

COVID-19 Phobia, Dyadic Coping, and Subjective Change in Relationship Quality due to the Pandemic: A Dyadic Approach

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Received: May 10, 2023; Accepted: Jun 08, 2023;

How to cite: Marcin Moroń, Wiktoria Smolkowska-Jędo. COVID-19 Phobia, Dyadic Coping, and Subjective Change in Relationship Quality due to the Pandemic: A Dyadic Approach. *Psychology Research and Practice*, 2023; Vol. 2 (2023) Doi: [10.37155/2972-3086-0201-1](https://doi.org/10.37155/2972-3086-0201-1)

Abstract: The present study investigated, in a dyadic approach, whether phobic symptoms experienced due to the COVID-19 pandemic correlated with conflicts with romantic partners and subjective change in the quality of romantic relationships during the pandemic. Although previous studies investigated stress and partner's responsiveness as predictors of romantic satisfaction during the pandemic, the present study investigated the phobia as a particular emotional consequence of pandemic-related stress for romantic couples. One hundred fifteen marital couples (230 individuals) participated in the study. Both spouses from each marital couple assessed their COVID-19 phobia, marital disagreements during the pandemic, perceived dyadic coping of their partner and subjective change in relationship quality compared to the quality before the outbreak of the pandemic. We observed that COVID-19 phobia predicted higher marital disagreements in husbands and wives and that the wives' COVID-19 phobia predicted higher perceived marital disagreements among the husbands. Perceived partner's supportive behavior buffered the actor effects of COVID-19 phobia in men and women. Additionally, higher husband's COVID-19 phobia predicted subjective positive change in relationship quality during the pandemic when the wife's supportiveness was perceived as lower.

Keywords: Dyadic coping; Stress spillover effect; Stress crossover effect; Romantic couples

1. Introduction

The COVID-19 pandemic caused a severe socio-economic crisis (Nicola et al., 2020) and unprecedented alteration of people's

lives worldwide (Serafini et al., 2020). Effects of the COVID-19 pandemic on psychological outcomes of the population included high prevalence of symptoms of anxiety, depression, psychological distress, loneliness,



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media addiction, and post-traumatic stress disorder (Karakose et al., 2022; Karakose, Yirci, & Papadakis, 2022; Salari et al., 2020; Wang et al., 2020; Xiong et al., 2020). Uncertainty and fears associated with the pandemic, such as e.g. joblessness and worsened financial situation, might even lead to a heightened rate of suicide attempts and mental conditions which are risk factors for suicide (McIntyre & Lee, 2020).

The spreading pandemic and mitigation measures implemented by governments during the outbreak affected the everyday functioning of romantic couples substantially (Ferguson et al., 2020; Luetke et al., 2020). Romantic partners were confined together in their homes during lockdowns, suffering disruptions of daily routines, related to e.g. lack of physical activity, reduced physical contact with other people, forced alteration of daily household chores, and supervising children's remote learning (Stanley & Markman, 2020). These alterations affected intimate relationships between romantic partners in domains such as e.g. division of house duties, sexual behaviors, implied challenges for family cohesion and conflicts (Behar-Zusman et al., 2020; Günther-Bel et al., 2020; Luetke et al., 2020), or the risk of domestic violence (Bradbury-Jones & Isham, 2020). Both individual and one's partner's pre-existing vulnerabilities negatively affected satisfaction with the romantic relationship during the mandatory quarantine, but these effects were moderated by stress experienced during the pandemic (Overall, Chang, Pietromonaco, Low, & Henderson, 2020). However, married people were less distressed (Wang et al., 2020) and less depressed compared to unmarried individuals during the COVID-19 pandemic (Peng et al., 2020). Earlier findings demonstrated that particular mechanisms present within romantic couples may buffer or reduce the stress related to the pandemic (Bodenmann, 2005).

The goal of the present study was to examine the associations between phobic symptoms experienced by romantic partners due to the pandemic and subjective change in relationship quality during the pandemic. As a conceptual model for the study, we used Bodenmann's *systemic-transactional model* (Bodenmann, 1995, Bodenmann et al., 2016), which posits that external stressors could affect internal stress experienced inside a romantic couple, while dyadic coping, namely "all efforts of one or both partners to face and manage

stress events as well as strains affecting one of the partners or both together" (Bodenmann, 1995, p. 44), might moderate spillover effects of external stress to internal stress. Previous studies showed that stress experienced by the romantic partners during the pandemic resulted in stronger conflict and lower satisfaction in romantic relationships (Balzarini et al., 2022; Ogan et al., 2022). However, they rarely investigated consequences of stress such as emotional reactions of anxiety or phobic symptoms as predictors of relationship outcomes (Merrolla et al., 2021). In the present study, we addressed this gap in current research. Particularly, we examined the COVID-19-related phobia spillover process, namely whether an experience of phobia caused by the pandemic could spill over into a romantic relationship and cause conflicts and perceived decrease in satisfaction within the latter (Bolger et al., 1989; Falconier et al., 2015; Randall & Bodenmann, 2009). We also investigated whether dyadic coping buffered the spillover effects of COVID-19 related phobia on perceived change in relationship quality (Falconier et al., 2013). The significant increases in anxiety symptoms observed during the pandemic (Hawes et al., 2022) suggest that investigating the correlates of potentially heightened symptoms for functioning in close relationship could be particularly important. Moreover, the present study is one of few studies conducted in Eastern Europe which may provide additional information concerning the cultural differences in romantic couples' processes during the pandemic (see Randall et al., 2022).

1.1 Reactions to Stressors within Intimate Relationships

Stress is a risk factor in predicting the quality and stability of intimate relationships (Karney, Story, & Bradbury, 2005; Randall & Bodenmann, 2009). A harmful impact of stress on relationship satisfaction depends on the locus of stress: external versus internal, the intensity of the latter (major versus minor stress), and its duration (acute versus chronic stress; Randall & Bodenmann, 2009, 2017). External stressors originate outside the relationship (e.g., family of origin, the workplace, economic stress), while internal stressors originate within the relationship (e.g., negative interactions between the partners, health conditions of one partner; Bodenmann, Ledermann, & Bradbury, 2007). Major stressors include critical life events

(e.g., illness, death of a family member) or adapting to life changes (e.g., pregnancy or retirement). Common everyday stressors (e.g., getting stuck in traffic) were identified as minor stressors or daily hassles (Bodenmann, 2005). Finally, stress can be temporary, lasting only a few days, or several months. Chronic minor stresses, which come from outside of the relationship and heighten the marital conflict, are particularly adverse for the romantic relationship because they lead to a slow deterioration of relationship quality which is often outside the conscious awareness of the romantic partners (Bodenmann et al., 2007).

Anxiety and phobic symptoms are commonly experienced along with stress (Page et al., 2007). According to the Diagnostic and Statistical Manual of Mental Disorders (DSM-5), phobic symptoms include “marked fear or anxiety about a specific object or situation” which almost always provoke immediate fear or anxiety and are avoided (CBHSQ, 2016, p. 96). In a phobia, fear or anxiety is “out of proportion to the actual danger posed by the specific object or situation and to the sociocultural context” (CBHSQ, 2016, p. 96). Regarding the pandemic, phobic symptoms were referred to as coronaphobia (Asmundson & Taylor, 2020) and were defined as a fear reaction disproportionate to the pandemic as an anxiety or fear-provoking situation (American Psychiatric Association, 2013). Given the well-known associations between stress and anxiety (Bystritsky & Kronemyer, 2014; Etkin & Wager, 2007; Graver & White, 2007), phobic symptoms due to COVID-19 could be regarded as a concomitant of particularly strong stress reactions toward the threats caused by the pandemic.

Previous studies indicated high positive correlations between the COVID-19 phobia and perceived stress (Bandari et al., 2023; Ülker Dörttepe et al., 2021). Thus, in the present study we used the COVID-19 phobic symptoms as a measure of individual stressful reaction to the pandemic. According to the conceptualization of the COVID-19 phobia, it consists of psychological, psychosomatic, social, and economic concerns (Arpaci et al., 2020). These symptoms are similar to the recently proposed COVID-19 stress syndrome (Taylor, 2021), which consists of fears of: (a) a possibility of becoming infected; (b) contact with individuals or objects possibly contaminated; (c) the socio-economic consequences, e.g., lower salary; (d)

compulsive reassurance-seeking behaviors in reaction to these fears; and (e) intrusions and other traumatic stress symptoms regarding the pandemic.

Stress was usually conceptualized as an individual phenomenon (Lazarus & Folkman, 1984). However, a strong interdependence within romantic relationships (Kelley & Thibaut, 1978) implies that the partners' behaviors and emotions significantly affect one another (Aron & Aron, 1996; Butler & Randall, 2013; Schoebi & Randall, 2015). In order to extend the individual-oriented approach to stress and coping, the *Systemic Transactional Model* examines stress as a dyadic phenomenon (Bodenmann, 2005). According to these models, stress of one romantic partner affects the other partner (Bodenmann et al., 2007; Neff & Karney, 2007). Stress caused by external stressors can spill over into the romantic relationship causing internal stress (stress spillover; Breitenstein et al., 2018; Buck & Neff, 2012; Falconier et al., 2015; Bodenmann et al., 2007), or stress experienced by one romantic partner due to external stressors may influence emotions and satisfaction of the other spouse (stress crossover; Larson & Almeida, 1999). Stress spillover within the romantic relationship may include decreasing the mutual sensitivity of the partners, which in turn weakens the partners' feelings of effective communication, increasing the probability that the partners' difficult dispositions such as anxiety, dominance, lack of emotional stability, will be displayed, and increasing the risk of negative mental and physical health outcomes, such as anxiety or fatigue disorders (Bodenmann et al., 2007; Randall & Bodenmann, 2017). Here, we used this model to investigate whether phobic reactions due to the pandemic of one partner within the romantic dyad could spill over into the tension in romantic couple (phobia spillover) or affect the other partner (phobia crossover).

1.2 Dyadic Coping

The complex behavioral and emotional reactions of romantic partners in response to stress experienced by one or both of them are referred to as dyadic coping (Bodenmann, 1997, 2005). The goal of dyadic coping is to restore or maintain homeostasis in the physiological and psychosocial area within partners as individuals and within the couple (Bodenmann,

1997). Dyadic coping involves various processes: (a) cognitive (individual and common cognitive appraisals of stressors and resources), (b) emotional (co-regulation of emotional reactions to stressful situations), (c) physiological (excitation transfer, modification of endocrine mechanisms due to the social interactions between the romantic partners) and behavioral processes (e.g., various verbal and non-verbal behaviors related to stress management, e.g. hugging, problem solving, self-disclosure, active listening; Bodenmann, Falconier, & Randall, 2019).

Dyadic coping can be distinguished into one's dyadic coping, dyadic coping by the partner and common dyadic coping (Bodenmann, 2005). Dyadic coping consists of both positive and negative forms of support (Bodenmann, 1995). Positive dyadic coping of each of the partners includes supportive dyadic coping such as attempts to help the other partner in his/her coping efforts, e.g. helping to find solutions and showing understanding of their emotions, and delegated dyadic coping, including supporting the partner by taking over some of their responsibilities; Falconier & Kuhn, 2019). Negative dyadic coping comprises the following forms of coping: hostile (e.g., derogation of the partner's stress, irony, mockery, manifestation of insensitivity), ambivalent (e.g., helping with simultaneous doubts about the necessity to support a partner), and superficial (e.g., support characterized by lack of attention, a lack of empathy towards the partner; Bodenmann, 2005). Common dyadic coping refers to the participation of both partners in a symmetrical way in coping with a stressor or with an emotional reaction toward the stressor (Falconier & Kuhn, 2019).

Previous studies conducted within couples exposed to daily external stress (Story & Bradbury, 2004; Neff & Karney, 2007; Randall & Bodenmann, 2009, 2017; Falconier et al., 2015a,b), adverse life events (e.g., Revenson & Lepore, 2012; Rottmann et al., 2015) or mental illness (Bodenmann & Randall, 2013) showed that dyadic coping is an important resource in coping. An extensive review of the literature on dyadic coping (Falconier & Kuhn, 2019) demonstrated that positive individual and common forms of dyadic coping have benefits for couples coping with stress. Dyadic coping had a buffering effect for couples, namely dyadic coping modifies the association between extra-dyadic stress and intra-dyadic stress or relationship

satisfaction, respectively (the transfer of extra-dyad stress into the intra-dyad stress was lower among couples using more positive dyadic coping; Breitenstein et al., 2018). Dyadic coping was also a resource for romantic couples coping with pandemic-related stress (Ogan et al., 2022; Randall et al., 2022).

1.3 Perceived Change in Relationship Satisfaction

Being in a committed romantic relationship was regarded as a significant factor affecting well-being (Dolan & Peasgood, 2008), but relationship quality is a central moderator of this association (Holt-Lundstad et al., 2008). Thus, the impact of pandemic-related stress on relationship quality became one of the most important goals of studies during the pandemic (Estlein et al., 2022). The studies reviewed by Estlein et al. (2022) indicated that about 30–40% of romantic couples experienced some deterioration in their satisfaction, while about 20% of couples reported improved quality of their relationship. Some studies indicated that relationship satisfaction was stable in the early stages of the pandemic, but dyadic coping and conflicts moderated the changes in satisfaction (Williamson, 2020). Couples coping better with the stressors and having fewer conflicts reported higher satisfaction and marital adjustment. Anxiety and distress experienced by the romantic partners also negatively affected their relationship quality (Goodwin et al., 2020; Panzeri et al., 2020). These findings are in line with the abovementioned model of individual stress spilling over to internal relationship conflicts and resulting in deterioration of relationship satisfaction (Randall & Bodenmann, 2009).

Although the majority of studies on relationship quality measure an objective change in relationship satisfaction (Estlein et al., 2022), the subjective (self-reported) change was understudied. Previous studies on well-being and aging indicated that these two assessments of subjective well-being differ (Röcke & Lachman, 2008). Subjective change is “an appraisal that one is a new or different kind of person, or that some aspect of one's functioning has improved or declined” (Keyes & Ryff, 2000, p. 264). Self-rated change in well-being is related to subjective comparisons between assessments of satisfaction in various temporal perspectives (e.g., past, future; Pavot et al., 1998). Particularly, subjective change in

present well-being was associated with higher ratings of health, control, positive personality profile, social relationships, and optimism (Röcke & Lachman, 2008).

Previous studies indicated that subjective change could be self-deceptive when the future perspective is activated (Robinson & Ryff, 1999). Regarding the pandemic, such subjective assessment of change in the relationship could be of special interest due to the unknown future development of the pandemic. Thus, the romantic partners could subjectively perceive their romantic relationship differently depending on their fear of how the pandemic will develop. Those feeling higher anxiety due to the pandemic could subjectively experience an improvement in relationship satisfaction in order to comfort and regulate their emotional distress.

1.4 Current Study

The aim of the study was to investigate phobia spillover and crossover processes in romantic couples during the COVID-19 pandemic (Pietromonaco & Overall, 2020). We were also interested in examining the buffering effect of dyadic coping for the association between pandemic-related phobia and intra-dyadic stress (e.g., conflicts within a romantic couple) or perceived change in relationship quality during the COVID-19 pandemic, respectively. The COVID-19 pandemic heavily impacted global health, including mental health, leading to problems such as psychological distress, anxiety and depressiveness, sleep problems, and anger (Torales et al., 2020). The pandemic affected romantic couples also due to coronavirus-related conflicts between partners, altered frequency of intimate and sexual behaviors (Luetke et al., 2020), elevated levels of state anxiety and a conflict atmosphere (Günther-Bel et al., 2020), as well as increased household conflicts and decreased family cohesion (Behar-Zusman et al., 2020). In this study, we tested the associations between phobic reactions to COVID-19-related stress, internal stress measured as the level of conflict within the romantic couple and perceived change in relationship satisfaction using the actor-partner interdependence model (APIM; Cook & Kenny, 2005; see Breitenstein et al., 2018) among marital couples. Specifically, we tested whether COVID-19-related phobia was negatively associated with subjective change in relationship quality during the pandemic and whether

this association was mediated by increased intra-dyadic conflict (phobia spillover effect). We expected that high phobia related to the pandemic would be negatively correlated with perceived change in marital satisfaction, and that an elevated level of marital conflict would mediate in this association. Second, we tested whether a partner's phobia related to the pandemic might influence the level of marital conflict (intra-dyadic stress) or predict subjective changes in marital quality perceived by their spouse (crossover effect). We expected that the crossover effect would occur, namely that the husband's elevated levels of COVID-19-related phobia would affect the wife's intra-dyadic stress (perceived conflict) and subjective change in relationship quality perception and vice versa (Overall et al., 2020). In addition, we tested if dyadic coping buffered the association between COVID-19-related phobia and marital conflicts (intra-dyadic stress) or subjective change in relationship satisfaction, respectively (buffering effect). We expected that COVID-19-related phobia would predict intra-dyadic stress and marital quality to a lesser degree in individuals who perceived higher dyadic coping by their partner (Balzarini et al., 2020; Breitenstein et al., 2017). In this vein, we add to the previous research about distress and romantic relationships during the pandemic (Randall et al., 2022) by investigating phobic symptoms and simultaneously estimating the mediating effect (by intra-relational conflict) and the moderating effect of dyadic coping. We also studied the particular type of change in relationship satisfaction, namely the explicit perceived change due to the pandemic (Keyes & Ryff, 2000). This type of perceived change could be particularly important in such a dynamically evolving situations as the pandemic.

2. Method

2.1 Participants and Procedure

Invitations to participate in a study on marriage experiences during the COVID-19 pandemic were posted on social media and disseminated by students of a large university in southern Poland. Three hundred eighty-five individuals accepted the invitation. However, due to lack of the spouse's participation, the final sample consisted of 230 individuals (115 couples; 59.35%). All participants were in marriages at least for one year and no longer than for 36 years (*M*

= 12.3; $SD = 7.9$). The women were on average 33.7 years old ($SD = 8.1$, range = 21–57) and the men were on average 35.7 years old ($SD = 8.4$, range = 23–58) (the women thus being significantly younger than their male partners), $t(113) = 6.71$, $p < .001$. Thirty-seven marriages had children (32%), less than 6% of the participants had been infected by the coronavirus (3% of men and 6% of women), 45.8% of the men and 60.3% of the women had experienced changes in work due to the pandemic (3% of men and 6% of women had lost their job). One hundred forty-three participants reported higher education (62.2%), seventy participants reported secondary education (30.4%), vocational education was reported by fifteen participants (6.5%), and 0.9% reported primary education. The participants were asked to fill out the on-line form independently of their spouse. This approach was related to the social isolation measures suggested at the time of the study (particularly in October 2020). The participants were informed about the goals of the study and that it was possible to withdraw at any point of the latter. The participants did not receive any remuneration. In order to identify members of the same dyad, the participants were asked to indicate the date and place of their marriage. The data was collected from 25 August to 17 November. Due to the rapid changes in the number of confirmed cases of COVID-19 infection in Poland at that time, we created a variable indicating the number of days since the first confirmed case of COVID-19 in Poland (4 March) in order to indicate the moment of participation. The minimum sample size necessary to detect the actor and partner effects for an Actor-Partner Interdependence Model analysis with distinguishable dyads with the desired level of power set to 0.80 and alpha level set to 0.05 is 91 dyads (Ackerman, Lederman, & Kenny, 2020). Thus, the number of couples participating in the study was sufficient for the APIM analysis.

The study protocol was approved by the Institutional Review Board (KEUS180/11.2021).

2.2 Measures

2.2.1 COVID-19 phobia

Individuals' reactions to stressors caused by the COVID-19 pandemic were assessed with the COVID-19 Phobia Scale (C19P-S; Arpacı et al., 2020). The C19P-S includes 20 items measuring factors of

the following nature: psychological (e.g., The fear of coming down with coronavirus makes me very anxious), psycho-somatic (e.g., I experience serious stomachaches out of the fear of coronavirus), economic (e.g., The possibility of food supply shortage due to the coronavirus pandemic causes me anxiety), and social (e.g., After the coronavirus pandemic, I feel extremely anxious when I see people coughing), related to anxious responding to the pandemic. We added to this economic subscale four items designed to assess concerns related to keeping one's job, absent from the initial version of the scale (i.e. "The coronavirus outbreak made me worried about keeping my job"; "I was afraid of losing liquidity during the pandemic"; "I was experiencing financial difficulties due to the pandemic situation"; "The changes in my work during the pandemic caused me serious concern"). All items are rated on a 5-point scale from 1 (*Strongly disagree*) to 5 (*Strongly agree*). The C-19P-S was carefully translated into Polish and refined in order to ensure clarity and understandability. The fit of the model with four latent variables and one higher-order latent variable was acceptable ($\chi(237) = 470.478$; $p < .001$; RMSEA = .065; 90% CI = [.056; .073]; CFI = .945; TLI = .936; SRMR = .073). Thus, in the present study we used a global score of stress related to COVID-19. Internal consistency was satisfactory with $\alpha = .938$ for the women and $\alpha = .939$ for the men.

2.2.2 Marital Disagreements

Intra-dyadic stress was assessed with General Marital Disagreements (Jouriles et al., 1991; Polish translation: Janda, 2002). The scale consists of 10 items developed to assess the frequency of general marital disagreements (e.g., handling family finances, choice of friends, employment and career, etc.). We added two items designed to assess the balance between time spent alone and together, and parenting during the pandemic (i.e., time for yourself versus time with your family; upbringing and education of children). All items are rated on a 6-point scale from 1 (*Consistently disagree*) to 6 (*Consistently agree*). The participants were asked to assess the frequency of their disagreements with their spouse during the pandemic. The fit of the model with one latent variable was acceptable ($\chi(47) = 79.762$; $p = .002$; RMSEA = .055; 90% CI = [.033; .075]; CFI = .984; TLI = .978; SRMR

= .031). Internal consistency was satisfactory with $\alpha = .816$ for the women and $\alpha = .867$ for the men. As not all participants were parents, we controlled for having children in all subsequent analyses.

2.2.3 Dyadic coping

Two subscales of the Dyadic Coping Inventory (Bodenmann, 2008) were used to measure perceived dyadic coping by the partner (Wendolowska et al., 2020). A score of perceived dyadic coping by the partner was composed from supportive dyadic coping of the partner (5 items; e.g., My partner helps me to see stressful situations in a different light), delegated dyadic coping by the partner (2 items; e.g., My partner takes on things that I normally do in order to help me out) and reversed negative dyadic coping by the partner (4 items; e.g., My partner is not taking my stress seriously). This approach was similar to those in Breitenstein et al. (2018). The items were assessed using a 5-point Likert-type scale ranging from 1 (*Never*) to 5 (*Very often*). The participants were asked to assess their partner's dyadic coping skills during the pandemic. The mean of all positive and reversely coded negative items indexed the perceived total dyadic skills of the partner. The higher the score, the more supported the spouse felt by his or her partner. Internal consistency was satisfactory with $\alpha = .938$ for the women and $\alpha = .939$ for the men.

2.2.4 Subjective change in relationship quality

The Perceived Relationship Quality Components Inventory (PRQC; Fletcher et al., 2000) was used to measure the subjective changes in marital quality during the pandemic. The PRQC consists of six relationship evaluation components of satisfaction (e.g., How satisfied are you with your relationship?), commitment (e.g., How committed are you to your relationship?), intimacy (e.g., How intimate is your relationship?), trust (e.g., How much do you trust your partner?), passion (e.g., How passionate is your relationship?), and love (e.g., How much do you love your partner?). The PRQC was carefully translated into Polish with focus on ensuring clarity and understandability for the participants. Each perceived relationship quality component is assessed by three questions. The participants were asked to assess each statement on an 8-point Likert-type scale ranging from 1 (*Definitely less/lower than before the pandemic*) to

7 (*Definitely more/better than before the pandemic*) with the midpoint being 4 (*No changes*). In the present study, we used a general score calculated as the average score for each statement. A higher score indicated improvement of relationship quality during the pandemic, while a lower score indicated deterioration of the relationship quality during the pandemic. Internal consistency was satisfactory with $\alpha = .971$ for the women and $\alpha = .978$ for the men.

2.3 Data Analysis

To test our hypotheses, we used the APIM suitable for the analysis of dyadic data combining mediation (e.g., Ledermann, Macho, & Kenny, 2011) and moderation (e.g., Cook & Kenny, 2005). This model is based on structural equation modeling for observed variables (Cook & Kenny, 2005). Such an approach makes it possible to simultaneously estimate the effects of women's and men's predictors on both couple members' individual outcomes taking into account the interdependencies between the romantic partners. The effects of individuals' independent variables on their dependent variables are called *actor effects*, whereas effects on the partner's dependent variables are called *partner effects*. In this approach, mediation can occur when the effect of men's or women's COVID-19-related phobia on their respective relationship quality can be explained by a significant indirect effect via one's own or one's partner's perceived general marital disagreements. To test the buffering hypothesis, we additionally included perceived dyadic coping by the partner and each partner's interaction term of extra-dyadic stress and perceived dyadic coping by the partner in the model. This approach allows us to test the effects of perceived dyadic coping on the partner's part on the associations between (a) COVID-19 phobia and marital disagreements, and between (b) COVID-19 phobia and subjective relationship quality.

Following previous studies, we controlled for age, having children and being exposed to the virus in all analyses (Breitenstein et al., 2018; Günther-Bel et al., 2020). We also controlled for time since the outbreak of the pandemic in Poland (in order to control for dynamics of the pandemic spreading). All predictors were centered prior to the APIM in order to reduce problems associated with multicollinearity (Aiken & West, 1991). Covariation between all predictor

variables was permitted, and residuals of the mediators and dependent variables were correlated (Cook & Kenny, 2005). The models were estimated using the lavaan package in R (Rosseel, 2012).

3. Results

3.1 Preliminary Results

Means and standard deviations of the main study variables are reported in **Table 1**. Men and women differed significantly in terms of COVID-19 phobia and general marital disagreements experienced during the pandemic. Women reported higher phobia of COVID-19 ($t(113) = -4.053; p < .001$) and a higher

level of general marital disagreements ($t(113) = -3.744; p < .001$) than men. Subjective change in relationship quality reported by men ($M = 4.748; SD = 1.035$) and women ($M = 4.797; SD = .916$) differs significantly from the midpoint of the Likert-type scale used which referred to a lack of any change in relationship quality components compared to before the pandemic ($t(114) = 7.750; p < .001$ and $t(114) = 9.322; p < .001$, respectively). Thus, the participants reported a positive change in their relationship quality during the pandemic compared to the quality before the outbreak.

Table 1. Means, standard deviations and correlations of the study variables

Variables	Descriptives				t	Bivariate correlations				
	Wife		Husband			1	2	3	4	5
	M	SD	M	SD						
1. COVID-19 phobia	2.649	.823	2.356	.776	-4.053***	.533***	.574***	-.322***	.181†	-.028
2. GMD	2.231	1.100	1.975	1.076	-3.477***	.388***	.737***	-.570***	.168†	-.143
3. DCP	3.781	.754	3.717	.694	-.919	-.066	-.363***	.470***	.102	-.221*
4. SCRQ	4.797	.916	4.748	1.035	-.538	.212*	.144	.144	.508***	-.049
5. Age	33.7	8.1	35.7	8.4	6.708* **	.210*	-.167†	-.021	.005	.920***

Note. Women’s correlations are above and men’s correlations are below the diagonal. GMD = general marital disagreements; DCP = perceived dyadic coping by the partner; SCRQ = subjective change in relationship quality.

Consistently with the predictions, phobia related to COVID-19 was positively correlated with general marital disagreements both in male and female respondents. Higher experienced external stress correlated negatively with dyadic coping by the partner. External dyadic stress was positively correlated with husbands’ subjective change in relationship satisfaction, but marital disagreements did not correlate with male relationship satisfaction. COVID-19 phobia and marital disagreements reported by women did not correlate with their subjective changes in relationship quality. Correlations within couples were highest with regard to marital disagreements ($r = .737; p < .001$). Within dyads, the correlations of COVID-19 phobia ($r = .533; p < .001$), dyadic coping by the partner ($r = .470; p < .001$), and subjective change in relationship quality ($r = .508; p < .001$) were also positive and significant. We also found that spouse age was related to some main variables, so we controlled for its shared variance in all subsequent analyses. We also examined whether the time since the outbreak of the pandemic was correlated with the variables. Individuals who participated in the

study nearer the date of the closure of the questionnaire reported lower COVID-19 phobia ($r_{\text{husbands}} = -.269; p = .004; r_{\text{wives}} = -.377; p < .001$), lower perceived marital disagreements ($r_{\text{husbands}} = -.278; p < .001; r_{\text{wives}} = -.311; p = .001$), and lower subjective change in relationship quality ($r_{\text{wives}} = .253; p = .006$). Thus, the time since the outbreak of the pandemic was also controlled for in the analyses.

3.2 Structural Model

We first tested whether effects could be equalized across the genders without increments in model fit. The comparison of the patterns with distinguishable and indistinguishable partners in the dyads indicated that the distinguishable pattern fit the data better ($\Delta\chi = 20.046; \Delta df = 9; p = .018$). According to the model fit criteria proposed by Hu and Bentler (1999), the model fit the data well ($\chi = 25.628, df = 20, p = .178$; root mean square error of approximation [RMSEA] = 0.049; standardized root mean square residual [SRMR] = 0.060; comparative fit index [CFI] = .991; **Figure 1**).

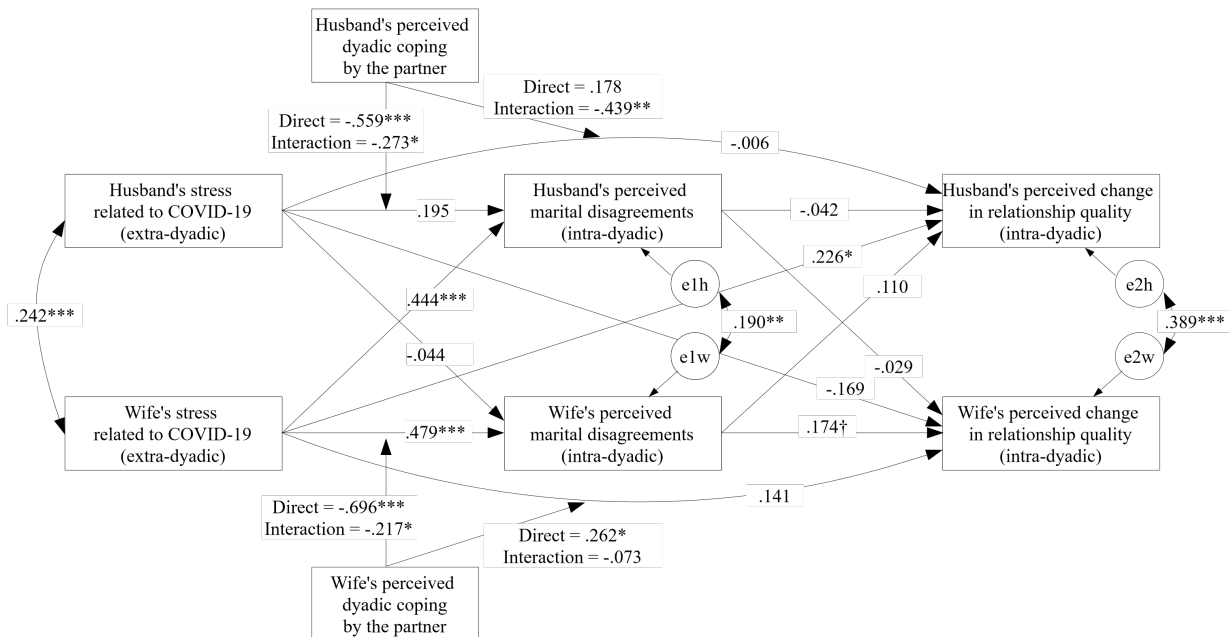


Figure 1. Moderated mediation actor-partner interdependence model (distinguishable partners). Unstandardized estimates are presented. All independent variables are allowed to covary. For the sake of clarity, not all correlations of the independent variables are depicted. The effect of partners' age, having children, and time since the outbreak of the pandemic were controlled for in the model.

† $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$.

Wife's experienced COVID-19 phobia predicted wife's reported marital conflict ($\beta = .362$; $p < .001$), while no similar actor effect emerged among male respondents ($\beta = .142$; $p = .195$). These effects could be equalized without significant declines in model fit ($\Delta\chi = 2.676$; $\Delta df = 1$; $p = .102$). The actor effect would be positive ($\beta = .260$; $p < .001$). A significant partner effect emerged between wife's COVID-19 phobia and husband's reported marital conflict ($\beta = .343$; $p = .001$), while the path from husband's COVID-19 phobia to wife's reported marital disagreement did not appear to be significant ($\beta = -.044$; $p = .696$). These effects could not be equalized without significant declines in model fit ($\Delta\chi = 8.253$; $\Delta df = 1$; $p = .004$). Husband's reported dyadic coping by the partner predicted husband's reported marital conflict ($\beta = -.375$; $p < .001$), and a similar effect was detected among female respondents ($\beta = -.486$; $p < .001$). Again, these effects could be equalized ($\Delta\chi = .985$; $\Delta df = 1$; $p = .321$), thus the actor effect of observed dyadic coping by the partner on perceived marital conflict was $\beta = -.440$ ($p < .001$). A significant interaction effect of COVID-19 phobia and dyadic coping by the partner was observed in predicting wife's marital disagreement ($\beta = -.131$; $p =$

$.033$), and similar marginally significant moderation emerged among male respondents ($\beta = -.151$; $p = .035$).

These effects could be equalized ($\Delta\chi = .098$; $\Delta df = 1$; $p = .754$), which resulted in an interaction effect, $b = -.266$ ($p = .006$). The simple slope analysis indicated that at a low level of dyadic coping by the partner, COVID-19 phobia predicted higher marital disagreement ($\beta = .470$; $p < .001$), at a moderate level of dyadic coping by the partner, COVID-19 phobia positively predicted marital disagreements ($\beta = .319$; $p = .006$), while with high dyadic coping by the partner, the association between COVID-19 phobia and marital disagreements was non-significant ($\beta = .167$; $p = .116$). Thus, the buffering effect of dyadic coping was observed. In general, the APIM model explained 41.5% of variance of husband's perceived marital conflict and 53.8% of variance of wife's perceived marital conflicts.

Wife's extra-dyadic stress predicted husband's subjective change in relationship quality ($\beta = .179$; $p = .046$), while the partner effect of male COVID-19 phobia on female subjective change in relationship quality was non-significant ($\beta = -.142$; $p = .157$). Equalizing these effects resulted in worse model fit ($\Delta\chi$

= 3.299; $\Delta df = 1$; $p = .069$). Wife's subjective changes in relationship quality were also predicted by wife's perceived dyadic coping by the partner ($\beta = .218$; $p = .010$) and, marginally, by wife's marital conflict ($\beta = .206$; $p = .091$). The first effect (dyadic coping by the partner_{actor} → subjective change in relationship quality_{actor}) could be equalized ($\Delta\chi = .240$; $\Delta df = 1$; $p = .624$) between spouses ($b = .225$; $p = .031$). The second effect (marital conflict_{actor} → subjective change in relationship quality_{actor}) could also be equalized ($\Delta\chi = 1.172$; $\Delta df = 1$; $p = .279$) between the spouses ($b = .072$; $p = .279$). The association between husband's COVID-19 phobia and husband's subjective changes in relationship quality was moderated by husband's reported dyadic coping by the partner ($\beta = -.249$; $p = .004$). Equalization of interaction effects resulted

in worse fit ($\Delta\chi = 3.725$; $\Delta df = 1$; $p = .054$), thus we analyzed these effects only in men.

At a low level of perceived dyadic coping by the partner, husband's COVID-19 phobia predicted a higher subjective change in relationship quality ($\beta = .429$; $p = .071$), while at moderate and high levels of dyadic coping by the partner, the associations between COVID-19 phobia and subjective change in husband's relationship quality were non-significant ($\beta = .184$; $p = .384$, and $\beta = -.062$; $p = .774$, respectively). All indirect effects experienced were non-significant (**Table 2**). In general, the APIM model explained 15.6% of variance of husband's subjective changes in relationship quality and 12.2% of variance of wife's subjective changes in relationship quality.

Table 2. Unstandardized indirect effects of COVID-19 phobia on subjective change in relationship quality mediated by perceived marital disagreements

Indirect paths	<i>b</i>	SE	<i>p</i>	95% CI
COVID-19 phobia _{husband} → GMD _{husband} → SCRQ _{husband}	-.008	.038	.829	[-.12; .05]
COVID-19 phobia _{husband} → GMD _{husband} → SCRQ _{wife}	-.006	.031	.855	[-.09; .05]
COVID-19 phobia _{husband} → GMD _{wife} → SCRQ _{husband}	-.005	.020	.811	[-.04; .05]
COVID-19 phobia _{husband} → GMD _{wife} → SCRQ _{wife}	-.008	.020	.753	[-.05; .05]
COVID-19 phobia _{wife} → GMD _{wife} → SCRQ _{wife}	.083	5.06	.197	[-.02; .25]
COVID-19 phobia _{wife} → GMD _{wife} → SCRQ _{husband}	.053	.066	.426	[-.06; .22]
COVID-19 phobia _{wife} → GMD _{husband} → SCRQ _{husband}	-.019	.061	.758	[-.14; .11]
COVID-19 phobia _{wife} → GMD _{husband} → SCRQ _{wife}	-.013	.055	.812	[-.14; .08]
<i>Moderated mediation</i>				
COVID-19 phobia _{husband} x DCP _{husband} → GMD _{husband} → SCRQ _{husband}	.012	.046	.800	[-.07; .12]
COVID-19 phobia _{husband} x DCP _{husband} → GMD _{husband} → SCRQ _{wife}	.008	.042	.849	[-.05; .12]
COVID-19 phobia _{wife} x DCP _{wife} → GMD _{husband} → SCRQ _{wife}	-.024	.039	.546	[-.13; .03]
COVID-19 phobia _{wife} x DCP _{wife} → GMD _{wife} → SCRQ _{wife}	-.038	.040	.350	[-.16; .01]

Note. Unstandardized maximum likelihood estimates are presented. GMD = general marital disagreements; DCP = perceived dyadic coping by the partner; SCRQ = subjective change in relationship quality.

4. Discussion

The present study investigated whether phobia experienced due to the COVID-19 pandemic affected romantic couples via the spillover or crossover effects of extra-dyadic COVID-19 phobia on subjective changes in relationship satisfaction through increased intra-dyadic stress (i.e., perceived marital conflicts). Second, in the study we examined the buffering mechanism of dyadic coping in the phobia spillover

and crossover in romantic couples. In line with previous research (Randall & Bodenmann, 2009), stress caused by the COVID-19 pandemic was positively associated with intra-dyadic stress (marital conflicts), but was not correlated with the perceived change in relationship quality during the pandemic. Both husbands and wives experiencing higher levels of phobia related to the pandemic (health, economy, work, etc.) were also perceiving higher marital disagreements since the outbreak of COVID-19. Thus, we replicated

the stress spillover effect evidenced in previous studies (Bodenmann et al., 2007; Breitenstein et al., 2017), but demonstrated that these effects did not decrease the relationship satisfaction of romantic couples. We also observed the crossover effect (Neff & Kerney, 2004), due to a significant partner effect in men. Higher levels of wife's phobia predicted higher perceived marital disagreements by the husbands. Similarly, higher levels of wife's phobia predicted higher change in relationship satisfaction by the husbands. These effects were partially moderated by dyadic coping which indicated that the sense of one's romantic partner's supportiveness would buffer the effects of higher extra-dyadic stress (Breitenstein et al., 2017).

4.1 Pandemic-related Phobia and Relational Outcomes

First, in the current study, we replicated previous findings demonstrating that COVID-19-related stress resulted in decreased relationship satisfaction and higher conflict (Ogan et al., 2022). We showed that phobia predicted higher perceived marital disagreements. Thus, we observed the phobia spillover effect, namely extra-dyadic COVID-19 phobia spillover to the dyad, evoking higher conflict with the spouse (Randall & Bodenmann, 2009). Actor effects were mostly responsible for these observations. Phobia experienced by the spouse predicted higher perceived marital conflict during the pandemic (Balzarini et al., 2020; Luetke et al., 2020). However, we also observed the crossover effect (partner effect) in men, which could not be detected in previous studies due to their non-dyadic design (Balzarini et al., 2020). The obtained partner effect of extra-dyadic phobia experienced by wives may be in line with the findings showing a higher proneness of women to experience psychological distress during the pandemic (Kowal et al., 2020; Xiong et al., 2020). In the present study, consistent with these observations, wives reported higher extra-dyadic phobia compared to husbands, and also higher intra-dyadic stress. Thus, we demonstrated that women's higher proneness to phobia during the pandemic may have deleterious effects on the quality of romantic relationships through actor effects and partner effects. Emotions experienced by the romantic partners due to some uncontrollable external situations may, therefore, result in heightened probability of increased relationship conflict.

4.2 Perceived Change in Relationship Quality during the Pandemic

Second, the present study demonstrated that increased extra-dyadic phobia and intra-dyadic conflict during the pandemic did not predict perceived change in romantic relationship quality. Rather than investigating the level of satisfaction in marriage, we studied the subjective change in perceived relationship quality as compared to the level before the outbreak of the pandemic (Keyes & Ryff, 2000). In this vein, we tried to capture an impact of the pandemic perceived by the participants on their marital functioning. The participants reported that they had experienced improved levels of relationship quality since the outbreak of the pandemic. This was partially consistent with previous research (Estlein et al., 2022). Thus, the unprecedented epidemiological crisis of the COVID-19 pandemic may result not only in a risk of worsened mental health of the population (Xiong et al., 2020), but may also have some beneficial outcomes for close relationships (Estlein et al., 2022). First of all, married people reported significantly lower stress during the pandemic compared to single people (Kowal et al., 2020). Greater COVID-19 health anxiety was directly positively correlated with family engagement (Trougakos et al., 2020). Similarly, the frequency of sexual behaviors declined, but sexual diversity increased during the social isolation period (Lehmiller et al., 2020; Luetke et al., 2020). Thus, the pandemic and its consequences for relationship outcomes were perceived mostly positively by the participants, even if the latter reported higher conflict when being more anxious about the pandemic. Thus, worsened well-being due to the pandemic did not result in the participants' negative perceived change in romantic relationships.

4.3 Dyadic Coping as a Buffering Variable

The phobia spillover to intra-dyadic conflict effect was buffered by the dyadic coping of the partner. This result was consistent with the beneficial role of dyadic coping for adult romantic couples (Bodenmann et al., 2007; Randall & Bodenmann, 2009) and the buffering effect of perceived partner responsiveness during the pandemic (Balzarini et al., 2020; Randall et al., 2022). Phobia experienced by husbands and wives due to pandemic-related concerns affected the perceived conflict in their marriage mostly when they experienced

low supportiveness of their spouse (Rusu et al., 2020). The phobia spillover effect was nullified when the dyadic coping of the romantic partner was high. Moreover, the main effects of dyadic coping of the romantic partner in predicting intra-dyadic stress were also observed both in men and women (Breitenstein et al., 2017). Thus, dyadic coping was proved to be a psychological resource of romantic couples during crises such as the pandemic.

Contrary to expectations, the dyadic coping of the romantic partner did not moderate the associations between extra-dyadic phobia and subjective changes in relationship satisfaction. The only significant effect was observed in husbands, and indicated that, among men experiencing low levels of wife's support, phobia related to the pandemic positively predicted subjective changes in marital quality. This result was inconsistent with Overall et al. (2020) findings showing that stress experienced during quarantine was related to lower relationship satisfaction. However, the present counterintuitive finding was in line with results which showed that extra-dyadic stress of lower magnitude (e.g., daily hassles) may predict bonding behaviors which could be translated into improved relationship quality. Bodenmann et al. (2007) demonstrated that higher levels of daily stress predicted more sexual activity for men dissatisfied with their marriage. Thus, men involved in less satisfying marriages (which was indicated by lower perceived dyadic coping of the wife) may engage more effort in their romantic relationships during the forced isolation in a perceived positive change in relationship quality. This effort might provide opportunities for couples to join together against the pandemic and to recognize the inherent strengths of their relationship which, in turn, may constitute a resource in dealing with consequences of the pandemic (cf. Bodenmann et al., 2007).

Moreover, in the study by Overall et al. (2020), COVID-19 stress was assessed during quarantine and in the initial phase of the pandemic (March–April 2020), while the present study was conducted from the fifth to the seventh month since the outbreak of the pandemic. Thus, the severity of COVID-19 as a stressor may have decreased. The correlations between time since the outbreak of the pandemic and COVID-19 stress and dyadic stress could verify this assumption. However, longitudinal designs need to verify the decrease

of COVID-19 severity as a psychological stressor. Nevertheless, higher COVID-19 stress negatively predicted dyadic coping of the partner (see also Randall et al., 2022). Previous studies also showed that some vulnerabilities of romantic partners (e.g., insecure attachment) may deteriorate the relationship quality during the pandemic (Overall et al., 2020). Moreover, maladaptive regulation of emotion (e.g., suppression) due to higher COVID-19 health anxiety may worsen family engagement (Troughakos et al., 2020). This could indicate that stress related to the pandemic may cause a deterioration of mutual empathy, emotion coregulation and understanding in the long run. Thus, prevention of psychological distress seems to be an important goal of social policy referring to the quality of marital and other romantic relationships (Tsai et al., 2020). This result is also consistent with a portion of results by Randall et al. (2022) which showed a lack of moderating role of dyadic coping in countries such as Portugal for the associations between COVID-19-related distress and relationship satisfaction.

4.4 Limitations and Future Directions

The limitations of the study must be taken under consideration in interpreting the findings. First, the cross-sectional design of the study forbids causal or temporal interpretations of our results. Future studies should use longitudinal designs to investigate the temporal mechanisms of phobia spillover in romantic dyads in the midst of the pandemic. Second, the present study used self-reports which could be biased due to rationalization or idealization. Thus, future studies should be more oriented towards observational data.

Third, we asked the participants to assess the perceived change in their relationship satisfaction during the pandemic. Given that the measurement was taken five-to-seven months after the outbreak of the pandemic, the assessment of changes in relationship satisfaction might be affected by recalling errors. Moreover, it could not capture the fluctuation of satisfaction in the light of the increase or decrease of spreading of the virus. Thus, future studies should focus on momentary changes in romantic relationship satisfaction. Future studies should also more straightforwardly control for the baseline relationship satisfaction (see Overall et al., 2020; Randall et al., 2022).

The present study captures only the perceived change in marital quality, thus the indicators of positive change may be too optimistic if the level of satisfaction is generally low. However, the subjective positive change in reported relationship satisfaction demonstrated opportunities related to the pandemic and measures undertaken to prevent spreading the virus (e.g., social isolation). A potential mediating mechanism may include the mental health consequences of the pandemic experienced by romantic partners. For example, both husbands and pregnant wives reported higher depressiveness, anxiety, worse mental health and more suicidal ideation due to higher COVID-19 health anxiety (Ahorsu et al., 2020). These detrimental outcomes of the pandemic-related phobia included both actor (spillover) and partner (crossover) effects. Thus, public health services should focus special attention on romantic couples experiencing significant life transitions and challenges during the pandemic.

Future studies should also consider moderating more precisely the role of parenting challenges during the COVID-19 pandemic (e.g., supervision of remote learning of children; Brown et al., 2020; Günther-Bel et al., 2020) and the type of work performed by the spouses (remote vs. office-based work during the pandemic; Trougakos et al., 2020). Both factors may impact the perceived conflict in marriage and relationship quality during the pandemic. The limitations of the present study also included measurement of the overall dyadic coping by the partner. Previous studies showed that positive dyadic coping by the partner was particularly important in buffering the distress – romantic relationships associations (Randall et al., 2022).

4.5 Conclusion

The present study showed phobia spillover effects and phobia crossover effects which indicated that the psychological distress experienced due to pandemic-related concerns affected the intra-dyadic stress of husbands and wives, and wife's stress also affected the intra-dyadic stress experienced by husbands. Dyadic coping buffered these effects in both men and women. Higher perceived partner's responsiveness prevented spilling COVID-19 stress to the dyad. The positive subjective change in relationship quality perceived by husbands was predicted by their higher COVID-19

stress experiences. The last finding indicated that, although the pandemic resulted in severe mental health consequences (Xiong et al., 2020), it could also create opportunities for couples to join together against the challenges and improve their bonds. A strength of the study is that we focus on particular COVID-19-related anxiety symptoms (phobia) in order to investigate its associations with intrarerelationship conflict. We also focused on perceived change in romantic relationships satisfaction, which was very rarely studied in the literature during the pandemic, but which could be important in terms of determination of momentary life and relationship satisfaction (Pavot et al., 1998).

Conflict of Interest

There is no conflict of interest

Ethics Approval

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional research committee of University of Silesia in Katowice and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

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