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The role of dyadic coping in the individual and dyadic adjustment during the transition to parenthood

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O papel do coping diádico no ajustamento individual e conjugal durante a transição para a parentalidade

Resumo

Considerada uma fonte de stresse, a transição para a parentalidade é um período na vida do casal que requer múltiplas mudanças e ajustamentos, tanto a nível individual como conjugal. Cada membro do casal tem de lidar com o stresse do outro (stresse diádico) e, em conjunto, encontrar estratégias de *coping* que os permitam lidar eficazmente com esse mesmo stresse. O objetivo deste estudo consistiu em avaliar o papel do *coping* diádico na associação entre variáveis de ajustamento individual (sintomas de depressão, ansiedade e qualidade de vida) e conjugal (ajustamento diádico) na transição para a parentalidade. A análise do papel mediador do *coping* diádico e dos efeitos recíprocos entre os elementos do casal representam a contribuição inovadora do presente estudo, nomeadamente no contexto da transição para a parentalidade.

A amostra deste estudo transversal foi composta por 386 participantes (193 casais) recrutados durante o segundo trimestre de gravidez na consulta externa do Serviço de Obstetrícia A (Maternidade Doutor Daniel de Matos) do Centro Hospitalar e Universitário de Coimbra (CHUC, EPE). Os casais completaram instrumentos de autorresposta que avaliaram sintomatologia depressiva (Escala de Depressão Pós-Natal de Edinburgh), sintomatologia ansiosa (Escala de Ansiedade e Depressão Hospitalar), qualidade de vida (EUROHIS-QOL-8), ajustamento diádico (Escala de Ajustamento Diádico – Revista) e *coping* diádico (Inventário de Coping Diádico).

Os resultados mostraram que as mães, comparativamente aos pais, reportaram piores níveis de ajustamento individual, mas valores semelhantes de ajustamento diádico. Para mães e pais, o coping diádico associou-se positiva e significativamente ao ajustamento diádico, sendo as associações mais fortes do que com os indicadores de ajustamento individual. Nos modelos de mediação, verificou-se que o coping diádico foi um mediador significativo na associação entre ajustamento individual e diádico. Em termos globais, o coping diádico do parceiro percebido pela mãe, o coping diádico do próprio reportado do pai e o coping diádico conjunto foram os mediadores que se revelaram significativos dos modelos de ambos os membros do casal.

Os resultados deste estudo relevam a importância de desenvolver modelos de intervenção direcionados para a transição para a parentalidade que envolvam a participação de ambos os membros do casal. Especial foco deverá ser dado à melhoria da comunicação das necessidades por parte da mãe e à psicoeducação do pai relativamente às mesmas, deste modo promovendo estratégias de resposta mais eficazes e adequadas, nomeadamente no sentido da resolução de problemas a dois (por exemplo, desenvolvendo estratégias de coping diádico conjunto). O objetivo desta intervenção seria melhorar o impacto das fontes de stresse diário para ambos os membros do casal, promovendo o melhor ajustamento individual e diádico.

Palavras-chave: ansiedade, depressão, ajustamento diádico, coping diádico, transição para a parentalidade.

The role of dyadic coping in the individual and dyadic adjustment during the transition to parenthood

Abstract

Considered an event that can be a source of stress, the transition to parenthood is a period in the couples' lives that requires multiple changes and adjustments, both at individual and relational levels. Each partner needs to deal with his/her own and partner's stress (dyadic stress) and, together, to find joint coping strategies to overcome it successfully. The aim of this study was to examine the role of dyadic coping in the association between individual (depression, anxiety and quality of life) and relational (dyadic adjustment) adjustment of couples during the transition to parenthood. The analysis of the mediating role of dyadic coping and of cross-partner effects is a novel contribution of this study, particularly in the context of the transition to parenthood.

The sample of this cross-sectional study comprised 386 participants (193 couples) recruited during the second trimester of pregnancy at the obstetrics appointments of the Obstetrics Service A (Maternity Daniel de Matos) from the Centro Hospitalar e Universitário de Coimbra (CHUC, EPE). Couples completed self-report questionnaires of depressive symptoms (Edinburgh Post-Natal Depression Scale), anxiety symptoms (Hospital Anxiety and Depression Scale), quality of life (EUROHIS-QOL-8), dyadic adjustment (Revised Dyadic Adjustment Scale), and dyadic coping (Dyadic Coping Inventory).

The results of this study showed that mothers, in comparison with fathers, reported lower levels of individual adjustment, but similar levels of dyadic adjustment. For both mothers and fathers, dyadic coping was positive and significantly associated with dyadic adjustment; these associations were stronger than those observed with the indicators of individual adjustment. In the mediation models, results indicated that dyadic coping was a significant mediator in the association between individual and dyadic adjustment. In general, mothers' reports of dyadic coping by the partner, fathers' reports of dyadic coping by the self and joint dyadic coping were significant mediators on both partners' models.

The results of this study underline the importance of developing intervention models targeted to the period of transition to parenthood, and involving both partners. Special attention must be given to the improvement of mothers' communication of her needs as well as the promotion of fathers' psychoeducation about those needs, therefore promoting more effective and adequate response strategies, such as dyadic problem-solving (for example, developing joint dyadic coping strategies). The aim of these interventions would be to ameliorate the impact of daily stressors for both partners and therefore promote better individual and dyadic adjustment.

Keywords: anxiety, depression, dyadic adjustment, dyadic coping, transition to parenthood.

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Content

Introduction

Dyadic coping must be conceptualized as a process of joint problem-solving and emotion-focused coping activities that occurs within a couple, stimulated by the interdependence of the spouses, their common concerns and mutual goals. This process implies both partners' engagement in order to assure own and partner's satisfaction and well-being (Bodenmann, 1995, 2005). Since the 1990s, researchers extended the study of stress and coping paradigm to commited couples, families and communities (Bodenmann, 2005; Pietromonaco, Uchino, & Schetter, 2013). This extension was due, for instance, to the larger amount of stressful situations and demands (increasing working hours, economical chrisis, unemployment, terrorism and violence, urban crime, political conflicts, wars and ethnic disputes) of recent years. Those stressors might undermine a couple's relationship stability, which in the absence of coping skills to manage the stress, may lead to a breakdown (Revenson, Kayser, & Bodenmann, 2005).

There is a growing body of research analysing the association between dyadic coping and indicators of individual and dyadic adjustment (or other relationship outcomes). These associations have been examined in several contexts, most notably in the context of chronic health conditions. However, the study of this association during the transition to parenthood has been fairly unexplored. In this study, our aim was also to investigate the degree to which dyadic coping may be a protective factor against relationship dissatis-faction during the transition to parenthood. Although the mediating role of dyadic coping between individual and dyadic adjustment has been already studied (Bodenmann, Pihet, & Kayser, 2006; Falconier, Jackson, Hilpert, & Bodenmann, 2015a; Iafrate, Bertoni, Margola, Cigoli, & Acitelli, 2012), to the best of our knowledge, no studies have examined its role in the association between individual and dyadic adjustment during the transition to parenthood. This study may instigate the development of more accurate intervention programs specifically targeted to the period of the transition to parenthood, in order to promote a better individual and dyadic adjustment of both members of the couple, and reduce the impact of daily stressors associated with pregnancy and the transition to parenthood.

This document is firstly composed by a theoretical framework of the main concepts examined in the present study, namely stress, dyadic stress, dyadic coping, transition to parenthood, individual and dyadic adjustment, as well as the state-of-the-art regarding the association between these variables. Then, the objectives, methods, and procedures are described, followed by a presentation of the obtained results for each of the indicated objectives. The next section is the discussion, in which our findings are briefly described and integrated in the context of the reviewed literature. Lastly, in the section of conclusions, we present a more general overview of the main implications of this study, focusing on its strengths and limitations as well as implications for practice and future research.

I – Background

Numerous studies have highlighted the negative influence of stress in marital relationships (e.g., Bodenmann, Meuwly, Bradbury, Gmelch, & Lederman, 2010; Falconier, Nussbeck, Bodenmann, Schneider, & Bradbury, 2015b). Stress may arise from a different range of situations, so that divorce and marital conflict and instability may be a consequence of challenges external to the couple and the relationship. Some of the first theories of stress in the context of marital relationships were developed with the study of the effects of the economic strains of the Great Depression and the military separation in the Second World War. For example, the ABCX model of family stress proposed by Hill (1949, cited in Karney, Story, & Bradbury, 2005), suggested that the stability of a family was a result of the interaction between the stressful events and the resources acquired by the family to cope with them. A relevant problem with stress in the family context is that families not always can find the ability to restore stability within the constant pressure to make changes in the family structure and patterns of interaction, therefore leading to a crisis (Karney et al., 2005).

Nowadays, economic crisis and obstacles leaded many couples to increase their working hours in order to maintain an acceptable lifestyle; simultaneously, the world has been lashed with terrorism and violence, urban crime, political conflicts, wars and ethnic disputes. Without the coping abilities and skills to manage the stress, there is the possibility for a couple to suffer a breakdown (Revenson, Kayser, & Bodenmann, 2005). Karney and colleagues (2005) suggested that marriages are affected by their context, highlighting for all the potencial influences to the relationship that can be found outside the partners and their relationship. All those elements of the external context interact to influence the relationship, although a relevant amount of studies have been relating marital outcomes to specific life events (for example, heart attack, death of a child, or military service) or specific circumstances (e.g., low socioeconomic status or chronic unemployment). Moreover, these elements can be more or less proximal to the context, controllable, current or historical, affect only one or both partners, and can be chronic or acute.

In this context, Karney and Bradbury (1995) indicated two factors that may play a role in how couples deal with major life transitions. The first factor relates to the personal and situational charateristics that can contribute to the impact of an event or transition, and affect how couples adapt to that event or transition. As mentioned by multiple authors (e.g., Bodenmann, 2005; Falconier et al., 2015b; Ledermann et al., 2010; Randall, Hillpert, Jimenez-Arista, Walsh, & Bodenmann, 2015), for several decades, stress was a concept only studied in an individual perspective; the same applied to the strategies of coping with stress. In this context, Lazaru's transactional approach (Lazarus & Folkman, 1984) was one of the most recognized approaches, establishing the baseline to a significant range of studies in this area. Lazarus and Folkman (1984) conceptualized stress not as a quality of the event *per se*, but resulting from the appraisal of the situation by the

individual. In other words, the stress arises when someone evaluates a situation or an event as harmful and as a possible danger for his/her health or well-being, and does not have the resources to cope with it (Lazarus & Launier, 1978; cited in Bodenmann, 1995).

In addition to personal and situational characteristics, conceptualised as important factors that can play a role in how couples deal with major life transitions, Karney and Bradbury (1995) also emphasized the adaptive processes, which refer to the ways that couples deal with conflict and marital difficulties, and that can alleviate or exacerbate the impact of the event on marital quality (Kluwer, 2010). Since relationships (mostly romantic ones) are dynamic and reciprocal, there is an understanding that reactions of a partner influence and are influenced by those of the other, thus constituting a system of reciprocal interactions (Berman, Marcus, & Berman, 1994; Bertalanfy, 1969, as cited in Bodenmann, 1995). Accordingly, both partners are viewed as a unit and a bond of mutual relations, in wich the stress is no longer a matter of only one of them.

Bodenmann (1995) considered that it is possible to distinguish two types of stress in an intimate relationship. First, the individual stress, which is experienced and coped by one of the partners without bothering the other or ask him/her for assistance; second, the dyadic stress, which happens when one of the partners cannot deal with the stress by himself, and may emerge not only of unresolved individual stress, but also may be a consequence of individual coping efforts. Dyadic stress is therefore viewed as an emotional or problem-focused stress that influences the couple as a unit, defined by Bodenmann (1995) as "any form of emotional or problem-centered stress directly concerning the couple as a unit (i.e. the birth of a child, search for an apartment, etc. are appraised as a challenge or threat, communication troubles, bad organization, lack of cooperation, differences in goals or expectancies, etc.)" (pp. 35-36). Dyadic stress may be indirect – when a partner is afraid of being affected by the stress of the other or the stressed partner expresses his/her stress and triggers dyadic coping strategies – or direct – which refers to a stressor that affects both partners simultaneously, although it may be in a different manner.

In a review concerning the role of stress on close relationships and marital satisfaction, Randall and Bodenmann (2009) divided stressors in three typologies: external vs. internal, major vs. minor and acute vs. chronic. Internal stress refers to when the couple is the source of stress itself (e.g., incompatibility, conflict, and disagreement regarding values, goals, attitudes and habits) - also known as intradyadic stress - while external may result from different situations, such as problems in the workplace, finances, children or other family members - extradyadic stress (Falconier et al., 2015b). Major stresses are normative or nonnormative critical life events such as severe illness, handicap, unemployment, death of a significant other or accident, and minor stressors refer to irritating, frustrating and distressing in everyday activities (Bodenmann, Ledermann, Blattner, & Galluzzo, 2006). Finnally, while acute stressors refer to those that are temporary and limited to a single instance, chronic stressors are stable aspects of the environment that can have repecussions for a long period of time (Karney et

al., 2005). Bodenmann, Ledermann, and Bradbury (2007) considered that external, minor, chronic stressors are the types of stressors that are more negative for the couple's relationship, once they lead to mutual alienation and a decreasing in relationship satisfaction over time.

Dyadic coping

The concept of couples' coping and, consequently, of dyadic stress and dyadic coping, emerged in the early 1990s, when researchers extended the study of stress and coping paradigm to commited couples, families and communities. These two concepts were defined as parts of an interpersonal process that must be studied involving both marital partners' characteristics and outcomes (Bodenmann, 2005; Pietromonaco et al., 2013).

The concepts of dyadic stress and dyadic coping are included in the Systemic-Transactional Model (STM) proposed by Guy Bodenmann (1995), which is based on the Transactional Stress Theory of Lazarus and Folkman (1984), but who expanded it to systemic and process-oriented dimensions. In the STM, Bodenmann argues that there exist two appraisals: a primary appraisal – in which the person judges the situation regarding its ambiguity, relevance, controllability and general character – and a second appraisal – in which the response capacities of the person are evaluated. That is, a stressful event triggers coping responses in both partners, when one of them appraises it as stressful and communicates to the other (verbally for problem-focused strategies or non-verbally for emotion-focused strategies), who responds with some form of dyadic coping. In the development of an appraisal, the individual must assess: (1) who has initially perceived the stressor (partner A, partner B, or both); (2) what caused the stressor (the partner, other, or external causes); and (3) controllability (by partner A, partner B, or both) (Bodenmann, 2005). Regarding the causes of the stressor, Bodenmann (1995) considers four categories: (a) trait-like personality variables; (b) physical and psychological well-being of the partners; (c) sociodemographic characteristics; and (d) stressful conditions or situations to which one or both partners are exposed.

Within the STM, Bodenmann (2005) conceptualized the couple in a systemic perspective, so that we cannot consider one partner's coping efforts and stress appraisals without considering the effects they have in the other partner's appraisals and coping strategies. Therefore, stressful situations may always affect in some way the marital satisfaction and the physical and psychological well-being of both partners.

According to Bodenmann (1995), in the same social context, dyadic coping occurs when interdependence of the spouses, their common concerns and mutual goals stimulate the intervention of a joint problem-solving process and, consequently, of emotion-focused coping activities). Both partners may be engaged in order to assure partners satisfaction and well-being, therefore assuring one's satisfaction and well-being (Bodenmann, 2005).

The concept of dyadic coping must be however distinguished from the concept of social support. There is abundant empirical evidence proving that

those are qualitatively different concepts and types of assistance, and that the conceptualization of dyadic coping implies the intervention of a specific kind of partner (romantic partner) to make sense (Bodenmann, 1995).

The effects of dyadic coping in marital quality seem to be pervasive throughout the years, as stated by Bodenmann, Pihet and Kayser (2006), reflecting itself differently in intra and interindividual point of views. This leads to two different approaches of dyadic coping, the individual coping strategies and dyadic coping as a phenomenon.

Individual coping strategies

The first approach, developed by Barbarin, Hughes, and Chesler (1985), focuses on the individual coping strategies of each partner and the degree these problem-focused and emotion-focused coping strategies are congruent or discrepant between partners. According to Herzberg (2013), "the function of problem-focused coping is to actively alter the stressful situation in some way, while emotion-focused coping is directed at regulating the emotional response to a stressor" (p. 136). In a recent study, it was found that emotional-focused coping by the partner was a better predictor of the other partner's dyadic coping and relationship satisfaction than problem-oriented coping, especially for females (Falconier, Jackson, Hilpert, & Bodenmann, 2015a; Herzberg, 2013); however, at an individual level, it has also been shown that problem-oriented coping proved to be better strategy in achieving personal well-being (adaptation and good health) and relationship satisfaction (Herzberg, 2013).

The expectancies concerning the other partner proved, in fact, to be particularly important, as the role of stereotypes may lead to different results in terms of relationship satisfaction (Iafrate, Bertoni, Margola, Cigoli, & Acitelli, 2012). Specifically, according to these authors, perceived similarity (determined by the stereotypes of social context shared by the partners) and congruence seem to be more important to relationship satisfaction than actual similarity between partners.

In addition, at an individual level, Bodenmann (1995, 2005) suggested that dyadic coping is influenced by intra and extrapersonal factors. First, this author divides intrapersonal factors in individual competency - which are formed by individual skills (e.g., coping skills, effectiveness of individual coping, former experiences and adequate appraisal of stress) - and dyadic competences (e.g., communication, cooperation, organization). Second, the extrapersonal or motivational factors, which are influenced by intrinsic aspects (e.g., marital satisfaction, feeling of togetherness, goals and expectancies regarding the relationship, the well-being of both partners) and extrinsic features (e.g., social pressure, economics, children or lack of better alternatives), situational motives (e.g., partner's attribution of the responsebility of the problem to the other and possibility of avoiding the negative outcome) and global motives (e.g., general attitudes on helping relationships in general).

Given the intra and extrapersonal factors described above, when one of the partners communicates stress, the other partner can either ignore it by lack of competencies (intrapersonal factors) or motivation (extrapersonal

factors), be contaminated or initiate a process of negative or positive dyadic coping (Bodenmann, 1995, 2005). For example, in a study of the moderating role of anger in the association between stress and aggression, Bodenmann and colleagues (2010) found that individuals who reported having few coping skills also reported higher levels of verbal aggression against the partner at low levels of stress. This result suggested that inter and extra-personal factors may have an important role in the pattern of behaviours that an individual shows toward the partner during a stressful situation.

In this context, gender differences in coping strategies should also be noted. For instance, there is evidence indicating that women engage more in dyadic coping strategies, as reported by Herzberg (2013) in a study that analysed the association between individual and dyadic coping. Similarly, in a recent Portuguese study, women reported to perceive themselves as communicating more stress and providing more delegated dyadic coping than their partners (Vedes, Nussbeck, Bodenmann, Lind, & Ferreira, 2013).

Dyadic coping as a phenomenon

The second approach views dyadic coping as a phenomenon, such as in the STM proposed by Bodenmann (1995). As noted, this model suggests that dyadic coping efforts and stress appraisals will have an impact in the other partner's appraisals and coping strategies, emphasizing the reciprocal nature of dyadic coping. Several studies highlighted this relationship. In a study developed by Gasbarrini et al. (2015), positive relationship processes, such as communication and dyadic coping (dyadic competences), proved to ameliorate the adverse impact of some stressors that partners experience in their daily lifes. In a recent study, Vedes et al. (2013) found that the more one partner perceives the other as being supportive and responsive, the more satisfied he/she is with the relationship and more positively perceives the partner.

This reciprocal effect was found to be more significant for women, who seem to pay more attention to husband's behaviours than the contrary, whereby husband's investment and dyadic coping is crucial to the relationship (Bodenmann et al., 2006). Taking into account its prominent effect in the couples' dyadic adjustment, the impact of husbands' supportiveness and responsiveness reinforces the idea of dyadic coping as a reciprocal pheno-menon, which is a topic that requires further attention however.

The systemic-transactional perspective of dyadic coping (Bodenmann, 2005) also differentiates between positive and negative dyadic coping. Positive dyadic coping includes supportive dyadic coping (when a partner assists the other is his/her coping efforts, by helping with daily tasks or providing practical advice, empathic understanding, and helping the other to reframe the situation or expressing solidarity, with the goal of reducing the partner's and own's stress), joint dyadic coping (when both partners participate in the coping process in a complementary way through joint problem-solving, joint information seeking, sharing of feelings, mutual commitment or relaxing together) and delegated dyadic coping (when one partner, asked by the other, takes over responsibilities in order to reduce the

other partner's experience of stress). Positive forms of dyadic coping can either be problem-focused or emotion-focused (Bodenmann, 1995, 2005). In contrast, negative forms of dyadic coping include hostile dyadic coping (e.g., support accompanied by disparagement, distancing, mocking or sarcasm, open disinterest or minimizing the extent of the partner's stress), ambivalent dyadic coping (when the partner provides support in a way that is pointless) and superficial dyadic coping (consists in a not so sincere support, not listening to the partner's answer when asked about his or her feelings) (Bodenman, 2005).

Both types of dyadic coping were suggested to influence relationship outcomes. Recently, Falconier et al. (2015a) highlighted that both positive and negative dyadic coping contributed significantly to the relationship satisfaction. However, positive dyadic coping has been associated with better outcomes both at individual and relational levels (e.g., Bodenmann et al., 2010; Bodenmann et al., 2006; Falconier et al., 2015a; Gasbarrini et al., 2015). Particularly, more positive and less negative individual and dyadic coping, as well as more positive perceptions of partner's efforts of positive dyadic coping were associated with higher relationship satisfaction for both partners (Bodenmann et al., 2006; Falconier et al., 2015a). More specifically, joint dyadic coping was suggested to be the type of positive dyadic coping that holds the greatest promise in reducing the effects of negative daily hassles (Bodenmann et al., 2010; Falconier et al., 2015a). For example, in a recent longitudinal study concerning couples' adaptation right after a breast cancer surgery, Rottmann et al. (2015) found joint dyadic coping to be an important variable in increasing couples' relationship quality and decreasing depressive symptoms and distress for both partners. As the stress increases, these positive effects tend to decrease, because of the decreasing in the capacities to solve problems (Bodenmann et al., 2010). Therefore, engaging in positive dyadic coping by discussing the stressors jointly with partner, reframing the situation or helping each other to relax increases the sense of we-ness, reduces stress and, consequently, promotes happiness and cohesion within the relationship (Bodenmann, 2005). This form of coping was also shown to be as effective in reducing depressive symptoms in patients with depression as cognitive behavioral therapy and interpersonal psychotherapy (Bodenmann et al., 2008).

Although no significant effect of negative dyadic coping in marital functioning was found in the validation of the Dyadic Coping Inventory (DCI) for Italian, French and German populations (Ledermann et al., 2010), it has been found in the Portuguese validation of this inventory (Vedes et al., 2013). In this study, a negative association pattern was suggested between negative dyadic coping and relationship outcomes (specifically relationship satisfaction, quality of sexuality, romance and passion, constructive conflict processes and shared meaning). In a recent meta-analysis concerning the association between dyadic coping and relationship satisfaction, although not as strongly as positive dyadic coping, negative dyadic coping was also shown to be significantly associated with relationship satisfaction (Falconier et al., 2015a).

For the assessment of dyadic coping, Bodenmann and his team (2008)

developed a self-reported questionnaire (the abovementioned Dyadic Coping Inventory), a coding system for analyzing overt dyadic coping behavior of the couples (Coping System for Analysing Dyadic Coping; SDAD) and an interview for exploring dyadic coping. Given the context of this study, we will focus primarily on the DCI, a self-reported inventory that assesses stress communication and dyadic coping in three dimensions: 1) as perceived by each partner about their own coping; 2) each partner's perception of the others' coping; and 3) each partner's view of how they cope as a couple. These three dimensions cover a total of nine subscales aggregated in the two types of dyadic coping (positive and negative dyadic coping) – a more detailed description of the DCI is presented in the Methods' section. The DCI has been validated across several cultures, being currently available in German, French, Italian (Ledermann et al., 2010), English (Randall et al., 2015) Portuguese (Vedes et al., 2013) and Spanish (Falconier, Nussbeck, & Bodenmann, 2013).

The role of dyadic coping in the association between individual and dyadic adjustment

The concepts of dyadic stress and dyadic coping have been broadly studied alongside with relationship satisfaction. As suggested in a recent meta-analysis conducted by Falconier and colleagues (2015a), relationship satisfaction is the dependent variable that has been more frequently studied in dyadic coping research. Beyond studying the association between dyadic coping strategies and individual adjustment, in the past few years researchers have also been focused in the study of the variables that may play a role in the association between individual and dyadic adjustment (e.g., Falconier et al., 2015a; Gasbarrini et al., 2015; Herzberg, 2013). Thus, in this context, it would be particularly relevant to examine if dyadic coping is a significant mediator of the former relationship, and which forms of dyadic coping (e.g., enacted by oneself, enacted by the partner or joint dyadic) may contribute to better dyadic adjustment of parents.

Dyadic coping and individual adjustment

There is a fair amount of research examining the association between dyadic coping and different indicators of individual adjustment, most often symptoms of anxiety and depression. However, the link between these variables has been mostly studied in the context of chronic diseases (e.g., Berg & Upchurch, 2007; Gabriel, Untas, Lavner, Koleck, & Luminet, 2016; Regan et al., 2014; Samios, Pakenham, & O'Brien, 2015), and the majority of the results demonstrated a significant association between depression, anxiety and own and partner's dyadic coping strategies.

For instance, Regan et al. (2014), in a study examining the association between dyadic coping, anxiety, depression and relationship satisfaction in patients with prostate cancer, indicated that there was significant negative associations between partner's supportive and negative dyadic coping and one's symptoms of depression and anxiety. More recently, Gabriel et al. (2016) examined the association between dyadic coping, alexithymia, symptoms of anxiety/depression and life satisfaction. The authors found that

the variables of individual adjustment (anxiety and depression) and dyadic coping were associated; however, for women it was observed an indirect pattern, with alexithymia mediating this association, while for men it were psychological symptoms that were found to mediate the association between alexitimia and dyadic coping.

In fact, gender differences in individual adjustment have been well documented in several studies concerning dyadic interactions. For example, Papp and Witt (2010) suggested these differences when studying individual coping strategies, as indexed by negative mood regulation, in association with own and partner's positive and negative dyadic coping. The authors found that individual coping strategies were influenced by individual strategies of negative mood regulation, and its effects in dyadic coping efforts were higher for women. Specifically, this study indicated that the more one uses individual coping strategies, the higher the probability of engaging in positive dyadic coping strategies and the lower of engaging in negative dyadic coping strategies. However, lower levels of mood regulation (more depressive and anxious symptomathology) seemed to be linked to more negative strategies of dyadic coping.

Bodenmann, Charvoz, Widmer, and Bradbury (2004) also concluded that depression was positively related to deficits in individual and dyadic coping, that is, those deficits exist specially in high depressed individuals. Moreover, they also identified gender differences, reporting that the impact in dyadic coping strategies was stronger for women, which thus contributed to the idea that female partners are more susceptible to changes in marital relationships than male partners.

Dyadic coping and dyadic adjustment

Although some authors did not find a significant association between dyadic coping and relationship satisfaction (Bodenmann et al., 2006), most research has shown significant correlations between these variables (e.g., Gasbarrini et al., 2015; Herzberg, 2013; Levesque, Lafontaine, Caron, Flesch, & Bjorson, 2014). In a recent meta-analysis about dyadic coping and relationship satisfaction, Falconier and colleagues (2015a) underlined that research is consensual in showing a strong positive correlation between total dyadic coping and relationship satisfaction for both men and women, regardless of the partner's gender, age, nationality, educational level and couple's relationship length. In 1994, Gottman (as cited in Kluwer, 2010) had already suggested this strong association, referring that conflict and problem-solving behaviours, and the way couples interact and handle their conflicts (i.e. dyadic coping strategies) were one of the most important determinants of relationship satisfaction. In fact, as recently reported (Vedes et al., 2013), individuals' coping together as a unit is strongly linked to the feeling of we-ness and fulfillment.

Dyadic coping studies reinforce this strong association for all forms of dyadic coping, though at different levels (Bodenmann et al., 2006; Falconier et al., 2015a). Specifically, the perception of positive dyadic coping by the self and by the partner was suggested to have a strong effect in relationship satisfaction. This means that relationship satisfaction depends more on the

perception of an increase of own and partner's efforts to engage in positive dyadic coping than of a decreasing of negative dyadic coping (Falconier et al., 2015a).

Although there is evidence that one's own dyadic coping strategies enhances one's own relationship satisfaction (Levesque et al., 2014), most research also holds for the idea that the perception of partner's dyadic coping is a significantly higher predictor of own's relationship satisfaction, specially for women (Bodenmann et al., 2006; Don & Mickelson, 2014). For example, Bodenmann and colleagues (2006) only found significant effects of inter-individual dyadic coping in relationship satisfaction (that is, partner's dyadic coping), but not at an intra-individual level (own dyadic coping).

Given these findings, it would be important to study the cross-partner effects in relation to individual and relational indicators, as well as the association between own and partner's dyadic coping strategies and own and partner's individual and relational adjustment. This would also allow to distinguish the contributions from individuals' reports regarding themselves (actor) and the contributions from their partner, which may be relevant in the context of shared stressors, such as the transition to parenthood.

Because different forms of dyadic coping (as stated above) are differently associated with relationship satisfaction (Falconier et al., 2015a), special attention should be given to the different consequences of the use of each one of these forms the adaptation outcomes.

Dyadic coping as a mediator

Although there is a significant number of studies trying to establish a direct association between dyadic coping and relationship satisfaction (e.g., Bodenmann et al., 2006; Falconier et al., 2015a; Iafrate et al., 2012), some authors have also found important outcomes indicating dyadic coping as a mediating variable (e.g., Herzberg, 2013; Levesque et al., 2014; Wunderer & Shneewind, 2008).

The mediating role of dyadic coping was studied by Herzberg (2013), when examining the interplay between individual and dyadic coping and their effects on relationship satisfaction. Besides finding a stronger influence of dyadic coping than individual coping in relationship satisfaction, the author corroborated the indirect effect of dyadic coping. Furthermore, this study showed that this effect was particularly significant for women, once that dyadic coping fully mediated the link between individual coping and relationship satisfaction. On the other hand, Levesque and colleagues (2014) only reported significant effects for men. In a study examining the mediating role of dyadic coping in the association between dyadic empathy and relationship satisfaction, the authors found that dyadic coping only mediated the link between one's own empathic concern and one's own relationship satisfaction in men.

Nevertheless, significant actor effects suggested that the more one individual takes the point of view or shares the emotional experience of the partner (dyadic empathy), the more he/she can communicate stress (dyadic coping), suggesting a possible positive influence in partner's relationship outcomes (Levesque et al., 2014). Indeed, several authors underscored the

interdependence of partner's dyadic coping, particularly for women. For example, Herzberg (2013) found that, men's individual emotional dyadic coping predicted females' dyadic coping efforts and relationship satisfaction. Similar results were reported by Wunderer and Schneewind (2008), who indicated that men with high relationship standards invested more in dyadic coping efforts, which in turn increased women's relationship satisfaction. These results call therefore attention for actor-partner mediation effects of dyadic coping.

Although it has been shown that dyadic coping had a mediating role between individual variables and relationship satisfaction (e.g., Bodenmann et al., 2006; Falconier et al., 2015a; Iafrate et al., 2012), to the best of our knowledge, no studies have examined its role in the association between individual and dyadic adjustment during the transition to parenthood.

Pregnancy and transition to parenthood

The transition to parenthood may be conceptualized, in a psychological and sociological perspective, as beginning in the moment that parents decide to have a child untill the first months after the birth, mostly because this is the time when expectancies and decision-making processes related to conception start to emerge (Moura-Ramos, 2006; Oliveira, Araújo-Pedrosa, & Canavarro, 2005).

Untill the early 80's, the transition to parenthood was mostly defined as moment of crisis, largely because of Hill's definition of this concept as an acute change within the usual patterns of family behaviours. Hill's definition was stimulated by LeMasters, who indicated in 1957 that almost 83% of parents experienced a moderated or light crisis in the first years after the birth of the first child (Cowan & Cowan, 1995). More recently, with the contributions of numerous authors, the transition to parenthood has been increasingly refered as a normative event, and less as a crisis (Canavarro, 2001; Cowan & Cowan, 1995; Oliveira et al., 2005).

Canavarro (2001) defined the transition to parenthood as the ability to overcome the developmental tasks needed to take care and educate a child, in order to contribute to his or her normative development. According to this author, during the transition to parenthood, the developmental tasks can be summarized as follows: a) to reavaluate and restructure of the relationship with parents; b) to reavaluate and restructure the relationship with the partner; c) to construct the relationship with the baby as a separated person; d) to reavaluate and restructure the self-identity (roles, values, personal aims and priorities). If there is already another child, the relationship with the child may also be revaluated and restructured, therefore contributing for a complexification of the familiar system (Oliveira et al., 2005).

Such developmental tasks imply gains and losses, associated with the representations that each member of the couple has of pregnancy and of parenthood. These tasks also require behavioural, cognitive and emotional responses that are not part of the usual behavioural pattern of parents, thus implying specific adaptations (Canavarro & Araújo-Pedrosa, 2005). More specifically, Cowan and Cowan (2000) suggested five main issues in the couple's relationship that may need more adaptation efforts and/or represent

an important source of stress: 1) changes in partner's emotional life; 2) changes in their sexual relationship; 3) lack of communication of expectations; 4) different visions of the division of household chores and taking care of the baby; and 5) shifting in independence and interdependence notions as the child birth gets closer.

Becoming a parent may represent a source of satisfaction and personal realization, but also a source of stress (and sometimes of maladaptative change). On the one hand, becoming a parent has the capacity of giving a new meaning to life and strengthening the couple's and family's bond. On the other hand, it is a period of time where new challenges can arise, thus implying new resources, enhancing new problems or increasing pre-existing ones due to child care, and organizing individual, marital, familiar and professional issues (Cowan & Cowan, 1995; Moura-Ramos, 2006). In fact, it has been widely acknowledged the decline in marital adjustment, dyadic satisfaction and cohesion from pregnancy to postpartum (Hernandez & Hutz, 2009), as well as an inverse association between relational outcomes and stress, depression, and psychosocial adjustment (e.g., Caroli & Sagone, 2014a; Hernandez & Hutz, 2009; Marshall, Simpson, & Rholes, 2015; Moura-Ramos & Canavarro, 2007). The negative impact in individual and relational outcomes may, indeed, affect the relationship with the baby at the postpartum period (Cox, Paley, Burchinal, & Payne, 1999; Parfitt & Ayers, 2014).

The birth of a child may be included in Bodenman's dyadic stressor perspective (1995) as any form of emotional or problem-centered stress directly concerning the couple as a unit, which is appraised by the couple as a challenge. In fact, pregnancy and transition to parenthood have already been studied concerning the dyadic stressors that may emerge (Hernandez & Hutz, 2009; Nazaré, Fonseca, & Canavarro, 2013).

In the context of the adaptation in the transition to parenthood, Moura-Ramos (2006) suggested a list of four principal contexts of influence in this adaptation: 1) individual (including personal characteristics such as age, socioeconomic level and parity); 2) relational (marital relationship, presence of a significant other during labour; 3) child-related (e.g., gender, weight and gestational age); and 4) medical (e.g., type of labour and anesthesia).

Differences and similarities amid mothers and fathers in adaptation during the transition to parenthood

There are numerous studies suggesting the existence of differences in the adaptation to the transition to parenthood between mothers and fathers (e.g., Conde & Figueiredo, 2014; Figueiredo & Conde, 2011; Guedes & Canavarro, 2014; Moura-Ramos & Canavarro, 2007; Parfitt & Ayers, 2014; Stroud, Durbin, Saigal, & Knobloch-Fedders, 2010). According to these studies, women seem to report more symptoms of anxiety and depression in all moments of the transition to parenthood, though there are some variations in some periods, especially between the second semester of pregnancy to three months postpartum. For example, Conde and Figueiredo (2014), in a study examining sex differences of 24h- cortisol from mid-pregnancy to three months postpartum, found that women showed higher cortisol levels at

the second trimester than at three months postpartum, while men showed the opposing pattern. Based in prior studies that postulated that high cortisol levels are associated with psychological symptoms during pregnancy and the postpartum, these authors concluded that mothers showed higher anxiety and depression symptoms near the end of pregnancy, while fathers showed higher symptomathology at early postpartum. These findings support the authors' idea that late pregnancy and childbirth seem to be particularly difficult for women's adjustment (Figueiredo & Conde, 2011). Indeed, in the first days postpartum, Moura-Ramos and Canavarro (2007) also found that mothers reported more intense emotional reactivity and maladjustment. Similar results were recently reported by Parfitt and Ayers (2014). As noted by Caroli and Sagone (2014b), several factors may play a role in this mal-adjustment, namely "prenatal stress, anxiety, feeling of parental inefficacy, social support, symptom of physical maternity-care systems, satisfaction with the child-birth benefited from the fulfillment of expectations, personal control, and maternal self-efficacy" (p. 697).

In a recent study where gender differences in individual adaptation to transition to parenthood were also found (more symptoms of depression and anxiety), Guedes and Canavarro (2014) underlined that this migh me due to the fact that women experience more changes than parents, namely physical changes and maternal leave, as well as the fact that they usually assume the main role of caregiver. In the same direction, Moreno-Rosset, Arnal-Rémon, Antequera-Jurado and Ramírez-Uclés (2016) indicated that women experience physical, hormonal, and emotional changes more intensely during pregnancy, contributing for the higher reports of individual maladjustment. Conversely, there are studies that advocate a similar pattern of individual adjustment by both partners. In a recent study examining mental health of first-time parents, Parfitt and Ayers (2014) reported that a proportion of men and women suffer from mental health problems during pregnancy and after childbirth, and that parents within the same couple had similar experiences of adjustment and relationships in this period. Moreover, a similar pattern of change in 24h-urinary cortisol was found between women and men from mid-pregnancy to three months postpartum, which increased from the second to the third trimester of pregnancy and decreased in the three months postpartum (Conde & Figueiredo, 2014).

Moreno-Rosset et al. (2016) also highlighted that mothers' individual maladjustment might have an impact on both partners and contribute to the decline in the quality of their relationship. Thus, although mothers frequently report more difficulties of adaptation, stressors associated with the transition to parenthood affect both partners and, therefore, represent a challenge to the marital relationship. Guedes and Canavarro (2014) found similar patterns of marital relationship quality between mothers and fathers, suggesting that partners experience transition to parenthood differently (individually, as described above), but make more similar appraisals of their relationship (relationship satisfaction).

A significant association between mothers' and fathers' distress was earlier reported by some studies (e.g., Epifanio, Genna, De Luca, Rocella, & La Grutta, 2015; Marshall et al., 2015), which found that husbands' and

wives' depressive symptoms seem to be related, and which highlighted the interdependence and reciprocity between the members of the couple. For instance, it has been indicated that the more social support from the partner is perceived by the mother, the higher the marital quality, emotional closeness and intimacy, and perceived equity (Don & Mickelson, 2014). It is notewhorthy, however, that more than the the lack of social support itself, it is the lack of perceived effectiveness of partner's support that was found to be a stronger contributor to maternal emotional distress (Kluwer, 2010; Rini, Schetter, Hobel, Glynn, & Sandman, 2006; Tanner et al., 2012). Also, there is evidence that partner's support contributes to the prevention and reduction of postpartum depression and anxiety in mothers (Hernandez & Hutz, 2009; Tanner et al., 2012), to less fearful or distressed infant temperament (Tanner et al., 2012) and more cooperative coparenting (Christopher Umemura, Mann, Jacobvitz, & Hazen, 2015; Feinberg, 2002).

Based on the previous findings, fathers seem to have a crucial role during this period in upholding balance in the marital relationship and, thus, in the relationship satisfaction. However, stressful situations during this period must be recognized and managed by both partners, which implies that in the same context, interdependence of the spouses, their common concerns and mutual goals stimulate a joint problem-solving process and, accordingly, of emotion-focused coping activities, and particularly of dyadic coping (Bodenmann, 1995).

The present study

In the present study, the objective was to assess the degree to which dyadic coping may be a protective factor against relationship dissatisfaction during the transition to parenthood, so that mental health professionals may better support couples in which at least one partner is experiencing stress. The recent systemic view and definition of stress allowed a better understanding of how couples perceive and cope with stress, individually and as a dyad, driving individual-oriented interventions to others integrating the role of the partner (Randall & Bodenmann, 2009). The aim of these interventions would be to take action in already existing disruption or preventing future relationship dysregulation, particularly because the transition to parenthood may intensify relationship problems that already exist during pregnancy (Kluwer, 2010). Corroborating this fact, for example, Cox and colleagues (1999) found that couples in which neither partner presented positive problem-solving communication before childbirth expressed the least marital satisfaction and reported the biggest declines in satisfaction 24 months postpartum. Moreover, the *Vulnerability-Stress Adaptation* (VSA) model of marriage (Karney & Bradbury, 1995) postulates that pre-birth relationship characteristics such as frequency of conflicts, marital adjustment, communication and support affect how couples adapt to the transition to parenthood, and subsequently whether this transition causes changes in the relationship satisfaction. Moreover, Gasbarrini and colleagues (2015) suggested that positive relationship processes such as couple communication and dyadic coping can be beneficial to ameliorate the adverse impact of some stressors that partners experience in their daily lives.

However, the development of interventions focused on dyadic coping during the transition to parenthood could be used as an important resource for reducing its potentially stressful impact in the couple. Understanding the effects of coping strategies of one partner in the other partner's adjustment may help clinicians in promoting a more adaptive transition to parenthood for couples, while taking into account their different characteristics. As an example, there are some prevention programs for assisting couples with their marital life (Razak, Hoesni, Zakaria, & Ismail, 2015), such as *The Couples Coping Enhancement Training* (CCET) developed by Bodenmann and Shantinath (2004) or *The Coping Oriented Couple Therapy* (COCT), developed by Bodenmann et al. (2008). Although these programs were not specifically designed for interventions during the transition to parenthood, they may be an important tool. In fact, these programs are mainly focused on stress and coping, and anchored in social learning and coping theories (Bodenmann & Shantinath, 2004; Bodenmann et al., 2008), which is in line with the representation of the transition to parenthood as a source of dyadic stress (Bodenmann, 1995). Moreover, they are divided in several modules, comprising individual and dyadic stress managing tools as well as training in dyadic skills, dyadic coping and dyadic communication. These programs were also tested in various moments of measurement from the beginning to the end of transition to parenthood. For example, the COCT (a depression prevention program) revealed a significant impact on depressive symptoms reduction due to mutual partner's support. This finding might be interesting in this context, considering the significant postpartum depression rates found in literature (Epifanio et al. 2015).

II - Objectives

The general objective of this study was to evaluate the potential role of dyadic coping in the association between couples' individual and dyadic adjustment during the transition to parenthood. The specific aims of this study were:

- To characterise the individual (depressive and anxiety symptoms and quality of life) and relational adjustment (dyadic adjustment) of couples during the transition to parenthood, comparing mothers' and fathers' outcomes;
- To characterise and compare dyadic coping (enacted by the self, enacted by the partner and joint dyadic coping) between mothers and fathers;
- To examine the associations between dyadic coping (enacted by the self, enacted by the partner and joint dyadic coping) and couples' individual and dyadic adjustment, also analysing the cross-partner effects;

- To study the potential mediating role of dyadic coping (enacted by the self, by the partner and joint dyadic coping) in the association between individual adaptation (anxiety and depressive symptoms) and dyadic adjustment.

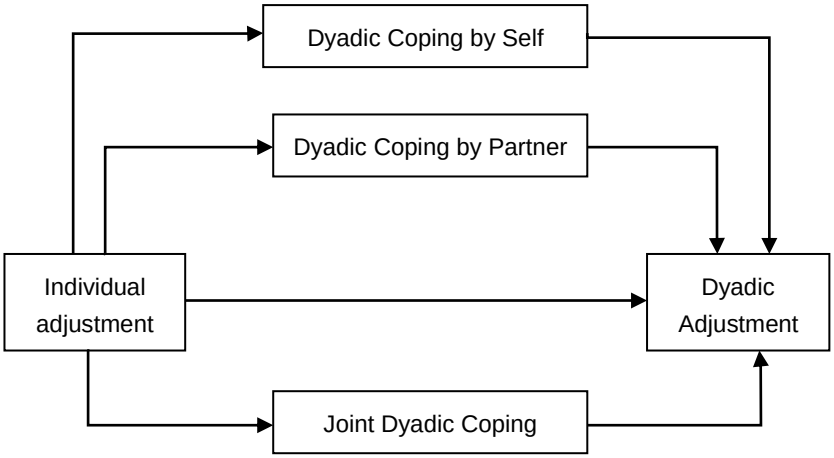

Figure 1. Mediation model of dyadic coping in the relationship between individual and dyadic adjustment

Given the abovementioned objectives and the literature review, in this study we hypothesized that:

H1: Mothers will report lower levels of individual (depression, anxiety and quality of life) and dyadic adjustment than fathers.

H2: Mothers will report higher levels of dyadic coping by the self and lower levels of dyadic coping by partner than parents.

H3: Dyadic coping (enacted by the self, enacted by the partner and joint) will be associated with better individual adjustment (lower scores on depression and anxiety, and higher quality of life) and dyadic adjustment (consensus, satisfaction and cohesion), for both partners.

H4: The link between individual adjustment and dyadic coping (by the self, by the partner and joint dyadic coping) will be stronger for mothers than for fathers.

H5: For mothers, dyadic coping enacted by the partner will be more strongly associated with own dyadic adjustment than dyadic coping enacted by oneself.

H6: Dyadic coping will mediate the association between individual and dyadic adjustment.

III - Methods

Participants

The sample of this study consisted of 386 participants (193 couples), consecutively recruited during the second trimester of pregnancy at the obstetrics appointments of the Obstetrics Service A (Maternity Daniel de Matos; MDM) from the Centro Hospitalar e Universitário de Coimbra (CHUC, EPE). The inclusion criteria of this study were:

1) Age of both members of the couple of 18 years or higher;
2) Ability to give a written informed consent;
3) Ability to read and write in Portuguese, in order to complete the set of questionnaires;
4) Be in the course of the second trimester of a singleton pregnancy, without any complications with the baby or other serious obstetrics problems;
5) Be in a relationship (dating, marriage or *de facto* union).

The study sample was mostly constituted by married couples (62.2%), followed by those in a *de facto* union (34.7%). The mean age was of 33.7 years for fathers (*SD* = 5.19) and 31.6 years for mothers (*SD* = 4.64). Fathers were significantly older than mothers ($t(386) = 4.14$, $p < .001$). The mean length of the relationship was of 7.11 years (*SD* = 4.59). Most participants had university education (42.6% for fathers and 59.7% for mothers), and were employed (94.2% for fathers and 84.9% for mothers). The comparative analysis showed that fathers had less education ($\chi^2 = 29.94$; $p < .001$) and were more likely to be employed than mothers ($\chi^2 = 9.37$; $p < .001$).

Table 1. Socio-demographics (*N* = 193 couples)

	Men (*n* = 193)		Women (*n* = 193)		χ^2	*Cramer's V*
Marital status						
Married	120	62.2	120	62.2		
In a relationship (do not live together)	6	3.1	6	3.1		
De facto union	67	34.7	67	34.7		
Education					29.94***	.28***
≤ 9th grade	49	25.8	11	5.8		
10th – 12th grade	60	31.6	66	34.6		
University education	81	42.6	114	59.7		
Professional situation					9.37**	.16**
Employed	180	94.2	163	84.9		
Unemployed	10	5.2	28	14.6		
Student	1	0.5	1	0.5		
	M (SD)		*M (SD)*		*t*	*Cohen's d*
Age (years)	33.7(5.19)		31.6(4.64)		4.14***	.43
Relationship lenght (years)	7.11 (4.59)					

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

Regarding the obstetric characteristics, the majority of women was primiparous (63%). The mean value of gestation weeks was 22.93 (*SD* = 5.23). The obstetric characteristics are presented with detail in Table 2.

Table 2. Obstetric characteristics (*N* = 193 mothers)

	Women (*n* = 193)	
	M (SD)	
Weeks of gestation	22.93 (5.23)	
	n	**%**
Parity		
Primiparous	121	63
Multiparous	71	37
Pregnancy complications	63	33
Baby's medical problem	1	0.5
Previous losses	36	19.6
Previous infertility story	17	9.6
Infertility treatments	12	6.8

Procedures

This study was formally authorized by the Ethics Committee of the CHUC, EPE and the Ethics Committee of Research in Psychology of the Faculty of Psychology and Education Sciences of the University of Coimbra.

Data collection took place between November 2015 and April 2016 in the Maternity Daniel de Matos – CHUC, EPE. Before the contact with the elegible couples, the medical team was contacted by the researchers to define the recruitment procedures. All couples were informed about this study at the end of a medical appointment and were asked permission to be contacted by the study researchers. If the couple agreed, the researchers presented the objectives of the study and those who decided to participate signed a consent form (keeping a copy for themselves). When the contact with the male partner was not possible, the study was presented to the pregnant woman and they were asked to repeat the information to the partner (also presenting the consent form). The set of questionnaires was then given to participants in an envelope, and participants were asked to complete them individually, and to return them to the researchers at the next appointment.

A total of 518 couples were initially contacted, of which 45 refused to participate. Reasons for refusal (when provided) were as follows: 1) not having time; 2) one of the partner was not a native Portuguese speaker; 3) it was not the first child; and 4) not interested. Four women were also excluded because they were not in an intimate relationship, three women reported not continue the medical follow-up at the same maternity, one woman was emotionally distressed to continue the presentation of the study, and one woman was experiencing an interruption of pregnancy.

Of the 518 initially contacted couples, 463 accepted to participate and, of those, 228 returned the set of questionnaires completed by the couple or by the mother (participation rate = 44%). Of the returned questionnaires, two women did not know how to characterize their current relationship, since

they were going through a process of divorce, and nine couples delivered the questionnaires unfilled. Couples with more than 20% of missing values in a questionnaire were not considered, as well as one case of twin pregnancy were excluded from the analyses. As well, data provided only by the mother were not considered for this study's analyses. Therefore, the final sample of this study comprised 193 couples.

Measures

The assessment protocol included a sociodemographic and clinical questionnaire and five self-reported questionnaires.

Sociodemographic and clinical characteristics

The sociodemographic and clinical characteristics (for both women and partner) were assessed with a self-reported questionnaire developed specifically for this study and included the following information: age, education, gender, relationship status (married, living together, dating) and length of the relationship, employment status, past or present psychological/ psychiatric history. Information concerning current pregnancy and mother's reproductive history included information such as gestation weeks, baby's gender, the existence of complications during pregnancy, problems with the baby, predictability of pregnancy (expected or unexpected), planning of pregnancy, and obstetric history.

Dyadic coping

Dyadic coping was assessed with the Dyadic Coping Inventory (DCI; Bodenmann, 2007; Portuguese version (PV): Vedes et al., 2013). The DCI is a 37-item self-reported inventory that assesses dyadic coping and discrepancies regarding equity, congruence and reciprocity between the two partners. The DCI is organized in nine subscales that can be grouped in three levels: Dyadic Coping By the Self (Stress Communication by Self, Supportive Dyadic Coping by Self, Negative DC by Self, Delegated DC by Self), Dyadic Coping by The Partner (Stress Communication by Partner (or Other), Supportive DC by Partner, Negative DC by Partner, Delegated DC by Partner) and Joint DC. The items are measured in a five-point response scale (from 1 = very rarely to 5 = very often). Two items (36 and 37) assess how satisfied the individual is with their dyadic coping. The mean of all items serves as a total score of dyadic coping. In this study, the reliabilities were .85 for both partners in the dimension dyadic coping by the self, .86 for fathers and .89 for mothers in the dimension dyadic coping by the partner, and .87 for fathers and .90 for mothers in the dimension joint dyadic coping. For total dyadic coping, the Cronbach's alpha was .94 for women, and .93 for men.

Depressive symptoms

The Edinburgh Postnatal Depression Scale (EPDS; Cox, Holden, & Sagovsky, 1987; PV: Augusto, Kumar, Calheiros, Matos, & Figueiredo, 1996) was used to assess depressive symptoms and to identify patients at risk for "perinatal" depression. The EPDS comprises 10 items with four

alternatives each, where patients must indicate the one that better represents how they have been feeling in the last seven days. The total score is obtained by adding the item scores. The maximum possible score is 30 and a value of 10 or more represents a risk for possible depression. In the present study, the Cronbach's alpha was of .86 for mothers and .83 for fathers.

Anxiety symptoms

The anxiety subscale of the Hospital Anxiety and Depression Scale (HADS; Zigmond & Snaith, 1994; PV: Pais-Ribeiro et al., 2007) was used to assess symptoms of anxiety. This subscale is constituted by seven items, which are answered on a response scale ranging from 0 (less severe) to 3 (more severe). The total score of the subscale varies between 0 and 21. A total score between 0 and 7 indicates inexistence of symptoms, a score from 8 to 10 indicates mild symptomatology, a score between 11 and 14 point to a moderate symptomatology and from 15 to 21, the symptomatology is severe. In the present study, the Cronbach's alpha was of .85 for mothers and .80 for fathers.

Quality of life

Quality of life was assessed with the EUROHIS-QOL-8 (Power, 2003; PV: Pereira, Melo, Gameiro, & Canavarro, 2011). The EUROHIS-QOL 8-item index covers items of four domains (physical, psychological, social relationships and environment) of the generic questionnaire WHOQOL-Bref, each one assessed by two items. Participants are asked to indicate how much they agree with each item in a five-point response scale that ranges, for example, from "Nothing" to "Completely". The total score is obtained by adding the scores from the eight items and a higher value reflects a perception of better quality of life. In this study, the Cronbach's alpha was of .80 for mothers and .82 for fathers.

Dyadic adjustment

The Revised Dyadic Adjustment Scale (RDAS; Busby, Christensen, Crane, & Larson, 1995; PV: Pereira, Canavarro, & Narciso, psychometric studies ongoing) was used to assess dyadic adjustment. The RDAS is a self-report scale composed by 14 items divided in three dimensions: Consensus, Satisfaction and Cohesion. A total score can be obtained by adding the item-scores, answered in a five-point response scale (e.g., 1-Every day to 5 – Never) or a six-point response scale (e.g., 1-Always to 6 –Never). Higher scores denote increased dyadic adjustment. In the present study, the Cronbach's alpha was of .86 for mothers and .82 for fathers.

Data analysis

For the data analysis, the program IBM SPSS (*Statistical Package for the Social Sciences* – version 22.0) was used. First, descriptive statistics, including frequencies, means (M) and standard deviations (SD) were used to the sample's characterization. Chi-square and Student t tests were used to compare mothers and fathers in respectively categorical and continuous variables.

To examine the existence of differences between mothers and fathers in the study variables (individual and dyadic adjustment, dyadic coping), we applied repeated measures univariate or multivariate analysis of covariance (ANCOVA or MANCOVA), with gender as within-factor. Because mothers and fathers differed in relation to age, education and professional situation, these variables were included as covariates. Pearson correlations were used to assess the associations between study variables, including cross-partner effects.

To ascertain the direct and indirect effects of individual adjustment (depression and anxiety) on dyadic adjustment through dyadic coping, multiple mediation analyses were performed in the PROCESS (Model 4 in Hayes, 2013), a computational tool for path analysis. Independent models were tested for mothers and fathers. Depression and anxiety symptoms were used as independent variables, dyadic coping (by the self, by the partner and joint dyadic coping) were entered as mediators, and dyadic adjustment was tested as the dependent variable. A bootstrapping procedure was used to generate conditional indirect effects, and bias-corrected and accelerated confidence intervals (BCa CIs) were created with an indirect effect considered significant if zero was not contained within the lower and upper CIs. Bootstrapping is a nonparametric resampling procedure that does not require the assumption of a normal distribution, and it demonstrates a higher power with reasonable control over the Type-I error rate through an appropriate control of confidence intervals.

Statistical significance was set at the alpha .05 level. Effect sizes were analysed using Cramer's *V*, Cohen's *d* and Partial Eta Squared (η_p^2), adopting the following conventions: small effect: Cohen's $d \geq .20$, Cramer's $V \geq .01$, $\eta_p^2 \geq .01$; medium effect: Cohen's $d \geq .50$, Cramer's $V \geq .03$, $\eta_p^2 \geq .06$; large effect: Cohen's $d \geq .80$, Cramer's $V \geq .05$, $\eta_p^2 \geq .14$ (Cohen, 1992).

IV - Results

Comparison of individual adjustment between mothers and fathers

Regarding the three dimensions of individual adjustment, significant differences were found between mothers and fathers in relation to depressive and anxiety symptoms, as well as quality of life. The results indicated that mothers reported higher levels of symptoms of depression and anxiety, and perceived lower quality of life than fathers (see Table 3).

Table 3. Comparison of individual adjustment between mothers and fathers

	Mothers (*n* = 193)	Fathers (*n* = 193)	*F*	η_p^2
	M (*SE*)	*M* (*SE*)		
Depression	6.54 (0.32)	5.13 (0.29)	16.57***	.08
Anxiety	5.17 (0.28)	3.85 (0.24)	20.06***	.10
Quality of life	72.58 (0.86)	76.36 (0.88)	12.67**	.06

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

[a] Univariate analysis of covariance (ANCOVA)

Comparison of dyadic adjustment between mothers and fathers

In relation to the dimensions of dyadic adjustment, no differences were found between mothers and fathers (Wilks' Lambda = .99, $F(3,184) = 0.92$, $p = .433$, $\eta_p^2 = .02$). Similarly, no significant differences were found regarding total dyadic adjustment. The results are presented in Table 4.

Table 4. Comparison of dyadic adjustment between mothers and fathers

	Mothers (*n* = 193)	Fathers (*n* = 193)	*F*	η_p^2
	M (*SE*)	*M* (*SE*)		
Consensus	4.13 (0.04)	4.10 (0.04)	0.78	.004
Satisfaction	4.16 (0.04)	4.18 (0.04)	0.26	.001
Cohesion	3.35 (0.07)	3.27 (0.07)	1.41	.007
Total dyadic adjustment	54.68 (0.56)	54.20 (0.54)	1.28	.007

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

[a] Multivariate analysis of covariance (MANCOVA)

Comparison of dyadic coping between mothers and fathers

Regarding dyadic coping, repeated measures, MANCOVA revealed that mothers and fathers significantly differed in the composite measures of dyadic coping (Wilks' Lambda = 0.88, $F(3,190) = 8.72$, $p < .001$, $\eta_p^2 = .12$). Follow-up univariate tests showed that mothers reported significantly higher dyadic coping by self than fathers. No significant differences were found in relation to dyadic coping as enacted by the partner and joint dyadic coping (see Table 5).

Table 5. Comparison of dyadic coping dimensions between mothers and fathers

	Women (*n* = 193)	Men (*n* = 193)	*F*	η_p^2
	M (*SE*)	*M* (*SE*)		
Dyadic Coping by Self	4.06 (0.03)	3.93 (0.03)	15.69***	.076
Dyadic Coping by Partner	3.92 (0.04)	3.95 (0.04)	0.92	.005
Joint Dyadic Coping	3.89 (0.06)	3.87 (0.05)	0.12	.001

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

[a] Multvariate analysis of covariance (MANCOVA)

Associations between individual and dyadic adjustment

Overall, mothers' individual adjustment was significantly associated with dyadic adjustment. Specifically, mothers' symptoms of depression and anxiety were negatively correlated with their dyadic adjustment, whereas the correlations with QoL were positive. In addition, mothers' individual adjustment variables were associated with partners' dyadic adjustment, particularly with the dimension relationship satisfaction (see Table 6).

Table 6. Correlations between mother's individual adjustment and both partners' dyadic adjustment

	Dyadic adjustment					
	Women			Men		
	Consensus	Satisfaction	Cohesion	Consensus	Satisfaction	Cohesion
Depression	-.28***	-.34***	-.13	-.13	-.28***	-.19**
Anxiety	-.29***	-.36***	-.17*	-.08	-.26***	-.11
QoL	.27***	.20**	.21**	.20**	.32***	.16*

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

Significant correlations were found between fathers' individual and dyadic adjustment. As well, fathers' individual adjustment was significantly correlated with dyadic adjustment of mothers, particularly with relationship satisfaction. All the correlations with symptoms of depression and anxiety were negative (see Table 7).

Table 7. Correlations between father's individual adjustment and both partners' dyadic adjustment

	Dyadic adjustment					
	Women			Men		
	Consensus	Satisfaction	Cohesion	Consensus	Satisfaction	Cohesion
Depression	-.21**	-.32***	-.23**	-.28***	-.34***	-.13
Anxiety	-.17*	-.32***	-.20**	-.29***	-.36***	-.17*
QoL	.17*	.13	.13	.27***	.20**	.21**

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

Associations between dyadic coping and individual adjustment

All dimensions of dyadic coping reported by mothers (by the self, by the partner and joint dyadic coping) were significantly correlated with their own and father's indicators of individual adjustment (see Table 8).

Table 8. Correlations between mother's dyadic coping and both partners' individual adjustment

		Individual adjustment					
		Women			Men		
		Depression	Anxiety	Quality of life	Depression	Anxiety	Quality of life
Dyadic Coping by Women	Self	-.31***	-.25**	.25***	-.34***	-.29***	.31***
	Partner	-.30***	-.29***	.39***	-.34***	-.27***	.27***
	Joint	-.25***	-.28***	.39***	-.30***	-.17*	.22**

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

All the dimensions of dyadic coping reported by fathers (by the self, by the partner and joint dyadic coping) were significantly correlated with their own and their partner's individual adjustment. The exceptions were the correlations between joint dyadic coping and the dimension anxiety reported

by mothers (p = .079) and by fathers (p = .061). Overall, dyadic coping reported by fathers was more strongly correlated with their own individual adjustment than with mothers' individual adjustment (see Table 9).

Table 9. Correlations between father's dyadic coping and both partners' individual adjustment

		Individual adjustment					
		Women			Men		
		Depression	Anxiety	Quality of life	Depression	Anxiety	Quality of life
Dyadic	Self	-.24**	-.20**	.27***	-.33***	-.28***	.34***
Coping by	Partner	-.28***	-.24**	.34***	-.37***	-.28***	.30***
Men	Joint	-.14*	-.13	23**	-.21**	-.14	.25***

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

Associations between dyadic coping and dyadic adjustment

Correlations between mothers' reports of dyadic coping and dyadic adjustment by both mothers and fathers were all significant for $p < .001$, ranging from low to moderate. Overall, higher associations were found with their dyadic adjustment (see Table 10).

Table 10. Correlations between mother's dyadic coping and both partners' dyadic adjustment

		Dyadic adjustment					
		Women			Men		
		Consensus	Satisfaction	Cohesion	Consensus	Satisfaction	Cohesion
Dyadic	Self	.42***	.36***	.44***	.43***	.39***	.35***
Coping by	Partner	.59***	.57***	.56***	.45***	.46***	.42***
Women	Joint	.55***	.52***	.49***	.42***	.42***	.33***

*** $p < .001$

The correlations between fathers' dyadic coping and the dimensions of dyadic adjustment (consensus, satisfaction and cohesion) of their own and of their partner were all statistically significant ($p < .001$). Overall, higher associations were found between fathers' dyadic coping and his own dyadic adjustment (see Table 11).

Table 11. Correlations between father's dyadic coping and both partners' dyadic adjustment

		Dyadic adjustment					
		Women			Men		
		Consensus	Satisfaction	Cohesion	Consensus	Satisfaction	Cohesion
Dyadic	Self	.47***	.40***	.43***	.53***	.46***	.51***
Coping	Partner	.43***	.41***	.42***	.50***	.50***	.45***
by Men	Joint	.44***	.34***	.39***	.54***	.42***	.44***

*** $p < .001$

Associations between partners' dyadic coping

The correlations between mothers' and fathers' dyadic coping are presented in Table 12. All the associations were positive and statistically significant ($p < .001$). The strongest correlations were found between joint dyadic coping, as reported by mothers and fathers.

Table 12. Correlations between dyadic coping dimensions

		Dyadic Coping by Men		
		Self	Partner	Joint
Dyadic Coping by Women	Self	.52***	.52***	.51***
	Partner	.62***	.59***	.55***
	Joint	.51***	.49***	.64***

*** $p < .001$

The mediating role of dyadic coping in the association between symptoms of depression and anxiety and dyadic adjustment

A multiple mediation model was used for both partners, as it was shown in Figure 1. In the tested models, in order to study potential cross-partner effects, both dyadic coping reported by oneself, but also partners' reports of dyadic coping were used as mediators.

Mediation models for mothers

As presented in Table 13, no significant direct effects were found between mothers' depressive symptoms and dyadic adjustment, although the total effect of depressive symptoms reported by mothers on their dyadic adjustment was significant.

Table 13. Total and direct effects of individual adaptation on dyadic adjustment (mothers)

	Point estimate	Standard error (SE)	*t*	*p*
Depression				
Total effect	-0.49	0.12	-3.95	<.001
Direct effect	-0.13	0.09	-1.42	.158
Anxiety				
Total effect	-0.55	0.14	-3.90	<.001
Direct effect	-0.12	0.11	-1.12	.266

Mothers' depressive symptoms were significantly correlated with dyadic coping by the self ($b = -0.03$, $SE = 0.07$, $p < .001$, 95% CI = -0.047/-0.018), by the partner ($b = -0.04$, $SE = 0.09$, $p < .001$, 95% CI = -0.057/-0.021) and joint dyadic coping ($b = -0.04$, $SE = 0.01$, $p = .001$, 95% CI = -0.069/-0.020), respectively explaining 9.5%, 8.9%, and 6.3% of the variance. Dyadic coping by the partner ($b = 8.28$, $SE = 1.22$, $p < .001$, 95% CI = 5.879/10.683) and joint dyadic coping ($b = 2.67$, $SE = 0.74$, $p <.001$, 95% CI = 1.207/4.135) were signicantly associated with dyadic adjustment. Dyadic coping by the self was not significantly associated with dyadic adjustment (*b*

= -2.65, *SE* = 1.36, *p* = .053, 95% CI = -5.341/0.033). Significant indirect effects were found between mothers' depressive symptoms and their dyadic adjustment with dyadic coping by the partner and joint dyadic coping reported by mothers as mediators (respectively, point estimate = -0.33, 95% CI = -0.517/-0.173, *p* < .001, point estimate = -0.12, 95% CI = -0.248/-0.041, *p* = .013) (see Table 14).

Table 14. Conditional indirect effects of depressive symptoms on dyadic adjustment via dyadic coping reported by mothers

	Point estimate	Standard error (SE)	Bootstrapp IC 95%	
			Lower limit	Upper limit
Dyadic coping by self	0.09	0.06	-0.008	0.219
Dyadic coping by partner	-0.33***	0.09	-0.517	-0.173
Joint dyadic coping	-0.12*	0.05	-0.248	-0.041

* *p* < .05; ** *p* < .01; *** *p* < .001

Mothers' symptoms of depression were significantly associated with fathers' reports of dyadic coping by the self (*b* = -0.03, *SE* = 0.01, *p* < .001, 95% CI = -0.040/-0.011), dyadic coping by the partner (*b* = -0.03, *SE* = 0.01, *p* < .001, 95% CI = -0.050/-0.017) and joint dyadic coping (*b* = -0.02, *SE* = 0.01, *p* = .048, 95% CI = -0.047/-0.0002) explaining, respectively, 5.6%, 7.7% and 2.0% of the variance. The direct effect of mothers' symptoms of depression on dyadic adjustment was significant (*b* = -0.27, *SE* = 0.11, *p* = .017, 95% CI = -0.474/-0.047). A significant indirect effect was also found between mothers' depressive symptoms and their dyadic adjustment through fathers' dyadic coping by the self (point estimate = -0.12, 95% CI = -0.245/-0.037, *p* = .038). The results are presented in Table 15.

Table 15. Conditional indirect effects of depressive symptoms on dyadic adjustment via dyadic coping reported by fathers

	Point estimate	Standard error (SE)	Bootstrapp IC 95%	
			Lower limit	Upper limit
Dyadic coping by self	-0.12*	0.05	-0.245	-0.037
Dyadic coping by partner	-0.06	0.05	-0.176	0.040
Joint dyadic coping	-0.05	0.04	-0.150	-0.005

* *p* < .05

Regarding anxiety, although the total effect of symptoms of anxiety reported by mothers was significant, no significant direct effects were found between mothers' anxiety symptoms and dyadic adjustment (see Table 13). Mothers' anxiety symptoms were significantly correlated with their reports of dyadic coping enacted by the self (*b* = -0.03, *SE* = 0.01, *p* < .001, 95% CI = -0.047/-0.013), by the partner (*b* = -0.04, *SE* = 0.01, *p* < .001, 95% CI = -0.064/-0.023) and joint dyadic coping (*b* = -0.06, *SE* = 0.01, *p* < .001, 95% CI = -0.084/-0.028), respectively explaining 6.2%, 8.5% and 7.6% of the variance. Significant indirect effects were found between mothers' anxiety symptoms and their dyadic adjustment via dyadic coping by the partner and joint dyadic coping reported by mothers (point estimate = -0.36, 95% CI = -

0.597/-0.185, $p < .001$; point estimate = -0.15, 95% CI = -0.298/-0.058, $p = .010$) (Table 16).

Table 16. Conditional indirect effects of anxiety symptoms on dyadic adjustment via dyadic coping reported by mothers

	Point estimate	Standard error (SE)	Bootstrapp IC 95%	
			Lower limit	Upper limit
Dyadic coping by self	0.07	0.05	-0.010	0.206
Dyadic coping by partner	-0.36***	0.10	-0.597	-0.185
Joint dyadic coping	-0.15*	0.06	-0.298	-0.058

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

Mothers' anxiety symptoms also presented significant associations with fathers' dyadic coping by the self (b = -0.02, SE = 0.01, p = .006, 95% CI = -0.041/-0.007) and by the partner (b = -0.03, SE = 0.01, p = .001, 95% CI = -0.051/-0.013) explaining, respectively, 3.9% and 5.6% of the variance. The association with joint dyadic coping was not significant (b = -0.02, SE = 0.01, p =.079, 95% CI = -0.051/0.003). The direct effect of mothers' anxiety symptoms on dyadic adjustment was significant (b = -0.33, SE = 0.12, p = .008, 95% CI = -0.570/-0.087). A marginally significant indirect effect was found between mothers' anxiety symptoms and dyadic adjustment through fathers' reports of dyadic coping by the self (point estimate = -.11, 95% CI = -0.270/-0.030, p = .054) (Table 17).

Table 17. Conditional indirect effects of anxiety symptoms on dyadic adjustment via dyadic coping reported by fathers

	Point estimate	Standard error (SE)	Bootstrapp IC 95%	
			Lower limit	Upper limit
Dyadic coping by self	-0.11†	0.06	-0.270	-0.030
Dyadic coping by partner	-0.06	0.05	-0.173	0.026
Joint dyadic coping	-0.05	0.04	-0.159	0.000

† $p < .01$

Mediation models for fathers

No direct effect was found between fathers' depressive symptoms and dyadic adjustment. However, the total effect of depressive symptoms reported by fathers on their dyadic adjustment was significant. In relation to anxiety symptoms, both total and direct effects were significant (Table 18).

Table 18. Total and direct effects of individual adaption on dyadic adjustment (fathers)

	Point estimate	Standard error (SE)	*t*	*p*
Depression				
Total effect	-0.58	0.13	-4.49	<.001
Direct effect	-0.18	0.10	-1.75	.081
Anxiety				
Total effect	-0.78	0.16	-4.82	<.001
Direct effect	-0.40	0.13	-3.11	.002

Fathers' symptoms of depression were significantly correlated with dyadic coping by the self (*b* = -0.04, *SE* = 0.01, *p* < .001, 95% CI = -0.055/-0.023), dyadic coping by the partner (*b* = -0.05, *SE* = 0.01, *p* < .001, 95% CI = -0.066/-0.031) and joint dyadic coping (*b* = -0.04, *SE* = 0.01, *p* = .004, 95% CI = -0.063/-0.012), respectively explaining 10.9%, 13.3% and 4.2% of the variance. Dyadic coping by the self and joint dyadic coping have shown significant correlations with father's dyadic adjustment (respectively, *b* = 5.02, *SE* = 1.45, *p* < .001, 95% CI = 2.162/7.870; *b* = 2.89, *SE* = 0.76, *p* < .001, 95% CI = 1.380/4.397), which was not verified with dyadic coping by the partner (*b* = 1.85, *SE* = 1.33, *p* = .164, 95% CI = -0.763/4.467). Significant indirect effects were found between fathers' symptoms of depression and their dyadic adjustment through their reports of dyadic coping by the self (point estimate = -0.20, 95% CI = -0.369/-0.073, *p* = .006) and joint dyadic coping (point estimate = -0.11, 95% CI = -0.239/-0.026, *p* = .025). The results are presented in Table 19.

Table 19. Conditional indirect effects of depressive symptoms on dyadic adjustment via dyadic coping reported by fathers

	Point estimate	Standard error (SE)	Bootstrapp IC 95%	
			Lower limit	Upper limit
Dyadic coping by self	-0.20**	0.07	-0.369	-0.073
Dyadic coping by partner	-0.09	0.07	-0.236	0.034
Joint dyadic coping	-0.11*	0.05	-0.239	-0.026

* *p* < .05; ** *p* < .01

The associations were also significant between fathers' symptoms of depression and mothers' reports of dyadic coping by the self (*b* = -0.04, *SE* = 0.01, *p* < .001, 95% CI = -0.056/-0.024), by the partner (*b* = -0.05, *SE* = 0.01, *p* < .001, 95% CI = -0.069/-0.030) and joint dyadic coping (*b* = -0.06, *SE* = 0.01, *p* <.001, 95% CI = -0.085/-0.031), respectively explaining 11.8%, 11.6% and 8.7% of the variance. Although the total effect was significant (see Table 18), the direct effect of fathers' depressive symptoms on dyadic adjustment was not significant (*b* = -0.22, *SE* = 0.12, *p* = .063, 95% CI = -0.457/0.012). Significant indirect effects were found between father's symptoms of depression and their dyadic adjustment, with mother's dyadic coping by the partner as a mediator (point estimate = -0.24, 95% CI = -0.452/-0.093, *p* = .006) (see Table 20).

Table 20. Conditional indirect effects of depressive symptoms on dyadic adjustment via dyadic coping reported by mothers

	Point estimate	Standard error (SE)	Bootstrapp IC 95%	
			Lower limit	Upper limit
Dyadic coping by self	-0.05	0.06	-0.174	0.070
Dyadic coping by partner	-0.24**	0.09	-0.452	-0.093
Joint dyadic coping	-0.07	0.05	-0.189	0.010

* *p* < .05; ** *p* < .01; *** *p* < .001

Both direct and total effects of fathers' anxiety symptoms on their dyadic adjustment were significant (Table 18). Fathers' anxiety symptoms were significantly correlated with their own reports of dyadic coping by the self (b = -0.04, SE = 0.01, p < .001, 95% CI = -0.062/-0.022) and dyadic coping by the partner (b = -0.05, SE = 0.01, p < .001, 95% CI = -0.070/-0.024), contrary to joint dyadic coping (b = -0.03, SE = 0.02, p = .061, 95% CI = -0.063/0.001). A significant indirect effect was found between fathers' symptoms of anxiety and their dyadic adjustment through dyadic coping by the self (point estimate = -0.20, 95% CI = -0.389/-0.073, p = .012) and marginally significant through joint dyadic coping (point estimate = -0.09, 95% CI = -0.250/-0.002, p = .096) (see Table 21).

Table 21. Conditional indirect effects of anxiety symptoms on dyadic adjustment via dyadic coping reported by fathers

	Point estimate	Standard error (SE)	Bootstrapp IC 95%	
			Lower limit	Upper limit
Dyadic coping by self	-0.20*	0.08	-0.389	-0.073
Dyadic coping by partner	-0.09	0.07	-0.234	0.026
Joint dyadic coping	-0.09†	0.06	-0.250	-0.002

† p <.01; * p < .05

Fathers' symptoms of anxiety were also significantly associated with mothers' reports of dyadic coping by the self (b = -0.04, SE = 0.01, p < .001, 95% CI = -0.062/-0.022), by the partner (b = -0.05, SE = 0.01, p < .001, 95% CI = -0.075/-0.025) and joint dyadic coping (b = -0.04, SE = 0.02, p = .017, 95% CI = -0.077/-0.008). The direct effect of fathers' anxiety symptoms on dyadic adjustment was significant (b = -0.44, SE = 0.14, p = .002, 95% CI = -0.726/-0.160). As shown in Table 22, significant indirect effects were found between fathers' symptoms of anxiety and their dyadic adjustment through mothers' reports of dyadic coping by the partner (point estimate = -0.23, 95% CI = -0.470/-0.084, p = .012).

Table 22. Conditional indirect effects of anxiety symptoms on dyadic adjustment via dyadic coping reported by mothers

	Point estimate	Standard error (SE)	Bootstrapp IC 95%	
			Lower limit	Upper limit
Dyadic coping by self	-0.04	0.06	-0.175	0.089
Dyadic coping by partner	-0.23*	0.09	-0.470	-0.084
Joint dyadic coping	-0.06	0.04	-0.177	-0.0002

* p < .05

V - Discussion

In this study, we examined the role of dyadic coping in the association between couples' individual and dyadic adjustment during the transition to parenthood. Main findings indicate that mothers reported poorer individual adjustment than fathers, similar levels of dyadic adjustment, and perceive themselves as engaging in more dyadic coping strategies. Data also illustrate

significant associations between dyadic coping and the different indicators of individual and dyadic adjustment. The mediating role of dyadic coping in the association between individual and dyadic adjustment was found for both partners, although there was a notorious effect of fathers' behaviours in both partners' dyadic adjustment, namely the perception of dyadic coping by the partner for mothers and dyadic coping by the self for fathers, in addition to joint dyadic coping for both.

The first objective was to characterise and compare the individual and dyadic adjustment of couples during the transition to parenthood. Consistent with our hypotheses, mothers presented higher levels of symptomathology (depression and anxiety) and perceived lower quality of life than fathers. These results are in line with previous studies indicating that mothers seem to report poorer individual adjustment than fathers during the transition to parenthood (e.g., Conde & Figueiredo, 2014; Figueiredo & Conde, 2011; Guedes & Canavarro, 2014; Moura-Ramos & Canavarro, 2007; Parfitt & Ayers, 2014; Stroud et al., 2010). Particularly, Conde and Figueiredo (2014) also found these results during the second pregnancy trimester, which corresponds to our period of analysis. This findings is also consistent with the idea that women experience more changes than parents, namely physical changes, hormonal and emotional changes more intensely during pregnancy, as reported by other authors (Guedes & Canavarro, 2014; Moreno-Rosset et al., 2016).

Although there is evidence that women and men seem to experience the transition to parenthood differently, there is also evidence that they make more similar appraisals of the relationship during this period (Belsky, Lang, & Rovine, 1985). The results of this study are in line with this idea, and did not confirm the hypothesis that women would report worst levels of dyadic adjustment than men. Previous studies had already found such a similar pattern (Guedes & Canavarro, 2014; Parfitt & Ayers, 2014). The absence of differences on dyadic adjustment may be explained, on the one hand, by the similar appraisals of the relationship, regardless of the different individual adjustment (Guedes & Canavarro, 2014). On the other hand, considering the dyadic, interdependent and reciprocal nature of the transition to parenthood (Epifanio et al., 2015), which Parfitt and Ayers (2014) also underlined, these findings may reflect that within the same couple, individuals have similar experiences of adjustment and relationships.

Regarding the differences in dyadic coping (enacted by the self, by the partner and joint dyadic coping) between mothers and fathers, the results of this study indicate that partners differed only in dyadic coping by the self. Particularly, mothers reported higher levels of dyadic coping enacted by the self. These results only partially corroborate our hyphotesis of differences between mothers and fathers in dyadic coping by the self and by the partner. As previously indicated by Herzberg (2013) and Vedes et al. (2013), women report to engage more in dyadic coping strategies and to communicate more stress than men, and also seem to pay more attention to parners' behaviours than the opposite (Bodenmann et al., 2006). For example, this may be related to the existing evidence indicating that female partners are more susceptible to changes in marital relationships than male partners (Bodenmann et al.,

2004), lowering the levels of perception of dyadic coping enacted by the partner and increasing the perception of their own dyadic coping strategies. In addition, as stressed by Iafrate et al. (2012), expectancies might also be playing a role in the outcomes, because mothers may have created some ideas about their partners' role, which may be increased during this specific period, therefore contributing to an increased attention to their behaviours.

In the current study, the correlations between individual and dyadic adjustment were generally significant for both partners. Results also revealed that individual adjustment is more strongly correlated with the dimension relationship satisfaction, for both mothers and fathers. Also, the associations involving symptoms of depression and anxiety are all negative, which means that the higher the psychological symptoms, the lower the reports of dyadic adjustment for both partners, as indicated by previous studies (Don & Mickelson, 2014; Hernandez & Hutz, 2009; Parfitt & Ayers, 2014; Theiss et al., 2012).

Regarding the associations between dyadic coping and individual adjustment, the results of this study indicate a similar pattern of associations for mothers and fathers. Overall, all dyadic coping dimensions were significantly associated with the indicators of individual adjustment, and in the expected directions. Specifically, the more one engages in dyadic coping strategies or perceives the partner efforts of dyadic coping, the lower the depressive and anxiety symptoms and the higher the perceived quality of life. These results are in line, for example, with the finding of Bodenmann et al. (2004) indicating that higher levels of depression are associated with deficits in dyadic coping.

Based on the evidence that women report worst individual adjustment than men (Bodenmann et al., 2004), the fact that women report to engage more than men in dyadic coping strategies (Herzberg, 2013; Vedes et al., 2013) and that they are more susceptible to changes in marital relationships than male partners, we hypothesized that the association between individual adjustment and dyadic coping strategies would be stronger for women. Our findings did not allow us to confirm our hypothesis. Overall, fathers' dyadic coping was more strongly correlated with his own individual adjustment. This results may be explained, on the one hand, with the fact that individual adjustment dimensions, such as depressive symptoms have been associated with deficits in dyadic coping strategies (Bodenmann et al., 2004) and, on the other hand, with the fact that the influence of individual mood regulation strategies in coping strategies has been shown to be higher for women (Papp & Witt, 2010). Because in our study women present lower levels of individual adjustment, it is possible that their dyadic coping strategies might be compromised, thus lowering the association values.

In line with our hypothesis, dyadic coping was significantly correlated with better levels of dyadic adjustment for both partners. The correlations were all positive, which means that the more one partner engages in dyadic coping strategies or perceive the other partner's efforts of dyadic coping, the better the dyadic adjustment. This finding underlines the reciprocal nature of this phenomenon highlighted in previous studies (e.g., Bodenmann et al. 2006; Falconier, 2015a; Gasbarrini et al., 2015; Herzberg, 2013; Levesque et

al., 2014). That is, engaging in more dyadic coping strategies or perceiving the other partner's efforts of dyadic coping may promote higher feelings of we-ness and fulfillment (Vedes et al., 2013) and therefore to increase dyadic adjustment. We then corroborate our third hypothesis indicating that dyadic coping would be associated with better reports of individual and dyadic adjustment for both partners.

Based on the fact that partner's contribution is crucial to women's relationship satisfaction, as well as the fact that women seem to pay more attention to partners' behaviours than the opposite (Bodenmann et al., 2006), we were also expecting that, for mothers, dyadic coping enacted by the partner would be more strongly related to their own dyadic adjustment than dyadic coping enacted by oneself. The results validated our hyphotesis, by showing that, for mothers, the partners' efforts and behaviours targeted to joint problem-solving and emotion-focused coping activities seem to be more important for their relationship satisfaction than their own. In addition, it is notewhorthy that it is the perception of the father's behaviour that was more strongly associated with mother's dyadic adjustment, than father's own reports of their behaviors (father's dyadic coping enacted by the self). This result underlines the idea previously reported that the perception of partner's dyadic coping is a significantly higher predictor of own's relationship satisfaction, particularly for women (e.g., Bodenmann et al., 2006; Don & Mickelson, 2014; Kluwer, 2010).

Regarding the associations between dyadic coping, as reported by mothers and fathers, our findings indicate that all the correlations were significant and moderate, and that the strongest were those relating mother's dyadic coping enacted by the partner and father's dyadic coping enacted by the self, and joint dyadic coping by both partners. Again, these results seem to suggest the higher susceptibility of women to their own perception of partners behaviours (Bodenmann et al., 2006) and the importance of his positive contribution to the relationship, especially during the transition to parenthood (Don & Mickelson, 2014; Hernandez & Hutz, 2009; Tanner et al., 2012). As well, the higher associations between reported joint dyadic coping represent the importance for the couple to cope together as a unit, and calls attention for the necessity of joint problem-solving, joint information seeking, sharing of feelings and mutual commitment in reducing the effects of negative daily hassles (Bodenmann et al., 2010; Falconier et al., 2015b; Vedes et al., 2013).

The last aim of the present study consisted in examining the potential mediating role of dyadic coping (enacted by the self, by the partner and joint dyadic coping) in the association between individual adaptation (anxiety and depressive symptoms) and dyadic adjustment. Our findings support our hypothesis that dyadic coping mediates this association, but at different levels within the eight models analysed.

In relation to mothers' models of multiple mediation, the most evident fact was that the association between their individual adjustment (depressive and anxiety symptoms) and dyadic adjustment was always mediated by their reports of dyadic coping by the partner and fathers' reports of dyadic coping enacted by the self. In line with what was suggested by Bodenmann et al.

(2006) as well as Don and Mickelson (2014), our findings show that fathers' behaviours and dyadic coping seem to represent an important variable for the prediction of mothers' dyadic adjustment and, secondly, more than the behaviours themselves, it is the perception that women have of them that seems to play a role in this path. Interestingly, dyadic coping by the self was never a significant mediator in mothers' models, neither father's reports of dyadic coping by the partner, reinforcing the evidence that women seem to pay more attention to men's behaviours and investment in the relationship, which is crucial to their relationship satisfaction (Bodemann et al., 2006).

Regarding fathers' models of mediation, the results indicate that the association between their individual and dyadic adjustment depends more on their own perceived efforts to assist their partner cope with stress (dyadic coping by the self) and how partners perceive their efforts (mother's reports of dyadic coping by the partner) than on their perception of mother's efforts to help them cope. These findings seem to suggest that men are more self-centered than women. Indeed, as indicated by Bodenmann et al. (2006), who also found a similar result, "men may not be aware of or attend to their partners' behaviors and seem less influenced by their spouse's dyadic coping with regard to their appraisal of marital quality" (p. 492).

In the current study, overall, joint dyadic coping was also a significant mediator in the examined associations. Indeed, each partner's perception of both participation in the coping process also showed a significant influence in the association between individual and dyadic adjustment. These results reinforce the idea that joint (common) dyadic coping is an important variable in increasing relationship quality and decreasing both partners' distress, as previously reported among couples dealing with breast cancer (Rottmann et al., 2015), but that also seem to apply during the transition to parenthood. As an important strategy that can contribute to strengthening couple bonds promoting strategies of joint dyadic coping may have the potential to reduce the effects of daily hassles and, therefore, to enhance individual and dyadic adjustment during pregnancy and the transition to parenthood.

Finally, it is notable that, overall, only total effects were found (the direct effects of individual adjustment in dyadic adjustment were generally non-significant). Such an information means that dyadic coping should be a topic of special attention and has the potential of making the difference in the couple's life during the transition to parenthood, by diminishing the impact of the associated stressors, and ameliorating individual and dyadic adjustment.

VI - Conclusions

In this study, we examined the mediating role of dyadic coping in the association between individual and dyadic adjustment of both mothers and fathers, during the transition to parenthood. In general, this study showed that the higher the symptoms of depression and anxiety, the lower the dyadic adjustment. However, the effect of this association was not direct, but mediated by dyadic coping. Therefore, we can conclude that engaging in

dyadic coping strategies in stressfull transitions, such as the transition to parenthood, is beneficial for couples. Besides, this relationship occurred at different levels for each partner.

Taking into account the previously described results, this study has important clinical implications to address. First, at an individual level, these findings call attention for the poorer individual adjustment reported by mothers. As decreased levels of individual adjustment were suggested to affect the relationship with the baby at the postpartum period (Cox et al., 1999; Parfitt & Ayers, 2014) and poor problem-solving communication strategies of parents before childbirth have been associated with lower levels of marital satisfaction and higher declines at 24 months post-partum (Cox et al., 1999), it will be important to develop preventive interventions in order to promote a more adaptive individual and dyadic adjustment of mothers during pregnancy and transition to parenthood. The results of this study also allowed us to reinforce the dyadic nature of the transition to parenthood and, therefore, the need of developing interventions targeting both partners. The aim of these interventions would be to promote more positive relationship processes that can be beneficial to reduce the impact of daily stressors during this specific transition. For example, *The Couples Coping Enhancement Training* (Bodenmann, 1997; Bodenmann & Shantinath, 2004) and *The Coping Oriented Couple Therapy* (Bodenmann et al., 2008) are important approaches, and may be applied to the period of transition to parenthood. Besides the already proved efficacy in terms of a significant improvement of marital satisfaction, in general and in terms of individual and dyadic coping, these programs comprise several areas that may be particularly important for couples' relationship. Specifically, three important topics may be important to address: first, the improvement of stress perception, that is, learning how to more accurately recognize and understand their partner's stress, adapting him or her support to the specific needs of the others (this may be especially focused on fathers, considering the results of this study); second, training the ability to openly communicate their own stress to their partner, in order to allow him or her to respond properly to their stress (particularly important for mothers); and third, to promote problem-solving skills from a dyadic perspective, based on the partners' feedback. Furthermore, since the positive outcomes of both programs were proved to be evident at least one year after the intervention (Bodenmann et al., 2008; Ledermann, Bodenmann, & Cina, 2007), we anticipate that these interventions may bring important gains to the life of the couple after the transition to parenthood, possibly preventing or significantly reducing the risk of a breakdown associated to the lack of coping abilities and skills to manage stress (Revenson et al., 2005).

The current study has several limitations that should be noted. First, this is a cross-sectional study, and data were collected only during the second trimester. Causal relations between the study variables cannot be made, and thus the generalization of the findings must be done with caution. Studies with a longitudinal design would allow a better understanding of the predictors of dyadic adjustment in more advanced phases of the transition to parenthood. After delivering the questionnaires to the couples and explaining the importance of filling the questionnaires independently, we cannot be sure

if they were completed individually and that the reports are completely independent. This fact may also have introduced some bias. Additionally, in order to simplify the mediation models, we did not examine all forms of dyadic coping, although they are included in the composite measures used in our model (dyadic coping by self, dyadic coping by partner and joint dyadic coping). To overcome this limitation, in future studies it would be valuable to examine the potential role of the different forms of dyadic coping.

Despite these limitations, the present study also has a number of strengths. First, the sample size of 193 couples is an important strength. Because of the dyadic nature of our data and the use of couples as the unit of analyses (considering the couple as a unique and dependent unit, and not as two independent individuals), beyond studying intraindividual associations, we also studied cross-partner effects, an analysis therefore more consistent with the dyadic nature of the transition to parenthood. Additionally, one of the most relevant strengths of this study relates to its innovate contribution to the existing literature on dyadic coping. Indeed, the study of dyadic coping, as well as the mediating role of dyadic coping in the relationship between individual variables and relationship satisfaction has been already examined (e.g., Bodenmann et al., 2006; Falconier et al., 2015a; Iafrate et al., 2012), however, to the best of our knowledge, no studies had yet examined this concept as well as the mediating role of dyadic coping in the association between individual and dyadic adjustment during pregnancy and the transition to parenthood.

Some sugestions for future research are also relevant. As noted before, studies with longitudinal design are needed and important to provide sound and causal evidence for the direction of associations here reported, since we cannot generalize the results to the transition to parenthood with data obtained only in the second trimester of pregnancy. Based on what was also suggested by Moura-Ramos (2006) and Oliveira and colleagues (2005) that transition to parenthood might be conceptualized between the moment when parents decide to have a child to some months after birth, future studies may also examine the abovementioned associations in different time points, for example from the first trimester of pregnancy to one year after birth. In addition, as noted above, to achieve a more complete model of mediation, it would also be adequate to considerate all the forms of dyadic coping pointed by Bodenmann (2007). Finally, we also suggest that future research could make a comparison considering parity. This would be a relevant point of investigation, since there is evidence that, even though pregnancy and the moment after childbirth is often associated with significant demands for both primiparous and multiparous mothers, first-time mothers tend to report a better individual and relational adjustment over time (Conde & Figueiredo, 2014; Figueiredo & Conde, 2011; Gameiro, Moura-Ramos, & Canavarro, 2007; Pereira & Canavarro, 2011). Therefore, it would also be interesting to analyse if the associations with dyadic coping and its role as a mediator as described in the model of the study would vary between primiparous and multiparous couples.

References

Augusto, A., Kumar, R., Calheiros, J., Matos, E., & Figueiredo, E. (1996). Postnatal depression in an urban area of Portugal: Comparison of chilbearing women and matched controls. *Psychological Medicine*, *26*(1), 135-141. doi:10.1017/S0033291700033778

Barbarin, G. A., Hughes, D., & Chesler, M. A. (1985). Stress, coping, and marital functioning among partners of children with cancer. *Journal of Marriage and the Family*, *47*(2), 473-480. doi:10.2307/352146

Belsky, J., Lang, M. E., & Rovine, M. (1985). Stability and change in marriage across the transition to parenthood: A second study. *Journal of Marriage and the Family*, *47*(4), 855-865. doi:10.2307/352329

Berg, C., & Upchurch, R. (2007). A developmental-contextual model of couples coping with chronic illness across the adult life span. *Psychological Bulletin*, *133*(6), 920-954. doi:10.1037/0033-2909.133.6.920

Berman, W. Marcus, L., & Berman, E. (1994). Attachment in marital relations. In W. Berman, M. Sperling, & R. Weiss (Eds.), *Attachment in adults: Clinical and developmental perspectives* (pp. 3-28). New York, NY: The Guildford Press.

Bodenmann, G. (1995). A systematic-transactional conceptualization of stress and coping in couples. *Swiss Journal of Psychology*, *54*(1), 34-49.

Bodenmann, G. (2005). Dyadic coping and its significance for marital functioning. In T. Revenson, K. Kayser, & G. Bodenmann (Eds.), *Couples coping with stress: Emerging perspectives on dyadic coping* (pp. 13-49). Washington, DC: American Psychology Association.

Bodenmann, G. (2007). *Dyadic coping inventory* (DCI). Testmanual. Bern, Göttigen: Huber & Hogrefe Tests.

Bodenmann, G. (2008). Dyadic coping and the significance of this concept for prevention and therapy. *Zeitschrift für Gesundheitspsychologie*, *32*(4), 108-111. doi:10.1026/0943-8149.16.3.108

Bodenmann, G., Ledermann, T., & Bradbury, T. N. (2007). Stress, sex, and satisfaction in marriage. *Personal Relationships*, *14*(4), 561-569. doi:10.1111/j.1475-6811.2007.00171.x

Bodenmann, G., & Shantinath, S. (2004). The Couples Coping Enhancement Training (CCET): A new approach to prevent marital distress based upon stress and coping, *53*(5), 477-484. doi:10.1111/j.0197-6664.2004.00056.x

Bodenmann, G., Charvoz, L., Widmer, K., & Bradbury, T. (2004). Differences in individual and dyadic coping among low and high depressed, partially remitted, and nondepressed persons. *Journal of Psychopathology and Behavioral Assessment*, *26*(2), 75-85. doi:10.1023/B:JOBA.0000013655.45146.47

Bodenmann, G., Ledermann, T., Blattner, D., & Galluzzo, C. (2006). Associations among everyday stress, critical life events, and sexual problems. *Journal of Nervous & Mental Disease*, *194*(7), 494-501. doi:10.1097/01.nmd.0000228504.15569.b6

Bodenmann, G., Meuwly, N., Bradbury, T., Gmelch, S., & Ledermann, T. (2010). Stress, anger, and verbal aggression in intimate relationships: Moderating effects of individual and dyadic coping. *Journal of Social and Personal Relationships*, *27*(3), 408-424. doi:10.1177/0265407510361616

Bodenmann, G., Pihet, S., & Kayser (2006). The relationship between dyadic coping and marital quality: A 2-year longitudinal study. *Journal of Family Psychology*, *20*(3), 485-493. doi:10.1037/0893-3200.20.3.485

Bodenmann, G., Plancherel, B., Beach, S. R., Widmer, K., Gabriel, B., Meuwly, N., … Schramm, E. (2008). Effects of coping-oriented couples therapy on depression: A randomized clinical trial. *Journal of Consulting and Clinical Psychology*, *76*(6), 944-954. doi:10.1037/a0013467

Busby, D. M., Christensen, C., Crane, D. R., & Larson, J. H. (1995). A Revision of the Dyadic Adjustment Scale for use with distressed and nondistressed couples: Construct hierarchy and multidimensional scales. *Journal of Marital and Family Therapy*, *21*(3), 289-308. doi: 10.1111/j.1752-0606.1995.tb00163.x

Canavarro, M. C. (2001). *Psicologia da gravidez e da maternidade*. Coimbra: Quarteto.

Canavarro, M. C., & Araújo-Pedrosa, A. (2005) Transição para a parentalidade: Compreensão segundo diferentes perspectivas teóricas. In I. Leal (Coord.) *Psicologia da gravidez e da parentalidade* (pp. 225-255). Lisboa: Fim de Século.

Caroli, M., & Sagone, E. (2014a). Stress and support in relation to parental self: A comparison between mothers of children in cancer treatment and mothers of healthy children. *Procedia - Social and Behavioral Sciences*, *114*, 211-215. doi:10.1016/j.sbspro.2013.12.687

Caroli, M., & Sagone, E. (2014b). The experience of pre- and post-partum in relation to support, stress, and parenthood representation. *Procedia - Social and Behavioral Sciences*, *116*, 697-702. doi:10.1016/j.sbspro.2014.01.282

Christopher, C., Umemura, T., Mann, T., Jacobvitz, D., & Hazen, N. (2015). Marital quality over the transition to parenthood as a predictor of coparenting. *Journal of Child and Family Studies*, *24*(2), 3636-3651. doi:10.1007/s10826-0172-0

Cohen, J. (1992). A power primer. *Psychological Bulletin*, *112*(1), 155-159. doi:10.1037/0033-2909.112.1.155

Conde, A., & Figueiredo, B. (2014). 24-h urinary free cortisol from mid-pregnancy to 3-months postpartum: Gender and parity differences and effects. *Psychoneuroendocrinology*, *50*, 264-273. doi:10.1016/j.psyneuen.2014.08.013

Cowan, C., & Cowan, P. (2000). *When partners become parents: The big life change for couples*. New Jersey, NJ: Lawrence Erlbaum Associates.

Cowan, C., & Cowan, P. (1995). Interventions to ease the transition to parenthood: Why they are needed and what they can do. *Family*

Relations, *44*(4), 412-423. doi:10.2307/584997

Cox, J. L., Holden, J. M., & Sagovsky, R. (1987). Detection of postnatal depression. Development of the 10-item Edinburgh Postnatal Depression Scale. *British Journal of Psychiatry*, 150(4), 782-786. doi:10.1192/bjp.182.4.368

Cox, M. J., Paley, B., Burchinal, M., & Payne, C. (1999). Marital perceptions across the transition to parenthood. *Journal of Marriage and the Family, 61*, 611-325. doi:10.2307/353564

Don, B., & Mickelson, K. (2014). Relationship satisfaction: Trajectories across the transition to parenthood among low-risk parents. *Journal of Marriage and Family*, *76*(3), 677-692. doi:10.1111/jomf.12111

Epifanio, M., Genna, V., De Luca, C., Roccella, M., & La Grutta, S. (2015). Paternal and maternal transition to parenthood: The risk of postpartum depression and parenting stress. *Pediatric Reports*, *7*(2), 38-45. doi:10.4081/pr.2015.5872

Falconier, M. K., Nussbeck, F., & Bodenmann, G. (2013). Dyadic coping in Latino couples: Validity of the Spanish version of the Dyadic Coping Inventory. *Anxiety, Stress & Coping, 26*(4), 447-466. doi:10.1080/10615806.2012.699045

Falconier, M. K., Jackson, J., Hilpert, J., & Bodenmann, G. (2015a). Dyadic coping and relationship satisfaction: A meta-analysis. *Clinical Psychology Review, 42*, 28-46. doi:10.1016/j.cpr.2015.07.002

Falconier, M. K., Nussbeck, F., Bodenmann, G., Shneider, H., & Bradbury, T. (2015b). Stress from daily hassles on intradyadic stress, relationship satisfaction, and physical and psychological well-being. *Journal of Marital and Family Therapy, 41*(2), 221-235. doi:10.1111/jmft.12073

Feinberg, M. (2002). Coparenting and the transition to parenthood: A framework for prevention. *Clinical Child and Family Psychology Review*, *5*(3), 173-195. doi:10.1023/A:1019695015110

Figueiredo, B., & Conde, A. (2011). Anxiety and depression in women and men from early pregnancy to 3-months postpartum. *Archives of Women's Mental Health, 14*(3), 247-255. doi:10.1007/s00737-011-0217-3

Gabriel, B., Untas, A., Lavner, J., Koleck, M. & Luminet, O. (2016). Gender typical patterns and the link between alexithymia, dyadic coping and psychological symptoms. *Personal and Individual Differences*, *96*, 266-271.doi: 10.1016/j.paid.2016.02.029

Gasbarrini, M. F., Snyder, D. K., Iafrate, R., Bertoni, A., Margola, D., Gasbarrini, M. F., … Bertoni, A. (2015). Investigating the relation between shared stressors and marital satisfaction: The moderating effects of dyadic coping and communication. *Family Science*, *6*(1), 143-149. doi:10.1080/19424620.2015.1082044

Gottman, J. M. (1994). *What predicts divorce? The relationships between marital processes and marital outcomes*. Hillsdale, NJ. Erlbaum.

Guedes, M., & Canavarro, M. C. (2014). Psychosocial adjustment of couples to first-time parenthood at advanced maternal age: An exploratory

longitudinal study. *Journal of Reproductive and Infant Psychology*, *32*(5), 425-440. doi:10.1080/02646838.2014.962015

Hernandez, J., & Hutz, C. (2009). Transição para a parentalidade: Ajustamento conjugal e emocional. *Psico*, *40*(4), 414-421.

Herzberg, P. (2013). Coping in relationships: The interplay between individual and dyadic coping and their effects on relationship satisfaction. *Anxiety, Stress, and Coping. 26*(2), 136-153. doi:10.1080/10615806.2012.655726

Iafrate, R., Bertoni, A., Margola, D., Cigoli, V., & Acitelli, L. (2012). The link between perceptual congruence and couple relationship satisfaction in dyadic coping. *European Psychologist*, *17*(1), 73-82. doi:10.1027/1016-9040/a000069

Karney, B. R., & Bradbury, T. N. (1995). The longitudinal course of marital quality and stability: A review of theory, method and research. *Psychological Bulletin*, *118*(1), 3-34. doi:10.1037/0033-2909.118.1.3

Karney, B. R., Story, L., & Bardbury, T. N. (2005). Marriages in context: Interactions between chronic and acute stress among newlyweds. In T. Revenson, K. Kayser, & G. Bodenmann (Eds.), *Couples coping with stress: Emerging perspectives on dyadic coping* (pp. 13-49). Washington, DC: American Psychology Association.

Kluwer, E. (2010). From partnership to parenthood: A review of marital change across the transition to parenthood. *Journal of Family Theory & Review*, *2*(2), 105-125.doi:10.1111/j.1756-2589.2010.00045.x

Lazarus, R., & Folkman, S. (1984). *Stress, appraisal and coping*. New York, NY: Springer Publishing Company.

Ledermann, T., Bodenmann, G., Gagliardi, S., Charvoz, L., Verardi, S., Rossier, … Iafrate, R. (2010). Psychometrics of the Dyadic Coping Inventory in three language groups. *Swiss Journal of Psychology*, *69*(*4*), 201-212. doi:10.1024/1421-0185/a000024

Ledermann, T., Bodenmann, G., & Cina, A. (2007). The efficacy of the Couples Coping Enhancement Training (CCET) in improving relationship quality. *Journal of Social and Clinical Psychology*, *26*(8), 940-959. doi:10.1521/jscp.2007.26.8.940

Levesque, C., Lafontaine, M., Caron, A., Flesch, J., & Bjornson, S. (2014). Dyadic empathy, dyadic coping, and relationship satisfaction: A dyadic model. *Europe's Journal of Psychology*, *10*(1), 118-134. doi:10.5964/ejop.v10i1.697

Marshall, E., Simpson, J., & Rholes, W. (2015). Personality, communication, and depressive symptoms across the transition to parenthood: A dyadic longitudinal investigation. *European Journal of Personality*, *29*(2), 216-234. doi:10.1002/per.1980

Moreno-Rosset, C., Arnal-Rémon, B., Antequera-Jurado, R., & Ramírez-Uclés, I. (2016). Anxiety and psychological wellbeing in couples in transition to parenthood. *Clínica Y Salud*, *27*(1), 29-35. doi:10.1016/j.clysa.2016.01.004

Moura-Ramos, M. (2006). *Adaptação materna e paterna ao nascimento de um filho: Percursos e contextos de influência* (Dissertação de mestrado não publicada). University of Coimbra, Coimbra.

Moura-Ramos, M., & Canavarro, M. C. (2007). Adaptação parental ao nascimento de um filho: Comparação da reactividade emocional e psicossintomatologia entre pais e mães nos primeiros dias após o parto e oito meses após o parto. *Análise Psicológica*, 3(*XXV*), 399-413.

Nazaré, B., Fonseca, A., & Canavarro, M. C. (2013). Stressores diádicos associados ao risco de anomalia fetal: Com que exigências se confrontam os casais durante a gravidez? In S. L. Jesus, J. L. Pais Ribeiro, M. M. Rezende, M. G. V. Heleno, G. Buela-Casal, & J. Tobal (Eds.), *Atas do II Congresso Iberoamericano/III Congresso Luso-Brasileiro de Psicologia da Saúde*. Faro: Universidade do Algarve.

Oliveira, C., Araújo-Pedrosa, A., & Canavarro, M. C. (2005). Gravidez, parentalidade e mudança: Stress e adaptação nos processos de adaptação à transição para a parentalidade. In Pinto, A., & Silva, A. (Coords.), *Stress e bem-estar* (pp. 59-84). Lisboa: Climepsi Editores.

Pais-Ribeiro, J., Silva, I., Ferreira, T., Martins, A., Menezes, R., & Baltazar, M. (2007). Validation study of a Portuguese version of the Hospital Anxiety and Depression Scale. *Psychology, Health & Medicine*, *12*(2), 225-237.doi: 10.1080/13548500500524088

Papp, L., & Witt, N. (2010). Romantic partner's individual coping strategies and dyadic coping: Implications for relationship functioning. *Journal of Family Psychology, 24*(5), 551-559. doi:10.1037/a0020836

Parfitt, Y., & Ayers, S. (2014). Transition to parenthood and mental health in first-time parents. *Infant Mental Health Journal, 35*(3), 263-274. doi:10.1002/imhj.21443

Pietromonaco, P., Uchino, B., & Schetter, C. (2012). Close relationship processes and health: Implications of attachment theory for health and disease. *Health Psychology, 32*(*5*), 499-513. doi:10.1037/a0029349

Pereira, M., & Canavarro, M. C. (2011). Influência da paridade na adaptação da transição para a maternidade em grávidas infectadas pelo VIH e grávidas sem condição médica associada. *Análise Psicológica*, *29*(3), 425-438.

Pereira, M., Melo, C., Gameiro, S., & Canavarro, M. C. (2011). Estudos psicométricos da versão em Português Europeu do índice de qualidade de vida EUROHIS-QOL-8. *Laboratório de Psicologia*, *9*(2), 109-123. doi: 10.14417/lp.627

Power, M. (2003). Development of a common instrument for quality of life. In A. Nosikov & C. Gudex (Eds.), *EUROHIS: Developing Common Instruments for Health Surveys* (pp. 145-159). Amsterdam: IOS Press.

Razak, S., Hoesni, S., Zakaria, E., & Ismail, R. (2015). The role of dyadic coping to marital quality: The conceptual paper. *Procedia: Social and Behavioral Sciences*, *211*, 911-916. doi:10.1016/j.sbspro.2015.11.120

Randall, A., & Bodenmann, G. (2009). The role of stress on close relationships and marital satisfaction. *Clinical Psychology Review, 29*(2), 105-115. doi:10.1016/j.cpr.2008.10.004

Randall, A., Hilpert, P., Jimenez-Arista, L., Walsh, K., & Bodenmann, G. (2015). Dyadic coping in the U.S.: Psychometric properties and validity for use of the English version of the Dyadic Coping Inventory. *Current Psychology*. Advanced online publication.

doi:10.1007/s12144-015-9323-0

Regan, T., Lambert, S., Kelly, B., McElduff, P., Girgis, A., Kayser, K. & Turner, T. (2014). Cross-sectional relationships between dyadic coping and anxiety, depression, and relationship satisfaction for patients with prostate cancer and their spouses. *Patient Education Counseling, 96*(1), 120-127. doi:10.1016/j.pec.2014.04.010

Revenson, T. A., Kayser, K., & Bodenmann, G. (2005). Introduction. In T. Revenson, K. Kayser, & G. Bodenmann (Eds.), *Couples coping with stress: Emerging perspectives on dyadic coping* (pp. 13-49). Washington, DC: American Psychology Association.

Rini, C., Schetter, C., Hobel, C., Glynn, L., & Sandman, C. (2006). Effective social support: Antecedents and consequences of partner support during pregnancy. *Personal Relationships, 13*(2), 207-229. doi:10.1111/j.1475-6811.2006.00114.x

Rottmann, N., Hansen, D. G., Larsen, P. V., Nicolaisen, A., Flyger, H., & Johansen, C. (2015). Dyadic coping within couples dealing with breast cancer : A longitudinal, population-based study. *Health Psychology, 34*(5), 486–495. doi:10.1037/hca0000218

Samios, C., Pakenham, K., & O'Brien, J. (2015). A dyadic and longitudinal investigation of adjustment in couples coping with multiple sclerosis. *Annals of Behavioral Medicine, 49*(1), 74-83. doi:10.1007/s12160-014-9633-8

Stroud, C., Durbin, C., Saigal, S., & Knobloch-Fedders, L. (2010). Normal and abnormal personality traits are associated with marital satisfaction for both men and women: An Actor-Partner Interdependence Model analysis. *Journal of Research in Personality, 44*(4), 466-477. doi:10.1016/j.jrp.2010.05.011

Vedes, A., Nussbeck, F., Bodenmann, G., Lind, W., & Ferreira, A. (2013). Psychometric properties and validity of the Dyadic Coping Inventory in Portuguese. *Swiss Journal of Psychology, 72*(3), 149-157. doi:10.1024/1421-0185/a000108

Tanner, L., Schetter, C., Westling, E., Rini, C., Glynn, L., Hobel, C., & Sandman, C. (2012). Perceived partner support in pregnancy predicts lower maternal and infant distress. *Journal of Family Psychology, 36*(3), 453-463. doi:10.1037/a0028332

Theiss, J., Estlein, R., & Weber, K. (2012). A longitudinal assessment of relationship characteristics that predict new parents' relationship satisfaction. *Personal Relationships, 20*(2), 216-235. doi:10.1111/j.1475-6811.2012.01406.x

Wunderer, E., & Schneewind, K. (2008). The relationship between marital standards, dyadic coping and marital satisfaction. *European Journal of Social Psychology, 38*(3), 462-476. doi:10.1002/ejsp.405

Zigmond, A., & Snaith, R. (1983). The Hospital Anxiety and Depression Scale. *Acta Psychiatrica Scandinavica*. *67*(6), 361-370. doi:10.1111/j.1600-0447.1983.tb09716.x