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An exploration of masculinity, social support and depression in new and experienced fathers

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ABSTRACT

Objective: This study aimed to explore the relationship between masculinity, perceived social support and depression symptomology in the postpartum period in new and experienced fathers.

Design: Cross-sectional questionnaire study.

Participants: A total of 118 first- and second-time fathers (N = 48) of infants aged under 12-months, currently residing in the United Kingdom.

Measurements and Findings: Questionnaires consisted of the Edinburgh Postnatal Depression Scale, the Conformity to Masculine Norms Inventory, and the Multidimensional Scale of Perceived Social Support. Data were analysed through inferential statistics.

Key Conclusions: Masculine norms of self-reliance and primacy of work were positively related to depression symptomology in both father groups. Perceived social support was negatively related to depression symptomology. Further analyses revealed significant effects regarding partner health status and depression symptomology. No significant differences were found between presentation of first- and second-time fathers.

Implications for Practice: Main findings support partners as a part of the family unit. Findings have implications for midwives in that an increased understanding of these factors in early fatherhood could improve family outcomes.

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The need for an increased understanding of perinatal mental health difficulties has long been recognised, and has been reflected in the wealth of research regarding postpartum depression in new mothers (e.g. Shorey et al., 2018). Despite this growing body of knowledge, the wellbeing of partners, specifically those that identify as new fathers is a relatively under-researched area (Eddy et al., 2019). The transition to parenthood can be a challenging time, as significant changes to parents' identity, coupled with practical, financial and relationship pressures may leave new parents vulnerable to psychological distress (Bruno et al., 2020). Both members of the new family have these needs and poor perinatal mental health for fathers can impact the family system just as it does for mothers (e.g. Bowen, 1978; Davé et al., 2005; Sethna et al., 2018).

Supporting fathers with their mental health needs is important not only for the individual father, but for the wider family unit. Systemic theories suggest that mental health problems in one family member are likely to impact the wider family unit (Bowen, 1978). Fathers experiencing depression and anxiety may have difficulty maintaining consistently positive relationships with their children; for example, fathers who were experiencing depression were less likely to engage playfully with their children at 3-months of age (Sethna et al., 2018). Furthermore, father depression in the postpartum period has also been associated with observed negative outcomes in child behaviour such as 'fussiness' at 6-months (Davé et al., 2005), and emotional and behavioural problems at 3–5 years (Ramchandani et al., 2005).

The prevalence of depression in men in the postpartum period has been estimated to be approximately 8–10% globally, around half the prevalence observed in mothers. However, the rate can vary significantly across studies depending on fathers' age, number of children, method and timing of assessment and cultural con-

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text (Cameron et al., 2016). Highest rates of depression were observed at 3–6 months postpartum, and prevalence estimates appeared to be higher for studies who employed self-report measures rather than formal diagnostic assessment (Cameron et al., 2016). Thus, there are methodological issues at play that need to be addressed when looking into paternal perinatal depression rates. The estimated prevalence of depression in fathers is reported as much higher than depression observed in men in general, which was estimated to be 3.6% (World Health Organisation, 2017). This apparent increase in depression rates during the perinatal period might be understandable given the challenges of becoming a parent, which could indicate a time of increased psychological vulnerability for both partners (Bruno et al., 2020).

Despite this increase in psychological distress observed in new fathers, service provision in the UK still places a primary focus on the mental health of mothers (Williams, 2020); for example, current National Institute for Health and Care Excellence (NICE) and Increasing Access for Psychological Therapies (IAPT) guidance continues for place focus on support for mothers, with little guidance on supporting new fathers (NICE, 2014; NHS England, 2021). There has been a recent move within the National Health Service (NHS) with the introduction of primary care mental health checks for new fathers in England; however, these assessments were only proposed to be available for partners of women experiencing postnatal mental health issues themselves (NHS England, 2018). Darwin et al. (2021) recently published a helpful guide to supporting partners in perinatal mental health services; However, this guidance was again aimed at supporting partners of women who were accessing perinatal services themselves. The disparity in support has been highlighted by those working to support fathers, such as the Fatherhood Institute, who recently launched a guide for new fathers entitled 'Becoming Dad' (The Fatherhood Institute, 2021b). This guide includes advice and guidance for fathers regarding parenting, as well as a guide to coping and where to go for advice.

Little is known about the relationship between fathers and mental health support in the perinatal period. A growing body of research is emerging that suggests that a number of factors may be involved (e.g. Baldwin et al., 2019; Darwin et al., 2017; Giallo et al., 2017). These factors appear complex and may relate to both 1) internal mechanisms, such as beliefs around the acceptability of experiencing psychological distress, which qualitative data suggests may be theoretically linked to western ideals of 'masculinities', or 2) factors, such as feeling excluded by health services and isolated from usual social support systems (Darwin et al., 2017; Baldwin et al., 2019; Das and Hodgkinson, 2019). The emerging research appears to be mostly qualitative in nature, which has allowed for a rich exploration of the complex nature of fathers' wellbeing and help-seeking. Giallo et al. (2017) studied attitudinal barriers to help-seeking in Australian fathers and its relationship to depression and anxiety symptoms and found that symptoms were positively correlated with help-seeking barriers such as emotional control and self-reliance; however, there has been no empirical research to date with United Kingdom (UK) fathers. This may be due to the apparent complexity involved in studying the transition to fatherhood; for example, identifying an appropriate comparison group, or the time and resources required to study fathers longitudinally during the transition (Wee et al., 2011).

In a systematic review, Philpott et al. (2017) found a number of factors related to stress in fathers, such as, role conflicts, feelings of incompetence and lower self-efficacy. Stress in turn appeared to signify an increased risk of depression and anxiety, marital dissatisfaction and decreased social support (Philpott et al., 2017; Kamalifard et al., 2014). However, the authors noted a high level of selection bias and attrition rates observed in the included studies, possible due to the recruitment of parents through health services. Fathers may have been more likely to drop-out of studies, which could be related to findings regarding a reluctance to seek help for a mental health issue or practical barriers such as work commitments (Giallo et al., 2017; Wong et al., 2013).

The concept of masculinities has been suggested to be one of the factors involved in the disparity for support as well as help seeking by fathers (Giallo et al., 2017). When considering parenting roles and 'masculinities' as a construct, caution must be taken not to conform to a reductionist view of 'mother' and 'father', due to the diversity in family units, as it has been suggested that the roles are interchangeable depending on context (Tamis-LeMonda, 2004). This has also been supported by neuropsychological evidence, as fathers were found to have the capacity to activate child-rearing pathways in the brain in a similar way to mothers (Abraham et al., 2014). However, changes in parenting practices over recent decades, such as men being expected to be more involved in childcare, may pose a dilemma for new fathers, since societal demands placed on men have changed very little (Mander, 2004).

However the societal demands shape how parents operate, those fathers who conform to masculine norms may be more likely to experience psychological distress, expressed as heightened depression and anxiety symptoms, as they may also feel less able to seek support from those close to them (Das and Hodgkinson, 2019; Bruno et al., 2020; Courtenay, 2000). This hypothesis was supported by an Australian exploratory study conducted by Giallo et al. (2017), who found that help-seeking was negatively correlated with particular attitudinal barriers; such as, self-reliance, a tendency to minimise problems and a belief that help will be ineffective. These themes were also present in qualitative literature; for example, Baldwin et al. (2019) reported that fathers found much less time to interact socially following the birth, and interactions were kept light-hearted in nature. Darwin et al. (2017) found that fathers recognised a change in fathering across generations and tended to seek support from female family members for reassurance regarding parenting worries; however, there were many who remained self-reliant. Men also tended to keep their partner as their main source of emotional support, even though they recognised a change in the relationship and sometimes felt rejected or pushed out. Informal and 'casual' support from other parents was common, but usually kept light-hearted. Men described the interactions with fellow fathers as like sharing 'war stories', rather than seeking emotional support (Darwin et al., 2017).

Research suggests that social support may be an important protective factor for fathers (Da Costa et al., 2017); however, the need for further exploration of this relationship has been recently highlighted in the literature (MacDonald et al., 2021). The need to belong has been proposed by many as fundamental to psychological wellbeing (Baumeister and Leary, 1995). Social support during the parenting transition may increase new fathers' wellbeing through supporting emotion regulation (Castle et al., 2008; Lakey and Orehek, 2011). A higher level of perceived social support (PSS) was found to be protective in a sample Chinese fathers (Gao et al., 2009); however, others have found that although there was a significant correlation, PSS did not predict postpartum depression in fathers in Iran (Kalamifard et al., 2014). These conflicting findings might be explained by cultural differences in parenting practices, such as the communalist Chinese practice of 'doing the month', whereby the wider family traditionally provide close support (Gao et al., 2009).

The present study aimed to explore two themes that have arisen in the literature that may contribute to fathers' wellbeing in the postnatal months: conformity to masculine norms and perceived social support. To date, there appears to be very little by way of quantitative exploration of masculinities and perceived so-

cial support in fathers. These variables were selected as they may help to offer some insight into the specific mechanisms involved in paternal wellbeing and support-seeking within the family system (e.g. Das and Hodgkinson, 2019; Macdonald et al., 2021).

The study aimed to explore the following research questions:

1. Is conformity to masculine norms associated with higher depression symptomology in the postpartum period?
2. Is higher PSS associated with lower depression symptomology in the postpartum period?
3. Is there a difference in presentation between new and experienced fathers?

Materials and methods

Participants

There were 70 (59%) first-time fathers and 48 (41%) second-time fathers that responded and completed the study in full. Participants were included if they were a first- or second-time father based in the UK, with their youngest child aged under 12-months at the time of completion. Fathers' ethnicity was self-identified as 'White' or 'White British/Scottish' (93%), 'Asian' or 'Mixed Asian' (5%), or 'Black' (2%). First-time fathers were aged between 23 and 52 ($M = 33.71$, $SD = 6.01$) and second-time fathers were aged between 26 and 46 ($M = 35.56$, $SD = 4.64$).The majority were heterosexual (98%) while 2% reported they were bisexual or homosexual. All fathers reported that they were employed.

Materials and procedure

Procedure

Ethical approval for the present study was gained from the University Research Ethics Committee prior to commencement. Participants were recruited using a snowball sampling method. A social media post was generated and disseminated through various sites by the main researchers on groups aimed mainly at parenting and fathers. If a participant accessed the link, they were invited to read a participant information sheet and participate in a 10-minute online survey on the Qualtrics™ platform. It took 5–10 min on average to complete the study in full.

Of the 118 participants recruited, 91 were recruited using the Prolific™ participant sourcing platform commonly used in research as a way of gathering high quality data from diverse populations (Peer et al., 2017).

Participant informed consent was gathered electronically prior to completion of the questionnaire. Following informed consent, participants were asked to complete a number of demographic questions.

Participants were then presented with one of three measures in random order: The Edinburgh Postnatal Depression Scale (EPDS; 10 items; Cox et al., 1987), The Conformity to Masculine Norms Inventory (CMNI-46; 19 items; Parent and Moradi, 2009), and The Multidimensional Scale of Perceived Social Support (MSPSS; 12 items; Zimet et al., 1988). Following completion of the three scales, participants were presented with a debrief sheet thanking them for their participation and providing links to further support services if required.

Demographic questions

Participants were asked 10 different demographic questions regarding their age, sex, gender identity, sexual orientation, employment status, relationship status, child(ren)'s sex and age, and residential status. Demographic questions included whether the participant took parental leave (standard leave, shared parental leave or full parental leave). Maternal health status was also included (whether the mother of their most recent child had received support for a mental or physical health condition) as evidence suggests that this may be a predictor of mental health status in fathers (Cameron et al., 2016).

The edinburgh postnatal depression scale *(Cox et al., 1987; EPDS)*

The EPDS is a 10-item measure commonly employed in clinical practice and research to assess symptoms of depression and anxiety in the perinatal period (Cox et al., 1987). The scale has been validated for fathers (Matthey et al., 2001) and has been used extensively in perinatal research on depression (e.g. Edwards et al., 2019). It is intended to measure symptoms related to worry (e.g. *'I have been anxious or worried for no good reason'*), difficulty sleeping (e.g. *'I have been so unhappy that I have had difficulty sleeping'*), panic (e.g. '*I have felt scared and panicky for no very good reason*'), coping (e.g. *'Things have been getting on top of me'*) and low mood (e.g. '*I have felt sad or miserable*'). Each response is scored from 0 to 3 on a 4-point likert scale, with a maximum score of 30; a higher score indicates increased symptomatology (Cox et al., 1987). Because we were not interested in a depression diagnosis, but rather looking dimensionally at depression symptomology in fathers, no clinical cut off was considered. The EPDS demonstrated very good reliability for the present study ($\alpha = 0.87$).

The conformity to masculine norms inventory *(Mahalik et al., 2003; parent and moradi, 2009;CMNI)*

The Conformity to Masculine Norms Inventory was initially developed in the United States by Mahalik et al. (2003) as a method of assessing the extent to which males conform to traditional western masculine role expectations. The measure was theoretically based on a multidimensional normative model developed by the authors with 11 dimensions relating to masculinities: (1) winning, (2) emotional control, (3) risk-taking, (4) acceptability of physical violence, (5) power over women, (6) assertiveness, (7) the desire for multiple sexual partners, (8) self-reliance, (9) disapproval of homosexuality, (10) the desire to be seen as important, and (11) primacy of work (Mahalik et al., 2003). For the purposes of the present study, four dimensions of interest were included as they were considered to be of relevance to fatherhood from considering previous literature (power over women (Hambidge et al., 2021), primacy of work (Baldwin et al., 2018) emotional control, and self-reliance (Baldwin et al., 2019; Giallo et al., 2017). The other dimensions were excluded for brevity as they were not considered relevant to the aims of the study. There has been little evidence to suggest a global construct of 'masculinity'; Owen (2011) and Hammer et al. (2018) both suggested that taking a dimensional approach, using selected subscales of the CMNI may be more appropriate.

The questions resulting from the four dimensions totalled 19 items: emotional control (e.g. *'I bring up my feelings when talking to others*'; 6 items), self-reliance (e.g. *'I never ask for help*'; 5 items), power over women (e.g. '*Women should be subservient to men*'; 4 items) and primacy of work (e.g. '*Work comes first*'; 4 items).

Responses range from 'strongly agree' to 'strongly disagree' on a 4-point likert scale. Scores for each item range from 1 to 4; scores for each dimension can be calculated by adding the respective scores for all items from each, with a total masculinities score being derived by totalling the scores from all dimensions. A higher score indicates increased conformity to masculine norms (Parent and Moradi, 2009). The four subscales were also found to have adequate internal consistency in line with previous research; emotional control demonstrated very good internal consistency ($\alpha = 0.93$), self-reliance was very good ($\alpha = 0.89$), primacy of work was adequate ($\alpha = 0.75$), and power over women was found to be adequate ($\alpha = 0.74$).

Table 1
Demographic variables for the EPDS, CMNI and PSS including subscales.

Measure	First-time fathers Mean (SD)	experienced fathers Mean (SD)	Total Mean (SD)
Edinburgh Postnatal Depression Scale (EPDS)	8.37 (5.02)	9.57 (5.03)	8.86 (5.04)
Conformity to Masculine Norms Inventory (CMNI)	41.21 (6.76)	38.94 (8.56)	40.29 (7.59)
Emotional Control	15.10 (3.53)	14.69 (4.49)	15.46 (3.98)
Self-reliance	12.43 (2.77)	11.54 (3.36)	12.06 (3.04)
Primacy of Work	7.17 (2.19)	7.00 (1.85)	7.10 (2.05)
Power Over Women	5.63 (1.45)	5.71 (1.71)	5.66 (1.55)
Multidimensional Scale of Perceived Social Support (MSPSS)	65.31 (11.11)	63.50 (12.77)	64.58 (11.79)
Family	20.97 (5.21)	21.04 (4.97)	21.00 (5.09)
Friends	19.57 (4.97)	19.65 (4.84)	19.60 (4.90)
Significant Other	24.77 (4.38)	22.81 (5.19)	23.97 (4.80)

*Note There were 70 first-time fathers, and 48 experienced fathers making a total of 118.

Multidimensional scale of perceived social support *(Zimet et al., 1988; MSPSS)*

The MSPSS is a 12-item measure of perceived social support that is conceptualised across three dimensions: (1) family (e.g. '*My family really tries to help me*'), (2) friends (e.g. '*I can count on my friends when things go wrong*') and (3) significant other (e.g. '*There is a special person who is around when I am in need*'; (Zimet et al., 1988). Responses for each item range from 'Very Strongly Disagree' to 'Very Strongly Agree' and are scored from 1 to 7 on a 7-point likert scale. A maximum score of 84 indicates a high level of perceived social support.

The MSPSS demonstrated excellent overall internal consistency for the present sample ($\alpha = 0.90$). The subscales were also found to demonstrate excellent reliability: family ($\alpha = 0.90$), friends ($\alpha = 0.92$) and significant other ($\alpha = 0.93$).

Results

Descriptive statistics and preliminary analysis

All three main measures were taken by all 118 participants. The CMNI scores ranged from 19 to 59 ($M = 40.29$, $SD = 7.59$). The EPDS scores ranged from 0 to 21 ($M = 8.86$, $SD = 5.04$), and the PSS scores ranged from 17 to 84 ($M = 64.58$, $SD = 11.79$). For descriptive statistics on these measures and subscales see Table 1.

Pearson Correlations were utilised to explore all main measures. All measures were significantly correlated. The CMNI demonstrated significant positive correlation with the EPDS; $r = 0.261$, $p < .01$ with a small to medium effect size. The MSPSS was significantly negatively correlated with the EPDS, with a medium to large effect size $r = -0.432$, $p < .01$. Finally, the MSPSS was significantly negatively correlated with the CMNI with a medium to large effect size $r = -0.490$, $p < .01$.

After looking at the three main measures, demographic information was analysed. First-time fathers were significantly younger than experienced fathers, $t\ (1116) = -1.79$, $p = .038$, thus parent age was used as a covariate while investigating the relationship between fathers mental health, masculinities scores, and social support. There was not a difference in child gender between first- and second-time fathers $X^2(1, N = 118) = 0.34$, $p = .335$, and there was no difference in most recent child's age between experienced and first-time fathers $t\ (1116) = -1.23$, $p = .110$. There were no differences between first time and experienced fathers in report of partner receiving support for physical or mental health issues $X^2(1, N = 118) = 5.33$, $p = .149$. Of the participants, 15 (12.7%) fathers did not take parental leave while 103 (87.3%) took leave with their most recent child. Fathers leave status (took leave, did not take leave) was analysed according to the three main measures. Fathers that took leave had significantly lower scores on the EPDS $t\ (1116) = 1.66$, $p = .050$, and the CMNI $t\ (1116) = 1.83$, $p = .035$, but did not differ in terms of MSPSS scores $t\ (1116) = -1.59$, $p = .066$. Thus, leave status was added to the rest of the analysis as a covariate.

Father status and their relations to scores on the EPDS, CMNI, and MSPSS

Next, the three main measures were analysed in relation to father status (first or second-time father). Each was looked at in an ANCOVA with the total score on the measure as a dependant variable, father status as a fixed factor, and age and leave status as covariates. Scores on the EPDS did not relate to father age $F\ (1117) = 3.11$, $p = .080$, $\eta^2 = 0.027$, leave status $F\ (1117) = 2.05$, $p = .155$, $\eta^2 = 0.018$, or father status $F\ (1117) = 2.05$, $p = .155$, $\eta^2 = 0.018$. The CMNI did not relate to father age $F\ (1117) = 0.07$, $p = .791$, $\eta^2 = 0.001$ or status $F\ (1117) = 3.36$, $p = .069$, $\eta^2 = 0.029$ either, bud did relate to leave status $F\ (1117) = 4.08$, $p = .046$, $\eta^2 = 0.035$,. Scores on the MSPSS did not relate to either age $F\ (1117) = 2.63$, $p = .108$, $\eta^2 = 0.023$ or father status $F\ (1117) = 0.11$, $p = .747$, $\eta^2 = 0.001$, but did relate to leave status, $F\ (1117) = 5.87$, $p = .017$, $\eta^2 = 0.049$.

The CMNI and subscales relations to the EDPS in fatherhood

Partial Correlations were run to examine the relationship between the CMNI, its subscales, and the EPDS with father age and leave status partialed out of the correlation. The CMNI was positively correlated with scores on the EPDS ($r = 0.243$, $p = .009$), with a small to medium effect size.

The EPDS was also positively correlated with the CMNI self-reliance ($r = 0.289$; $p = .002$). and primacy of work subscales ($r = 0.215$; $p = .020$). Both scales showed medium effect sizes. Please see Table 2 for an overview of correlations between CMNI subscales and EPDS scores.

MSPSS and subscales relations to the EDPS in fatherhood

Partial Correlations for the MSPSS, subscales, and the EPDS were run controlling for father age and leave status. Total scores on the MSPSS were negatively correlated with scores on the EPDS ($r = -0.446$, $p < .001$), with a medium to large effect size. All MSPSS subscales showed significant negative corelations with the EPDS. See Table 2 for an overview of the correlations between the MSPSS subscales and EDPS scores.

The CMNI and subscales relation to the MSPSS in fatherhood

Partial correlations for the CMNI and MSPSS subscales were run controlling for father age and leave status. All subscales were significantly negatively correlated with the exception of the power over women subscale of the CMNI which was not significantly correlated with any of the MSPSS measures, and primacy of work

Table 2
Pearson's correlations for all measures and subscales.

Measure	1	2	3	4	5	6	7	8	9	10
1. EPDS	–									
2. CMNI	**.243****	–								
3. Emotional Control	.079	**.863****	–							
4. Self-Reliance	**.289****	**.825****	**.663****	–						
5. Primacy of Work	**.215***	**.491****	.180	.154	–					
6. Power Over Women	.132	**.379****	.078	.136	**.314****	–				
7. MSPSS	**−0.446****	**−0.478****	**−0.456****	**−0.411****	**−0.211***	−0.062	–			
8. Significant Other	**−0.320****	**−0.450****	**−0.425****	**−0.325****	**−0.264****	−0.107	**.816****	–		
9. Friends	**−0.325****	**−0.297****	**−0.337****	**−0.250****	−0.055	−0.017	**.737****	**.388****	–	
10. Family	**−0.409****	**−0.393****	**−0.330****	**−0.399****	**−0.189***	−0.028	**.825****	**.581****	**.361****	–

Note, * $p < .05$, ** $p < .01$, all correlations based upon 118 participant responses.

Table 3
ANCOVA Results for oldest child's gender.

Fixed Factor and Covariates	Dependant Variables	F	Sig.	ηp^2
OCG	EPDS	0.17	.680	.004
	MSPSS	1.65	.206	.037
	CMNI	1.35	.252	.030
	EPDS	0.57	.454	.013
F - AGE	MSPSS	0.72	.402	.016
	CMNI	0.85	.361	.019
	EPDS	2.55	.118	.056
LS	MSPSS	6.02	.018	.123
	CMNI	3.32	.075	.072

*FBG = Oldest child's gender; F – AGE = Father's age; LS = Leave status.

Table 4
ANCOVA Results for youngest child's gender.

Fixed Factor and Covariates	Dependant Variables	F	Sig.	ηp^2
YCG	EPDS	0.37	.545	.003
	MSPSS	1.35	.248	.012
	CMNI	4.35	.039	.037
	EPDS	2.26	.136	.019
F - AGE	MSPSS	3.10	.081	.027
	CMNI	0.01	.961	.000
	EPDS	2.40	.124	.021
LS	MSPSS	5.86	.017	.049
	CMNI	2.97	.088	.025

*YCG = Youngest child's gender; F – AGE = Father's age; LS = Leave status.

which was only significantly negatively correlated with the significant other subscale of the MSPSS ($r = -0.264$, $p = .004$). For an overview of all correlations see Table 2.

Partner and child factors

Child gender (male, female) and partner health conditions (none, mental physical health, mental health, both physical & mental health) were both analysed as potential contributing factors to scores on the EPDS, CMNI and MSPSS.

An ANOVA with partner health condition as the fixed factor and EPDS score as the dependant variable showed that there were significant differences between partner health status and scores on the EPDS F (3117) = 8.16, $p < .001$, $\eta^2 = 0.18$. Post hoc Bonferroni tests showed that the significance was a result of EPDS scores being lower between those reporting no conditions when compared to those reporting both physical & mental health conditions p <0.001 as well as those reporting only physical health issues compared to those reporting both physical & mental health conditions p <0.001.

Partner health condition did not relate to scores on the CMNI F (3117) = 0.66, $p = .580$, $\eta^2 = 0.01$ or MSPSS F (3117) = 0.24, $p < .866$, $\eta^2 = 0.006$.

Youngest child's gender was investigated. An ANCOVA with gender as the fixed factor, EPDS score as the dependant variable, and father age and leave status as covariates was run finding no significant differences in EPDS scores between fathers with boys and those with girls F (1117) = 0.368, $p = .545$, $\eta^2 = 0.003$. The same was true for oldest child gender F (1,46) = 0.17, $p = .680$, $\eta^2 = 0.004$. Neither covariate was significant. See Tables 3 and 4 for these results.

MSPSS scores were then run as a dependant variable in an ANCOVA looking at youngest child's gender as a fixed factor and age and leave status as covariates finding no significant differences between these groups F (1117) = 1.35, $p = .248$, $\eta^2 = 0.01$. The same held true for oldest child gender F (1,46) = 1.65, $p = .206$, $\eta^2 = 0.04$. Although the dependant variables were non-significant, covariates were significant. See Tables 3 and 4 for results.

Finally, an ANCOVA was run with CMNI score as a dependant variable, youngest child's gender as a fixed factor and father age and leave status as covariates finding that CMNI scores of those with a male youngest child are significantly higher than those with a female youngest child F (1117) = 4.35, $p = .039$, $\eta^2 = 0.04$. This effect disappears when looking at the oldest child's gender F (1,46) = 1.35, $p = .252$, $\eta^2 = 0.03$. Neither covariate was significant. See Tables 3 and 4 for results.

Discussion

This study set out to determine whether there was a relationship between masculine norms, perceived social support and depression symptomology in the postpartum period in new and experienced fathers. Taken together, the results suggested that perceived social support was related to postpartum depression symptomology in recent fathers. With regards to masculinities, self-reliance and primacy of work were both related to postpartum depression symptomology. Parent factors also related to depression scores. Fathers with a partner who had experienced both physical and mental health conditions since the birth of their child demonstrated significantly higher depression symptomology than those whose partner had not experienced a health condition or those who had a physical health condition alone. There were no parity effects found in relation to postpartum depression; however, fathers who had recently had a male infant were found to demonstrate significantly higher masculinities scores than those with a female infant. These findings have wide-reaching implications regarding father mental health and support provision, that will be outlined below.

Perhaps the most prominent finding of the present study was that fathers with lower perceived social support were more likely to report higher depression symptoms in the first 12 months postpartum, for both new and experienced fathers. These results

extended previous research conducted by Castle et al. (2008), who found that lower social support in the antenatal period predicted depression in the postpartum period in UK fathers, and Gao et al. (2009) who found that PSS was negatively correlated with stress and depression in a sample of Chinese fathers. A similar correlational association was found with a sample of Iranian fathers using the EPDS and MSPSS by Kamalifard et al. (2014), suggesting this association may not be strictly UK fathers, but potentially runs across cultures. Data measuring Australian fathers, as those experiencing depression were also likely to demonstrate poorer social outcomes (MacDonald et al., 2021). Perhaps looking at social support and outcomes as a dynamic system where social opportunities may decrease with a baby, bearing in mind that lack of social support at the beginning of the process may also exacerbate these social systems and transactions. Although direction of causality cannot be determined with the present study.

The finding that self-reliance related positively to postpartum depression supported previous literature conducted with the general male population (Wong et al., 2016), as conformity to masculine norms has not only been found to be related to increased depression in men, but also related to decreased help-seeking behaviours (Iwamoto et al., 2018; Seidler et al., 2016). Increased self-reliance was also found to be associated with depression symptoms in a sample of Australian fathers (Giallo et al., 2017). In contrast, the relationship between primacy of work and depression symptomatology, as well as the lack of relationship found between depression and power over women, might suggest a different masculinities profile for our sample of UK fathers. A possible explanation for this is that the increased pressures regarding work-life balance encountered by many new fathers could introduce new challenges (e.g. Gregory and Milner, 2011). Whilst many fathers may understandably want to be as involved as possible in their child's life, working practices in the UK still leave a lot to be desired when it comes to supporting fathers (The Fatherhood Institute, 2021a; Gheyoh Ndzi, 2023).

The finding that fathers' overall masculinities rating was higher for those with a male youngest child raises questions about the complexities of masculinities across the transition to fatherhood. For example, what does it mean to be male in how I relate to my children? It has been suggested in literature that fathers may be more interested in child gender conformity (e.g. Pruett, 2000), and that fathers tend to spend more time with male children than with female children (Marsiglio, 1991). As with other aspects of personality development, male identity is thought to develop through a process of socialisation (Bandura and Walters, 1963; Connell, 1995), which may mean that masculinities might be more salient in fathers of sons, but the present findings suggest that this effect may only be present in the postpartum months. This finding requires further exploration beyond the theoretical, but recent interview data suggests that the intergenerational transmission of masculinities may have far reaching impacts on men (Umamaheswar and Tadros, 2022). Future research could examine the developing and changing masculinity scores of new parents longitudinally to examine the relationship between masculinities, child gender, and postpartum depression.

Fathers with partners who experienced both mental and physical health conditions were found to be, on average, significantly more depressed than those with physical health problems and those with no health problems following the birth of their most recent child. This finding partially supported previous literature regarding the impact of maternal depression on partners (Cameron et al., 2016; Mayers et al., 2020), although no significant difference was found for mental health problems alone. It is notable that the number of fathers who identified that their partner had experienced a health condition was relatively small, which may explain the lack of effect found regarding mental health. Nevertheless, the findings suggest that increased complexity in maternal presentation would warrant increased support for their partners. The transaction between partners should be taken into account by those working with new fathers. This might first be achieved by ensuring that clinicians working in maternity services are able to signpost fathers to appropriate support services at the earliest opportunity possible, accompanied by efforts to normalise such difficulties among partners (Mayers et al., 2020).

The implications of the present study are far-reaching and could be used to inform service provisions from an individual up to a wider reaching public health level. The first implication is that an understanding of how fathers might present to health services could help in identifying the most appropriate line of support, which is in line with recent guidance that highlighted that current practices could be iatrogenic for men (British Psychological Society, 2022; Morison et al., 2014). A second implication rests in social support scores. An awareness by midwives that having low social support might indicate increased risk of depression symptomology could inform assessment and referral to appropriate lines of support. This finding is also reflected in wider mental health research, suggesting that the inclusion of a social support measure could inform clinical practice and mental health screening for fathers (Wang et al., 2018). Finally, the relationship between primacy of work and depression symptomology further highlights the need for a reform in working practices for fathers in the UK, as work stress has also been shown previously to be related to depression symptomatology in the postpartum period (The Fatherhood Institute, 2021a; Giallo et al., 2013).

There are a number of limitations of the present study that mean that the results should be approached with caution. The cross-sectional and correlational design of the study means that we were unable to ascertain the direction of the observed relationships. The interaction between depression symptomology, masculinities and social support may be complex and future research should focus on employing a more predictive design; a longitudinal study that follows men into fatherhood would be ideal. The study also took place during the Covid-19 pandemic. Although research into the impact of the pandemic on mental health is in its infancy, preliminary research has indicated that Covid-19 brought wide-reaching stressors for parents that might have had an impact on the results of the present study (Brown et al., 2020).

A further limitation related to the selection of only four of the masculine norms subscales of the CMNI-46 (Mahalik et al., 2003). Whilst the use of individual subscales has been validated in previous research (Hammer et al., 2018; Owen, 2011), this may have introduced a bias in the interpretation of masculinity as a single construct. It may be helpful for future researchers to consider employing the CMNI-46 as a whole measure in order to limit this risk. Future research may also benefit from the inclusion of a wider range of potentially significant variables that may also be related to risk of depression symptomology in recent fathers, most notably, historical and current substance use, history of mental health issues, and whether the child was planned (Huang and Warner, 2005; Leathers and Kelley, 2010).

The sample size of the present study was relatively small and may not be representative of the diverse nature of the UK population, as 93% of participants identified as 'White British/Scottish'. This lack of diversity in sampling appears to be a common difficulty reported in father studies (e.g. Darwin et al., 2017; Giallo et al., 2017). Furthermore, the study was not inclusive of the full representation of parents in the UK; for example, female and non-binary partners. Future researchers might want to address these important diversity issues by conducting research with specific underrepresented populations.

Overall, the links between social support, masculinities and depression could inform public policy and therapeutic intervention;

creating safer, more supportive spaces, which cater to those who may not want, or know how to ask for help.

S.S. Designed the study, was in charge of acquisition of data, analysed and interpreted the data, revised the article

P.D. Conceived of the study, designed the study, analysed and interpreted the data, drafted the article based on S.S.'s chapter, revised the article

E.G. Conceived of the study, designed the study, commented on the article.

Data availability

Dataset is now live in RaYDaR with this doi: https://doi.org/10.25421/yorksj.22846268.v1.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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