Marital Instability and Spousal Empathy Mediate Childhood Parental Affection Predicting Adulthood Depression

Madeline Eleanor Bartek, McNair Scholar, The Pennsylvania State University

McNair Faculty Research Adviser: Michelle G. Newman, Ph.D.
Professor of Psychology and Psychiatry
Director of the Center for the Treatment of Anxiety and Depression

Graduate Student: Nur Hani Zainl, M.S.
Department of Psychology
College of the Liberal Arts
The Pennsylvania State University

Author Note

Madeline Eleanor Bartek, Nur Hani Zainal, Michelle G. Newman, Department of Psychology, The Pennsylvania State University, University Park. Correspondence concerning this article should be addressed to Nur Hani Zainal, Department of Psychology, The Pennsylvania State University, University Park, PA 16802. E-mail: nvz5057@psu.edu. Telephone: 814-863-0115. The data used in this publication were made available by the Data Archive on University of Wisconsin - Madison Institute on Aging, 1300 University Avenue, 2245 MSC, Madison, Wisconsin 53706-1532. Since 1995 the Midlife Development in the United States (MIDUS) study has been funded by the following: John D. and Catherine T. MacArthur Foundation Research Network; National Institute on Aging (P01-AG020166); National institute on Aging (U19-AG051426). The original investigators and funding agency are not responsible for the analyses or interpretations presented here.

Conflict of interest
The authors do not have any conflicts of interest or financial disclosures.

Ethical standards
This study was conducted in compliance with the American Psychological Association (APA) ethical standards in the treatment of human participants and approved by the institutional review board (IRB). Informed consent was obtained from participants as per IRB requirements at Harvard University, Georgetown University, University of California at Los Angeles, and University of Wisconsin. Since this study used a publicly available dataset, it was exempt from IRB approval.

Abstract

Attachment theories propose that lack of childhood parental affection confers increased vulnerability to heightened depression in adulthood. However, there remains a dearth of prospective studies on this topic, and no studies have attempted to explain the sequential parental affection–depression connection. This study thus explored whether marital risk and spousal empathy functioned as mediators for childhood parental affection predicting depressive symptoms across 18 years of adulthood. Participants (n = 2,825) averaged 45.55 years (SD =11.39) and 54.16% were females. Parental affection (Parental Support Scale) was measured at Time 1 (T1). Depressive symptoms (Composite International Diagnostic Interview-Short Form) were measured at T1, Time 2 (T2) and Time 3 (T3). Marital risk (Marital Instability Index) and spousal empathy (Marital Empathy Scale) were measured at T1 and T2. Structural equation modeling analyses were conducted to test whether parental childhood affection would negatively predict T3 depressive symptoms, and if marital risk and spousal empathy mediated those relations. All analyses adjusted for prior levels of mediator and outcome variables. Significant direct effects were found such that childhood maternal and paternal affection negatively predicted T3 depressive symptoms. Further, marital risk and spousal empathy mediated those associations. Lower childhood maternal and paternal affection predicted greater marital risk and less spousal empathy. Higher risk and less spousal empathy in turn predicted more T3 depressive symptoms. Findings highlight the importance of parental affection in childhood as well as learning socio-emotional skills to nurture strong marital bond to reduce the odds of developing major depressive disorder in middle-to-late adulthood.

Keywords: attachment theory, major depressive disorder, marital satisfaction, prospective

Marital Instability and Spousal Empathy Mediate Childhood Parental Affection Predicting Adulthood Depression

Major depressive disorder (MDD) is one of the most common mental disorders globally (Whiteford et al., 2013). In the United States, the lifetime prevalence for MDD is estimated to be 16.2%, and of these, 60% of sufferers of MDD experience severe functional impairment (Kessler et al., 2003). Functional deficits include lack of participation in rewarding social or leisure activities by limiting interactions with family, friends, and significant others (Blanco & Barnett, 2014). Relatedly, MDD has been associated with poorer job performance, work productivity, and increased absenteeism (Lerner & Henke, 2008). Further, research has shown that MDD might put people at risk for chronic cardiovascular, autoimmune, and metabolic health conditions such as angina, arthritis, asthma, and diabetes (Moussavi et al., 2007). Thus, MDD is currently the second major cause of disability globally (Ferrari et al., 2013), and is predicted to be the first major cause of disability by 2030 (Mathers & Loncar, 2006). Given the adverse individual and societal impacts of MDD and its high prevalence, identifying risk factors to inform evidence-based programs that might prevent the development this common mental illness is important.

A plethora of variables serve as risk factors for MDD. These include cognitive biases toward negative material, abnormalities in brain regions linked to emotion regulation and reward processing, parental depression, marital dissatisfaction, and problematic pattern of interactions with primary caregivers during childhood (Gotlib, Joormann, & Foland-Ross, 2014). Specifically, in the last 50 years, *attachment theories* have proposed that deficits in parental affection in childhood contribute to the etiology of MDD (Bowlby, 1977; Bowlby, 1982).

Attachment is defined as an internal working model humans develop that reflects the enduring psychological connections with caregiver figures, particularly the biological parents most people grew up with. Primary caregivers are thought of as those who primarily offer basic care, protection, and pleasure in most situations, as well as a sense of comfort in times of distress. The mental representations of primary caregivers guide one's social skills, as well as how one thinks about others' motivations, actions, and feelings. Secure attachment patterns characterized by high levels of parental affection, availability, and support are theorized to protect against MDD. People with secure attachment styles tend to be more optimistic, open to new experiences, and goal-driven (Bowlby, 1969). Conversely, insecure attachment styles typified by unpredictable, avoidant, or conflictual ways of parenting have been proposed to confer increased risk of MDD. Taken together, high levels of childhood parental affection functions as a proxy for secure attachment, whereas low childhood parental affection reflects insecure attachment styles.

Supporting attachment theories, data pooled across 4,386 participants reliably showed that persons with insecure (vs. secure) attachment patterns marked by dismissive, cold, distant, or harsh caregiver-child interactions were at heightened risk for future depressive disorders (Dagan, Facompré, & Bernard, 2018). However, a primary limitation of research on the relations between attachment and depression is that most of them have been cross-sectional in nature, thereby precluding causal inferences. Nonetheless, these single-time point studies concur with prospective data that insecure attachment styles places people at risk for the onset of clinical depression later in life (Bifulco, Moran, Ball, & Bernazzani, 2002). Collectively, data suggests that lack of childhood parental affection would predict future heightened depression.

What factors might then explain the aforesaid relations between attachment and depression symptoms? Attachment theory also postulates that insecure attachment patterns could adversely impact relationships all through life (Bowlby, 1977; Hazan & Shaver, 1987; Shaver & Mikulincer, 2002). As the internal working model shaped by attachment are the concepts we have of ourselves, others, and the world, attachment offers a practical lens to comprehend human thoughts and feelings. Attachment thus impacts marriage at its core: the growth of an intimate and trusting relationship. Whereas securely attached persons feel close with their intimate partners and reciprocate interactions, insecurely attached persons tend to display suspicion or indifference, or fear abandonment. Supporting this theory, insecure attachment patterns indexed by dearth of parental affection at childhood have been linked to poorer marital quality and risk of separation in at least two studies (Curran, Hazen, Jacobvitz, & Feldman, 2005; Young & Ehrenberg, 2007); however, these single time-point studies need to be corroborated with longitudinal study designs. On the whole, low levels of childhood parental affection can set the stage for marital instability later in life, thereby increasing the risk for future MDD.

Yet attachment models also posit that deficits in childhood parental affection and support likely diminishes individuals' capacity to empathize with others (Mikulincer et al., 2001). Empathy, defined as the emotional response of care brought about by observing another being in need (Cuff, Brown, Taylor, & Howat, 2016), might be lacking in insecurely attached persons. In addition, the theory suggests that feeling chronically underappreciated by primary caregivers might hinder growth in the ability to accurately infer others' thoughts and feelings. Indeed, insecurely attached persons with parents who did not offer ample attention or space to confide in

difficult topics tend to be uncomfortable in intimate partnerships or with managing their feelings (Slade, 1999). Also, they display empathy deficits by hiding their feelings and are inclined to detach themselves from others to avoid discomfort arising from failures in seeking help (Shaver & Mikulincer, 2002). Moreover, data showing that insecurely attached persons endorsed low levels of interpersonal empathy (Burnette, Davis, Green, Worthington, & Bradfield, 2009) further supports the theory. Taken together, it is plausible that the childhood parental affection–adulthood depression connection would be mediated by deficits in spousal empathy.

To date, numerous studies have repeatedly shown that spousal empathy deficits, marital instability, and related concepts predict heightened depression. Data collated across 26 empirical studies comprising more than 5400 participants showed that marital instability and dissatisfaction explained 14% and 18% of husbands' and wives' depressive symptoms respectively (Whisman, 2001). Moreover, even after adjusting for marital instability, depressed (vs. non-depressed) couples displayed more problematic communication patterns (Du Rocher Schudlich, Papp, & Cummings, 2004). For instance, distressed couples with at least one clinically depressed partner habitually communicated about their identity, physical health, psychological well-being, and future in ways that worsen the situation (Hautzinger, Linden, & Hoffman, 1982). This pattern of observations holds up across cultures. For instance, divorced and separated Korean couples were vulnerable to experiencing prolonged low mood states, fatigue, and other depressive symptoms later in life than their married counterparts (Jang et al., 2009). These single time point studies concur with longitudinal ones that showed higher marital strife forecasted more depressive symptoms 15 years later (Choi & Marks, 2008). Therefore, low spousal empathy and high marital instability would likely lead to future increased depression.

Building on attachment theory, the empirical evidence, and logic outlined, we examined the prospective associations among parental affection in childhood and MDD in adulthood. Further, we explore how marital risk and lack of spousal empathy functioned as mediators of the inverse parental affection–adulthood MDD severity connections. This study makes an important contribution because it adds to the limited longitudinal evidence base on deficits in parental affection as risk factors for MDD over 18 years at various stages of adulthood. Thus, we hypothesized that childhood maternal and paternal affection would significantly negatively predict future depressive symptoms (Hypotheses 1 and 2). Additionally, we hypothesized that the childhood maternal and paternal affection–adulthood depressive symptoms relation would be mediated by marital instability (Hypotheses 3 and 4) and spousal empathy (Hypotheses 5 and 6).

Methods

Participants

The present study used the publicly available Midlife Development in the United States (MIDUS) dataset. Data was collected across three waves of assessment to gather information on behavioral and psychosocial factors for physical and mental health (Ryff et al., 2017a; Ryff & Lachman, 2018; Ryff & Lachman, 2017; Ryff et al., 2017b): 1995–1996 (Time 1 [T1]); 2004–2005 (Time 2 [T2]); 2012–2013 (Time 3 [T3]). In this study, participants (N = 2825) averaged 45.55 years (SD = 11.39, range = 20–74), and 54.16% were females.

Data was gathered in the forms of clinical interviews, mailed questionnaires via telephone and self-administered questionnaires. Whereas data on depressive symptoms were collected via interviews across three waves, childhood parental affection was assessed at T1, and both marital risk and spousal empathy were measured at T1 and T2.

Measures

Parental affection. Parental affection was measured using a seven-item Parental Support Scale (Rossi, 2001) at T2 and T3. Maternal and paternal affection were assessed separately, each on a 7-item scale (e.g., "How much time and attention did your mother/father give you when you needed it?"). Participants rated on a 4-point Likert scale ranging from 1 (*not at all*) to 4 (*a lot*). High internal consistencies have been found for the scale (Cronbach's αs = .91 and .93 for maternal affection and paternal affection respectively) (Rossi, 2001).

Marital risk. Marital risk was measured using the two-item Marital Instability Index (Booth, Johnson, & Edwards, 1983). The two items consisted of, "During the past year, how often have you thought your relationship might be in trouble?" and "What do you think the chances are that you and your partner will eventually separate?" Participants endorsed on a 4-point Likert scale ranging from 1 (*not likely at all*) to 4 (*very likely*). This measure has shown good internal consistency at T1 (α = .69) and T2 (α = .70).

Spousal Empathy. was measured using the Marital Empathy Scale (Grzywacz & Marks, 1999; Schuster, Kessler, & Aseltine Jr., 1990; Walen & Lachman, 2000) administered at T1 and T2. The clinical interview asked questions such as, "How much does your spouse or partner really care about you?" Respondents rated on a 4-point Likert-scale ranging from 1 (*not at all*) to 4 (*a lot*). This scale has good internal consistency at T1 (α = .86) and T2 (α = .90).

Major depressive disorder symptom severity. MDD symptom severity was measured by using the World Health Organization's Composite International Diagnostic Interview-Short Form (WHO CIDI-SF; Kessler, Andrews, Mroczek, Ustun, & Wittchen, 1998), based on the Diagnostic and Statistical Manual of Mental Disorders – Revised Third Version (DSM-III-R; American Psychiatric Association, 1980). Participants first answered the stem question, "In your lifetime, have you ever had two weeks or more when nearly every day you felt sad, blue, depressed? Have there ever been two weeks or longer when you lost interest in most things like work or hobbies or things you usually like to do for fun?" Subsequently, those who endorsed 'yes' on either of the two stem questions reported whether they had experienced any of the following seven depressive symptoms over the last 12 months: low mood, loss of interest, fatigue, appetite, sleep disturbances, poor concentration, suicidal ideation. Participants responded on a dichotomous scale (either 0 (*no*) or 1 (*yes*)).

Procedures

At T1, the survey was given to a wide variety of participants using a random digit dialing (RDD) strategy, which oversampled five metropolitan areas in the US, siblings of the those from the RDD, and a national RDD of twin pairs (N = 7,108). All of these participants were English speaking adults living in the US. Most of the participants were interviewed via phone calls, whereas others were given self-administered questionnaires, which were mailed to the participants.

The follow-up assessment at T2 was carried out in a similar fashion on 4,963 participants recruited from T1. At T3, assessments from the previous waves were repeatedly administered on 3,294 participants (Radler & Ryff, 2010). The final sample comprised 2,825 married participants who were able to speak to our research questions.

Data Analytic Strategy

We conducted longitudinal structural equation modeling analyses using the *lavaan* package in R (Rosseel, 2012). MDD symptom severity at T3 served as the outcome variable in all of the models. For a stringent test of our analyses, we adjusted for baseline mediators (marital risk, spousal empathy) as well as T1 MDD and T2 MDD (Cole & Maxwell, 2003). All the indicators of the latent constructs were non-normally distributed ordinal data. Thus, we conducted all analyses using the diagonally weighted least squares estimator with means and variance adjusted (WLSMV) χ^2-statistic with theta parametrization which inputs the polychoric correlation matrix (Rhemtulla, Brosseau-Liard, & Savalei, 2012; Wang & Cunningham, 2005). Pearson product-moment correlations underestimate the strength of associations among variables which may lead to attenuated factor loading estimates (Jöreskog & Sörbom, 2006). Further, the WLSMV estimator does not assume multivariate normality but instead computes optimal weights and offers robust standard errors. Simulation studies showed that the WLSMV (vs. standard WLS estimator) worked well across diverse sample sizes and an array of manifest indicators (2-8 items; Flora & Curran, 2004; Nussbeck, Eid, & Lischetzke, 2006).

Mediation analyses were conducted by carrying out a *product-of-coefficients* approach of the indirect effects ($a \times b$) for the regression coefficients of the predictor (childhood maternal *or* paternal affection) forecasting the mediator (marital risk *or* spousal empathy) (*a* path), and the mediator predicting T3 MDD symptom severity (*b* path). We presented the unstandardized regression coefficients and used bootstrapping with 10,000 resampling draws (Cheung & Lau, 2008). The mediation effect size (P_M) is the ratio of the indirect effect (a*b) to the total effect, c = a*b + c' (Preacher & Kelley, 2011; Wen & Fan, 2015). In total, the 1.9% missing data points were handled with listwise deletion. Tests of model's assumptions were conducted before analysis of each hypothesis.

We assessed each model's *empirical identification status* by comparing the model's fully standardized solutions against conventionally acceptable loadings (Graham, 2005). The pattern of standardized factor loadings suggested that all measurement models were empirically identified. For large samples, χ^2 tends to be statistically significant (Brown, 2006), despite the candidate model differing from the true saturated model by trivial amounts. To assess each model's goodness-of-fit, we used practical goodness-of-fit indices and heuristic cut-offs (Kline, 2016a, 2016b): Tucker-Lewis Index (TLI; also named non-normed fit index (NNFI); Bentler & Bonett, 1980; Tucker & Lewis, 1973; TLI $\geq$ .95), confirmatory fit index (CFI; Bentler, 1990; McDonald & Marsh, 1990; CFI $\geq$ .95), root mean square error of approximation (RMSEA; Browne & Cudeck, 1993; Steiger, 1990; RMSEA and its 90% confidence interval [CI] $\leq$ .50), and standardized root mean square residual (SRMR; Hu & Bentler, 1999; SRMR with 90% CI $\leq$ .080).

Results

Direct Effects of Parental Affection on Future MDD

The structural models for the first two hypotheses showed excellent fit when the predictors were childhood maternal affection ($\chi^2(df = 344) = 347.14$, $p = .442$, CFI = 1.00, RMSEA = .002, SRMR = .027) and childhood paternal affection ($\chi^2(df = 344) = 334.66$, $p = .631$, CFI = 1.000, RMSEA = .000, SRMR = .027). Supporting Hypothesis 1, childhood maternal affection significantly uniquely negatively predicted T3 MDD ($\beta = -0.012$, $SE = 0.004$, $z = -3.092$, $p = .002$). Similarly, supporting Hypothesis 2 childhood paternal affection significantly independently negatively predicted T3 MDD ($\beta = -0.007$, $SE = 0.003$, $z = -2.454$, $p = .014$).

Indirect Effects of Parental Affection on Future MDD

When marital risk was tested as the mediator, the structural models displayed acceptable model fit for Hypothesis 3 ($\chi^2(df = 653) = 3304.14$, $p < .001$, CFI = .90, RMSEA = .049, SRMR = .060) and Hypothesis 4 ($\chi^2(df = 653) = 3334.61$, $p < .001$, CFI = .91, RMSEA = .050, SRMR = .061). Analyses showed that childhood maternal affection significantly negatively predicted T2 marital risk ($\beta = -0.166$, $SE = 0.027$, $z = -6.024$, $p < .001$), and T2 marital risk in turn substantially predicted T3 MDD severity ($\beta = 0.020$, $SE = 0.007$, $z = 2.680$, $p = .007$). The indirect effect for Hypothesis 3 (childhood maternal affection → T2 marital risk → T3 MDD severity) was also significant ($\beta = -0.003$, $SE = 0.001$, $z = -2.482$, $p = .013$) and explained 26.39% of the variance of the relation between childhood maternal affection and T3 MDD severity. Accordingly, Hypothesis 3 was supported.

For Hypothesis 4, analyses revealed that childhood paternal affection substantially negatively predicted T2 marital risk ($\beta = -0.127$, $SE = 0.021z = -6.047$, $p < .001$) and T2 marital risk then considerably positively predicted T3 MDD severity ($\beta = 0.023$, $SE = 0.007$, $z = 3.129$, $p = .002$). The indirect effect for Hypothesis 4 (childhood paternal affection → T2 marital risk → T3 MDD severity) was also statistically significant ($\beta = -0.003$, $SE = 0.001$, $z = -2.754$, $p = .006$) and accounted for 40.38% of the variance of the relation between childhood paternal affection and T3 MDD severity. All in all, Hypothesis 4 was supported.

Upon examining spousal empathy as the mediator, the structural models for Hypothesis 5 ($\chi^2(df = 767) = 4041.30$, $p < .001$, CFI = .90, RMSEA = .050, SRMR = .074) and Hypothesis 6 ($\chi^2(df = 767) = 4267.04$, $p < .001$, CFI = .90, RMSEA = .053, SRMR = .078) displayed satisfactory model fit. Results showed that childhood maternal affection significantly negatively predicted T2 spousal empathy ($\beta = -0.124$, $SE = 0.016$, $z = -7.557$, $p < .001$) and T2 spousal empathy thereby substantially negatively predicted T3 MDD severity ($\beta = -0.043$, $SE = 0.016$, $z = 2.662$, $p = .008$). The indirect effect for Hypothesis 5 (childhood maternal affection → T2 spousal empathy → T3 MDD severity) was also significant ($\beta = -0.005$, $SE = 0.002$, $z = -2.560$, $p = .010$) and explained 40.20% of the variance of the relation between childhood maternal affection and T3 MDD severity. Therefore, Hypothesis 5 was fully supported.

For Hypothesis 6, analyses showed that childhood paternal affection significantly negatively predicted T2 spousal empathy ($\beta = -0.085$, $SE = 0.012$, $z = -6.923$, $p < .001$), and T2 spousal empathy subsequently negatively predicted T3 MDD severity ($\beta = 0.047$, $SE = 0.015$, $z = 3.168$, $p = .002$). The indirect effect for Hypothesis 6 (childhood paternal affection → T2 spousal

empathy → T3 MDD severity) was also significant (β = 0.004, *SE* = 0.001, *z* = 2.967, *p* = .003) and explained 51.92% of the variance of the relation between childhood paternal affection and T3 MDD severity. Hypothesis 6 was fully supported.

Discussion

Due to the limited amount of studies on how marital risk along with parental affection impacts depression, this was the first analysis proposing the potential of marital risk being a mediator between parental affection predicting depression. Importantly we found that the association between low levels of parental affection predicting depressive symptoms occurred via two mediators: marital risk and spousal empathy. Findings of this study align with the previous cited literature such that distant and cold caregivers lead to heightened risk of depressive disorders later in life (Dagan et al., 2018). Results are also consistent with Bowlby's attachment theory (Bowlby, 1977; Bowlby, 1982) which proposed that parental affection plays a salient role in the etiology of MDD. The importance of parental affection in childhood impacts the potential of someone experiencing depressive symptoms later in adulthood. The degree to which individuals experiences warmth and affection during childhood will impact how they express or experience affection, thus either mitigating or aggravating the risk for future MDD.

Why did the negative childhood parental affection-future MDD association occur via marital risk? Plausibly, experiencing dissatisfying relationships with one's maternal figure might render individuals' vulnerable to interacting with significant others in maladaptive ways. Perhaps recurrent poor quality of parental interactions in childhood might hinder the development of open communicative styles important for satisfying relationships. Low parental affection might also predispose individuals to adopt attitudes that reflect high level of distrust towards their spouse. Further, the lack of adaptive communication skills that accompany deficits in maternal affection might create confrontational relationship dynamics in marriages. Data showing that people who reported less childhood parental affection tend to be more upset in social situations and were less able to relate to the others perspectives (Narvaez, Wang & Chen, 2016) supports these viewpoints. Without this perceptive taking, confrontations are bound to happen. Future prospective work could attempt to confirm these speculations.

More specifically, Bowlby proposed the idea of an internal working model (Bowlby, 1969). This internal working model proposed that children suffering from lack of parental affection would have emotional difficulties later in life along with difficulty in understanding the world and their relationships with others (Bretherton & Munholland, 1999). Further, individuals are often misguided when it comes to later partners and relationships if their internal working model is disrupted. This may contribute to trust issues in the relationship, ineffective communication, as well as a poor connection between two people. These persons are missing an essential part of their development. Having a secure-base via high levels of parental affection, not only positively impacts how a person interacts in later relationships, but also how a person later interprets interactions with their spouses. Lack of parental affection likely increases misinterpretation of intentions and causes quarrelsome and lackluster interactions often seen in distressed couples. Without trust in a relationship, many problems arise quickly.

Why did spousal empathy mediate the relationship between childhood parental affection and adulthood MDD symptoms? Perhaps that lack of parental affection reduces the ability to care for and resolve conflict with others, more specially spouses, in constructive and mature ways. Also, less parental affection in childhood leads to people not being able to understand other's perceptions. Lacking the skills of perspective taking can be detrimental to relationships when it comes to understanding others emotions and motives. Possibly the type of attachment style that someone forms based on parental affection, impacts future relationships, which might then manifest in depressive symptoms. Relatedly, as partner support has been found to be predictive of future well-being (Walen & Lachman, 2001), it is likely to be protective against MDD. Research has also consistently shown positive connections between insecure attachment styles and marital quality (Hollist & Miller, 2005). Also, romantic love has been shown to be related to attachment styles (Hazan & Shaver, 1987). People who have poor experiences of parental affection childhood, may in turn, have bad love experiences with their future intimate partners.

Limitations of the study deserve mention. The present sample comprised mostly well-educated, White Americans in the middle-to-higher income bracket. Thus, future studies could test if findings herein generalize to culturally and socio-economically diverse contexts. Doing so is important as participants who retained in the study were more likely to be Caucasians (vs. ethnic minority), highly educated, financially and physically healthier, as well as married (vs. single, divorced, or widowed) (Radler & Ryff, 2010). Also, the study used the DSM-III criteria to measure depressive symptoms rather than the current DSM-5. Relatedly, as the parental affection measure was retrospective in nature, it was susceptible to recall bias, and their opinions of their parents' affection could have changed through the years. Nonetheless, study strengths include the long 18-year period, where data was collected across three phases. Further, this study used psychometrically valid and reliable measures. Therefore, due to its longitudinal design, this study offered unique views on the predictive roles of parental attachment, marital instability, and spousal empathy on adulthood depression.

Findings demonstrate that parenting practices, in terms of level of warmth and affection conveyed by parental figures during children's formative years are instrumental in either mitigating or increasing future risk of major depressive episodes in adulthood. Accordingly, a major clinical implication of this study is the need to increase dissemination of evidence-based, preventative parenting programs, such as those delivered online (Cardamone-Breen et al., 2018). The results suggest that parents who model adaptive behaviors (e.g., willingness to have conversations on important matters) to their children are likely to help them become well-adjusted adults later in life. Such efforts are crucial from a public health perspective due to the rising numbers of people suffering from major depressive episodes and suicidal ideation (Bridge, Horowitz, Fontanella, Grupp-Phelan, & Campo, 2014). Moreover, subsequent work should examine how therapies that improve married couples' socio-emotional skills, such as empathic accuracy and effective communication (Schmidt & Gelhert, 2017), might also effectively prevent the onset of MDD.

References

American Psychiatric Association. (1980). *Diagnostic and statistical manual of mental disorders* (3rd ed.). Washington, DC: American Psychiatric Association.

Anderson, J. C., & Gerbing, D. W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological Bulletin, 103*, 411-423. doi:10.1037/0033-2909.103.3.411

Bentler, P. M., & Bonett, D. G. (1980). Significance tests and goodness of fit in the analysis of covariance structures. *Psychological Bulletin, 88*, 588-606. doi:10.1037/0033-2909.88.3.588

Bentler, P. M. (1990). Comparative fit indexes in structural models. *Psychological Bulletin, 107*, 238-246. doi:10.1037/0033-2909.107.2.238

Bifulco, A., Moran, P. M., Ball, C., & Bernazzani, O. (2002). Adult attachment style. I: Its relationship to clinical depression. *Social Psychiatry and Psychiatric Epidemiology, 37*, 50-59. doi:10.1007/s127-002-8215-0

Blanco, J. A., & Barnett, L. A. (2014). The effects of depression on leisure: varying relationships between enjoyment, sociability, participation, and desired outcomes in college students. *Leisure Sciences, 36*, 458-478. doi:10.1080/01490400.2014.915772

Booth, A., Johnson, D., & Edwards, J. N. (1983). Measuring marital instability. *Journal of Marriage and the Family, 45*, 387-394. doi:10.2307/351516

Bowlby, J. (1977). The making and breaking of affectional bonds. I. Aetiology and psychopathology in the light of attachment theory. An expanded version of the Fiftieth Maudsley Lecture, delivered before the Royal College of Psychiatrists, 19 November 1976. *British Journal of Psychiatry, 130*, 201-210. doi:10.1192/bjp.130.3.201

Bowlby, J. (1982). Attachment and loss: Retrospect and prospect. *American Journal of Orthopsychiatry, 52*, 664-678. doi:10.1111/j.1939-0025.1982.tb01456.x

Bridge, J. A., Horowitz, L. M., Fontanella, C. A., Grupp-Phelan, J., & Campo, J. V. (2014). Prioritizing research to reduce youth suicide and suicidal behavior. *American Journal of Preventive Medicine, 47*, S229-S234. doi:10.1016/j.amepre.2014.06.001

Brown, T. A. (2006). *Confirmatory Factor Analysis for Applied Research*. New York: Guilford Press.

Browne, M. W., & Cudeck, R. (1993). Alternate ways of assessing model fit. In K. A. Bollen & J. S. Long (Eds.), *Testing equation models* (pp. 136–162). Newbury Park, CA: Sage.

Burnette, J. L., Davis, D. E., Green, J. D., Worthington, E. L., & Bradfield, E. (2009). Insecure attachment and depressive symptoms: The mediating role of rumination, empathy, and forgiveness. *Personality and Individual Differences, 46*, 276-280. doi:10.1016/j.paid.2008.10.016

Cardamone-Breen, M. C., Jorm, A. F., Lawrence, K. A., Rapee, R. M., Mackinnon, A. J., & Yap, M. B. H. (2018). A single-session, web-based parenting intervention to prevent adolescent depression and anxiety disorders: randomized controlled trial. *Journal of Medical Internet Research, 20*, e148. doi:10.2196/jmir.9499

Cheung, G. W., & Lau, R. S. (2008). Testing Mediation and Suppression Effects of Latent Variables: Bootstrapping With Structural Equation Models. *Organizational Research Methods, 11*, 296-325. doi:10.1177/1094428107300343

Choi, H., & Marks, N. F. (2008). Marital conflict, depressive symptoms, and functional impairment. *Journal of Marriage and the Family, 70*, 377-390. doi:10.1111/j.1741-3737.2008.00488.x

Cole, D. A., & Maxwell, S. E. (2003). Testing mediational models with longitudinal data: questions and tips in the use of structural equation modeling. *Journal of Abnormal Psychology, 112*, 558-577. doi:10.1037/0021-843x.112.4.558

Cuff, B. M. P., Brown, S. J., Taylor, L., & Howat, D. J. (2016). Empathy: a review of the concept. *Emotion Review, 8*, 144-153. doi:10.1177/1754073914558466

Curran, M., Hazen, N., Jacobvitz, D., & Feldman, A. (2005). Representations of early family relationships predict marital maintenance during the transition to parenthood. *Journal of Family Psychology, 19*, 189-197. doi:10.1037/0893-3200.19.2.189

Dagan, O., Facompré, C. R., & Bernard, K. (2018). Adult attachment representations and depressive symptoms: A meta-analysis. *Journal of Affective Disorders, 236*, 274-290. doi:https://doi.org/10.1016/j.jad.2018.04.091

Du Rocher Schudlich, T. D., Papp, L. M., & Cummings, E. M. (2004). Relations of husbands' and wives' dysphoria to marital conflict resolution strategies. *Journal of Family Psychology, 18*, 171-183. doi:10.1037/0893-3200.18.1.171

Ferrari, A. J., Charlson, F. J., Norma, R. E., Patten, S. B., Freedman, G., Murray, C. J. L., . . . Whiteford, H. A. (2013). Burden of depressive disorders by country, sex, age, and year: findings from the global burden of disease study 2010. *PLoS Medicine, 10*. doi:10.1371/journal.pmed.1001547

Flora, D. B., & Curran, P. J. (2004). An Empirical Evaluation of Alternative Methods of Estimation for Confirmatory Factor Analysis With Ordinal Data. *Psychological Methods, 9*, 466-491. doi:10.1037/1082-989X.9.4.466

Gotlib, I. H., Joormann, J., & Foland-Ross, L. C. (2014). Understanding familial risk for depression: a 25-year perspective. *Perspectives on Psychological Science, 9*, 94-108. doi:10.1177/1745691613513469

Graham, J. W. (2005). *Structural Equation Modeling*. Unpublished Manuscript, The Pennsylvania State University.

Grzywacz, J. G., & Marks, N. F. (1999). Family solidarity and health behaviors: evidence from the national survey of Midlife Development in the United States. *Journal of Family Issues, 20*, 243-268. doi:10.1177/019251399020002004

Hautzinger, M., Linden, M., & Hoffman, N. (1982). Distressed couples with and without a depressed partner: An analysis of their verbal interaction. *Journal of Behavior Therapy and Experimental Psychiatry, 13*, 307-314. doi:10.1016/0005-7916(82)90075-1

Hazan, C., & Shaver, P. (1987). Romantic love conceptualized as an attachment process. *Journal of Personality and Social Psychology, 52*, 511-524. doi:10.1037/0022-3514.52.3.511

Hollist, C. S., & Miller, R. B. (2005). Perceptions of Attachment Style and Marital Quality in Midlife Marriage*. Family Relations, 54(1), 46-57. doi:10.1111/j.0197-6664.2005.00005.x

Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: conventional criteria versus new alternatives. *Structural Equation Modeling, 6*, 1-55. doi:10.1080/10705519909540118

Jang, S.-N., Kawachi, I., Chang, J., Boo, K., Shin, H.-G., Lee, H., & Cho, S.-i. (2009). Marital status, gender, and depression: Analysis of the baseline survey of the Korean Longitudinal Study of Ageing (KLoSA). *Social Science and Medicine, 69*, 1608-1615. doi:10.1016/j.socscimed.2009.09.007

Jöreskog, K. G., & Sörbom, D. (2006). LISREL 8.80 for Windows [Computer Software]. Lincolnwood, IL: Scientific Software International, Inc.

Kessler, R. C., Andrews, G., Mroczek, D., Ustun, B., & Wittchen, H.-U. (1998). The World Health Organization Composite International Diagnostic Interview short-form (CIDI-SF). *International Journal of Methods in Psychiatric Research, 7*, 171-185. doi:10.1002/mpr.47

Kessler, R. C., Berglund, P., Demler, O., Jin, R., Koretz, D., Merikangas, K. R., . . . Wang, P. S. (2003). The epidemiology of major depressive disorder: results from the National Comorbidity Survey Replication (NCS-R). *Journal of the American Medical Association, 289*, 3095-3105. doi:10.1001/jama.289.23.3095

Kline, R. B. (2016a). Chapter 11: Estimation and local fit testing. In R. B. Kline (Ed.), *Principles and practice of structural equation modeling* (pp. 231–261). New York: The Guilford Press.

Kline, R. B. (2016b). Chapter 12: Global fit testing. In R. B. Kline (Ed.), *Principles and practice of structural equation modeling* (pp. 262–299). New York: The Guilford Press.

Lerner, D., & Henke, R. M. (2008). What does research tell us about depression, job performance, and work productivity? *Journal of Occupational and Environmental Medicine, 50*, 401-410. doi:10.1097/JOM.0b013e31816bae50

Mathers, C. D., & Loncar, D. (2006). Projections of global mortality and burden of disease from 2002 to 2030. *PLoS Medicine, 3*, e442. doi:10.1371/journal.pmed.0030442

McDonald, R. P., & Marsh, H. W. (1990). Choosing a multivariate model: noncentrality and goodness of fit. *Psychological Bulletin, 107*, 247-255. doi:10.1037/0033-2909.107.2.247

Mikulincer, M., Gillath, O., Halevy, V., Avihou, N., Avidan, S., & Eshkoli, N. (2001). Attachment theory and rections to others' needs: Evidence that activiation of the sense of attachment security promotes empathic responses. *Journal of Personality and Social Psychology, 81*, 1205-1224. doi:10.1037/0022-3514.81.6.1205

Moussavi, S., Chatterji, S., Verdes, E., Tandon, A., Patel, V., & Ustun, B. (2007). Depression, chronic diseases, and decrements in health: results from the World Health Surveys. *Lancet, 370*, 851-858. doi:10.1016/S0140-6736(07)61415-9

Nussbeck, F. W., Eid, M., & Lischetzke, T. (2006). Analysing multitrait–multimethod data with structural equation models for ordinal variables applying the WLSMV estimator: What sample size is needed for valid results? *British Journal of Mathematical and Statistical Psychology, 59*, 195-213. doi:10.1348/000711005X67490

Preacher, K. J., & Kelley, K. (2011). Effect size measures for mediation models: Quantitative strategies for communicating indirect effects. *Psychological Methods, 16*, 93-115. doi:10.1037/a0022658

Radler, B. T., & Ryff, C. D. (2010). Who participates? Accounting for longitudinal retention in the MIDUS National Study of Health and Well-Being. *Journal of Aging and Health, 22*, 307-331. doi:10.1177/0898264309358617

Rhemtulla, M., Brosseau-Liard, P. É., & Savalei, V. (2012). When can categorical variables be treated as continuous? A comparison of robust continuous and categorical SEM estimation methods under suboptimal conditions. *Psychological Methods, 17*, 354-373. doi:10.1037/a0029315

Rosseel, Y. (2012). lavaan: An R package for structural equation modeling. *Journal of statistical software, 48*, 1–36.

Rossi, A. S. (2001). *Caring and doing for others: Social responsibility in the domains of family, work, and community*. Chicago: University of Chicago Press.

Ryff, C., Almeida, D. M., Ayanian, J., Carr, D. S., Cleary, P. D., Coe, C., . . . Williams, D. (2017a). Midlife in the United States (MIDUS 2), 2004-2006. ICPSR04652-v7. Ann Arbor, MI: Inter-university Consortium for Political and Social Research [distributor], 2017-11-20. doi:10.3886/ICPSR04652.v7

Ryff, C. D., & Lachman, M. E. (2018). Midlife in the United States (MIDUS 3): Cognitive project, 2013-2017. doi:10.3886/ICPSR37095.v1

Ryff, C. D., & Lachman, M. E. (2017). National Survey of Midlife Development in the United States (MIDUS II): Cognitive Project, 2004-2006. *ICPSR25281-v5. Ann Arbor, MI: Inter-university Consortium for Political and Social Research [distributor], 2013-04-29*.

Ryff, C. D., Almeida, D. M., Ayanian, J., Binkley, N., Carr, D. B., Coe, C., . . . Williams, D. (2017b). National Survey of Midlife Development in the United States (MIDUS 3), 2013-2014. *Midlife in the United States (MIDUS 3), 2013-2014 . ICPSR36346-v5. Ann Arbor, MI: Inter-university Consortium for Political and Social Research [distributor], 2017-03-09*.

Schmidt, C. D., & Gelhert, N. C. (2017). Couples therapy and empathy: an evaluation of the impact of imago relationship therapy on partner empathy levels. *The Family Journal, 25*, 23-30. doi:10.1177/1066480716678621

Schuster, T. L., Kessler, R. C., & Aseltine Jr., R. H. (1990). Supportive interactions, negative interactions, and depressed mood. *American Journal of Community Psychology, 18*, 423-438. doi:10.1007/bf00938116

Shaver, P. R., & Mikulincer, M. (2002). Attachment-related psychodynamics. *Attachment & Human Development, 4*, 133-161. doi:10.1080/14616730210154171

Slade, A. (1999). Attachment theory and research: Implications for the theory and practice of individual psychotherapy with adults. In J. Cassidy & P. R. Shaver (Eds.), *Handbook of attachment: Theory, research, and clinical implications* (pp. 575–594). New York: Guilford Press.

Steiger, J. H. (1990). Structural model evaluation and modification: An interval estimation approach. *Multivariate Behavioral Research, 25*, 173-180. doi:10.1207/s15327906mbr2502_4

Tucker, L. R., & Lewis, C. (1973). A reliability coefficient for maximum likelihood factor analysis. *Psychometrika, 38*, 1-10. doi:10.1007/BF02291170

Walen, H. R., & Lachman, M. E. (2000). Social support and strain from partner, family, and friends: costs and benefits for men and women in adulthood. *Journal of Social and Personal Relationships, 17*, 5-30. doi:10.1177/0265407500171001

Wang, W. C., & Cunningham, E. G. (2005). Comparison of Alternative Estimation Methods in Confirmatory Factor Analyses of the General Health Questionnaire. *Psychological Reports, 97*, 3-10. doi:10.2466/pr0.97.1.3-10

Wen, Z., & Fan, X. (2015). Monotonicity of effect sizes: Questioning kappa-squared as mediation effect size measure. *Psychological Methods, 20*, 193-203. doi:10.1037/met0000029

Whisman, M. A. (2001). The association between depression and marital dissatisfaction *Marital and family processes in depression: A scientific foundation for clinical practice.* (pp. 3-24). Washington, DC, US: American Psychological Association. doi: 10.1037/10350-001

Whiteford, H. A., Degenhardt, L., Rehm, J., Baxter, A. J., Ferrari, A. J., Erskine, H. E., . . . Vos, T. (2013). Global burden of disease attributable to mental and substance use disorders: findings from the Global Burden of Disease Study 2010. *The Lancet, 382*, 1575-1586. doi:10.1016/S0140-6736(13)61611-6

Young, L., & Ehrenberg, M. F. (2007). Siblings, parenting, conflict, and divorce. *Journal of Divorce & Remarriage, 47*, 67-85. doi:10.1300/J087v47n03_04