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Dyadic coping, marital adjustment and quality of life in couples during pregnancy: an actor–partner approach

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ABSTRACT

Objective: This study aimed to examine the impact of dyadic coping on the quality of life of couples during pregnancy and to explore the potential mediating role of marital adjustment on this association.

Background: According to the systemic transactional model, pregnancy can be characterised as a situation of dyadic stress because it affects both members of the couple. However, the impact of dyadic coping on couples' quality of life during pregnancy is unexplored. Also, the potential mediating role of marital adjustment on this association remains understudied.

Methods: Participants were 320 pregnant women and their partners ($N = 640$) who completed the Dyadic Coping Inventory, the Dyadic Adjustment Scale and the World Health Organisation Quality of Life instrument. Data were analysed using the actor–partner interdependence mediation model.

Results: Results showed that there was an intrapersonal indirect effect of dyadic coping on quality of life through marital adjustment. Moreover, an interpersonal indirect effect was found with fathers' dyadic coping being associated with mothers' quality of life through mothers' marital adjustment.

Conclusions: These findings highlight the importance of assessing dyadic coping strategies of couples during pregnancy and targeting them in the psychological support offered to couples as a way of improving their marital adjustment, and consequently, their quality of life.

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KEYWORDS

Dyadic coping; marital adjustment; quality of life; dyadic approach

Introduction

Pregnancy is a normative life event, but it is experienced in different ways by couples. According to the systematic transactional model (Bodenmann, 2005), pregnancy can be characterised as a situation of dyadic stress because the demands and changes related to the reproductive period can have a profound impact not only in women, but also in men. Indeed, studies have shown that during pregnancy, both women and men tend to experience difficulties in marital adjustment (e.g. Claxton & Perry-Jenkins, 2008) as well as declines in quality of life (e.g. Abbasi, Van Den Akker, & Bewley, 2014; Chen, Huang, Au, & Chen, 2019).

Recently, researchers have demonstrated the importance of dyadic coping for couples' adaptation to stressful events. Dyadic coping (DC) can be described as an interpersonal process in which 'one partner's appraisal of a stress is communicated to the other partner, who perceives, interprets, and decodes these signals and responds with some form of dyadic coping (which might involve either acting on or ignoring the stress communication)' (Bodenmann, 2005, p. 36). While the main objective of DC is to reduce stress and enhance marital adjustment (e.g. Bodenmann, 2005; Bodenmann, Pihet, & Kayser, 2006; Meuwly et al., 2012), it can also promote psychological well-being and quality of life (e.g. Bodenmann, Meuwly, & Kayser, 2011; Chen, Chu, & Chen, 2004; Meier, Bodenmann, Mörgeli, & Jenewein, 2011).

In the specific context of pregnancy, the impact of DC on marital adjustment during pregnancy has only recently been explored at an individual (Alves et al., 2018) and at a dyadic level (i.e. using data from both members of the couple) (Molgora, Acquati, Fenaroli, & Saita, 2018). The results from the study of Molgora et al. (2018) give support for the interdependence between each partner's DC, with own DC influencing not only own marital adjustment but also the partner's marital adjustment, suggesting the importance of the relational coping for the marital adjustment during pregnancy.

The impact of DC on the couples' quality of life, however, remains unexplored at both levels. While previous studies have highlighted the importance of the partners' support (a construct that shares analogies with DC) for the quality of life of pregnant women (e.g. Calou et al., 2018; Elsenbruch et al., 2006), no studies have explored these associations using a dyadic approach.

Marital adjustment as linking mechanism

Marital adjustment is considered a prominent factor related to people's subjective well-being and quality of life, both concurrently and over time (for a review see Proulx, Helms, & Buehler, 2007). In the context of pregnancy, this pattern also exists, with the quality of marital relationship being linked to the individuals' well-being and quality of life (Figueiredo et al., 2008; Gameiro, Nazaré, Fonseca, Moura-Ramos, & Canavarro, 2011).

However, it is not uncommon to see a decline in marital adjustment when couples have to face a stressful life event such as pregnancy (e.g. Claxton & Perry-Jenkins, 2008). One potential factor that contributes to this decline can be the lack of DC strategies employed by one or by both members of the couple, or the use of negative DC strategies to deal with this event. Indeed, a previous study has shown that, during pregnancy, communication about and sharing efforts to cope with pregnancy-related challenges is associated with better marital adjustment (Molgora et al., 2018).

Taken together, these results lead us to hypothesise that marital adjustment can be a potential mechanism linking DC to the quality of life of pregnant women and their partners. Because of the shared nature of the pregnancy experience, it presents a unique stressor that lends itself well to the examination of actor and partner coping and its impact on the couple relationship and the couple quality of life. Therefore, the objective of this study is to investigate the role of each partner's DC on their own quality of life (actor direct effects) and their partner's quality of life (partner direct effects) during pregnancy, and to explore the potential mediating role of their own and their partner's marital adjustment (actor and partner indirect effects) on this association, using a dyadic

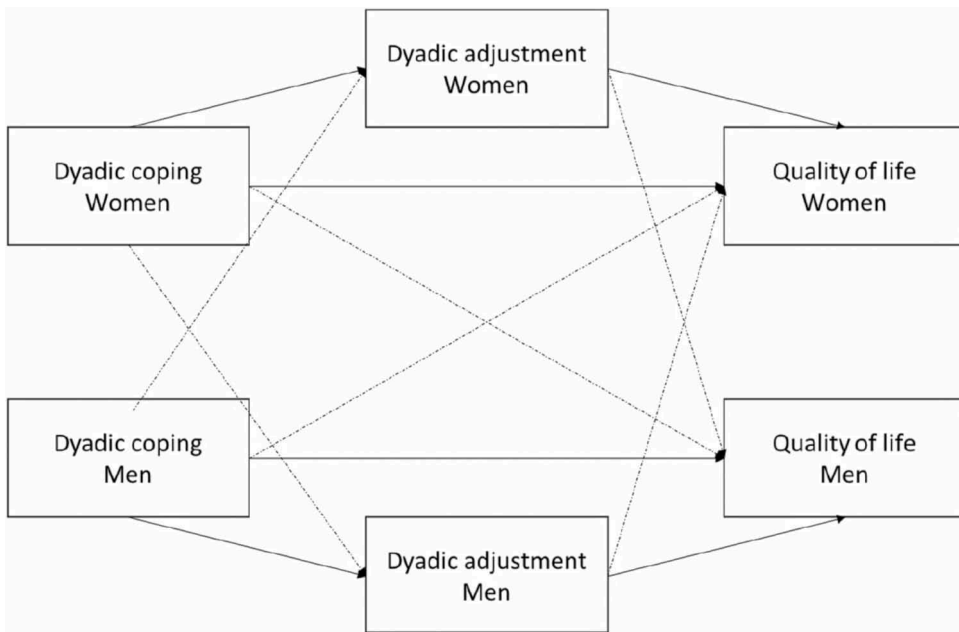


Figure 1. Actor-partner interdependence mediational model.

approach, namely the Actor-Partner Interdependence Mediational Model (Ledermann, Macho, & Kenny, 2011) (see Figure 1). This study fills two gaps in the literature by (1) examining the association between DC, marital adjustment and quality of life using a dyadic approach and by (2) exploring the potential mediating role of marital adjustment on the association between DC and quality of life during pregnancy.

Methods

Participants

Participants of this cross-sectional study were 320 pregnant women and their partners ($N = 640$) recruited in different private and public clinics in Lisbon and Oporto, the two greatest metropolitan areas of Portugal, between February 2015 and September 2017. Inclusion criteria for both partners were: to be at least 18 years old, to be expecting a baby, and to be in a committed heterosexual relationship.

Women's age ranged between 18 and 46 years ($M = 31.35$; $SD = 5.52$) and men's age ranged between 21 and 54 ($M = 33.28$; $SD = 5.76$). In terms of educational levels, 51% of women and 36% of men held a university degree, 37% of women and 37% of men had 12 years of education and 12% of women and 27% of men had less than 12 years of education.

About half the couples were first-time parents (58% of the women and 57% of the men). At the time of completing the questionnaire, the mean gestation was 32.52 weeks ($SD = 6.76$). Both have, on average, one child ($M = 1.29$; $SD = .64$, and $M = 1.41$; $SD = .72$, for mothers and fathers, respectively).

Measures

Sociodemographic and clinical data

The sociodemographic information collected included participants' age, gender, educational level, marital status, number of children, gestational age (weeks), first-time pregnancy, pregnancy complications.

Dyadic coping

The Dyadic Coping Inventory (DCI; Bodenmann, 2008; Portuguese version: Vedes, Nussbeck, Bodenmann, Lind, & Ferreira, 2013) was used to assess individuals' perceptions about their own and their partner communication and dyadic coping responses when one or both partners have to face a stressor (item examples: 'I show my partner through my behaviour when I am not doing well or when I have problem'; 'My partner listens to me and gives me the opportunity to communicate what really bothers me'). The DCI has 37 items scored on a five-point Likert-scale (from 1 = very rarely to 5 = very often). A total score using a sum of items 1–35 was used in this study, with higher scores representing higher levels of dyadic coping. Items 36 and 37 are not included in the total score as suggested by the author because they are used to evaluate perceptions about the quality of DC (Bodenmann, 2008). The alpha coefficient for this sample was .91 for women and .87 for men.

Marital adjustment

The Dyadic Adjustment Scale (DAS; Spanier, 1976; Portuguese version: Gomez & Leal, 2008), was used to assess different dimensions of marital adjustment. The DAS has 32 items scored on different Likert-type scales (items example: 'How often do you discuss, or have you considered divorce, separation, or terminating your relationship?'). A total score summing up all items was used in this study, with higher scores representing higher levels of marital adjustment. The alpha coefficient for this sample was .92 for women and .89 for men.

Quality of life

The World Health Organisation Quality of Life-BREF questionnaire was used to measure quality of life (WHO; Portuguese version: Vaz Serra et al., 2006). The WHOQOL-BREF has 26 items to measure multiple domains of quality of life. For the purpose of this study, three domains were used, namely the physical domain (seven items; item example: 'How much do you need any medical treatment to function in your daily life?'), the psychological domain (six items; item example: 'How often do you have negative feelings such as blue mood, despair, anxiety, depression?') and the social domain (three items; item example: 'How satisfied are you with the support you get from your friends?'). The alpha coefficients for this sample were .83 (physical domain), .78 (psychological domain) and .66 (social domain) for women and .78 (physical domain), .76 (psychological domain) and .65 (social domain) for men.

Procedure

The study protocol was approved by the Ethics Committee of the Center for Research in Psychology (CIP) from Universidade Autónoma de Lisboa Luís de Camões, by the

institutions' Ethical Committees (public and private hospitals), and by the National Commission for Data Protection. Prior to enrolment in the study, women and their partners provided written informed consent. Afterwards, both independently filled out the paper-and-pencil questionnaires in the presence of a researcher. Data collection took approximately 15–30 minutes. Participation was voluntary, and confidentiality was ensured.

Data analysis

Analyses were conducted using the SPSS and AMOS (version 23; IBM, SPSS Inc., Chicago, IL). Missing data were imputed through Expectation Maximisation (EM), as items did not have more than 5% of missing values and their pattern of missing was completely at random (Little's MCAR tests $> .05$) (Tabachnick & Fidell, 2007).

The extended version of the Actor–Partner Interdependence Model with distinguishable dyads, the API Mediation Model (APIMeM) (Ledermann et al., 2011) was used to test the proposed mediational model. In this model, actor (direct and indirect) and partner (direct and indirect) effects are examined. Our APIMeM has six variables: two outcomes (women's and men's quality of life), two independent variables (women's and men's dyadic coping) and two potential mediators (women's and men's marital adjustment).

Structural equation modelling (SEM) using the maximum likelihood robust estimation method was used to test our hypothesis. Direct and indirect effects were estimated using bootstrap resampling procedures (MacKinnon, Lockwood, & Williams, 2004). Bias-corrected 95% confidence intervals (CI) for the unstandardised effects were calculated based on 5000 bootstrap samples (MacKinnon et al., 2004). Measurement invariance across gender was examined before the estimation procedure through paths constraints in which we constrained the set of paths for men and women to be equal. A significant chi-square change between the models (i.e. the freely estimated model and the equally constrained model) indicated that the path coefficients are different for mothers and fathers.

The following fit model indices were used to assess the fit of the model: the chi-square/df statistic (< 2.0), the Bentler comparative fit index (CFI), the goodness of fit index (GFI) ($> .90$) and the root mean square error of approximation (RMSEA; $< .07$) (Hooper, Coughlan, & Mullen, 2008).

Results

Preliminary analysis

Means, standard deviations, and Pearson bivariate correlations among study variables are presented in Table 1. Significant and positive correlations were found among dyadic coping and marital adjustment for both women and men. Also, significant and positive correlations were found between dyadic coping and the three dimensions of quality of life for both women and men. Finally, significant and positive correlations were found between marital adjustment and three dimensions of quality of life for both women and men.

Direct and indirect effects on quality of life

Gender invariance was obtained with the chi-square change between the freely and the constrained model being non-significant ($\Delta\chi^2(4) = 5.87, p = .209$), the exception being



Table 1. Means, standard deviations, correlations and results of paired-sample *t*-tests.

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|----------------------------|--------------------|-------------------|----------------------|----------------------|---------------------|--------------------|-------------------|----------------------|----------------------|-------------------|
| 1. DCI Women | – | | | | | | | | | |
| 2. DAS Women | .617** | – | | | | | | | | |
| 3. Physical QoL Women | .152** | .143* | – | | | | | | | |
| 4. Psychological QoL Women | .382** | .372** | .505** | – | | | | | | |
| 5. Social QoL Women | .309** | .368** | .461** | .527** | – | | | | | |
| 6. DCI Men | .499** | .338** | .066 | .216** | .198** | – | | | | |
| 7. DAS Men | .413** | .520** | .179** | .304** | .241** | .522** | – | | | |
| 8. Physical QoL Men | .193** | .164** | .181** | .215** | .191** | .260** | .329** | – | | |
| 9. Psychological QoL Men | .181** | .138* | .164** | .240** | .247** | .258** | .411** | .638** | – | |
| 10. Social QoL Men | .282** | .320** | .152** | .239** | .397** | .348** | .478** | .465** | .514** | – |
| <i>M</i> (<i>SD</i>) | 136.20 (15.67) | 120.58 (14.53) | 65.36 (15.70) | 77.46 (13.00) | 73.20 (15.64) | 133.65 (13.81) | 120.72 (13.06) | 80.33 (12.67) | 81.73 (12.11) | 72.66 (15.49) |
| Range (possible range) | 52–172 (50–175) | 21–148 (0–151) | 17.86–100 (0–100) | 29.17–100 (0–100) | 8.33–100 (0–100) | 76–169 (50–175) | 70–150 (0–151) | 28.57–100 (0–100) | 33.33–100 (0–100) | 25–100 (0–100) |
| Cronbach's alpha | .91 | .91 | .83 | .78 | .66 | .87 | .89 | .78 | .76 | .65 |
| <i>t</i> | 3.07** | –.17 | –14.64*** | –4.93*** | .57 | – | – | – | – | – |

Notes: DCI, Dyadic Coping Inventory; DAS, Dyadic Adjustment Scale; QoL, quality of life; *M*, mean; *SD*, standard deviation; *t*, paired sample *t*-test; ****p* < .001; ***p* < .01; **p* < .05.

the actor and partner direct effects from marital adjustment and quality of life; these paths were freely estimated.

The proposed model fitted adequately with the data: $\chi^2/df(25) = 2.71$; CFI = .96; GFI = .96; RMSEA = .07, 90% CI [.053, .094], explaining 21% of variance in quality of life for women and 31% of variance in quality of life for men.

Actor effects from women’s and men’s dyadic coping to their own quality of life and levels of marital adjustment were found. Actor effects from women’s and men’s marital adjustment to their own quality of life were also found. Only one partner effect was found from own dyadic coping for their partner’s marital adjustment.

With regards to the indirect effects, we found an actor effect in which own dyadic coping was associated with own quality of life via own levels of marital adjustment; that means that higher levels of dyadic coping were associated with higher levels of marital adjustment, which in turn was associated with better quality of life. Moreover, one partner effect was found. Men’s dyadic coping was associated with women’s marital adjustment, which in turn was associated with women’s quality of life; that means that higher levels of dyadic coping in men was associated with higher levels of marital adjustment for women, which in turn were associated with better quality of life for women. Actor and partner direct and indirect effects can be seen in Tables 2 and 3.

Table 2. Significant direct effects (maximum likelihood estimates) between dyadic coping, marital adjustment, and quality of life.

| Effect predictor → Outcome | <i>B</i> | <i>SE</i> | <i>p</i> |
|---|----------|-----------|----------|
| Intrapersonal effects | | | |
| Dyadic Coping → Dyadic adjustment | .480 | .031 | <.001 |
| Dyadic Coping → Quality of life | .030 | .009 | <.001 |
| Dyadic adjustment women → Quality of life women | .044 | .015 | .003 |
| Dyadic adjustment men → Quality of life men | .096 | .015 | <.001 |
| Interpersonal effects | | | |
| Dyadic coping → Dyadic adjustment | .112 | .031 | <.001 |
| Dyadic coping → Quality of life | .004 | .009 | .663 |
| Dyadic adjustment women → Quality of life men | -.013 | .013 | .317 |
| Dyadic adjustment men → Quality of life women | .027 | .015 | .062 |

N = 320 couples; *B* = unstandardised estimates; *SE* = standard errors. Given gender invariance, *B* and *SE* were equal for men and women (exception being the links (actor and partner) among marital adjustment and quality of life, in which we present *B* and *SE* for both men and women).

Table 3. Bootstrap test for indirect effects for the APIMeM with dyadic coping as independent variable, dyadic adjustment as mediator, and quality of life as outcome.

| Effect | <i>B</i> | <i>SE</i> | <i>p</i> | Bootstrapping | |
|---|----------|-----------|----------|---------------|-------|
| | | | | Lower | Upper |
| Intrapersonal | | | | | |
| Dyadic coping women → Dyadic adjustment women → Quality of life women | .134 | .053 | .010 | .050 | .229 |
| Dyadic coping men → Dyadic adjustment men → Quality of life men | .248 | .042 | .010 | .176 | .318 |
| Interpersonal | | | | | |
| Dyadic coping men → Dyadic adjustment women → Quality of life women | .050 | .019 | .010 | .020 | .080 |

N = 320 couples; 5000 bootstrap sample; *p* = bootstrap bias-corrected *p*-values; *B* = unstandardised estimate; *SE* = standard error.

Multigroup SEM tests showed that the mediational model did not differ across couples in their first versus subsequent pregnancy ($\Delta\chi^2(4) = 5.85; p = .211$).

Discussion

Based on the systemic transactional model, this study aimed to explore the relationship between DC and quality of life in couples facing a situation of dyadic stress – pregnancy. Moreover, it aimed to explore the potential mediating role of marital adjustment on this association. Although most studies investigating coping responses have employed an individual level of analysis, the shared nature of the pregnancy experience leads to the need of examining intraindividual and interpersonal effects of coping on couples' marital adjustment and quality of life.

Overall, our findings revealed that DC seems to be an important factor for couples who are expecting a baby, given its potential impact on both marital adjustment and quality of life. As found in previous studies, DC contributes to improve marital adjustment (Alves et al., 2018; Molgora et al., 2018) as well as quality of life (Calou et al., 2018; Elsenbruch et al., 2006), for both women and men. Our results align with a previous study conducted with pregnant women and their partners, in which own common DC was associated with the partners' marital adjustment (Molgora et al., 2018). However, previous studies outside the reproductive literature have found some gender differences when the association between DC and marital adjustment was explored. In these studies, with participants from community (e.g. Bodenmann et al., 2006; Papp & Witt, 2010), while intrapersonal and interpersonal effects were found for women, for men only intrapersonal effects were found. One explanation can be related to the specific dyadic stressor faced by couples in this study and in the Molgora's study (i.e. pregnancy), in which it is expected that both women and men present a great involvement and communication about pregnancy-related issues.

As hypothesised, marital adjustment was associated with couples' quality of life (Figueiredo et al., 2008; Gameiro et al., 2011). Surprisingly, this effect was stronger for men than for women. While previous studies have shown that the link between marital adjustment and individuals' well-being is stronger for women than for men (e.g. Proulx et al., 2007; Whisman, 2001), this did not happen in this study. It seems, again, that the pregnancy context presents some specificities. As some studies have discussed (Colpin, De Munter, Nys, & Vandemeulebroecke, 1998; Slade, Cohen, Sadler, & Miller, 2009), because men do not have a baby growing inside them and experience the pregnancy in a different way, their adaptation (in terms of quality of life) to the pregnancy-related challenges may be more influenced by their marital adjustment, as a way of being closer to their baby. Partner effects, however, were not found. While there is some evidence outside of the reproductive literature that interpersonal effects exist (e.g. Beach, Katz, Kim, & Brody, 2003; Carr, Cornman, & Freedman, 2016), within this context more studies are needed.

Finally, as expected, our results suggest that marital adjustment may be a potential mechanism linking DC to couples' quality of life. Thus, our findings suggest that DC was associated with higher levels of marital adjustment, which in turn were associated with better quality of life. It seems that when women and men are able to employ DC strategies to deal with pregnancy-related changes, they become more satisfied with their marital

relationship (Alves et al., 2018; Molgora et al., 2018) which contributes to their well-being (Figueiredo et al., 2008; Gameiro et al., 2011). Moreover, women's quality of life seems to be more dependent on the way their partners deal with this stressful life event, as an indirect partner effect was found from men's DC to women's quality of life via women's marital adjustment. It seems that women's overall well-being is more influenced by relationships and by the efforts of their partners to deal with stress, which is in accordance with the literature (Bodenmann et al., 2006; Kiecolt-Glaser & Newton, 2001).

Strengths and limitations

The present study has some strengths that should be acknowledged. First, the sample was large with 320 couples (i.e. 640 participants). Second, to our knowledge, this is a pioneer study examining the associations between DC and quality of life in couples during pregnancy and exploring marital adjustment as a potential mechanism linking DC and quality of life. Third, this study presents a strong data analytic strategy (i.e. APIMeM) that allows capture of the intrapersonal and interpersonal effects of DC on couples' marital adjustment and quality of life.

Despite these strengths, the findings of the present study should be interpreted with caution. The cross-sectional nature of the study limits the conclusions regarding the causality of the associations between DC, marital adjustment and quality of life. Future studies employing a longitudinal design should be conducted not only to understand better the temporal order of the associations among these variables, but also to shed some light on the impacts of DC on marital adjustment and quality of life over time (including after childbirth). Second, we used a convenience sample which limits generalisation of findings. Also, it is possible that couples who participated in this study were those who presented better DC or were more satisfied with their marital relationship, leaving unexplored the more relationally distressed couples. Third, data were collected using self-report questionnaires. We have used questionnaires that were validated to the Portuguese population. However, relying only on self-report data is not sufficient for studying these complex processes. Thus, other types of data-collection procedures should be employed in future studies (e.g. diaries or observational measures).

Conclusions and practice implications

The results of this study showed that couples during pregnancy should be assessed in terms of the coping resources. This assessment will allow to identify those couples who may benefit more from psychological interventions in which couples are helped to jointly overcome the difficulties and challenges associated with the pregnancy period (e.g. DC-enhancing interventions; Bodenmann & Shantinath, 2004). Results highlight the need to focus not only on women but also on men given the impact their DC may have on women's marital adjustment and quality of life, and because their own DC may impact their marital adjustment as well as their quality of life during this specific period.

Disclosure statement

No potential conflict of interest was reported by the authors.

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