Parental well-being, couple relationship quality, and children's behavioral problems in the first 2 years of life

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Parental Wellbeing, Couple Relationship Quality and Children's Behavioral Problems in the First Two Years of Life.

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Abstract

Adverse effects of early exposure to parental mood disturbance on child adjustment have been documented for both mothers and fathers, but are rarely examined in tandem. Other under-researched questions include: effects of changes over time in parental wellbeing; similarities and contrasts between effects of parental mood disturbance on children's internalizing *versus* externalizing problems; and potential mediating effects of couple relationship quality. The current study involved 438 couples who reported symptoms of depression and anxiety at each of four time-points (last trimester of pregnancy and 4-, 14- and 24-months post-birth). Mothers and fathers also rated their couple relationship quality and their child's socio-emotional adjustment at 14-months, as well as internalizing and externalizing problems at 24-months. Latent growth models indicated direct effects of: (1) maternal prenatal wellbeing on externalizing problems at 24 months; and (2) paternal prenatal wellbeing on socio-emotional problems at 14 months. Internalizing symptoms at 24 months showed only indirect associations with parental wellbeing, with couple relationship quality playing a mediating role. Our findings highlight the importance of prenatal exposure to parental mood disturbance and demonstrate that, even in a low-risk sample, poor couple relationship quality explains the intergenerational stability of internalizing problems.

Parental Wellbeing, Couple Relationship Quality and Children's Behavior Problems in the First Two Years of Life.

Exposure to maternal perinatal mood disturbance adversely affects children's socio-emotional, behavioral and cognitive development (Stein et al., 2014). As well as influencing diverse child outcomes, the effects of exposure to maternal perinatal mood disturbance are remarkably persistent. For example, early exposure to maternal symptoms of depression or anxiety predicts reduced academic achievement and poorer behavioral adjustment in adolescence (e.g., Pearson et al., 2013). Exposure to fathers' perinatal mood disturbance also has long-term consequences on child adjustment (for a systematic review: Sweeney & MacBeth, 2016). Given the complexity of within-family processes that mediate and moderate parental influences on child outcomes (e.g., Cummings, Keller & Davies, 2005) and the steady rise in fathers' involvement in childcare (Bianchi, Robinson, & Melissa, 2006), a dual focus on the impact of mothers' and fathers' wellbeing on child adjustment is important from scientific and societal perspectives. Early clinical studies showed that paternal psychiatric problems amplify the impact of maternal depression (e.g., Conrad & Hammen 1993), but the current study is one of the first community studies to consider the impact of maternal and paternal perinatal mood disturbance on child adjustment in tandem.

Consistent with evidence for assortative mating, mothers and fathers show significant concordance in perinatal mood disturbance (Paulson & Bazemore, 2010), providing a valuable opportunity to investigate buffering effects of partner wellbeing (e.g., attenuated impact of maternal depressive symptoms in the context of low paternal symptomatology). Pathways between parental depression and child outcomes may also be similar in nature for mothers and fathers. For example, direct genetic effects (Harold et al., 2017) and indirect effects of marital conflict (Hanington et al., 2012) each contribute to associations between child problems and wellbeing in both mothers and fathers. Rather than reflecting the effects

of emotional contagion, the emotional security hypothesis (Davies & Cummings, 1994) suggests that child wellbeing is adversely affected by any factor that threatens children's feelings of safety and security. Supporting this hypothesis, meta-analytic data from 146 studies of 5 to 18 year old children and youths indicates moderate associations between interparental conflict child adjustment (Buehler et al., 1997). Meta-analytic evidence from 39 studies points to strong associations between interparental conflict and parenting behavior, supporting the view that there are spill-over effects of couple conflict (Krishnakumar & Buehler, 2000). Interparental conflict therefore provides a salient example of a family-wide stressor that may mediate associations between parental wellbeing and child adjustment.

In contrast, biologically mediated effects, such as fetal exposure to stress hormones (Talge et al., 2007), are specific to mothers. The meta-analytic finding that associations between child externalizing problems and parental depression weaken with child age for maternal depression but strengthen with child age for paternal depression (Connell & Goodman, 2002) also suggests distinct underlying mechanisms. Indeed, while reduced sensitivity to infant cues and needs appears to mediate the impact of maternal depression on child outcomes (Bernard et al., 2018), effects of paternal perinatal mood disturbance may rely on contextual mediators such as marital conflict (Sweeney & MacBeth, 2016). Moreover, in contrast to many potential mediators (e.g., parenting quality) that appear salient in the context of low socio-economic status (SES) (e.g., Pearson, Evans & Kounali, 2013), couple relationship problems are linked with symptoms of depression and lead to adverse child outcomes even in relatively low-risk samples (Cummings, Keller & Davies, 2005).

Similarities and contrasts between parents might also be expected with regards to the specific impact of parental perinatal mood disturbance on internalizing problems (i.e., emotional problems) *versus* externalizing problems (e.g., hyperactivity, conduct problems). Supporting the developmental psychopathology notion of multi-finality (Cicchetti & Rogosch

1996), meta-analytic findings indicate that maternal symptoms of depression show similarly small associations with children's internalizing and externalizing problems (Connell & Goodman, 2002). However, it would, be premature to conclude that the *mechanisms* underpinning these effects of exposure to parental mood disturbance are also non-specific. For example, while paternal and maternal depression show similar links with externalizing problems, maternal depression appears especially salient for internalizing problems (e.g., Connell & Goodman, 2002). Unfortunately, with few notable exceptions (e.g., Ramchandani et al., 2008), studies of the impact of fathers' perinatal depressive symptoms have typically not distinguished between internalizing and externalizing problems. It is therefore difficult to establish whether similar or distinct mechanisms underpin associations between poor paternal wellbeing and children's internalizing and externalizing problems. A further goal of the current study was to address this second gap in the literature.

Perhaps the most striking limitation of existing research concerns the scarcity of studies that include multiple assessments of parental mood disturbance. Reflecting this gap, the meta-analysis conducted by Goodman et al. (2011) focused on moderation effects of contextual factors (e.g., family income), but did not include sufficient studies with multiple assessments of mood disturbance to enable moderating effects of chronicity of exposure to be examined. Moreover, of the 21 articles reviewed by Sweeney and MacBeth (2016), only those based on the Avon Longitudinal Study of Parents and Children (Hanington et al., 2010; 2012; Ramchandani et al., 2005; 2008) included perinatal paternal wellbeing at more than one time-point. As a result, the independence of associations between child outcomes and prenatal *versus* postnatal paternal wellbeing remains unclear.

In addition, although some studies have adopted latent growth models to examine how exposure to parental perinatal mood disturbance affects children's developmental trajectories (e.g., Garber et al., 2012) no study has yet, to our knowledge, applied latent

growth models to investigate how the trajectory of parental mood disturbance contributes to child outcomes. This is important for at least two reasons. First, although studies show associations between fetal exposure to maternal stress and child psychopathology (Talge et al., 2007), the uniqueness of these associations from effects of postnatal exposure to maternal stress remains under-investigated (Van Battenburg-Eddes et al., 2013). Second, fine-grained temporally-sensitive analyses may elucidate mechanisms that have either domain-specific (i.e., on internalizing or externalizing) or parent-specific effects. The current study therefore obtained self-report measures from expectant first-time mothers and fathers who were followed up at three postnatal time points (4-, 14- and 24-months), and applied latent growth models to compare the relative salience of prenatal intercepts and postnatal slopes for mothers' and fathers' wellbeing as predictors of both early internalizing and externalizing problems.

In sum, we sought to examine for the first time the relative influence of both mothers' and fathers' pre- and postnatal wellbeing on children's adjustment at 14 and 24-months of age, controlling for parents' prior history of poor wellbeing. Our use of latent growth curve analyses enabled us to examine how changes over time in parental wellbeing were related to child outcomes, while the inclusion of prenatal measures of parental wellbeing allowed greater clarity in interpreting associations between parental wellbeing and child outcomes. Our design enabled us to examine the unique and overlapping influence of both mothers and fathers and to assess the specificity of effects on child outcomes by examining early externalizing and internalizing symptoms in the study children. In addition, we investigated the potential mediating effects of variation in couple relationship quality, assessed via multi-informant measures. In doing so, our study sought to distinguish biological (e.g., fetal exposure to maternal distress as indicated by unique effects of maternal prenatal wellbeing on child adjustment) and social (e.g., unique effects of interparental conflict on child adjustment)

mechanisms underpinning the links between parental wellbeing and child adjustment in the first two years of life.

Method.

Participants.

We recruited 484 expectant couples attending antenatal clinics, ultrasound scans, and parenting fairs in the East of England, New York State and the Netherlands. To be eligible participants had to: (1) be first-time parents and currently living together (being married was not an inclusion criterion), (2) expecting delivery of a healthy singleton baby, (3) planning to speak English (or Dutch) as a primary language with their child, (4) expecting to live in the area for the next three years, and (5) have no disclosed history of severe mental illness (i.e., psychosis or bipolar disorder) or substance misuse. We selected first-time parents to minimize confounding effects of parity and because the transition to parenthood is often perceived as a more significant life-event than the arrival of a second child. Ten families were not eligible for follow-up when the infants were 4 months old due to birth complications or having left the country. Of the remaining 474 families, 23 families withdrew and 445 (93.8%) agreed to a home visit when their infants (224 boys, 221 girls) were 4 months old, M_{Age} = 4.26 months, *SD* = 0.46 months, range: 2.97 – 6.23 months.

At the next time point, 13 of the 451 remaining families became ineligible for follow-up due to having left the country. Six families withdrew from the study and 6 families who missed appointments at 4-months took part. Thus, 422 out of 438 eligible families (96.3%) took part when their infants (214 boys, 208 girls) were 14 months old, M_{Age} = 14.42 months, *SD* = 0.57 months, range: 9.47 – 18.40 months. At the final time point, 12 of the remaining 438 families became ineligible for follow-up due to having left the country. Sixteen families declined to take part in the home visit and 10 families returned to the study having missed their previous appointment. Thus, 404 out of 426 eligible families (94.8%) took part when

their children (209 boys, 195 girls) were 24 months old, M_{Age} = 24.47 months, *SD* = 0.78 months, range: 19.43 – 26.97 months. At the birth of their child mothers were, on average 32.24 years old, *SD* = 3.92, range: 21.16 – 43.76 years, and fathers were 34.07 years old, *SD* = 4.73, range: 23.10 – 55.95 years. Both mothers and fathers had high levels of educational attainment: 84.3% of mothers and 76.3% of fathers had an undergraduate degree or higher. During the prenatal phase 76.7% of mothers and 92.8% of fathers were in full-time paid employment.

Procedure.

The study protocol was approved by the National Health Service (NHS UK) Research Ethics Committee. Following written consent, expectant parents completed an online questionnaire and in-person interview during the final month of their pregnancy (estimated as 1-month before the due date). Families participated in a 4-month, 14-month and 24-month questionnaire and home visit. Questionnaires were administered in a fixed order at each time point: Demographic questions, General Health Questionnaire, Centre for Epidemiological Studies Depression Scale, and State-Trait Anxiety Inventory. Mothers and fathers completed the Couple Satisfaction Questionnaire and Conflict Tactics Scale at 4 months. Mothers and fathers completed the Infant Behavior Questionnaire at 4 months, the Brief Infant-Toddler Social and Emotional Assessment at 14 months. Mothers in all three sites and fathers in the UK and Netherlands completed the Strengths and Difficulties Questionnaire at 24 months.

Measures.

Parental Wellbeing. Mothers and fathers completed three questionnaires to record symptoms of anxiety and depression at each timepoint: the twenty-item Centre for Epidemiological Studies Depression Scale (CESD20) (Radloff, 1977), the twelve-item General Health Questionnaire (GHQ12) (Goldberg, Gater, Ustun, Piccinelli, Gureje & Rutter, 1997), and the six-item State-Trait Anxiety Inventory (STAI6) (Speilberger et al., 1983). The

summed scale items for each measure showed excellent internal consistency in mothers and fathers across all time points of the study (see Table 1). Higher scores on each scale indicated greater levels of symptoms.

Child Behavior Problems. Prior to the 4-month home visit mothers and fathers completed the Brief Infant Behavior Questionnaire, a questionnaire suitable for rating 3- to 12-month-old infants' behavior (Putnam, Helbig, Garstein, Rothbart & Leerkes, 2013). Parents rated the frequency of behaviors from never (1) to always (7) on seven items measuring Distress to Limitations. Items were averaged across mothers and fathers and then summed to create a single score with higher scores indicating greater levels of negative affect and distress. Mothers and fathers completed the *Brief Infant-Toddler Social and Emotional Assessment* (BITSEA) (Briggs-Gowan et al., 2004) as part of the 14-month questionnaire. The BITSEA consists of 30 items measuring internalising symptoms, externalising symptoms, dysregulation, and behaviors classed as 'red flags' (e.g., 'does not make eye contact') and is suitable for rating children aged between 12 and 24 months. Each item was rated as '0' (Not true/rarely), '1' (Somewhat true/sometimes) or '2' (Very true/often). Items were averaged across parents and summed together to create a total problems score. Mothers in all three sites completed the *Strengths and Difficulties Questionnaire* (SDQ) (Goodman, 2001) as part of the 24-month questionnaire. Fathers in the UK and Netherlands also completed the SDQ. In response to negative feedback from fathers in the New York sample (who worked longer hours than fathers in the UK or Dutch samples) regarding the length of the online questionnaire, only maternal ratings on the SDQ were available for this site. The SDQ consists of 20 items measuring emotional problems, conduct problems, hyperactivity, and peer problems and is suitable for rating children aged between 2 and 4 years (note that it was not possible therefore to administer this measure at 14 months). Each item is rated as '0' (not true), '1' (somewhat true) or '2' (certainly true). Where available, items were averaged

across mothers and fathers and summed together to create an 'internalizing' score and an 'externalizing' score with higher scores indicating more problems in that domain (Goodman, Lamping, & Ploubidis, 2010). We compared our sample against population norms for British 2 to 3 year olds on SDQ total difficulty scores (M = 7.3, SD = 5.0) (i.e., the sum of internalizing and externalizing scores) (Goodman, 2014). Our sample of children had significantly elevated levels of problems on the SDQ, M = 8.90, SD = 3.59, t (363) = 8.53, p < .0001, M_{Diff} = 1.60, 95%CI [1.23, 1.97].

Relationship Quality. Mothers and fathers completed the 16-item Couple Satisfaction Index (CSI-16) (Funk & Rogge, 2007) and the 6-item Conflict Tactics Scale (CTS) (Strauss et al., 1996). In the CSI parents rated their level of agreement to items measuring their overall happiness with their relationship, the extent to which their relationship is rewarding, and the emotions evoked by their relationship. Items were summed together to create a total score for both mothers and fathers. In the 6-item CTS parents reported on the frequency with which they engaged in negative interactions with their partner. Negative items were reverse-scored so high scores reflected low levels of conflict.

Covariates. Parents also provided information about their highest level of educational attainment during the prenatal phase. At the prenatal visit parents also reported on whether they had ever been diagnosed with depression or anxiety prior to their pregnancy. At each postnatal phase parents completed the Ladder of Subjective Social Status (Singh-Manoux, Adler, & Marmot, 2003) in which their placement on a 10-rung ladder was used to indicate their self-perceived education, income and employment. We calculated the mean level of perceived social standing for mothers and for fathers across the three postnatal waves. Parental involvement in childcare duties was assessed at each time point using the *Who Does What Questionnaire* (Cowan & Cowan, 1988). Both parents reported on how day-to-day childcare tasks were shared between the respondent and their partner using a 9-point scale

ranging from 1 (‘I do it all’) to 9 (‘My partner does it all’). We reverse coded the items for fathers so that a 9 indicated that the father had sole responsibility for a given childcare task. We averaged items within each time point. Maternal and paternal ratings of paternal involvement in childcare activities were strongly correlated at the 4-, r (372) = .63, 14-, r (339) = .66, and 24-month, r (298) = .58, visits, all ps < .001. We created a paternal involvement in childcare score using an average of all ratings, α = .82. High scores indicated greater paternal involvement in childcare. While it would have been useful to also covary hours of employment for each parent, this measure was not available across all three sites. Moreover, multi-informant, multi-timepoint ratings of each parent’s involvement in childcare are, one might argue, of more direct relevance to child outcomes.

Results

Analytic Strategy.

We analysed the data using a latent variable framework in *Mplus* (Version 8) (Muthen & Muthen, 2017). We used structural equation modelling to examine relations between variation in initial levels and slopes of parental wellbeing as well as couple relationship quality with children’s internalizing and externalizing symptoms at 24 months (controlling for stability in problem behaviors over time). We used a maximum likelihood estimator with robust standard errors (MLR) in each of our models to account for the non-normal distribution of our indicators. We evaluated model fit using three primary criteria: Comparative Fit Index (CFI) > .90, Tucker Lewis Index (TLI) > .90, Root Mean Square Error of Approximation (RMSEA) < .08 (Brown, 2015). Table 1 illustrates the extent of missing data on each questionnaire. Missing data were judged to be missing at random (see Online Appendix). We used a full information approach (where model parameters and standard errors were estimated using all available data) under the assumption that data were missing at

random so that all eligible families who participated in the prenatal and at least one follow-up phase (N = 438) were included.

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Table 1 shows the descriptive statistics for each study measure. Note that at the prenatal phase 31.5% of mothers and 19.3% of fathers scored at or above the clinical cut-off (≥3) on the GHQ12 (Goldberg et al., 1997). The Online Appendix contains information about how we constructed the latent variables. Table 2 shows the standardized estimates for the covariances between each of the study variables. We used autoregressive modelling to examine the developmental relations between maternal and paternal wellbeing intercepts and slopes and children's behavior problems at 4, 14, and 24 months. We controlled for stability in behavior problems over time by regressing the 24-month internalizing and externalizing latent factors onto the 14-month problem behavior latent factor. This 14-month score was in turn regressed onto the 4-month problem behavior latent factor. We regressed each of the behavior problem latent factors and the maternal and paternal latent growth factors onto socio-economic status, two dummy variables representing country of origin with the UK as the reference group, paternal involvement in childcare, and child gender (1 = male, 2 = female) to control statistically for the influence of these variables. To examine cross-lagged effects we regressed the child problem behavior latent factors onto maternal and paternal wellbeing intercepts and slopes. We also examined the cross-lagged association between 4-month problem behaviors and maternal and paternal wellbeing slopes. Our model capitalized on the availability of developmental longitudinal data examining the impact of prenatal parental wellbeing (i.e., the intercepts) on later child outcomes while controlling for stability in children's problem behaviors and parental wellbeing trajectories in the postnatal period. Our model also examined the impact of child behavior on later parental wellbeing while controlling for initial levels of parental wellbeing.

This initial model provided an acceptable fit to the data, χ^2 (117) = 275.882, CFI = 0.938, TLI = 0.900, RMSEA = 0.056, 90%CI [0.047, 0.064]. Table 3 (Model 1) shows the path coefficients for each child outcome in the model. The full output is in Table S2. There was rank-order stability in children's behavior problems across the first two years of life such that children with high levels of distress at 4 months were more likely to have high levels of behavior problems at 14 months and high levels of externalizing and internalizing problems at 24 months. Maternal wellbeing intercepts were uniquely associated with 4-month problem behaviors and 24-month externalizing behaviors. Paternal wellbeing intercepts were uniquely associated with 14-month behavior problems.

Next, we examined the influence of parental relationship quality in the early postnatal period on children's behavior problems at 4, 14 and 24 months. To this end, we regressed the 14- and 24-month child problem behavior latent factors onto the couple relationship quality latent factor. We included each of the covariates reported in the first model. This model provided an acceptable fit to the data, χ^2 (64) = 102.442, CFI = 0.966, TLI = 0.938, RMSEA = 0.037, 90%CI [0.023, 0.050]. Table 3 (Model 2) shows the path estimates for each child outcome in the model. The full output is in Table S3. Couple relationship quality at 4 months had a unique effect on 24-month internalizing. Children whose parents' relationship was characterised by high levels of satisfaction and low levels of conflict in the early postnatal period were less likely to have internalizing problems at 24 months. Couple relationship quality was not related to any other measure of child behavioral problems.

In our final model, we investigated whether couple relationship quality at 4 months mediated the link between initial levels of parental wellbeing and later child behavioral problems. We regressed problem behavior latent factors onto maternal and paternal wellbeing intercepts and slopes and 24-month behavior problem latent factors onto 4-month couple relationship quality. We omitted the direct paths between maternal and paternal intercepts

and 24-month internalizing as neither path was significant in the earlier model. To control for the influence of postnatal parental wellbeing, we regressed the 24-month problem behavior latent factors onto both maternal and paternal wellbeing slopes. We regressed couple relationship quality at 4 months onto parental wellbeing intercepts to investigate the impact of prenatal wellbeing on postnatal relationship quality. Parental wellbeing slopes were in turn regressed onto 4-month couple relationship quality. We controlled for history of depression or anxiety prior to pregnancy, socioeconomic status, country of origin, paternal involvement in childcare, and child gender. Predictor variables and measures within the same timepoint covaried in the model.

The model provided an acceptable fit to the data, χ^2 (215) = 386.980, CFI = 0.944, TLI = 0.917, RMSEA = 0.043, 90%CI [0.036, 0.050]. Figure 1 shows a simplified path diagram depicting the results in mothers (Panel A) and fathers (Panel B). The full model output is in Table S4. There was a significant indirect effect of maternal wellbeing intercepts on 24-month internalizing via couple relationship quality at 4 months, β= 0.085, SE = 0.035, Z = 2.424, p = 0.015, 95%CI [.016, .154], and a significant indirect effect of paternal wellbeing intercepts on 24-month internalizing via couple relationship quality at 4 months, β= 0.067, SE = 0.033, Z = 2.069, p = 0.039, 95%CI [.004, .131]. There was a significant indirect effect of paternal wellbeing intercepts on 24-month externalizing via 14-month behavior problems, β= 0.100, SE = 0.036, Z = 2.747, p = 0.006, 95%CI [.029, .171]. Both maternal and paternal prenatal wellbeing contribute to children's externalizing problems.

We tested two follow-up models to examine the interactions between the effects of maternal and paternal prenatal and postnatal wellbeing on children's adjustment. To this end we extended the final model by regressing child internalizing and externalizing onto a multiplicative interaction between (1) the maternal and paternal latent intercepts in one model and (2) the maternal and latent paternal slopes in a separate model. The latent intercept

interaction term did not uniquely predict internalizing, *Std. Est.* = .03, *SE* = .03, *Z* = 1.06, *p* = .29, 95%CI [-.03, .10], or externalizing, *Std. Est.* = -.07, *SE* = .06, *Z* = -1.09, *p* = .27, 95%CI [-.18, .05]. The latent slope interaction term did not uniquely predict internalizing, *Std. Est.* = -.01, *SE* = .06, *Z* = -0.24, *p* = .81, 95%CI [-.12, .10], or externalizing, *Std. Est.* = .07, *SE* = .05, *Z* = 1.49, *p* = .14, 95%CI [-.02, .17]. In two further models we investigated the effect on child adjustment of the interactions between (1) maternal intercepts and paternal slopes and (2) between paternal intercepts and maternal slopes. The first interaction did not predict internalizing, *Std. Est.* = .03, *SE* = .04, *Z* = 0.67, *p* = .50, 95%CI [-.10, .20], or externalizing, *Std. Est.* = .04, *SE* = .04, *Z* = 0.96, *p* = .34, 95%CI [-.05, .16]. Likewise the second interaction did not predict internalizing, *Std. Est.* = .05, *SE* = .08, *Z* = 0.54, *p* = .59, 95%CI [-.12, .21], or externalizing, *Std. Est.* = .03, *SE* = .10, *Z* = 0.30, *p* = .76, 95%CI [-.17, .23]. These results suggest that the effects of paternal and maternal wellbeing on child adjustment are distinct.

Discussion

The objectives of this longitudinal study of 438 mothers and fathers and their first-born children were to identify whether pre- and postnatal measures of parental wellbeing made unique contributions to variation in children's early adjustment (adopting a dual focus on behavioral and emotional problems) and to examine potential mediating effects of couple relationship quality. Beyond stability in both parental and child measures, our analyses showed direct effects of prenatal wellbeing in mothers on externalizing problems at 24 months, even when prior history of depression and anxiety and postnatal exposure to poor maternal wellbeing were controlled. Likewise, variation in fathers' prenatal wellbeing was directly related to socio-emotional problems at 14 months, which in turn mediated the association between fathers' prenatal wellbeing and externalizing problems at 24 months. In contrast, variation in couple relationship quality fully mediated effects of parental wellbeing on internalizing symptoms at 24 months.

Findings from our latent growth models of both maternal and paternal wellbeing support the view that symptom severity is stable across the transition to parenthood (Stein et al., 2014). Given this stability, it is striking that both mothers' and fathers' prenatal wellbeing showed unique predictive associations with children's behavioral problems at 24 months. This complements existing evidence for a link between paternal prenatal mental health and children's adjustment at 36-months (Kvalevaag et al., 2013), and extends this work by including postnatal symptoms. In contrast with the findings from prior studies, both maternal and paternal prenatal wellbeing in the current study showed unique associations with child adjustment. This may be because our analyses focused on the first two years of life when infants have particularly extended periods of contact with their parents. In contrast, previous investigations have examined how exposure to poor parental wellbeing affects child adjustment using age-groups that are often exposed to non-familial environments, such as the preschool years (e.g., Gross et al., 2008), early school-age (e.g., Van Baternburg et al., 2013) or adolescence (e.g., Shelton et al., 2008). Our focus on the first two years of life was motivated by meta-analytic evidence (Goodman et al., 2011) that early exposure amplifies the impact of maternal depression on child adjustment. Factors that may contribute to this effect include: heightened vulnerability in young children (i.e., infancy as a 'sensitive period'); buffering effects of early healthy development on the impact of later exposure (e.g., the acquisition of socio-cognitive and emotion regulation skills enables children to make adaptive responses); and age-related increases in the salience of children's relationships with non-parental caregivers and peers.

At first glance, unique associations between fathers' prenatal wellbeing and child externalizing problems suggest genetic effects, because socially mediated effects of postnatal exposure have been controlled. Our results are consistent with genetically sensitive adoption studies, which show that fetal exposure to maternal depression is associated with later

externalizing problems in adopted children (Pemberton et al., 2010). However, it is worth noting that prenatal wellbeing showed unique effects on children's externalizing over and above effects of either paternal or maternal pre-pregnancy history of depression / anxiety, a possible marker of genetic predisposition (Davey Smith, 2008; Van Battenburg et al., 2013). Given the concordance in levels of wellbeing in expectant mothers and fathers, an alternative explanation is that mothers' exposure to partners' difficulties mediated the association between fathers' prenatal wellbeing and children's externalizing problems.

In contrast with the findings for children's externalizing problems, prenatal parental wellbeing showed no direct association with child internalizing problems at 24 months. Instead, our model showed that postnatal couple relationship quality mediated the association between prenatal wellbeing and internalizing problems at 24 months, even when effects of postnatal exposure to poor parental wellbeing were considered. Our results extend existing meta-analytic evidence (based largely on older children), which shows consistent associations between interparental conflict and child maladjustment, by providing evidence that parental relationship quality in the first months of life may have adverse consequences on children as early as the second year of life (Buehler et al., 1997; Rhoades, 2008). In addition our results support evidence that marital conflict plays a mediating role in the associations between maternal and paternal perinatal wellbeing and behavior problems at age 42 months (Hannington et al., 2012). While our models elucidate one mechanism by which parental wellbeing impacts on child internalizing, understanding the cognitive and physiological processes by which exposure to interparental conflict gives rise to internalizing problems requires further research (Cummings & Davies, 2002; Rhoades, 2008).

Our results contribute to the field by demonstrating that couple relationship difficulties play a mediating role in the intergenerational transmission of internalizing problems from as early as 24 months of age. In addition, our results indicated domain-

specific pathways. That is, interparental conflict played a mediating role in relation to children's internalizing problems but no parallel mediating effect was found in relation to children's externalizing problems. Note that this second point contrasts with South et al.'s (2011) conclusion that interparental distress had a broad, non-specific, impact upon child psychopathology. Arguably, this contrast hinges on our focus on the first years of life, in which externalizing problems are so common as to be developmentally normative. Further replication work involving older children is needed.

Caveats and Conclusions.

Two sets of limitations deserve note. First, despite the three-site international design of our study, the relatively small Dutch and American subsamples precluded analysis of the cross-country consistency of study findings. There are clear contrasts in health and social care systems in the USA, UK and Netherlands (e.g., statutory paid maternity leave entitlement is zero weeks in the USA, 16 weeks in the Netherlands and 39 weeks in the UK) (OECD, 2019). In view of these contrasts, it would be interesting to explore differences between sites in future work using larger samples. While the demographically and medically low-risk nature of the sample ensured a clean test of how parental wellbeing influences child adjustment (by limiting potential socioeconomic confounds), the relatively homogeneous sample limits the generalizability of our results. For instance, meta-analytic data indicate that socio-economic status is a modest but significant predictor of divorce (Roberts et al., 2007). Inclusion of a more diverse sample would provide an opportunity to examine whether heightened interparental conflict mediates the association between parental wellbeing and child outcomes. In addition, meta-analytic evidence (Grigoriadis et al., 2013) indicates that prenatal depression is associated with premature birth and, in low-/middle-income countries at least, with low birthweight. Thus, several different pathways are likely to underpin the relation between prenatal exposure to poor parental wellbeing and child outcomes.

Second, our analyses drew exclusively on parent questionnaire data, such that further work including an independent measure of children's behavior problems is needed (e.g., Cummings, Keller & Davies, 2005). Interestingly, just one of the 21 studies reviewed by Sweeney and MacBeth (2016) included non-parental ratings of children's adjustment, suggesting that a key methodological challenge for future studies in this field is to assess the importance of informant effects. Further work involving directly observed parent-child interactions and physiological measures of parent and child stress will help to identify the processes that underpin associations between parental wellbeing and child adjustment.

The current study stands apart from the field in its use of latent growth models to examine the unique contribution of pre- and postnatal wellbeing in both mothers and fathers as predictors of child adjustment in the first two years of life. Our results demonstrate that both maternal and paternal perinatal wellbeing have a unique impact on child adjustment in the first two years of life. Our results also suggest that parental wellbeing is linked to child externalizing and internalizing problems via distinct mechanisms. Specifically, interparental relationship quality appears to mediate associations between parental wellbeing and child internalizing (Hanington et al., 2012), but not child externalizing. In addition, by statistically controlling for postnatal wellbeing trajectories (i.e., postnatal environmental influence) and parents' prior history of depression and anxiety (i.e., a proxy indicator for genetic predisposition), our results provide strong evidence for unique prenatal effects on later child externalizing (Van Battenburg-Eddes et al., 2013; Davey-Smith, 2008). Together these results highlight the prenatal period as a salient window for research on clinical interventions to improve couple relationship quality and wellbeing in both expectant mothers and expectant fathers, with potential 'downstream' benefits for child outcomes.

References

Bernard, K., Nissim, G., Vaccaro, S., Harris, J.L., & Lindhiem, O. (2018). Association between maternal depression and maternal sensitivity from birth to 12 months: a meta-analysis. *Attachment and Human Development*, DOI: 10.1080/14616734.2018.1430839

Bianchi, S.M., Robinson, J.P., & Milke, M.A. (2006). *The Changing Rhythms of American Family Life*. New York, USA: Russell Sage Foundation.

Briggs-Gowan, M.J., Carter, A.S., Irwin, J.R., Wachtel, K. & Cicchetti, D.V. (2004). The Brief Infant-Toddler Social and Emotional Assessment: Screening for social-emotional problems and delays in competence. *Journal of Pediatric Psychology*, *29*, 143 – 155.

Brown, T. A. (2015). *Confirmatory Factor Analysis for Applied Research (2nd Ed.)*. London: The Guilford Press.

Buehler, C., Anthony, C., Krishnakumar, A., Stone, G., Gerard, J., & Pemberton, S. (1997). Interparental conflict and youth problem behaviors: A meta-analysis. *Journal of Child and Family Studies, 6*, 233-247.

Cicchetti, D. & Rogosch, F.A. (1996). Equifinality and multifinality in developmental psychopathology. *Development and Psychopathology, 8*, 597 – 600.

Connell, A.M. & Goodman, S.H. (2002). The association between psychopathology in fathers versus mothers and children's internalizing and externalizing problems: a meta-analysis. *Psychological Bulletin, 128*, 746 – 773.

Conrad, M. & Hammen, C. (1993). Protective and resource factors in high- and low-risk children: A comparison of children with unipolar, bipolar, medically ill, and normal mothers. *Development and Psychopathology, 5*, 593 – 607.

Cowan, C.P. & Cowan, P.A. (1988). Who does what when partners become parents: Implications for men, women, and marriage. *Marriage and Family Review, 12*, 105-131.

Cummings, E.M., Keller, P.S., & Davies, P.T. (2005). Towards a family process model of maternal and paternal depressive symptoms: exploring multiple relations with child and family functioning. *Journal of Child Psychology and Psychiatry, 46*, 479 – 489.

Cummings, E.M. & Davies, P.T. (2002). Effects of marital conflict on children: recent advances and emerging themes in process-oriented research. *Journal of Child Psychology and Psychiatry, 43,* 31-63.

Davey Smith, G. (2008). Assessing intrauterine influences on offspring health outcomes: Can epidemiological studies yield robust findings? *Basic and Clinical Pharmacology and Toxicology, 102,* 245 – 256.

Davies, P.T. & Cummings, E.M. (1994). Marital conflict and child adjustment: An emotional security hypothesis. *Psychological Bulletin, 116,* 387 – 411.

Eley, T.C., McAdams, T.A., Rijsdijk, F.V., Lichtenstein, P., Narusyte, J., Reiss, D., Spotts, E.L., Ganiban, J.M., Neiderhiser, J.M. (2015). The intergenerational transmission of anxiety: A children-of-twins study. *American Journal of Psychiatry, 172,* 630-637.

Funk, J.L. & Rogge, R.D. (2007). Testing the ruler with item response theory: Increasing precision of measurement for relationship satisfaction with the Couples Satisfaction Index. *Journal of Family Psychology, 21,* 572 – 583. doi: 10.1037/0893-3200.21.4.572

Garber, J., Keiley, M.K., & Martin, C. (2002). Developmental trajectories of adolescents' depressive symptoms: predictors of change. *Journal of Consulting and Clinical Psychology, 70,* 79 – 95.

Goldberg, D., Gater, R., Sartorius, N., Ustun, T. B., Piccinelli, M., Gureje, O., & Rutter, C. (1997). The validity of two versions of the GHQ in the WHO study of mental illness in general health care. *Psychological Medicine, 27,* 191-197.

Goodman, R. (2001). Psychometric properties of the Strengths and Difficulties Questionnaire. *Journal of the American Academy of Child and Adolescent Psychiatry, 40,* 1337 – 1345.

Goodman, R. (2014). *Normative SDQ Data from Britain for 2-4 year olds*. Downloaded from: https://sdqinfo.org/norms/UK3yearNorm.html

Goodman, A., Lamping, D.L., & Ploubidis, G.B. (2010). When to use broader internalizing and externalizing subscales instead of the hypothesized five subscales on the Strengths and Difficulties Questionnaire: data from British parents, teachers and children. *Journal of Abnormal Child Psychology, 38,* 1179 – 1191.

Goodman, S.H., Rouse, M.H., Connell, A.M., Broth, M.R., Hall, C.M., & Heyward, D. (2011). Maternal depression and child psychopathology: A meta-analytic review. *Clinical, Child, and Family Psychology Review, 14, 1 – 127*.

Grigoriadis S, VonderPorten EH, & Mamisashvili L. (2013). The impact of maternal depression during pregnancy on perinatal outcomes: a systematic review and meta-analysis. *Journal of Clinical Psychiatry, 74,* e321–341.

Gross, H.E., Shaw, D.S., Moilanen, .L., Dishion, T.J., Wilson, M.N. (2008). Reciprocal models of child behavior and depressive symptoms in mothers and fathers in a sample of children at risk for early conduct problems. *Journal of Family Psychology, 22,* 742-751.

Hanington, L., Heron, J., Stein, A., & Ramchandani, P. (2012). Parental depression and child outcomes – is marital conflict the missing link? *Child Care Health and Development, 38,* 520 – 529.

Hanington, L., Ramchandani, P., & Stein, A. (2010). Parental depression and child temperament: Assessing child to parent effects in a longitudinal population study. *Infant Behavior and Development, 33,* 88 – 95.

Harold, G.T., Leve, L.D., & Sellers, R. (2017). How can genetically informed research help inform the next generation of interparental and parenting interventions? *Child Development, 88,* 446-458.

Kvalevaag, A.L. Ramchandani, P.G., Hove, O., Assmus, J., Eberhard-Gran, M. & Biringer, E. (2013). Paternal mental health and socioemotional and behavioral development in their children. *Pediatrics, 131,* 463 – 469.

Krishnakumar, A. & Buehler, C. (2000). Interparental conflict and parenting behaviors: A meta-analytic review. *Family Relations, 49*, 25 – 44.

Muthèn, L. K., & Muthèn, B. (2017). *Mplus: Statistical Analysis With Latent Variables. User's Guide.* (8th ed.). Los Angeles, CA.: Muthèn and Muthèn.

OECD (2019). *OECD Family Database: Key characteristics of parental leave systems*. Downloaded from: http://www.oecd.org/els/family/database.htm.

Paulson, J.F. & Bazemore, S.D. (2010). Prenatal and postpartum depression in fathers and its association with maternal depression: A meta-analysis. *JAMA, 303,* 1961-1969.

Pearson, R.M., Evans, J., Kounali, D., Lewis, G., Heron, J., Ramchandani, P.G., O'Connor, T.G., & Stein, A. (2013). Maternal depression during pregnancy and the postnatal period: risks and possible mechanisms for offspring depression at age 18 years. *JAMA Psychiatry, 70,* 1312 – 1319.

Pemberton, C.K., Neiderhiser, J.M., Leve, L.D., Natsuaki, M.N., Shaw, D.S., Reiss, D. & Ge, X. (2010). Influence of parental depressive symptoms on adopted toddler behaviors: An emerging developmental cascade of genetic and environmental effects. *Development and Psychopathology, 22,* 803 – 818.

Putnam, S. P., Helbig, A. L., Garstein, M. A., Rothbart, M. K., & Leerkes, E. (2014). Development and assessment of short and very short forms of the infant behavior questionnaire-revised. *Journal of Personality Assessment, 96,* 445–458.

Radloff, L. (1977). The CES-D Scale: A Self-Report Depression Scale for Research in the General Population. *Applied Psychological Measurement, 1,* 385-401. doi: 10.1177/014662167700100306

Ramchandani, P.G., O'Connor, T.G., Evans, J., Heron, J., Murray, L., & Stein, A. (2008). The effects of pre- and postnatal depression in fathers: a natural experiment comparing the effects of exposure to depression on offspring. *Journal of Child Psychology and Psychiatry, 49,* 1069 – 1078.

Ramchandani, P., Stein, A., Evans, J., O'Connor, T.G. (2005). Paternal depression in the postnatal period and child development: A prospective population study. *Lancet, 365,* 2201 – 2205.

Rhoades, K.A. (2008). Children's responses to interparental conflict: A meta-analysis of their associations with child adjustment. *Child Development, 79,* 1942 – 1956.

Roberts, B.W., Kuncel, N.R., Shiner, R., Caspi, A. & Goldberg, L.R. (2007). The power of personality: The comparative validity of personality traits, socio-economic status, and cognitive ability for predicting important life outcomes. *Perspectives on Psychological Science, 2,* 313-345.

Schermerhorn, A.C., D'Onofrio, B.M., Turkheimer, E., Ganiban, J.M., Spotts, E.L., Lichtenstein, P., Reiss, D. & Neiderhiser, J.M. (2011). A genetically informed study of associations between family functioning and child psychosocial adjustment. *Developmental Psychology, 47,* 707 – 725.

Shelton, K.H., Harold, G.T., Fowler, T.A., Rice, F.J., Neale, M.C., Thapar, A., & Van Den Bree, M.B.M. (2008). Parent-child relations, conduct problems and cigarette use in adolescence: Examining the role of genetic and environmental factors on patterns of behavior. *Journal of Youth and Adolescence, 37,*1216-1228.

Singh-Manoux, A., Adler, N., & Marmot, M. (2003). Subjective social status: its determinants and its association with measures of ill-health in the Whitehall II study. *Social Science & Medicine, 56*, 1321 – 1333. doi: 10.1016/S0277-9536(02)00131-4

South, S.C., Krueger, R.F., & Iacono, W.G. (2011). Understanding general and specific connections between psychopathology and marital distress: A model based approach. *Journal of Abnormal Psychology, 120,* 935-947.

Spielberger, C., Gorsuch, R., Lushene, R., Vagg, P., & Jacobs, G. (1983). *Manual for the State-Trait Anxiety Inventory*. Palo Alto, CA: Consulting Psychologists Press.

Stein, A., Pearson, R.M., Goodman, S.H., Rapa, E., Rahman, A., McCallum, M., Howard, L.M., & Pariante, C.M. (2014). Effects of perinatal mental disorders on the fetus and child. *Lancet, 384*, 1800 – 1819.

Strauss, M.A., Hamby, S.L., Boney-McCoy, S. (1996). The revised Conflict Tactics Scale: Development and preliminary psychometric data. *Journal of Family Issues, 17*, 283-316. doi: 10.1177/019251396017003001

Sweeney, S. & MacBeth, A. (2016). The effects of paternal depression on child and adolescent outcomes: A systematic review. *Journal of Affective Disorders, 205*, 44-59.

Talge, N.M., Neal, C., & Glover, V. (2007). Antenatal maternal stress and long-term effects on child neurodevelopment: How and why? *Journal of Child Psychology and Psychiatry, 48*, 245 – 261.

Van Batenburg-Eddes, T., Brion, M.J., Henrichs, J., Jaddoe, V.W., Hofman, A., Verhulst, F.C., Lawlor, D.A., Davey-Smith, G., & Tiemeier, H. (2013). Parental depressive and anxiety symptoms during pregnancy and attention problems in children: A cross-cohort consistency study. *Journal of Child Psychology and Psychiatry, 54*, 591 – 600.

Table 1. *Descriptive Statistics.*

	Time 1 (Prenatal)				Time 2 (4 Months)				Time 3 (14 Months)				Time 4 (24 Months)			
	M	***SD***	**α**	***N***	***M***	***SD***	**α**	***N***	***M***	***SD***	**α**	***N***	***M***	***SD***	**α**	***N***
Child Measures																
IBQ Distress					3.41	0.92	.83	424								
BITSEA									10.52	4.55	.75	399				
SDQ Internalizing													2.97	2.05	.64	364
SDQ Externalizing													5.93	2.69	.70	364
Couple Relationship																
Maternal CSI16					68.16	11.37	.96	418								
Maternal CTS6					30.13	2.43	.64	418								
Paternal CSI16					67.76	11.48	.96	385								
Maternal CTS6					30.08	2.34	.64	385								
Maternal Wellbeing																
CESD20	9.67	5.88	.81	426	8.56	6.84	.87	419	9.01	7.20	.88	390	9.45	8.13	.91	356
GHQ12	1.97	2.16	.76	426	1.83	2.16	.79	421	1.80	2.45	.83	391	1.92	2.65	.86	357
STAI6	10.43	2.99	.76	426	10.45	3.07	.78	419	10.98	3.24	.80	390	10.80	3.20	.81	356
Paternal Wellbeing																
CESD20	7.34	5.97	.84	401	8.63	7.39	.88	385	9.31	7.54	.89	362	9.18	7.54	.88	327
GHQ12	1.37	2.01	.81	390	1.61	2.49	.85	390	1.61	2.53	.87	362	1.69	2.52	.86	330
STAI6	10.90	2.84	.71	402	10.80	3.34	.81	386	10.98	3.32	.81	362	10.90	3.39	.83	328
Socioeconomic Status																
Maternal Ladder													7.41	1.15	.85	437
Paternal Ladder													7.34	1.22	.84	437
Paternal Involvement													3.90	0.78	.82	434

Note. IBQ Distress = Infant Behavior Questionnaire Distress to Limitations Subscale. BITSEA = Brief Infant and Toddler Socio-Emotional Assessment. SDQ = Strengths and Difficulties Questionnaire. CSI16 = Couple Satisfaction Index. CTS6 = Conflict Tactics Scale. CESD20 =

Center for Epidemiological Studies Depression Scale. GHQ12 = General Health Questionnaire. STAI6 = State-Trait Anxiety Inventory. Ladder = Mean Rating from T2 to T4 on Ladder of Subjective Social Standing. Paternal Involvement = Mean Rating of Paternal Involvement in Childcare from T2 to T4.

Table 2. *Standardized Estimates for Latent Variable Covariances.*

		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1	T2 Behavior	-									
2	T3 Behavior	.56***	-								
3	T4 Internalizing	.23***	.37***	-							
4	T4 Externalizing	.33***	.59***	.19*	-						
5	T2 Couple Qual.	0	.03	-.23**	-.01	-					
6	SES	-.18**	-.14**	-.16*	-.13*	.12	-				
7	Mat. WB Intercept	.30***	.14*	.17**	.25***	-.39***	-.34***	-			
8	Mat. WB Slope	.16*	.06	.11	.06	-.21*	-.08	.14**	-		
9	Pat. WB Intercept	.25***	.24***	.19**	.16*	-.32***	-.22***	.29***	.12**	-	
10	Pat. WB Slope	.13*	.04	.10	.11	-.17*	-.14	.13**	.44***	.11**	-

*Note. ***p < .001. **p < .01. *p< .05.* T2 Behavior = 4-month problem behavior latent factor score. T3 Behavior = 14-month problem behavior latent factor score. T4 Internalizing = 24-month internalizing latent factor score. T4 Externalizing = 24-month externalizing latent factor score. T2 Couple Qual = 4-month couple relationship quality latent factor score. SES = socioeconomic status latent factor score. Mat. WB Intercept = Maternal wellbeing intercept latent factor score. Mat. WB Slope = Maternal wellbeing slope latent factor score. Pat. WB Intercept = Paternal wellbeing intercept latent factor score. Pat. WB Slope = Paternal wellbeing slope latent factor score.

Table 3. *Unstandardized and Standardized Estimates for Predictors of Child Problem Behaviors*.

	4-Month Behavior Problems			**14-Month Behavior Problems**			**24-Month Internalizing**			**24-Month Externalizing**		
	Est.	***SE.***	β	***Est.***	***SE.***	β	***Est.***	***SE.***	β	***Est.***	***SE.***	β
Model 1.												
Prior Behavior Problems				1.94	0.27	.42***	0.12	0.05	.29*	0.40	0.06	.68***
Country (UK vs. NL)	-0.75	0.10	-.40***	-3.67	0.45	-.42***	-0.17	0.37	-.05	1.43	0.43	.28**
Country (UK vs. USA)	-0.14	0.11	-.07	-4.79	0.45	-.54***	-0.21	0.43	-.06	0.04	0.51	.01
Child Gender	0.02	0.08	.01	-1.03	0.35	-.13***	0.35	0.22	.11	0.03	0.27	.01
SES	-0.17	0.14	-.09	-0.62	0.14	-.07	-0.19	0.35	-.05	0.28	0.40	.06
Paternal Involvement	0.06	0.06	.05	-0.16	0.23	-.03	0.13	0.14	.06	-0.05	0.19	-.02
Mat. WB Intercept	0.04	0.01	.21**	-0.04	0.05	-.05	0.05	0.04	.13	0.10	0.05	.18*
Mat. WB Slope							0.004	0.22	.002	-0.05	0.25	-.02
Pat. WB Intercept	0.01	0.01	.06	0.09	0.04	.11*	0.05	0.03	.14	0.02	0.04	.04
Pat. WB Slope							0.03	0.17	.02	0.22	0.20	.08
Model 2.												
Prior Behavior Problems				1.99	0.26	.43***	0.14	0.05	.34**	0.43	0.06	.74***
Country (UK vs. NL)	-0.83	0.10	-.44***	-3.82	0.45	-.44***	-0.27	0.42	-.07	1.45	0.43	.29**
Country (UK vs. USA)	-0.09	0.11	-.05	-4.76	0.47	-.54***	-0.15	0.22	-.04	0.37	0.51	.07
Child Gender	0.03	0.08	.02	-1.04	0.36	-.13**	0.42	0.22	.13	0.07	0.28	.02
SES	-0.38	0.13	-.18***	-0.42	0.52	-.05	-0.30	0.28	-.08	-0.14	0.34	-.03
Paternal Involvement	0.06	0.06	.06	-0.17	0.23	-.03	0.21	0.15	.10	-0.02	0.18	-.01
T2 Couple Relationship				-0.02	0.03	-.04	-0.05	0.02	-.24**	-0.01	0.02	-.02

*Note. ***p < .001. **p < .01. *p< .05.* Mat. WB Intercept = Maternal wellbeing intercept latent factor score. Mat. WB Slope = Maternal wellbeing slope latent factor score. Pat. WB Intercept = Paternal wellbeing intercept latent factor score. Pat. WB Slope = Paternal wellbeing slope latent factor score.

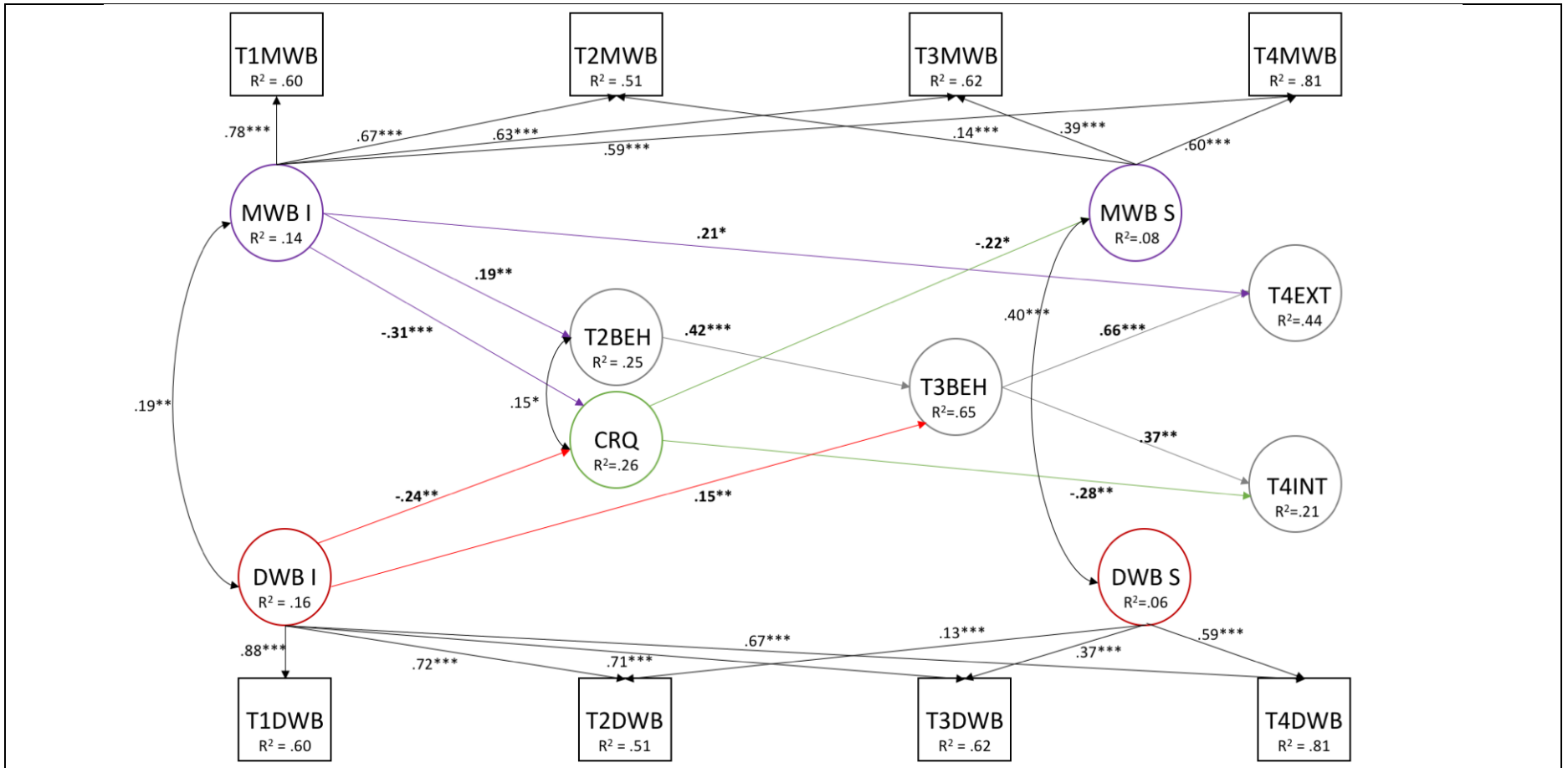

Figure 1. Simplified path diagram depicting standardized estimates for predictors of child behavior problems at 4, 14 and 24 months.
Note. ***$p < .001$. **$p < .01$. *$p < .05$. Only statistically significant paths are shown. MWB = Mums' Wellbeing. DWB = Dads' Wellbeing. I = Intercept. S = Slope. T1 = Prenatal Visit. T2 = 4-Month Visit. T3 = 14-Month Visit. T4 = 24-Month Visit. BEH = Behavior Problems. EXT = Externalizing. INT = Internalizing. CRQ = Couple Relationship Quality at T2.