION

The primary goal of this study was to test the feasibility of a newly developed group intervention at the transition to fatherhood to make sure it can work and identify any challenges in design or implementation prior to beginning a larger scale pilot study. Results support the feasibility of Becoming Fathers as a study that can work and demonstrates potential efficacy in expected outcomes of mental health, attachment representations, and nonreactivity.

Is Becoming Fathers feasible and acceptable?

Feasibility. Becoming Fathers demonstrated good feasibility, with effective inclusion criteria and sufficient recruitment for two cohorts, though finding direct avenues to recruit this specific population remains a challenge. Data collection procedures were effective with high participation in satisfaction surveys and pre-test and post-test surveys. High rates of data collection suggest it will be possible to track intervention efficacy in a larger pilot study. Most outcome measures demonstrated sufficient reliability, but outcome measures for father involvement and identity may need to be reassessed. The study required minimal resources at this scale. Feasibility questions remain regarding effective ways to create a control group, developing community partnerships for implementation, and training facilitators.

Acceptability. Satisfaction and post-test evaluation data provide evidence that participants found Becoming Fathers to be acceptable and subjectively valuable. Findings suggest that the pairing of skills-based education with group process created a positive learning environment. While fathers assigned high value to group process, it is likely fathers would seek out a class or group for expectant fathers primarily for the information they hope to gain, making group interaction a secondary but significant benefit to the program.

Reactions to the mindfulness components were mixed, which might point to participant unfamiliarity with the practice. Fathers gave high value to intentional breathing and many reported starting to integrate it into their lives by the second class, but longer sit-down practices received slightly lower ratings. Facilitators made adjustments to the curriculum prior to the second cohort in order to incorporate mindfulness learning and practice more seamlessly into other skills-based activities. The increased satisfaction ratings for mindfulness practices in the second cohort may be a reflection of these changes. It may also be due to uncontrolled group differences, or perhaps the smaller group size in the second cohort allowed for smoother transitions in class components and increased satisfaction. The increased satisfaction of the mindfulness components in the second cohort is encouraging. Mindfulness is a readily available tool that has demonstrated success at reducing stress even when practiced for only brief periods (Khoury, Sharma, Rush, & Fournier, 2015). Its accessibility and utility as a momentary coping skill recommend it for the fluctuations of parenting. While specific efficacy of the mindfulness components can't be determined in this study, previous work supporting mindfulness as a valuable tool in reducing overall stress (Pascoe, Thompson, Jenkins, & Ski, 2017), relationship stress (Laurent et al., 2016), and parenting stress (Gouveia, Carona, Canavarro, & Moreira, 2016) as well as its demonstrated acceptability in this study suggests it is a worthwhile component in the curriculum.

The high value participants placed on group interaction and the qualitative themes of community paired with openness are an interesting finding. Participants reported particular value in processing their thoughts and feelings with other men in the same life stage in a safe and comfortable environment. Turner (1969), in his exploration of rites of passage, describes the importance of community for those in the liminal, or transitional, state. As people leave one

identity behind and take on a new one, they also experience the loss of previous social ties but have not yet gained the social connections that will come with acceptance of their new identity. While in-between, those in transition receive support or community from each other (Turner, 1969). Draper (2003) argues the need for men to experience a rite of passage at the transition to fatherhood and suggests the importance of collective transitions. Group intervention at the period of transition offers the opportunity for men to process the individual, social, and relational changes they are experiencing with others who are also in the liminal state. Our findings indicate that men highly value the opportunity to connect with other emerging fathers and that social support to increase connection during the transition to fatherhood is a needed addition to current perinatal support systems.

How Might Becoming Fathers Be Effective?

I also explored efficacy trends in measures of mental health, father involvement, mindfulness, and relationship satisfaction. Findings indicate that there are potential effects of the intervention in the areas of stress, depressive symptoms, nonreactivity to inner experience, and attachment representations. This study is underpowered to detect all possible changes at a level of statistical significance, but trends in pre-post differences may provide directions for future studies at a larger scale.

Findings partially supported hypotheses for reductions in stress and depressive symptoms, but only for those whose babies were not born between pre-test and post-test. Stress levels reduced overall for the sample, but the difference was only significant for those whose babies were not born between pre-test and post-test. It may be that the changes incurred at the immediate transition to parenthood are likely to increase stress symptoms regardless of participation in an intervention. Since having a baby between pre-test and post-test was also the

primary reason participants missed class sessions, it may also be that attending fewer sessions provided less benefit in stress reduction. Alternatively, it may be that a father-preparation class has more value for those who are currently in a more stable point in the transition to parenthood, either prenatal or postnatal. Given the relationship between perinatal stress and depressive symptoms (Wee, Skouteris, Richardson, McPhie, & Hill, 2015), it is unsurprising that depressive symptoms would follow a similar pattern. Indeed, in the present study, stress and depressive symptoms were strongly correlated, as expected. A surprising finding, however, is that this correlation vanished for participants whose babies were born between pre-test to post-test. While most participants who had a baby between pre-test and post-test experienced increased stress levels, their stress levels were not associated with depressive symptoms in either direction over that time period. Whether the intervention may have influenced this difference or whether these two constructs fail to move together at the immediate transition to fatherhood is unknown and requires further study.

The hypothesis of increases in measures related to father involvement was partially supported, with no significant change to father involvement attitudes or caregiver identity, but significant increases in attachment representations. The non-significant change in father involvement attitudes was surprising given the class focus on developing a father identity. Scores were high to begin with, all clustered in the upper fourth of the possible range, which likely indicates a ceiling effect from pre-test to post-test. It may be that fathers who are likely to participate in a fathering class already have highly positive involvement attitudes. Further study should provide a comparison group to identify possible differences. Since internal expectations about fathering are important predictors of involvement (Trahan, 2017), the development of fathering expectations and identity remains an important area of inquiry.

Declines in caregiver identity, though non-significant, were unexpected. This may partly indicate a sample effect, as most participants were well-educated and many were in high-earning careers. These factors may mean participants were more likely to place importance on the provider role rather than their caregiver role. While the class discussed the importance of father involvement, it did not suggest an ideal level of father involvement as prior research suggests the quality of involvement is more important to infant attachment than the quantity of involvement for fathers (Brown et al., 2007). The dialogue process may have allowed fathers to clarify their roles such that were more likely to perceive themselves as secondary caregivers. Alternatively, since the caregiver identity scale did not demonstrate good internal consistency in this study, it may be that the scale does not provide a good measurement of identity changes for fathers during the transition to fatherhood. Future studies should consider alternative measures of identity.

Increased paternal subjective attachment representations were promising. Expectant fathers increased significantly in overall attachment representations as well as time spent in attachment mode (thinking about the infant). While a small postpartum sample size made it difficult to assess changes in postnatal attachment, postpartum fathers demonstrated increases in affection and pride toward their infants. Since subjective attachment representations have been found to correlate with attachment behaviors (Condon et al., 2013), increases in father attachment representations suggest fathers may also increase attachment behavior towards their infants. This is a promising finding as quality caregiving by fathers predicts secure infant attachment (Brown et al., 2007), and secure father-infant attachment provides an important buffer if infant attachment to the mother is compromised in some way, such as due to maternal postpartum depression (Mezulis, Hyde, & Clark, 2004).

Efficacy of the mindfulness components was difficult to determine in this sample.

Findings supported increases in subjective mindfulness in the area of nonreactivity to inner experience but not others. The curriculum utilizes brief mindfulness and compassion practices rather than a comprehensive mindfulness curriculum. These brief practices would not be expected to generate large effects in mindfulness. Small or medium effects would not be detectable in a sample of this size.

While relationship satisfaction declined pre-test to post-test, this aligns with current literature demonstrating sharp declines in relationship satisfaction at the transition to parenthood (Doss & Rhoades, 2017). Without a comparison group, it is unknown whether declines in relationship satisfaction for those participating in the intervention may be less than the general population. Future studies should use a comparison group to assess whether a father-focused prenatal intervention can reduce declines in couple relationship satisfaction. Correlations with caregiver identity and depressive symptoms suggest the possibility that improving outcomes for fathers in these areas will reduce declines in couple relationship satisfaction. Supporting the couple relationship at the transition to parenthood remains a primary issue for new fathers. Fathers who have a more supportive partner relationship experience decreased stress (Koester & Petts, 2017), and men who perceive their relationship quality to be higher are more likely to be able to take on multiple family roles without engaging in more risky health behaviors (DePasquale et al., 2018).

A Unique Intervention

Interest in father-focused intervention around the transition to fatherhood is gaining momentum. Recent studies have assessed feasibility of a text-message intervention for expectant fathers (Fletcher et al., 2017) and a brief group educational intervention focused on childcare skills and role clarification (Bourget, Heon, Aita, & Michaud, 2017). An on-going clinical trial is

assessing in-home and text-message stress reduction support for new fathers (Tandon, 2018).

Another feasibility study of a parenting skills intervention for prenatal fathers found increases in self-efficacy but no change in stress or depressive symptoms (Mihelic, Morawka, & Filus, 2018).

Identifying multiple avenues of support for emerging fathers is important to fill the support gap.

Results from this study suggest a focus on stress reduction and group process with sufficient time for fathers to develop positive connections with each other are worthwhile components that future interventions should consider including.

Limitations and Directions for Future Research.

While the study design demonstrated feasibility, some questions were raised that will need to be addressed in a larger-scale implementation. Direct recruitment worked best for this population, and future studies will need to identify additional means of direct recruitment to expand the sample characteristics. Identity and involvement scales may need to be reassessed. Future studies should recruit a more diverse sample and use a comparison group to more clearly identify any potential intervention effect separate from the effect of time alone. Future studies utilizing community-based implementation should also assess facilitator fidelity to the established intervention curriculum. Future research might also investigate possible participant factors associated with reliable change to attain a greater understanding of who would most benefit from this type of intervention.

Paternal depression has been shown to be associated with family stressors (Gutierrez-Galve et al., 2015), and paternal antenatal stress has been shown to predict later paternal depression (Wee et al., 2015). Future research should look at whether a father-focused intervention can moderate the link between stress and depressive symptoms in new fathers. It may also be valuable to understand more about why the association between stress and

depressive symptoms dissipates during the immediate transition to fatherhood.

Reliability of some measures used to assess father identity was low and were inconsistent between pre-test and post-test. This may be due to small sample sizes, or it may be that fathering attitudes around the time of childbirth have not coalesced sufficiently to make these measures reliable. Alternative means of measuring changes in identity at the transition to fatherhood may need to be utilized or developed.

One unexpected finding of this study is the importance for new fathers to be in a supportive community with one another. Little research currently exists on the value of supportive community for men. Understanding the nature and potential applications of positive male community is an important avenue for further inquiry. Given participants' desire for more time together, future iterations of this intervention should consider lengthening the duration of the intervention and continuing to emphasize group process. Other types of father-focused group programming are also open for scientific inquiry, such as new-father drop-in groups or organized father-tot play groups.

CONCLUSION

Fathers experience a variety of stressors over the transition to parenthood and are not currently well-supported by social systems. Changing ideals of fatherhood are increasing expectations for father involvement, and fathers may experience heightened stress as they adjust to a changing identity and new role as well as navigate changes in their romantic relationships and begin bonding with their babies. Fathers experience postpartum mood disorders about as often as mothers do but lack routine screening or intervention specific to their needs. When fathers struggle to adapt to the role, it may have lasting impacts for the family. Many prenatal interventions focus on mothers, but the potential for supporting early family functioning by intervening with fathers is relatively unexplored.

The Becoming Fathers program is a 5-week group intervention that aims to support fathers early on at the transition to fatherhood by providing a combination of education related to caregiving and relational skills, mindfulness-based coping skills, and a supportive community for processing issues related to father identity and adjustment. I conducted an initial feasibility and acceptability study with two cohorts and found that study parameters were feasible and fathers were interested and willing to attend the program. Direct methods of recruitment worked best. The program demonstrated high acceptability in all areas with fathers reporting particular interest in the education and group discussion aspects of the intervention. Pre-test and post-test surveys demonstrated trends in reduced stress and depressive symptoms, increases in nonreactivity to inner experience mindfulness, and increases in attachment representations. Additional small and medium effects may emerge with larger sample sizes in future study. Supporting fathers across the transition to parenthood is an intervention avenue with high potential that deserves continued

exploration.

REFERENCES

- Ainsworth, M. (1964). Patterns of attachment behavior shown by the infant in interaction with his mother. *Merrill-Palmer Quarterly of Behavior and Development*, 10, 51-58.
- Barry, A. A., Smith, J. Z., Deutsch, F. M., & Perry-Jenkins, M. (2011). Fathers' involvement in childcare and perceptions of parenting skill over the transition to parenthood. *Journal of Family Issues*, 32, 1500 – 1521. doi:10.1177/0192513X11406229
- Bartholomew, N. G., Hiller, M. L., Knight, K., Nucatola, D. C., & Simpson, D. D. (2000). Effectiveness of communication and relationship skills training for men in substance abuse treatment. *Journal of Substance Abuse Treatment*, 18, 217-225.
- Beaton, J., & Doherty, W. (2007). Fathers' family of origin relationship and attitudes about father involvement from pregnancy through first year postpartum. *Fathering*, 5, 236-245. doi:10.3149/fth.0503.236
- Bohm, D. (1996). *On Dialogue*. Nichols, L. (Ed.). London and New York, NY: Routledge.
- Bourget, M., Heon, M., Aita, M., & Michaud, M. (2017). An educational intervention to support the development of a sense of mastery of the anticipated paternal role in expectant fathers: A clinical project. *The Journal of Perinatal Education*, 26, 23-26. doi:10.1891/1058-1243.26.1.23
- Bowlby, J. (1969). *Attachment and Loss: Vol. 1: Attachment*. New York, NY: Basic Books.
- Boyce, P., Condon, J., Barton, J., & Corkindale, C. (2007). First-time fathers study: Psychological distress in expectant fathers during pregnancy. *Australian and New Zealand Journal of Psychiatry*, 41, 718-725
- Bretherton, I. (2010). Fathers in attachment theory and research: A review. *Early Child*

- Development and Care*, 180, 9-23. doi:10.1080/03004430903414661
- Brown, G. L., McBride, B. A., Shin, N., & Bost, K. K. (2007). Parenting predictors of father-child attachment security: Interactive effects of father involvement and fathering quality. *Fathering*, 5, 197-219. doi:10.3149/fth.0503.197
- Cameron, E., Sedhov, I., & Tomfohr-Madsen, L. (2016). Prevalence of paternal depression in pregnancy and the postpartum: An updated meta-analysis. *Journal of Affective Disorders*, 206, 189-203.
- Coatsworth, D., Duncan, L. G., Nix, R. L., Greenberg, M. T., Gayles, J. G., Bamberger, K. T., ... & Dami, M. A. (2015). Integrating mindfulness with parent training: Effects of the mindfulness-enhanced strengthening families program. *Developmental Psychology*, 51, 26-35. doi:10.1037/a0038212
- Cohen, S. (1994). *Perceived Stress Scale* [Measurement instrument]. Retrieved from <http://www.mindgarden.com/documents/PerceivedStressScale.pdf>
- Cohen, S., Kamarck, T., Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior*, 24, 385-396. doi:10.2307/2136404
- Condon, J. (2015a). *Paternal Antenatal Attachment Scale* [Measurement instrument]. Retrieved from https://dspace.flinders.edu.au/xmlui/bitstream/handle/2328/35294/Paternal_Antenatal_Attachment_Scale.pdf?sequence=5&isAllowed=y
- Condon, J. (2015b). *Paternal Postnatal Attachment Scale* [Measurement instrument]. Retrieved from <https://dspace.flinders.edu.au/xmlui/handle/2328/35293>
- Condon, J., Corkindale, C., & Boyce, P. (2008). Assessment of postnatal paternal-infant attachment: Development of a questionnaire instrument. *Journal of Reproductive and*

- Infant Psychology*, 26, 195-210. Doi:10.1080/02646830701691335
- Condon, J., Corkindale, C., Boyce, P., & Gamble, E. (2013). A longitudinal study of father-to-infant attachment: Antecedents and correlates. *Journal of Reproductive and Infant Psychology*, 31, 15-30. doi:10.1080/02646838.2012.757694
- Cormack, D., Jones, F. W., & Maltby, M. (2018). A “collective effort to make yourself feel better”: The group process in mindfulness-based interventions. *Qualitative Health Research*, 28, 3-15. doi:10.1177/1049732317733448
- Cox, J.L., Holden, J.M., & Sagovsky, R. (1987). Detection of postnatal depression: Development of the 10-item Edinburgh Postnatal Depression Scale. *British Journal of Psychiatry*, 150, 782-786
- Da Costa, D., Zelkowitz, P., Dasgupta, K., Sewitch, M., Lowensteyn, I., Cruz, R., . . . & Khalife, S. (2017). Dads get sad too: Depressive symptoms and associated factors in expectant first-time fathers. *American Journal of Men's Health*, 11, 1376-1384. doi:10.1177/1557988315606963
- DePasquale, N., Polenick, C. A., Hinde, J., Bray, J. W., Zarit, S. H., Moen, P., ... & Almeida, D. M. (2018). Health behavior among men with multiple family roles: The moderating effects of perceived partner relationship quality. *American Journal of Men's Health*, 12, 2006-2017. doi:10.1177/1557988316660088
- Dimidjian, S., Goodman, S. H., Felder, J. N., & Gallop, R. (2016). Staying well during pregnancy and the postpartum: A pilot randomized trial of mindfulness-based cognitive therapy for the prevention of depressive relapse/recurrence. *Journal of Consulting and Clinical Psychology*, 84, 134-145. doi:10.1037/ccp0000068
- Doss, B. D., Rhoades, G. K., Stanley, S. M., & Markman, H. J. (2009). The effect of the

- transition to parenthood on relationship quality: An 8-year prospective study. *Journal of Personality and Social Psychology*, 96, 601-619. doi:10.1037/a0013969
- Doss, B. D., & Rhoades, G. K. (2017). The transition to parenthood: Impact on couples' romantic relationships. *Current Opinion in Psychology*, 13, 25-28. doi:10.1016/j.copsyc.2016.04.003
- Draper, J. (2003). Men's passage to fatherhood: An analysis of the contemporary relevance of transition theory. *Nursing Inquiry*, 10, 66-77. doi:10.1046/j.1440-1800.2003.00157.x
- Duncan, L., & Bardacke, N. (2010). Mindfulness-based childbirth and parenting education: Promoting family mindfulness during the perinatal period. *Journal of Child and Family Studies*, 19, 190-202. doi:10.1007/s10826-009-9313-7
- Durkin, S., Morse, C., & Buist, A. (2001). The factor structure of prenatal psychological and psychosocial functioning in first-time expectant parents. *Journal of Reproductive and Infant Psychology*, 19, 121-134. doi:10.1080/02646830020032300
- Durtschi, J. A., Soloski, K. L., & Kimmes, J. (2017). The dyadic effects of supportive coparenting and parental stress on relationship quality across the transition to parenthood. *Journal of Marital and Family Therapy*, 43, 308-321. doi:10.1111/jmft.12194
- Elder, Jr., G. H. (1998). The life course as developmental theory. *Child Development*, 69, 1-12. doi:10.1111/j.1467-8624.1998.tb06128.x
- Entsieh, A. A., & Hallstrom, I. K. (2016). First-time parents' prenatal needs for early parenthood preparation: A systematic review and metasynthesis of qualitative literature. *Midwifery*, 39, 1-11. doi:10.1016/j.midw.2016.04.006
- Fletcher, R., Kay-Lambkin, F., May, C., Oldmeadow, C., Attia, J., & Leigh, L. (2017). Supporting men through their transition to fatherhood with messages delivered to their

- smartphones: A feasibility study of SMS4Dads. *BMC Public Health*, 17 (953), 1-10.
doi:10.1186/s12889-017-4978-0
- Garfield, C.F., Duncan, G., Rutsohn, J., McDad, T. W., Adam, E. K., Coley, R. L., & Chase-Lansdale, L. (2014). A longitudinal study of paternal mental health during transition to fatherhood as young adults. *Pediatrics*, 133, 836-843. doi:10.1542/peds.2013-3262
- Gerson, K. (2010). *The unfinished revolution: How a new generation is reshaping family, work, and gender in America*. New York, NY: Oxford University Press.
- Gettler, L. (2016). Becoming DADS: Considering the role of cultural context and developmental plasticity for paternal socioendocrinology. *Current Anthropology*, 57(513), 38-51.
doi:10.1017/CBO9781107415324.004
- Gouveia, M. J., Carona, C., Canavarro, M. C., & Moreira, H. (2016). Self-compassion and dispositional mindfulness are associated with parenting styles and parenting stress: The mediating role of mindful parenting. *Mindfulness*, 7, 700-712. Doi:10.1007/s12671-016-0507-y
- Grossman, K., Grossman, K. E., Fremer-Bombik, E., Kindler, H., Scheuerer-Englisch, H., & Zimmerman, P. (2002). The uniqueness of the child-father attachment relationship: Fathers' sensitive and challenging play as a pivotal variable in a 16-year longitudinal study. *Social Development*, 11, 301-337. doi:10.1111/1467-9507.00202
- Gu, J., Strauss, C., Crane, C., Barnhofer, T., Karl, A., Cavanagh, K., & Kuyken, W. (2016a). *FFMQ-15 items and scoring information*. [Measurement instrument]. Retrieved from https://www.researchgate.net/publication/303709635_FFMQ-15_items_and_scoring_information.
- Gu, J., Strauss, C., Crane, C., Barnhofer, T., Karl, A., Cavanagh, K., & Kuyken, W. (2016b).

- Examining the factor structure of the 39-item and 15-item versions of the Five-Facet Mindfulness Questionnaire before and after Mindfulness Based Cognitive Therapy for people with recurrent depression. *Psychological Assessment*, 28, 791-802. doi: 10.1037/pas0000263
- Gutierrez-Galve, L., Stein, A., Hanington, L., Heron, J., & Ramchandani, P. (2015). Paternal depression in the postnatal period and child development: Mediators and moderators. *Pediatrics*, 135, 339-347. doi:10.1542/peds.2014-2411
- Halme, N., Tarkka, M-T., Nummi, T., & Astedt-Kurki, P. (2006). The effects of parenting stress on fathers' availability and engagement. *Child Care in Practice*, 12, 13-26.
- Hazen, N. L., McFarland, L., Jacobvitz, D., & Boyd-Soisson, E. (2010). Fathers' frightening behaviors and sensitivity with infants: Relations with fathers' attachment representations, father-infant attachment, and children's later outcomes. *Early Child Development and Care*, 180, 51-69. doi:10.1080/03004430903414703
- Hendrick, S. S. (1988). A generic measure of relationship satisfaction. *Journal of Marriage and Family*, 50, 93-98
- Hofferth, S. L. (2003). Race/ethnic differences in father involvement in two-parent families: Culture, context, or economy? *Journal of Family Issues*, 24, 185-216. doi:10.1177/0192513X02250087
- Ives, J. (2014). Men, maternity, and moral residue: Negotiating the moral demands of the transition to first time fatherhood. *Sociology of Health and Illness*, 36, 1003-1019. doi:10.1111/1467-9566.12138
- Jacobson, N. S., & Truax, P. (1991). Clinical significance: A statistical approach to defining meaningful change in psychotherapy research. *Journal of Consulting and Clinical*

- Psychology*, 59, 12-19. doi:10.1037/0022-006X.59.1.12
- Jeynes, W. (2016). Meta-analysis on the roles of fathers in parenting: Are they unique? *Marriage and Family Review*, 52, 665-688. doi:10.1080/01494929.2016.1157121
- Kabat-Zinn, J. (2015). Mindfulness. *Mindfulness*, 6, 1481-1483. doi:10.1007/s12671-015-0456-x
- Khoury, B., Sharma, M., Rush, S. E., & Fournier, C. (2015). Mindfulness-based stress reduction for healthy individuals: A meta-analysis. *Journal of Psychosomatic Research*, 78, 515-528. doi:10.1016/j.jpsychores.2015.03.009
- Knoester, C. & Petts, R. J. (2017). Fathers' parenting stress after the arrival of a new child. *Family Relations*, 66, 367-382. doi:10.1111/fare.12263
- Kowlessar, O., Fox, J., & Wittkowski, A. (2015a). First-time fathers' experiences of parenting during the first year. *Journal of Reproductive and Infant Psychology*, 33, 4-14. doi:10.1080/02646838.2014.971404
- Kowlessar, O., Fox, J., & Wittkowski, A. (2015b). The pregnant male: A metasynthesis of first-time fathers' experiences of pregnancy. *Journal of Reproductive and Infant Psychology*, 33, 106-127. doi:10.1080/02646838.2014.970153
- Kozlowski, A. (2013). Mindful mating: Exploring the relationship between mindfulness and relationship satisfaction. *Sexual and Relationship Theory*, 28, 92-104. doi:10.1080/14681994.2012.748889
- Kushner, K.A., Pitre, N., Williamson, D.L., Breitzkreuz, R., & Rempel, G. (2014). Anticipating parenthood: Women's and men's meanings, expectations and idea(l)s in Canada. *Marriage & Family Review*, 50, 1-34. doi:10.1080/01494929.2013.834026
- Laurent, H. K., Hertz, R., Nelson, B., & Laurent, S. M. (2016). Mindfulness during romantic conflict moderates the impact of negative partner behaviors on cortisol responses.

- Hormones and Behavior*, 79, 45-51. doi:10.1016/j.yhbeh.2016.01.005
- Lord, S. (2017). Mindfulness and spirituality in couple therapy: The use of meditative dialog to help couples develop compassion and empathy for themselves and each other. *Australian and New Zealand Journal of Family Therapy*, 38, 98-114. 10.1002/anzf.1201
- Loutzenhiser, L., McAuslan, P., & Sharpe, D. (2015). The trajectory of maternal and paternal fatigue and factors associated with fatigue across the transition to parenthood. *Clinical Psychologist*, 19, 15-27. doi:10.1111/cp.12048
- Liyana Amin, N. A., Wilson, W. W. S., & Shefaly, S. (2018). Enhancing first-time parents' self-efficacy: A systematic review and meta-analysis of universal parent education interventions' efficacy. *International Journal of Nursing Studies*, 82, 149-162. doi: 10.1016/j.ijnurstu.2018.03.021
- MacDonald, E., & Hastings, R. (2010). Mindful parenting and care involvement of fathers of children with intellectual disabilities. *Journal of Child and Family Studies*, 19, 236-240. doi:10.1007/s10826-008-9243-9
- Machin, A. J. (2015). Mind the gap: The expectation and reality of involved fatherhood. *Fathering*, 13, 36-59. Doi:10.3149/fth.1301.36
- Matthey, S., Barnett, B., Kavanagh, D. J., & Howie, P. (2001). Validation of the Edinburgh Postnatal Depression Scale for men, and comparison of item endorsement with their partners. *Journal of Affective Disorders*, 64, 175-184. doi:10.1016/S0165-0327(00)00236-6
- Matvienko-Sikar, K., & Dockray, S. (2017). Effects of a novel positive psychological intervention on prenatal stress and well-being: A pilot randomized controlled trial. *Women and Birth*, 30, e111-e118. doi:10.1016/j.wombi.2016.10.003

- Maurer, T.W., Pleck, J.H., & Rane, T.R. (2001). Parental identity and reflected appraisals: Measurement and gender dynamics. *Journal of Marriage and Family*, 63, 309-321.
- McLaughlin, K., & Muldoon, O. (2014). Father identity, involvement, and work-family balance: An in-depth interview study. *Journal of Community and Applied Social Psychology*, 24, 439-452. doi:10.1002/casp.2183
- McGill, B. (2014). Navigating new norms of involved fatherhood: Employment, fathering attitudes, and father involvement. *Journal of Family Issues*, 35, 1089-1106. doi:10.1177/0192513X14522247
- Medeiros, C., Gouveia, M. J., Canavarro, M. C., & Moreira, H. (2016). The indirect effect of mindful parenting of mothers and fathers on the child's perceived well-being through the child's attachment to parents. *Mindfulness*, 7, 916-927. doi:10.1007/s12671-016-0530-z
- Mezulis, A. H., Hyde, J. S., & Clark, R. (2004). Father involvement moderates the effect of maternal depression during a child's infancy on child behavior problems in kindergarten. *Journal of Family Psychology*, 18, 575-588.
- Mihelic, M., Morawska, A., & Filus, A. (2018). Does a perinatal parenting intervention work for fathers? A randomized controlled trial. *Infant Mental Health Journal*, 39, 687-698. doi:10.1002/imhj.21748
- Newkirk, K., Perry-Jenkins, M., & Sayer, A. (2017). Division of household and childcare labor and relationship conflict among low-income new parents. *Sex Roles*, 76, 319-333. doi:10.1007/s11199-016-0604-3
- Olsson, A., Robertson, E., Björklund, A., & Nissen, E. (2010). Fatherhood in focus, sexual activity can wait: New fathers' experience about sexual life after childbirth. *Scandinavian Journal of Caring Sciences*, 24, 716-725. doi:10.1111/j.1471-6712.2009.00768.x

- Orsmund, G. & Cohn, E. (2015). The distinctive features of a feasibility study: Objectives and guiding questions. *The Occupational Therapy Journal of Research: Occupation, Participation, and Health*, 35, 169-177. doi:10.1177/1539449215578649
- Panter-Brick, C., Burgess, A., Eggerman, M., McAllister, F., Pruett, K., & Leckman, J. F. (2014). Practitioner review: Engaging fathers – recommendations for a game change in parenting interventions based on a systematic review of the global evidence. *Journal of Child Psychology and Psychiatry*, 55, 1187-1212. doi:10.1111/jcpp.12280
- Pascoe, M. C., Thompson, D. R., Jenkins, Z. M., & Ski, C. F. (2017). Mindfulness mediates the physiological markers of stress: Systematic review and meta-analysis. *Journal of Psychiatric Research*, 95, 156-178. doi:10.1016/j.jpsychires.2017.08.004
- Paulson, J. F., Bazemore, S. D., Goodman, J. H., & Leiferman, J. A. (2016). The course and interrelationship of maternal and paternal perinatal depression. *Archives of Women's Mental Health*, 19, 655-663. doi:10.1007/s00737-016-0598-4
- Peled, E. & Perel, G. (2012). Can a structured model for group intervention be responsive to group process? A proposal. *Journal of Clinical Social Work*, 40, 391-400.
- Prior, A. (2015). A guide to setting up a college bereavement group: Using monologue, soliloquy, and dialogue. *Journal of College Student Psychotherapy*, 29, 111-119. doi:10.1080/87568225.2015.1008366
- Ramchandani, P., Stein, A., Evans, J., O'Connor, T., & ALSPAC Study Team. (2005). Paternal depression in the postnatal period and child development: a prospective population study. *The Lancet*, 365, 2201 – 2205. doi:10.1016/S0140-6736(05)66778-5
- Rolle, L., Prino, L. E., Sechi, C., Vismara, L., Neri, E., Polizzi, C., . . . & Brustia, P. (2017). Parenting stress, mental health, dyadic adjustment: A structural equation model.

- Frontiers in Psychology*, 8(May), 1-10. doi:10.3389/fpsyg.2017.00839
- Saxbe, D., Rossin-Slater, M., & Goldberg, D. (2018). The transition to parenthood as a critical window for adult health. *American Psychologist*, 73, 1190-1200.
doi:10.1037/amp0000376
- Schlagintweit, H. E., Bailey, K., & Rosen, N. O. (2016). A new baby in the bedroom: Frequency and severity of postpartum sexual concerns and their associations with relationship satisfaction in new parent couples. *The Journal of Sexual Medicine*, 13, 1455-1465
- Schober, P. (2012). Paternal child care and relationship quality: A longitudinal analysis of reciprocal associations. *Journal of Marriage and Family Therapy*, 74, 281-296.
doi:10.1111/j.1741-3737.2011.00955.x
- Tandon, J. (2018). Development, feasibility and acceptability of Fathers and Babies: A pilot study. Identification No. NCT03427528. Retrieved from:
<https://clinicaltrials.gov/ct2/show/NCT03427528>.
- Trahan, M. (2017). Paternal self-efficacy and father involvement: A bi-directional relationship. *Psychology of Men & Masculinity*, 19, 624-634. doi:10.1037/men0000130
- Tremblay, S., & Pierce, T. (2011). Perceptions of fatherhood: Longitudinal reciprocal associations within the couple. *Canadian Journal of Behavioural Science*, 43, 99-110.
doi:10.1037/a0022635
- Trevarthen, C. & Aitken, K. J. (2001). Infant intersubjectivity: Research, theory, and clinical applications. *Journal of Child Psychology and Psychiatry*, 42, 3-48.
- Trillingsgaard, T., Baucom, K. J., & Heyman, R. E. (2014). Predictors of change in relationship satisfaction during the transition to parenthood. *Family Relations*, 63, 667-679.
doi:10.1111/fare.12089

- Turner, V. (1969). *The Ritual Process: Structure and Anti-Structure*. Middlesex: Penguin.
- Vaughn, M. J., Metastatik Baier, M. E. (1999). Reliability and validity of the relationship assessment scale. *The American Journal of Family Therapy*, 27, 137-147
- Van Wietmarschen, H., Tjaden, B., van Vlient, M., Battjes-Fries, M., & Jong, M. (2018). Effects of mindfulness training on perceived stress, self-compassion, and self-reflection of primary care physicians: A mixed-methods study. *British Journal of General Practice Open*, 2, 1-11. Retrieved from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6348323/>
- Viskovich, S. & De George-Walker, L. (2019). An investigation of self-care related constructs in undergraduate psychology students: Self-compassion, mindfulness, self-awareness, and integrated self-knowledge. *International Journal of Educational Research*, in press.
doi:10.1016/j.ijer.2019.02.005
- Webb, N. M. (2009). The teacher's role in promoting collaborative dialogue in the classroom. *British Journal of Educational Psychology*, 79, 1-28. doi:10.1348/000709908X380772
- Wee, K. Y., Skouteris, H., Richardson, B., McPhie, S., & Hill, B. (2015). The inter-relationship between depressive, anxiety, and stress symptoms in fathers during the antenatal period. *Journal of Reproductive and Infant Psychology*, 33, 359-373.
doi:10.1080/02646838.2015.1048199
- Whisman, M. A., Davila, J., & Goodman, S. H. (2011). Relationship adjustment, depression, and anxiety during pregnancy and the postpartum period. *Journal of Family Psychology*, 25, 375-383. doi:10.1037/a0023790
- White, J. M., Klein, D. M. & Martin, T. F. (2015). The Symbolic interactionism framework. In *Family theories: An introduction* (4th Ed) (pp. 71-100). Thousand Oaks: Sage
- Wilson, N., Lee, J. J., & Bei, B. (2019). Postpartum fatigue and depression: A systematic review

and meta-analysis. *Journal of Affective Disorders*, 246, 224-233.

doi:10.1016/j.jad.2018.12.032

Wright, B., & Edington, E. (2016). Evidence-based parenting interventions to promote secure attachment: Findings from a systematic review and meta-analysis. *Global Pediatric Health*, 3, 1-14. doi:10.1177/2333794X16661888

Wynter, K., Rowe, H., Tran, T., & Fisher, J. (2016). Factors associated with father-to-infant attachment at 6 months postpartum: A community-based study in Victoria, Australia. *Journal of Reproductive and Infant Psychology*, 34, 185-195.
doi:10.1080/02646838.2015.1136051