Article

Addressing Determinants of Paternal Subjective Well-Being Through Fatherhood Education

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Abstract

Fatherhood education promotes responsible father involvement, which supports family well-being. However, research is lacking relative to the impact of these programs on paternal subjective well-being. Using Andersen's Behavioral Model, this study examines the impact of a fatherhood education program on participants' perceptions of social support and self-reported mental health. Upon program completion, participants reported higher levels of perceived social support, and lower levels of depression and anxiety. Bi-directional associations between social support and paternal mental health were noted. Multivariate analyses revealed the characteristics of fathers who might benefit from post-program interventions that focus on building stronger social support systems and addressing mental health needs.

Keywords

fatherhood education, subjective well-being, mental health, social support, Behavioral Model

Positive father involvement holds many benefits for child development and family functioning (Pleck, 2007). Children whose fathers are positively involved tend to display more positive self-esteem and prosocial behaviors (Dion et al., 2015). Greater father involvement is also associated with marital satisfaction (Coley & Hernandez, 2006) and household economic stability (Fagan & Kaufman, 2015). Importantly, the

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well-being of fathers themselves positively predicts father-child relationship quality (Yuan, 2016). Paternal well-being is thus important to healthy family relationships.

Fatherhood education programs promote responsible father involvement by delivering curricula focused on father-child relationship quality, strong marital ties, increasing fathers' knowledge of child development, enhancing fathers' social capital, and connecting fathers with job training and information on child support compliance (e.g., Anderson et al., 2002). Some programs seek to promote fathers' personal development by helping them identify mental health indicators and positive sources of social support, with the goal of facilitating improvements in paternal subjective well-being (Bronte-Tinkew et al., 2012; Cowan et al., 2009; Dion et al., 2015). In the current study, we refer to subjective well-being as self-evaluative reports of mental health and social support (Helliwell et al., 2009).

Despite interventions to facilitate positive father involvement and paternal subjective well-being, relatively little research has been done to evaluate their effectiveness. Furthermore, specific to the effect of such programs on some of the key determinants of paternal subjective well-being, meta-analytic evidence suggests the impact has been non-significant ($d = 0.001$; Holmes et al., 2010). However, because the research is somewhat scant and dated, more research is needed to determine the consistency of past results. Moreover, research is needed to identify the characteristics of fathers who are at risk due to weak social support networks and mental health concerns. Questions remain regarding what groups of fathers could benefit from further assistance beyond initial participation in fatherhood education programs.

The purpose of this study is to: (a) evaluate the impact of a fatherhood education program in addressing key determinants of paternal subjective well-being, within the domains of perceived social support and self-reported mental health and (b) examine, through Andersen's Behavioral Model (1968), the influence of predisposing, enabling, and mental health need factors on fathers' perceived social support and mental health issues (i.e., depression and anxiety) post-intervention. From a basic research perspective, identifying the characteristics of fathers most at-risk for social support and mental health issues demonstrates the utility of the Behavioral Model (Andersen, 1968). Such an approach also provides an opportunity to test for possible bi-directional associations between fathers' social support and their mental health. From a practical and applied research standpoint, this line of inquiry holds public health implications, with the potential to aid in constructing a client profile that identifies the characteristics and needs of fathers in terms of their social support and mental health.

Literature Review

Social Support Systems and Fatherhood

Social support systems can be comprised of family members, friends, work colleagues, and social service agencies (Cowan et al., 2010). Social support generally falls under two major categories: (a) instrumental and (b) expressive. Instrumental social support refers to more direct, material support, such as financial assistance (Scharlach et al.,

2007). Expressive social support, a key concept examined in this study, refers to having and using social networks to express one's feelings, access information, and exchange emotional and moral support (Lin et al., 1999).

Fathers are more likely to engage in positive interactions with their children when they have stronger social support systems (Cowan et al., 2009). Strong social support systems, especially those involving extended family, can reduce fathers' parenting stress and promote father-child engagement (Fagan, 2008). Recognized as vital to psychological well-being, social support has been found to also positively predict involvement of nonresidential fathers with their children (Castillo & Sarver, 2012). However, men are less likely than women to seek social support from outside sources (formal or informal), which can weaken social support systems (Wilhelm et al., 1998). This is a cause for concern, as research has linked low levels of social support to depression (Cochran & Rabinowitz, 2000). To the extent that fathers do not have (or seek) social support, quality support within the coparental relationship becomes even more crucial. Unsupportive coparental relationships are linked to psychological distress (Hoard & Anderson, 2004). Moreover, fathers who perceive a lack of coparental support may be more likely to withdraw from child-rearing activities (Bronte-Tinkew et al., 2007).

Mental Health and Fatherhood

Compared to mothers, the mental health issues of fathers have received considerably less attention (Fletcher et al., 2012). The limited research on paternal mental health may be linked to gendered norms related to mental health and help-seeking among men (Allen et al., 1998). Relative to women, for example, one study found that men endorse self-care more, ascribe blame and shame in situations, and endorse psychotherapy less (Pattyn et al., 2015), reducing their likelihood of seeking treatment (Salaheddin & Mason, 2016). Research also indicates that 14.7% of adult American men will experience major depressive disorders in their lifetimes; rates approach 20% among men in young and middle adulthood (Hasin et al., 2018). Common mental health disorders among fathers such as depression and anxiety can have a deleterious impact on father-child and coparental relationships (Hayward & Honegger, 2018; Wilson & Durbin, 2010). Fathers dealing with mental illness are less likely to spend quality time with their children (Cowan et al., 2010) and more likely to be hostile and abusive (Rosenberg & Wilcox, 2006).

Research has also shown that paternal mental illness can have a negative impact on couple and coparenting relationships. For instance, dissatisfaction in coparenting is linked to marital conflict, which has a negative impact on parenting behaviors, increasing the potential for parent-child conflict (Ponnet et al., 2013), and parental psychological distress (Whisman & Baucom, 2012). Conversely, positive mental health among fathers is beneficial for family members as well as fathers themselves (Schindler, 2010). Past research has demonstrated that positive paternal mental health is associated with the tendency of fathers to devote more time and emotional support to their children, which makes a positive contribution to child life satisfaction and self-esteem (Zimmerman et al., 1995).

Fatherhood Education and Subjective Well-Being

Beginning with the 106th Congress in 2001, responsible fatherhood and healthy marriage grants continue to receive substantial federal support (Tollestrup, 2018). Traditionally, fatherhood education programs in the U.S. have stressed the importance of strong marital ties as a way for fathers to connect with children, increasing knowledge of child development issues, enhancing social and human capital, and helping fathers connect with resources related to job training and child support compliance (Bronte-Tinkew et al., 2012).

In addition to the educational efforts in the aforementioned areas, some fatherhood education programs also focus on the personal development of fathers by addressing key determinants of paternal subjective well-being, most notably within the domains of social support and mental health (i.e., Dion et al., 2015). However, questions remain as to whether program participation was associated with more positive perceptions of mental health, as well as which participants were most vulnerable to problems after program completion.

Theoretical Framework

Andersen's Behavioral Model

Originally developed to predict health service utilization, the Behavioral Model (Andersen, 1968) has been expanded to examine perceived and unmet service needs for a variety of populations, ranging from college-aged to elderly individuals (Turner et al., 2017; Calsyn & Winter, 2001; Pilar et al., 2020). Traditionally, this model centers around three interrelated categories of predictive factors to explain service need. *Pre-disposing* factors refer to demographic or socioeconomic characteristics existing prior to the onset of service need or utilization. *Enabling* factors pertain to the logistical aspects of accessing services and the means that make access possible, such as income, employment status, and social support systems. *Health need* factors, often related to illness levels, are typically broken down into two categories: (a) perceived need, referring to self-reported problems and (b) evaluated need, referring to symptoms observed through professional diagnoses (Andersen & Newman, 2005).

The Behavioral Model and Paternal Social Support and Mental Health

To our knowledge, the Behavioral Model has not been utilized to address key determinants of paternal subjective well-being within the context of fatherhood education. However, past research has indirectly demonstrated associations between several of the Behavioral Model's predictive factors and paternal mental health and social support (e.g., Bronte-Tinkew et al., 2007). These associations are discussed in greater detail below.

Pre-disposing factors. Past research has highlighted the associations between paternal mental health and social support and pre-disposing factors such as age, race, education,

and marital status. Relative to age, younger fathers, especially those in their teenage years, tend to lack strong social support systems, which is associated with a greater likelihood of engaging in high-risk behavior (Anda et al., 2001). Fathering children during the teen years has also been associated with increased levels of depression (Heath et al., 1995), possibly due to the stress accompanying adjustments involved with transitions to parenthood (Bronte-Tinkew et al., 2007).

Research relative to race has been inconclusive. Some research has found no significant differences in depression by race (Cummings et al., 2003), while other research found differences in depression between different racial groups, with Whites reporting slightly higher rates of depression than most minority groups (Oquendo et al., 2001). Relative to education, mental health issues such as depression tend to be most prevalent among individuals with lower levels of educational attainment (WHO International Consortium in Psychiatric Epidemiology, 2000). In terms of marital status, research indicates that rates of depression tend to be higher for divorced, separated, and widowed fathers when compared to married fathers (Lehtinen & Joukamaa, 1994; Mirowsky & Ross, 1993). Finally, residential status (based on whether fathers live with their children) can also serve as a pre-disposing factor. Nonresidential fathers, including those who have participated in fatherhood education programs, commonly experience emotional distress which is correlated with a lack of involvement with their children (Anderson et al., 2005; Coates & Phares, 2014).

Enabling factors. Income and employment status are often highlighted as two of the strongest enabling factors in terms of predicting paternal mental health and social support (Bronte-Tinkew et al., 2007). For instance, the ability of fathers to make financial contributions to the family has been found to be positively associated with their psychological well-being and parental engagement (Schindler, 2010). Moreover, past research demonstrates that depression varies by income levels (Mojtabai & Olfson, 2004). Similarly, depression is more prevalent among unemployed fathers (Cochran & Rabinowitz, 2000). However, fathers with lower incomes are less likely to seek treatment due to a perceived lack of support and access (Hayward & Honegger, 2018). Conversely, stable employment, professional success, and the ability to provide financially is positively related to paternal mental health (Karasek & Theorell, 1990).

In addition to income and employment, which represent more tangible enabling factors, the social support systems of fathers cannot be overlooked as an enabling factor with regard to their bi-directional relationship with mental health. In general, men have weaker social support systems (Wilhelm et al., 1998). Their ability to develop strong social support systems can protect against stressful situations (Cummins, 1988) and help promote positive psychological well-being (Colvin et al., 2002).

Mental health need factors. Within the Behavioral Model, health need factors are related to either perceived or evaluated need (Andersen & Newman, 2005). In terms of depression and anxiety among fathers, an analysis of the self-reported mental health issues of participants in a fatherhood education program revealed that depression and anxiety were the two most prevalent conditions reported by participants (Hayward &

Honegger, 2018). Although they are discrete conditions, depression and anxiety are often comorbid (Stein et al., 2001). This study examines the perceived mental health needs related to these conditions.

Consistent with one of the key objectives of this study, past research has demonstrated the bi-directional link between mental health and perceived social support (Cochran & Rabinowitz, 2000). Examples of studies that have demonstrated this bi-directional relationship include the work of Cowan et al. (2009, 2010), which argued that fathers with higher levels of psychological distress tend to lack access to reliable social support systems. A lack of access to strong social support systems has been shown to lead to negative consequences, not only for a father's overall subjective well-being, but also for father-child and coparenting relationships (Hoard & Anderson, 2004).

The Current Study

Evaluations of fatherhood education programs often focus on how involvement in such programs helps to improve father-child and coparenting relationships. Fewer evaluations have focused on how these programs address determinants of paternal subjective well-being, specifically within the domains of social support and mental health. Addressing these domains is important, as both have been shown to impact father involvement, fathering quality, and coparental relationships (Cowan et al., 2010; Fagan, 2008; Rosenberg & Wilcox, 2006).

The purpose of this study is two-fold. First, this study evaluates the impact of a fatherhood education program in addressing key determinants of paternal subjective well-being, with a focus on expressive social support and self-reported mental health. Second, using the Behavioral Model (Andersen, 1968), this study examines what pre-disposing, enabling, and perceived mental health need factors are associated with the perceived social support and self-reported mental health scores of participants. We attempt to construct a client profile by identifying the characteristics of at-risk fathers most in need of addressing their social support and mental health issues after program completion, while also testing for possible bi-directional associations between social support and mental health. To this end, the following research questions are posed:

1. Do fathers' levels of perceived social support improve from pretest to posttest?
2. Do fathers' levels of self-reported depression improve from pretest to posttest?
3. Do fathers' levels of self-reported anxiety improve from pretest to posttest?
4. What pre-disposing, enabling, and mental health need factors help identify fathers at-risk for social support and mental health issues at program exit?

We posit that lower levels of perceived social support and higher levels of self-reported depression or anxiety at program exit can serve as indicators of a participant being at-risk and possibly in need of additional assistance after fatherhood education. We also consider how pre-program conditions related to social support and mental health are related to participants' perceived social support and self-reported mental

health at program exit, which we view as another indicator of a participant being part of an at-risk group.

Methodology

Participants

Participants for this study consisted of community-dwelling fathers ($n = 1{,}355$), who completed one of three federally funded fatherhood education courses in a western state: (a) *Love and Logic* (Cline & Fay, 1990; $n = 934$), (b) *Home Run Dads* (Van Epp, 2016; $n = 253$), and (c) *24/7 Dads* (National Fatherhood Initiative, 2016; $n = 168$). Courses were offered between July 2016 and January of 2019. Eighty percent of the overall sample was between the ages of 25 and 44; 88% were White; 45% had completed a Bachelor's degree or higher; 22% reported monthly incomes of more than $5,000; 83% were employed full-time; 78% were married or engaged; and 82% lived with their children.

Procedure

Participants were recruited through billboards, flyers, partnerships with state agencies, and word of mouth. Each curriculum consisted of 8 hours of programming, spread over 4 weekly sessions, with each session lasting 2 hours. Participants in the *24/7 Dads* program were slightly less educated, less likely to be married or engaged or live with their children, and more likely to be of low-income status compared to the entire sample. However, chi-square tests for independence revealed that curriculum type was not a significant predictor of this study's main variables. Consequently, participant data were subsequently merged across curricula.

Participants were asked to complete the same pre- and post-program surveys regardless of curricula. Pre-program surveys were administered at the beginning of the first session, while post-program surveys were administered approximately 1 month later at the conclusion of the final session. Topics addressed in both surveys included parenting and coparenting practices, parent-child relationships, limits and consequences, economic stability, relationships and marriage, and subjective well-being. Surveys were offered in both English and Spanish.

Measures

Pre-disposing factors. Age, race, education, marital status, and residential status were identified as pre-disposing factors. Age was coded in four groups, ranging from 18–24 to 65 and older. Race was treated as a dichotomous variable, with White fathers assigned a code of "0" and minority fathers assigned a code of "1." Education was coded in five groups, ranging from less than high school to bachelor's degree or higher. Marital status was treated as a dichotomous variable, with separated, divorced, widowed, and single fathers assigned a code of "0" and married and engaged fathers

assigned a code of "1." Residential status was treated as a dichotomous variable, with nonresident fathers assigned a code of "0" and resident fathers assigned a code of "1."

Enabling factors. Monthly income, employment status, and the post-program perceptions of social support index acted as enabling factors. Monthly income consisted of four groups, ranging from $2,000 or less per month to more than $4,000 per month. Given the importance of full-time employment for father and masculine identity (Karasek & Theorell, 1990; Schindler, 2010), employment status was treated as a dichotomous variable. Fathers who were unemployed, temporarily employed, or employed part-time were assigned a code of "0." Fathers employed full-time were assigned a code of "1."

Perceptions of social support. To measure perceptions of social support as an enabling factor, items were adopted from the Protective Factors Survey (Counts et al., 2010). Participants rated their level of agreement with the following statements: (a) I have people I can count on if I am feeling down, (b) If there is a crisis, I have others I can talk to, (c) When I am lonely, there are several people I can talk to, and (d) I have others who will listen when I need to talk about my problems. These items were rated on a Likert scale from 1 (*strongly disagree*) to 4 (*strongly agree*) such that higher values represented higher levels of social support. These four items were combined to form a perceptions of social support index, producing alpha reliability coefficients of .92 (pretest) and .93 (posttest), respectively.

In order to test for possible bi-directional associations between perceptions of social support and perceived mental health need factors, the post-program perceptions of social support index served as both a predictor and an outcome variable in this study's multivariate analyses. The pre-program index of social support was also used as a predictor variable in testing lagged dependent variable models.

Perceived mental health need factors. The survey items used to measure changes in perceived mental health consisted of items related to self-reported depression and anxiety, which were adopted from the Kessler Psychological Distress Scale (Kessler et al., 2002). Items were rated on a Likert scale from 1 (*none of the time*) to 5 (*all of the time*). The specific items used for these measures are described in the following sections. As with the post-program perceptions of social support index, post-program self-reported mental health need measures served as predictor and outcome variables in this study's multivariate analysis, with the goal of testing for possible bi-directional associations. Pre-program indices related to self-reported mental health were also used as predictor variables in testing this study's lagged dependent variable models.

Self-reported depression. To measure levels of self-reported depression, participants were asked how often, in the last 30 days, that they had felt: (a) depressed, (b) hopeless, and (c) worthless. These three items were combined to form a self-reported depression index, which produced alpha reliability coefficients of .87 (pretest) and .89 (posttest), respectively.

Self-reported anxiety. To measure levels of self-reported anxiety, participants were asked how often, in the last 30 days, that they had felt: (a) nervous, (b) restless, and (c) that everything was an effort. These three items were combined to form a self-reported anxiety index, which produced alpha reliability coefficients of .71 (pretest) and .75 (posttest), respectively.

Analytical Strategy

To examine the impact of these programs, a three-fold analytical strategy was employed. First, to evaluate the impact for the entire sample in addressing paternal subjective well-being, paired-samples *t*-tests examined overall differences (pretest to posttest) in perceptions of social support and self-reported mental health.

Second, to further evaluate the impact of the fatherhood education programs under examination, a series of repeated measures ANOVA tests were conducted to examine differences in pretest versus posttest levels of perceived social support, self-reported depression and anxiety, and the effect of pre-disposing, enabling, and mental health need factors upon program entrance and exit. In addition to measuring program impact, this approach was taken to explore how changes in perceived social support and self-reported mental health differed within groups, as one way to identify the characteristics of fathers most at-risk for social support and mental health issues at program exit. In order to conduct this part of the analysis, age, education, and monthly income were treated as categorical variables.

Finally, a series of lagged dependent variable, hierarchical regression analyses were conducted to determine which factors of the Behavioral Model (pre-disposing, enabling, and mental health need) were associated with post-program perceptions of social support and self-reported depression and anxiety. In the tradition of lagged dependent variable regression models, our analyses also controlled for pre-program social support and mental health scores in order to predict post-program outcomes (or conditional change) for these measures (Finkel, 1995). The addition of lagged dependent variable regression models augments the repeated measures ANOVA analysis from a multivariate perspective by controlling for a range of different types of factors, illustrating which factors are most prevalent in terms of identifying fathers most in need of post-program intervention. For the regression analyses, age, education, and monthly income were treated as continuous variables. For example, participants with higher levels of education or income were assigned a higher score on that particular measure.

Results

Program Impact

Paired samples *t*-tests compared fathers' mean scores of perceptions of social support and self-reported depression and anxiety. Results indicated significant increases in perceptions of social support from pretest ($M = 3.22$, $SD = 0.68$) to posttest ($M = 3.30$,

$SD = 0.67$), $t = -4.61$, $p < .001$, $d = 0.11$. Tests also revealed significant decreases in self-reported depression from pretest ($M = 1.77$, $SD = 0.86$) to posttest ($M = 1.63$, $SD = 0.81$), $t = 7.72$, $p < .001$, $d = 0.17$, as well as significant decreases in self-reported anxiety from pretest ($M = 2.39$, $SD = 0.80$) to posttest ($M = 2.22$, $SD = 0.79$), $t = 9.44$, $p < .001$, $d = 0.21$.

Identifying At-Risk Fathers

Two analyses: (a) repeated measures ANOVA and (b) lagged dependent variable, hierarchical regression were utilized to identify the types of fathers most at-risk for post-program social support and mental health issues. Results are organized by the three main topics under analysis.

Repeated Measures ANOVA

Perceptions of social support. Social support differed by marital status ($F = 5.68$, $p = .017$), as increases in perceptions of social support were greater for married and engaged fathers ($MD = 0.09$, $SD = 0.66$) than nonmarried fathers ($MD = 0.01$, $SD = 0.72$). This effect also differed by residential status ($F = 6.35$, $p = .012$), as increases in perceptions of social support were greater for residential fathers ($MD = 0.10$, $SD = 0.66$) when compared to non-residential fathers, who showed slight decreases in social support between program entry and exit ($MD = -0.02$, $SD = 0.72$). Significant effects were also found for pre-program social support levels[1] ($F = 130.64$, $p = .000$), as mean changes in perceptions of social support were greatest for fathers with the lowest levels of pre-program social support ($MD = 0.44$, $SD = 0.68$). Finally, this effect also differed by pre-program self-reported depression ($F = 9.43$, $p = .000$) and anxiety levels[2] ($F = 6.01$, $p = .003$). Results indicated that the greatest increases in perceptions of social support were recorded for fathers with medium levels of pre-program self-reported depression ($MD = 0.22$, $SD = 0.68$) and fathers with high levels of pre-program self-reported anxiety ($MD = 0.21$, $SD = 0.79$) (see Table 1).

Self-reported depression. Changes in mean scores differed significantly by age ($F = 2.97$, $p = .031$), as the greatest decreases in self-reported depression were recorded for fathers aged 18 to 24 ($MD = -0.37$, $SD = 0.88$). This effect also differed by marital status ($F = 4.09$, $p = .043$), as nonmarried fathers ($MD = -0.20$, $SD = 0.97$) recorded greater decreases in self-reported depression than married or engaged fathers ($MD = -0.12$, $SD = 0.74$). Finally, this effect also differed by pre-program perceived social support ($F = 9.18$, $p = .000$), self-reported depression ($F = 103.90$, $p = .000$), and self-reported anxiety ($F = 27.36$, $p = .000$). Decreases in self-reported depression were greatest for fathers with low levels of pre-program perceived social support ($MD = -0.28$, $SD = 1.00$), fathers with high levels of pre-program self-reported depression ($MD = -0.89$, $SD = 1.06$), and fathers with high levels of pre-program self-reported anxiety ($MD = -0.54$, $SD = 1.11$) (see Table 2).

Table 1.

	Pretest mean (*SD*)	Posttest mean (*SD*)	*df*	*F*	*p*
Age group					
18–24	3.21 (.74)	3.35 (.60)	3	.94	.422
25–44	3.24 (.67)	3.31 (.67)			
45–64	3.15 (.73)	3.22 (.72)			
65+	3.11 (.76)	3.33 (.44)			
Race					
White	3.22 (.68)	3.30 (.67)	1	.31	.579
Minority	3.22 (.68)	3.32 (.67)			
Education					
Less than high school	3.16 (.66)	3.11 (.68)	4	1.28	.277
High school diploma/GED	3.19 (.69)	3.21 (.68)			
Some college	3.15 (.73)	3.25 (.66)			
Associate's/technical degree	3.17 (.70)	3.27 (.67)			
Bachelor's degree or higher	3.26 (.67)	3.35 (.68)			
Marital status					
Married/engaged	3.23 (.67)	3.32 (.66)	1	5.68	.017*
Separated/divorced/widowed/single	3.21 (.72)	3.22 (.72)			
Residential status					
Lived with children	3.21 (.67)	3.31 (.66)	1	6.35	.012*
Did not live with children	3.28 (.71)	3.26 (.72)			
Monthly income					
$2,000 or less	3.12 (.73)	3.12 (.76)	3	2.08	.101
$2,001–$3,000	3.18 (.70)	3.23 (.68)			
$3,001–$4,000	3.25 (.65)	3.38 (.62)			
>$4,000	3.31 (.64)	3.39 (.64)			
Employment status					
Full-time employment	3.26 (.66)	3.34 (.66)	1	.66	.416
Part-time/temporary/unemployed	3.06 (.74)	3.10 (.72)			
Pre-program social support					
Low	2.05 (.44)	2.49 (.68)	2	130.64	.000***
Medium	3.06 (.22)	3.24 (.52)			
High	3.94 (.10)	3.72 (.50)			
Pre-program self-reported depression					
Low	3.34 (.61)	3.38 (.63)	2	9.43	.000***
Medium	2.81 (.70)	3.03 (.68)			
High	2.57 (.76)	2.78 (.81)			
Pre-program self-reported anxiety					
Low	3.37 (.62)	3.40 (.64)	2	6.01	.003**
Medium	3.09 (.67)	3.21 (.66)			
High	2.75 (.75)	2.96 (.79)			

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

Table 2. Repeated Measures ANOVA Results: Self-Reported Depression (Post-Program).

	Pretest mean (*SD*)	Posttest mean (*SD*)	*df*	*F*	*p*
Age group					
18–24	2.31 (1.04)	1.94 (.88)	1	2.97	.031*
25–44	1.73 (.84)	1.60 (.79)			
45–64	1.84 (.92)	1.75 (.91)			
65+	1.76 (.90)	1.46 (.68)			
Race					
White	1.77 (.86)	1.65 (.81)	1	3.44	.064
Minority	1.74 (.85)	1.53 (.78)			
Education					
Less than high school	1.92 (.93)	1.82 (.92)	4	1.18	.317
High school diploma/GED	1.97 (.96)	1.75 (.88)			
Some college	1.75 (.89)	1.62 (.82)			
Associate's/technical degree	1.73 (.83)	1.62 (.84)			
Bachelor's degree or higher	1.69 (.79)	1.57 (.75)			
Marital status					
Married/engaged	1.67 (.77)	1.55 (.74)	1	4.09	.043*
Separated/divorced/ widowed/single	2.11 (1.05)	1.91 (.97)			
Residential status					
Lived with children	1.69 (.80)	1.56 (.75)	1	.42	.516
Did not live with children	2.11 (1.05)	1.95 (.98)			
Monthly income					
$2,000 or less	2.06 (1.02)	1.94 (.98)	3	1.07	.360
$2,001–$3,000	1.84 (.85)	1.66 (.80)			
$3,001–$4,000	1.68 (.84)	1.56 (.77)			
>$4,000	1.59 (.72)	1.49 (.67)			
Employment status					
Full-time employment	1.68 (.79)	1.55 (.74)	1	.71	.401
Part-time/temporary/ unemployed	2.16 (1.03)	1.99 (1.00)			
Pre-program social support					
Low	2.49 (1.04)	2.21 (1.00)	2	9.18	.000***
Medium	1.80 (.80)	1.66 (.78)			
High	1.41 (.64)	1.36 (.62)			
Pre-program self-reported depression					
Low	1.42 (.45)	1.39 (.57)	2	103.90	.000***
Medium	2.91 (.25)	2.45 (.72)			
High	4.06 (.43)	3.17 (1.06)			
Pre-program self-reported anxiety					
Low	1.39 (.55)	1.32 (.52)	2	27.36	.000***
Medium	2.05 (.76)	1.90 (.80)			
High	3.22 (.96)	2.68 (1.11)			

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

Self-reported anxiety. Effects differed by pre-program self-reported depression levels ($F=8.70$, $p=.000$) and pre-program self-reported anxiety levels ($F=96.27$, $p=.000$). The greatest decreases in self-reported anxiety were detected for fathers reporting high levels of pre-program self-reported depression ($MD=-0.36$, $SD=0.90$) and fathers reporting high levels of pre-program self-reported anxiety ($MD=-0.65$, $SD=0.82$) (see Table 3).

Lagged dependent variable, hierarchical regression. The second analysis intended to identify at-risk fathers at program exit consisted of three, four-step lagged dependent variable, hierarchical regression models. In Step I, pre-disposing factors were introduced into the model, followed by enabling factors (Step II), perceived mental health need factors (Step III), and pretest scores related to perceived social support and self-reported depression and anxiety (Step IV).

In Step I, pre-disposing factors explained 1.3% of the variance in perceived social support among fathers, 5.1% of the variance in self-reported depression, and 2.7% of the variance in self-reported anxiety, respectively. In Step II, the addition of enabling factors resulted in an increase in explained variance to 2.8% for perceived social support, 18.7% for self-reported depression, and 12.9% for self-reported anxiety, respectively. In Step III, the addition of mental health need factors resulted in an increase in explained variance to 14.1% for perceived social support, 53.7% for self-reported depression, and 50.4% for self-reported anxiety, respectively. Finally, in Step IV, the addition of pretest scores related to perceived social support and self-reported depression and anxiety resulted in an increase in explained variance to 44.4% for perceived social support, 68.2% for self-reported depression, and 64.4% for self-reported anxiety, respectively. Full results of these models are displayed in Table 4.

Discussion

This study's purpose was two-fold. First, we evaluated the impact of a fatherhood education program on key determinants of paternal subjective well-being (perceived social support and self-reported mental health). Second, we applied the Behavioral Model (Andersen, 1968) to examine the extent to which pre-disposing, enabling, and health need factors were associated with the social support and mental health issues of fathers after program completion. An evaluation of this study's findings is presented below.

Evaluation of Findings

Evaluating program impact. The results of research questions 1 to 3 suggest that fatherhood education has a positive impact on paternal subjective well-being, based on the evidence that perceived social support increased significantly and self-reported depression and anxiety levels decreased significantly from pretest and posttest. Effect sizes for each of the three variables were relatively small, ranging from $d=0.11$ (increased social support) to $d=0.21$ (decreased anxiety). This is not surprising given the fact that

Table 3. Repeated Measures ANOVA Results: Self-Reported Anxiety (Post-Program).

	Pretest mean (*SD*)	Posttest mean (*SD*)	*df*	*F*	*p*
Age group					
18–24	2.73 (.90)	2.65 (.93)	3	.83	.476
25–44	2.39 (.79)	2.21 (.78)			
45–64	2.39 (.78)	2.28 (.79)			
65+	2.26 (.84)	2.06 (.68)			
Race					
White	2.41 (.79)	2.24 (.79)	1	.68	.408
Minority	2.28 (.82)	2.15 (.80)			
Education					
Less than high school	2.42 (.97)	2.42 (.92)	4	1.64	.162
High school diploma/GED	2.43 (.77)	2.22 (.83)			
Some college	2.47 (.81)	2.24 (.81)			
Associate's/technical degree	2.33 (.79)	2.16 (.84)			
Bachelor's degree or higher	2.35 (.77)	2.20 (.74)			
Marital status					
Married/engaged	2.33 (.75)	2.17 (.75)	1	.67	.413
Separated/divorced /widowed/single	2.61 (.90)	2.42 (.89)			
Residential status					
Lived with children	2.36 (.76)	2.18 (.75)	1	2.85	.092
Did not live with children	2.55 (.91)	2.45 (.91)			
Monthly income					
$2,000 or less	2.55 (.92)	2.45 (.89)	3	.86	.461
$2,001–$3,000	2.39 (.79)	2.20 (.78)			
$3,001–$4,000	2.37 (.78)	2.22 (.76)			
>$4,000	2.33 (.69)	2.14 (.72)			
Employment status					
Full-time employment	2.33 (.74)	2.15 (.74)	1	.94	.333
Part-time/temporary/unemployed	2.68 (.96)	2.54 (.91)			
Pre-program social support					
Low	2.86 (.84)	2.66 (.88)	2	2.42	.089
Medium	2.46 (.71)	2.26 (.73)			
High	2.11 (.77)	2.00 (.74)			
Pre-program self-reported depression					
Low	2.19 (.67)	2.06 (.68)	2	8.70	.000***
Medium	3.05 (.61)	2.76 (.74)			
High	3.71 (.80)	3.35 (.90)			
Pre-program self-reported anxiety					
Low	1.85 (.42)	1.87 (.60)	2	96.27	.000***
Medium	2.92 (.25)	2.56 (.82)			
High	4.02 (.39)	3.37 (.82)			

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

Table 4. Hierarchical Regression Analysis Predicting Post-Program Social Support, Depression, and Anxiety in Fatherhood Education Participants.

	Perceived				Self-reported							
	Social support				Depression				Anxiety			
	Step I	Step II	Step III	Step IV	Step I	Step II	Step III	Step IV	Step I	Step II	Step III	Step IV
Pre-disposing factors												
Age	−.04	−.04	−.05	−.01	−.01	−.03	.02	.01	−.05	−.07**	−.05*	−.02
Race (1 = minority)	.03	.04	.01	.03	−.07*	−.07**	−.04	−.04	−.05	−.05	.00	.02
Education	.09**	.05	.06	.04	−.02	.03	.00	.01	.01	.04	.02	.02
Marital status (1 = married)	.05	.03	.00	.01	−.12**	−.08*	−.04	−.02	−.09*	−.07	−.01	.03
Residential status (1 = resident father)	−.03	−.04	−.08	−.01	−.12**	−.12***	−.07**	−.03	−.08*	−.09**	−.00	−.04
Enabling factors												
Income		.08*	.07*	.05		−.01	−.04	−.02		.05	.06*	.03
Employment status (1 = full-time)		.07*	.01	.01		−.14***	−.04	−.01		−.17***	−.07**	−.04*
Perceived social support (posttest)						−.32***	−.15***	−.08***		−.27***	−.05*	−.06*
Mental health need factors												
Self-reported depression (posttest)			−.28***	−.14***							.68***	.54***
Self-reported anxiety (posttest)			−.09*	−.09*			.63***	.48***				
Pretest measures												
Perceived social support (pretest)				.61***				.02				.03
Self-reported depression (pretest)				.05				.53***				−.18***
Self-reported anxiety (pretest)				.08*				−.15***				.51***
R^2	.013	.028	.141	.444	.051	.187	.537	.682	.027	.129	.504	.644

Note. Coefficients are standardized.
*$p < .05$. **$p = .01$. ***$p < .001$.

paternal subjective well-being was not central to the fatherhood education program per se, but rather, just one of several issues addressed. Although repeated measures ANOVA analyses were intended to identify at-risk fathers, these analyses indicated that the programs were especially impactful for married and engaged fathers, and fathers with higher levels of pre-program depression and anxiety and lower levels of pre-program social support. Such findings may serve as an example for other fatherhood education programs that intend to focus on paternal subjective well-being, especially within the domains of social support systems and mental health, while helping to inform future fatherhood education programs in terms of which groups stand to benefit most from further intervention.

Identifying at-risk fathers. Results provide support for a theory-driven approach in identifying the characteristics of fathers most at-risk with regards to perceptions of social support and self-reported mental health after program completion. Through the application of the Behavioral Model, this study identified which factors were most strongly associated with key determinants of paternal subjective well-being (i.e., perceptions of social support and self-reported mental health) addressed in the current study. This study also identified bi-directional associations between perceived social support and mental health. This was accomplished through (a) a repeated measures ANOVA, which from a bivariate perspective allowed for the exploration of how changes in perceived social support and self-reported mental health differed within groups and (b) lagged dependent variable, hierarchical regression models, a multivariate application which controlled for the same range of factors, in the end highlighting which factors were most prevalent in terms of identifying fathers most in need of post-program intervention. The following sections describe the results of the study in light of its two primary analyses and the three major factors of the Behavioral Model.

Pre-disposing factors. Results consistently demonstrated that the pre-disposing factors of age, residential status, and marital status were associated with mental health. For instance, results from the repeated measures ANOVA analysis revealed that fathers from the youngest age group (age 18-24) showed the highest levels of self-reported depression at program exit, while also reporting greater decreases in depression at program exit when compared to older age groups. Further, younger fathers also displayed higher levels of self-reported anxiety, even after controlling for other pre-disposing, enabling, and post-test mental health need factors. However, these associations became insignificant in the final model which controlled for pre-program measures of social support and mental health. These findings largely lend support to past research, which found that being a younger father is associated with poorer mental health, possibly due to the difficult adjustments these fathers face in terms of new parenting responsibilities (Bronte-Tinkew et al., 2007). Despite their relatively high levels of self-reported depression, the fact that the youngest fathers showed the greatest decreases in depression from pre-test to post-test may serve as an example of the benefits younger fathers can derive from participation in fatherhood education.

Residential status was also significantly related to mental health, as resident fathers reported significantly lower levels of post-program depression when compared to non-resident fathers in the regression analysis, even after controlling for other pre-disposing, enabling, and post-test mental health need factors. However, the association between residential status and depression became insignificant in the final model after controlling for pre-program measures of social support and mental health. Although also insignificant in the multivariate analysis, initial bivariate analyses indicated that resident fathers recorded significantly higher gains in perceived social support from pretest to posttest when compared to non-resident fathers. These findings show some consistency with past research that found that non-resident fathers tend to have higher psychological distress, possibly stemming from limited contact with their children (Coates & Phares, 2014), and more restrictive barriers in terms of challenging coparenting relationships that may further limit father-child interaction (Dion et al., 2015). It is worth noting however, that repeated measures ANOVA analyses indicated that non-resident fathers did report decreased levels of self-reported depression and anxiety at program exit, providing evidence of program effectiveness for this group of fathers.

Finally, results from the repeated measures ANOVA analyses indicated that fathers who were married or engaged displayed higher levels of perceived social support and lower levels of self-reported depression at program exit when compared to non-married fathers. The association between marital status and perceived social support at program exit became insignificant throughout the multivariate analysis, as did the association between marital status and self-reported depression and anxiety after controlling for other factors. Findings from bivariate analyses, as they relate to marital status, are consistent with past research that found higher rates of depression in non-married fathers when compared to married fathers (Lehtinen & Joukamaa, 1994; Mirowsky & Ross, 1993). Bivariate analyses also determined that non-married fathers in this study showed improvements in terms of social support and mental health from pretest to posttest, again demonstrating the possible benefits this group of fathers may derive from participation in such programs.

Enabling factors. For enabling factors, employment status emerged as an effective predictor of self-reported anxiety at program exit, as regression analyses showed that fathers who were employed full-time showed decreased levels of post-program anxiety, even after controlling for pretest social support and mental health measures. Repeated measures ANOVA analyses also indicated that fathers who were employed full-time showed greater improvement across all measures from pretest to posttest when compared to fathers who were not employed full-time. Such results also illustrate that low-income and marginally employed fathers may be more vulnerable to less positive subjective well-being at program exit, which also supports past research (see Cochran & Rabinowitz, 2000; Hayward & Honegger, 2018).

Results for enabling factors also demonstrated one of several examples revealed in this study of the bi-directional relationship between social support and mental health. Higher levels of perceived social support at program exit were associated with

decreased levels of post-program self-reported depression and anxiety, even after controlling for pretest measures of social support and mental health. Perhaps most importantly, fathers who reported the lowest levels of social support at program entry showed some of the greatest decreases in self-reported depression and anxiety. This finding demonstrates the effectiveness of the fatherhood education programs in addressing subjective well-being. It also supports past research that has found that stronger social support systems can help fathers cope with psychological distress (Castillo & Sarver, 2012).

Mental health need factors. Not surprisingly, multivariate analyses revealed that higher levels of post-program self-reported depression and anxiety were associated with lower levels of perceived social support at program completion, while higher levels of post-program perceived social support were associated with lower levels of self-reported depression and anxiety at program completion. These findings demonstrate a bi-directional link between mental health and perceived social support (Cochran & Rabinowitz, 2000). Although bi-directional linkages cannot be fully tested without longitudinal data, such findings are noteworthy after controlling for other pre-disposing and enabling factors as per the traditional procedures of applying the Behavioral Model. The fact that higher levels of post-program depression were associated with higher levels of post-program anxiety and vice versa is consistent with extant research showing that individuals often display symptoms of both conditions simultaneously (Stein et al., 2001).

The addition of pretest measures of perceived social support and self-reported depression and anxiety produced perhaps the most telling results of the study. For instance, for both bivariate and multivariate analyses, fathers with high levels of depression and anxiety at pretest were also likely to display high levels of depression and anxiety at posttest, which supports past research that has demonstrated the comorbidity of these conditions (Stein et al., 2001). Although speculative, these findings could point to the possibility of chronic depression and anxiety among these participants, which would definitely help to identify them as being at-risk or in need of further assistance after program completion. One unexpected finding from this analysis was that the greatest decreases in self-reported anxiety from pretest to posttest were found for fathers who had reported the highest levels of pre-program self-reported depression. This improvement was present in both bivariate and multivariate analyses. Such a finding lends credence to the possibility that after program completion, fathers with high levels of depression may have developed the necessary skills to address their anxiety.

Limitations and Future Directions

One limitation to consider was this study's relatively limited scope of the concept of subjective well-being. This limitation was mostly imposed by the design of the survey instrument, which placed a greater emphasis on the subjective well-being domains of mental health and social support systems. With the comprehensive nature of subjective well-being, future research could take an expanded approach to examine how

fatherhood education programs address other domains of subjective well-being, such as physical health and quality of life.

Next, this study also relied on the self-report of mental health issues by participants (i.e., perceived mental health needs; Andersen, 1968), as opposed to professionally diagnosed mental health conditions (i.e., evaluated mental health needs; Andersen, 1968). The goal of this study was to address some of the key determinants of paternal subjective well-being, and therefore relied on the self-evaluation of participants. Given the resources and access, future research could examine the impacts of fatherhood education programs on the mental health of fathers who have been clinically diagnosed with mood disorders prior to program participation.

Finally, we believe there is potential for research related to the effectiveness of fatherhood education programs in addressing paternal subjective well-being that reaches beyond the current study, which was primarily concerned with addressing matters of program impact and identifying fathers who may benefit from additional assistance after program completion. To expand on the current study, future research may examine the impact of paternal social support and mental health on father involvement and marital satisfaction in the context of relationship education.

Practical Implications

In addition to providing evidence of the effectiveness of fatherhood education in promoting paternal subjective well-being, this study holds implications for both research and practice. From a basic research perspective, this study demonstrated the utility of the Behavioral Model by identifying the characteristics of fathers most at-risk for post-intervention social support and mental health issues. To our knowledge, this is the first example of applying the Behavioral Model (Andersen, 1968) to this population and in this fashion. The results of this study also further illustrated the bi-directional associations between the perceived social support and the self-reported mental health of fathers.

From a practical standpoint, this study's analytical and theoretical approach resulted in the construction of a client profile that identified the characteristics of fathers most in need of further assistance after program completion in addressing their social support issues and mental health needs, which was the primary goal of this study from an applied standpoint. Although we recognize the potential threat of selection effects with such an approach, we also see this approach as a method that could potentially inform pre-program selection and recruitment efforts for fatherhood education programs, to better ensure that participants most in need of assistance after participation are more likely to receive the help they need. Indeed, promoting the personal development of fathers through improved subjective well-being has become an emerging goal of fatherhood education programs (Dion et al., 2015).

When considering which participants could benefit from post-program intervention or assistance, facilitators may especially consider the needs of younger, lower income, non-resident, and non-married fathers, who struggle finding and maintaining stable employment. It will also be important to identify fathers who may be struggling with

issues of mental health (i.e., high levels of self-reported depression and anxiety) and weaker social support systems at program entry, as results of this study predominately demonstrated that, although moderate improvements in these areas were detected, these problems were likely to persist even after intervention. Constructing reliable client profiles through a theory-driven approach may also serve as a potential early warning system that could be used to direct appropriate services and information to those fathers in greatest need of assistance.

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Notes

1. Pre-program social support levels were categorized into three groups (Low, Medium, and High), based on pre-program social support index scores. Categorization was guided by the Likert scales used to measure pre-program social support levels, which ranged from "1," (strong disagreement) to "4," (strong agreement) with the statements participants were presented regarding the perceived strength of their social support systems. Participants scoring between 0.00 and 2.50 were assigned to the "Low" group (weak social support), participants scoring between 2.51 and 3.50 were assigned to the "Medium" group (moderate social support), and participants scoring 3.51 or higher were assigned to the "High" group (strong social support).
2. Pre-program self-reported depression and anxiety levels were categorized into three groups (Low, Medium, and High), based on pre-program self-reported depression and anxiety index scores. Categorization was guided by the Likert scales used to measure pre-program depression and anxiety levels, which ranged from "1," (no problems with depression or anxiety) to "5" (constant problems with depression or anxiety). For both measures, participants scoring between 0.00 and 2.50 were assigned to the "Low" group (few problems with mental health), participants scoring between 2.51 and 3.50 were assigned to the "Medium" group (moderate problems with mental health), and participants scoring 3.51 or higher were assigned to the "High" group (major problems with mental health).

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