COVID-19 and relationship quality: Emotional, paid work and organizational spheres

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Abstract

This study contributes to the growing literature on the repercussions of the COVID-19 pandemic for family functioning, with a special focus on couples' relationship quality. We advance an analytical model that emphasizes the role of three main stressors of relationship quality during the pandemic: namely, emotional, paid work-related and organizational stressors. To outline such an approach, we analyze whether the onset of the pandemic – and the home confinement that followed – has reduced relationship quality in France, Italy and Spain using survey data collected in April 2020. We show that relationship quality decreased for a non-negligible part of the population, and that this result was driven mostly by the emotional stressor. These negative effects on relationship quality appeared to be relatively stable across genders, different levels of network support and countries; which suggests that the severity of the lockdown measures outweighed the traditional moderating factors usually accounted for in family research.

Keywords: relationship quality; COVID-19; emotions; paid work; organizational issues

1 Introduction

The coronavirus (COVID-19) pandemic and the subsequent lockdown measures greatly changed the everyday lives of individuals and families across the world. Social distancing measures became obligatory in several countries starting in March or April of 2020. For example, on March 10, 2020, Italy closed all shops other than

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grocery stores and pharmacies. Spain imposed a strict nationwide quarantine on March 14 and extended it to April 25, with only essential workers being allowed to work starting on April 6. France implemented a full lockdown from March 16 to April 15, prohibiting both outdoor walks and public meetings (Koh, 2020). Thus, dimensions related to home life were of increasing relevance for predicting individual well-being during these periods.

Several scholars in the intimate relationship sciences have argued that the pandemic constitutes an extraordinary setting for studying the functioning of relationships given that the majority of couples were "locked inside the same home" (Fernandes et al., 2020), at least in countries that experienced national lockdowns. The direct (e.g., illness, death of loved ones and the fear of one's own mortality) and indirect (e.g., employment loss) consequences of the pandemic have been closely interconnected with couples' relationship quality (Pietromonaco and Overall, 2021) and stability (Fallesen, 2021; Manning and Payne, 2021). We believe that understanding whether and how the pandemic and the quarantine measures have affected relationship quality is crucial. Partners' support represents a fundamental source of both physical and emotional well-being (for those in relationships) that has become even more vital in the current global context.

This paper focuses on the potential short-term negative effects of the pandemic on relationship quality. However, the pandemic may have also generated positive effects. For instance, Schmid et al. (2021) noted that for Germany, a substantial proportion of respondents experienced not only negative (40%) but also positive (20%) changes in relationship satisfaction during the crisis. The focus on the negative effects of the pandemic on relationship quality is justified in light of the ample discussion on its possible consequences for union dissolution (e.g., Prasso, 2020; Ryall, 2020; see Manning and Payne, 2021 for an analysis of divorce counts in five states of the US). We leave to future investigations an analysis of the pandemic's potential positive effects on relationship quality, especially during the later stages of the crisis.

The nature of the COVID-19 pandemic differs from that of other natural disasters. Nonetheless, it is useful to recall that exogenous stressful shocks tend to challenge unions. Couples facing heightened stress levels (including in the form of mental health issues), employment concerns or organizational problems as a result of a natural disaster are likely to experience fluctuations in their relationship satisfaction levels. On the one hand, individuals experiencing traumatic events (i.e., a terrorist bombing) may seek comfort and security from their loved ones (Pietromonaco and Overall, 2021). There is, for example, evidence that divorce rates declined in affected communities in the immediate aftermath of events like the 1995 Oklahoma City bombing (Nakonezny et al., 2004) or the 2001 September attacks (Cohan et al., 2009). On the other hand, life-threatening events externally generated by sudden shocks may cause chronic stress and relational conflicts, which could contribute to relationship deterioration. For example, divorce rates were shown to increase in the areas affected by Hurricane Hugo in 1989 (Cohan and Cole, 2002).

While the current pandemic partly recalls the settings associated with several previous disasters, its duration and pervasiveness make it unique. A review of 43 studies (Vindegaard and Benros, 2020) has shown that the pandemic has led to increased levels of anxiety and depression. There is also evidence that this phenomenon has occurred across countries (Luo et al., 2020). As people attempt to cope with negative emotions and the sense of being overwhelmed due to the pandemic, substance abuse appears to have increased significantly (Rogers et al., 2020). Thus, a number of scholars have observed that the COVID-19 pandemic has challenged the functioning of couple relationships, generating (in many countries) emotional obstacles that may be chronic or long-lasting, and that may hinder the pursuit of close interactions (e.g., Pietromonaco et al., 2021).

In this study, we advance an analytical model that emphasizes the role of three main stressors of couples' relationship quality during the pandemic, namely, emotional, paid work-related and organizational stressors. Inspired by the main theories on relationships and family stress, this model guides our empirical analyses, which are based on the results of an online survey conducted during the first wave of the COVID-19 pandemic in France, Italy and Spain.

2 How the pandemic can shape relationship quality: Theoretical relations

Figure 1 presents our adaptation of Pietromonaco and Overall's (2021) conceptual model on couples' relationship quality during the pandemic. It suggests that direct and indirect pandemic-related stressors associated with emotions, paid work and organization are likely to impact relationship quality.

First, the pandemic may have directly influenced a couple's emotional sphere (arrow A). In some cases, the partners may have lost loved ones, or be afraid that they or people close to them could die. The uncertainty associated with the pandemic's duration may have frustrated hopes of establishing a time frame for a return to normality, thus generating emotional stress and pain (Holmes et al., 2020). The pandemic might have also influenced the emotional sphere indirectly, through the imposition of lockdown policies (arrow B). The state-imposed physical distance from loved ones (e.g., friends and family members outside the household) may have exacerbated the partners' emotional distress. Generally speaking, isolation and a lack of emotional support within the couple may have harmed relationship quality (arrow H).

Second, couples' pandemic-related stress might have further increased if they had concerns about (paid) work, especially if one or both partners lost their job or (part of) their income. As represented by arrow C, this was typically not a direct consequence of the virus *per se*, but was, rather, the result of lockdown measures. The COVID-19 outbreak has been accompanied by unprecedented disruptions to

Figure 1:
A pandemic stress model for a couple's relationship quality
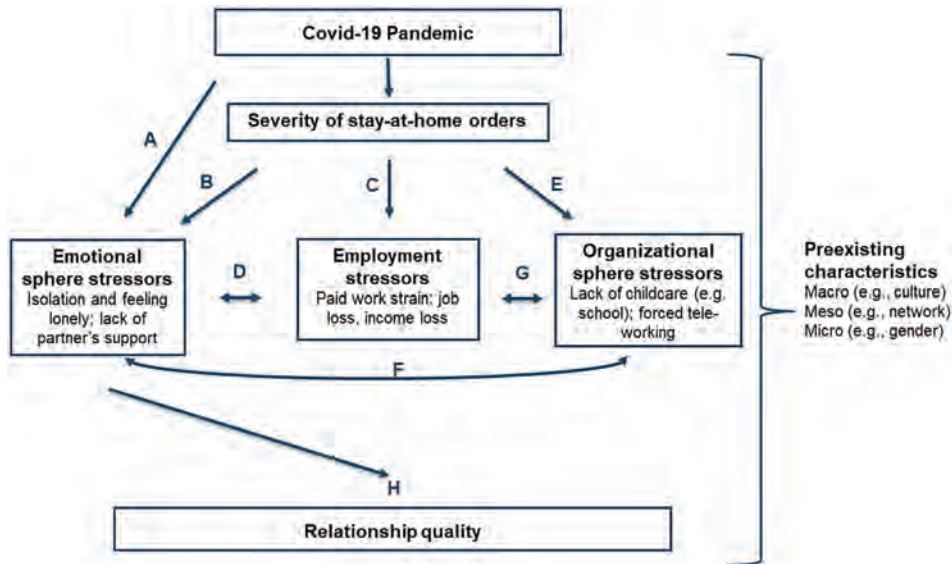
Source: Own elaboration.

global economies, which has, in turn, led to income losses and high unemployment rates (Dang and Viet Nguyen, 2021). Individuals who experience income or job loss, or reduced working hours, are more likely to experience a decrease in relationship quality (e.g., Blom et al., 2020; Brand, 2015; Kinnunen and Pulkkinen, 1998); see arrow D. A job loss is one of the worst financial shocks a family can face, making it extremely difficult for them to make ends meet, and to avoid distressing downstream effects, such as a foreclosure or an eviction (Gama et al., 2021). In addition, the pandemic has brought with it an enormous increase in economic uncertainty, fueling negative future expectations for all workers, regardless of whether they lost their jobs (Guetto et al., 2021). While the majority of the global population have not been directly exposed to the virus and its economic consequences, most people have been exposed to government restrictions and media-channeled shared narratives of an uncertain future (Guetto et al., 2021; Vignoli et al., 2020). Widespread uncertainty may have increased individuals' concerns about their present and future economic conditions, which may, in turn, have triggered relationship dissatisfaction and conflict.

Third, (strict) stay-at-home orders have likely generated organizational challenges for couples (arrow E). These orders have greatly influenced the organization of domestic life (Ruppanner et al., 2021), with many people being forced to start working or attending school from home. This shift to working from home has led

to the blurring of temporal and spatial boundaries between home and work life (Rudolph et al., 2021). Lowman (2021) has observed that in many families during the pandemic home issues have become work issues, and struggles at work have become entangled with home life. For instance, the lack of a commute may have removed the time many people previously used to calm down from or reframe an unpleasant day at work. Thus, remote working has hindered the division between the workplace and the domestic sphere, which may have made it easy for partners to transform their work struggles into marital conversations, instead of turning to their colleagues to complain, seek solidarity or discuss work events. On the other hand, working from home may have fostered relationship quality by increasing the time partners have been spending together. Despite being potentially therapeutic (Benjamin, 1998), the sharing of work-related issues with the other partner may have "invaded" the intimate relationship, thus reducing the couple's relationship quality. Difficulties in balancing working from home and family life might have been exacerbated by poor housing conditions due to overcrowding.

The organizational consequences of the COVID-19 pandemic might have also led to lower levels of relationship satisfaction by aggravating time stress and negative subjective feelings about the couple's division of labor (arrow F). Clearly, by definition, employment and organizational stressors interact with one another, as, for instance, a job loss or a reduction in working hours can dramatically change the time a person has available to spend at home (arrow G).

Importantly, our model emphasizes the role of micro, meso and macro characteristics that may represent vulnerabilities – or possibly even strengths – that contribute to important processes that influence couples' relationship quality. Pre-existing characteristics shape the association between the three life spheres and couples' relationship satisfaction, which can vary depending on the contexts in which the couples are embedded (e.g., the national culture), their social networks (e.g., the non-physical support offered by family and friends), and their individual characteristics (e.g., gender).

A final element of the model requires clarification. Arrow H may be partly counterbalanced by an adaptive process through which couples learn how to overcome stressors and negative events, which can reinforce their relationship before additional pandemic-related stressful events occur. Even if partners experience negative emotions and high levels of stress that have a detrimental impact on their relationship quality, they might be able to manage these stressful shocks through their own interactions. Couples may also adopt a problem-solving approach for managing changes to their emotional, paid work-related and organizational spheres (Sebri et al., 2021).

3 Literature review

In the following, we present a brief review of the literature on the three specific domains (emotional, paid work-related and organizational) that our theoretical model considers to be crucially associated with relationship quality during the

pandemic. It is worth noting that an exhaustive literature review is challenging to provide at the time of writing, as the literature on this topic is growing rapidly. We therefore narrow our review by focusing on studies that have examined the key micro-, meso- and macro-level pre-existing characteristics that might moderate such an association.

3.1 Emotional sphere

There is a considerable amount of evidence suggesting that the pandemic-induced lockdowns have had negative emotional consequences for couples (e.g., Donato et al., 2021). Although individuals in a relationship tend to experience less anxiety and depression than never- or previously-married individuals (e.g., Goldfarb and Trudel, 2019; Waite and Gallagher, 2001), being in relationship during the pandemic has not necessarily represented a safety net (for the Indian case, see Ahmad et al., 2020; for the Austrian, see Pieh et al. (2020).[1]

At the couple level, individual negative feelings triggered by either the pandemic or the forced quarantine measures may have worsened the functioning of a relationship. Stressful events can weaken relationship quality, as the individuals affected by external shocks may be less likely (or able) to provide their partner with emotional support (Reid and Reczek, 2011). This pattern has been observed during the COVID-19 pandemic as well (Settersten et al., 2020). Pieh and colleagues' (2020) cross-sectional study on the Austrian case indicated that during the pandemic, relationship quality has been strongly related to mental health. In their study, they found that poor relationship quality was negatively associated with symptoms of both depression and anxiety.

Relational uncertainty can be defined as (among other aspects) uncertainty about the partner's commitment, and is another crucial factor in this context (Solomon et al., 2016). Bellani and Vignoli (2020) found that "couples held in captivity" were at risk of decreased relationship quality, particularly when the partners reported experiencing stressors related to feeling lonely. It seems reasonable to assume that perceptions of loneliness[2] are negatively associated with relationship quality, given that individuals suffer when they cannot turn to their known support network to help them manage unexpected shocks (Saltzman et al., 2020).

[1] Studies have shown that having a partner is associated with several positive outcomes. However, it also carries a number of risks. If a couple is having difficulties (e.g., related to financial issues or a lack of support from the partner), the partners' satisfaction with their intimate relationship may suffer. This may, in turn, lead to an increase in stress levels (Archuleta et al., 2011). Another crucial risk is the contagion of negative emotions from one partner to another (Roberts and Levenson, 2001).

[2] In psychology, loneliness is defined as the negative effect an individual experiences when she or he perceives a discrepancy between his or her desired and actual relationships (Perlman and Peplau, 1981).

H1: *Couples experience a decrease in relationship quality during the lockdown when a partner(s) experiences an increased sense of loneliness.*

3.2　Paid work sphere

Research on romantic relationships has shown that economic hardship, unemployment and a shortage of jobs can threaten a couple's relationship quality and stability. Navigating economic adversity and job loss can have severe effects on the mental health of partners (Lund et al., 2018), often leading to depression (Llosa et al., 2018). Losing a job generally has a negative impact on a person's well-being (Burgard et al., 2012). Several studies have also identified a causal relationship between job loss and declines in psychological and physical well-being (e.g., De Moortel et al., 2017).

Despite the efforts of European governments to alleviate financial distress during the pandemic by providing massive amounts of welfare support, Mimoun et al. (2020) found that people who were even temporarily underemployed or laid off during the COVID-19 pandemic reported higher levels of distress than those who were unemployed prior to the crisis.

H2: *Couples in which a partner(s) loses a job and/or income are likely to experience a decrease in relationship satisfaction.*

3.3　Organizational sphere

A number of studies have noted the enormous time pressures couples were under during the lockdowns (e.g., Craig and Churchill, 2021), especially if they had children (Collins et al., 2021). The pressures faced by partners who wanted to maintain their attachment to their job while also devoting their time and attention to their children or other family members led to organizational issues.

Craig and Churchill (2021) found that as well as affecting how domestic life was structured, the pandemic also modified couples' time allocation patterns. The primary consequence of these shifts has been the blurring of spatial and temporal boundaries between paid and unpaid work (Craig and Churchill, 2021). A key challenge in the organizational sphere that emerged during the pandemic was the sharp increase in the level of unpaid work (Del Boca et al., 2020; Farre et al., 2020). For example, evidence from Italy has shown that most of the extra unpaid work caused by the crisis fell to women (Meraviglia and Dudka, 2021). In particular, women's child care duties expanded dramatically due to school closures. D'Ambrosio et al. (2020) explored the time allocation and well-being of couples in several countries in the later stages of the pandemic (November 2020). They found that the increase in the time women spent on child care during the pandemic was much greater in Italy than in Spain or Germany, largely because of the longer school closures in Italy.

H3: *Couples in which a partner(s) faces organizational struggles are likely to experience a decrease in relationship satisfaction.*

3.4 Moderation effects: Micro, meso and macro

The risk of experiencing worsening relationship quality is not equally distributed between men and women. A gender gradient in the prevalence of various of mental health disorders, such as depressive symptoms, has often been observed. It has generally been established that women tend to suffer from depressive symptoms more often than men; and that women are more likely than men to experience psychological disorders after traumatic events (e.g., Boerma et al., 2016).

There are also some reasons to expect that the pandemic has hit women more severely than men. Studies on gender inequalities during the pandemic have suggested that even if both men and women have experienced negative psychological consequences, they have been differentially exposed to stressors. On average, women have been more exposed than men to worsening working conditions and increasing work–family conflicts (Rubery and Tavora, 2020). Moreover, there is evidence that the employment declines related to social distancing measures have had a larger impact on sectors with high female employment shares. These gender differences may be especially relevant in Europe, where women are generally less likely than men to work in "essential" or "frontline" sectors; although they are more likely to work in "teleworkable" sectors (Fana et al., 2020, p. 16). Dang and Viet Nguyen's (2021) study on China, South Korea, Japan, Italy, the UK and the four largest states in the US found that women were 24% more likely than men to have permanently lost their job during the pandemic, and that this trend was pronounced in regions heavily affected by the virus.

An even more important factor that may have shaped the gender differences in the consequences of the pandemic relates to the increased needs of children (e.g., in term of child care), but also of other family members (e.g., cohabiting parents). Working women, and especially mothers, had been contributing far more than men to unpaid housework and child care before the pandemic (e.g., Bianchi and Milkie, 2010). The outbreak may have further exacerbated pre-existing gender inequalities in the division of domestic tasks within dual-earner couples. School and day care closures due to the pandemic have likely put even more pressure on women to assume care duties (for a review, see Croda and Grossbard, 2021; as well as Alon et al., 2020). This, in turn, has generated further stress that may have affected relationship quality.

In addition to micro-level moderation effects (gender in particular), meso-level effects also play a pivotal role in relationship quality (Furfaro et al., 2021). For instance, the lack of social support (e.g., by friends or family members, excluding the partner) during the pandemic may have triggered or exacerbated depressive symptoms and feelings of loneliness that could impede positive relationship adaptation after the pandemic is over (Saltzman et al., 2020). As a number of studies have

suggested, the presence and the strength of associational solidarity are important to life satisfaction and happiness (e.g., Perry and Pescosolido, 2010). Research has also shown that social networks influence well-being through the provision of social support. This support may, in turn, influence depressive symptoms (Lin et al., 1999), as well as marital quality (e.g., Holman, 1981).

Finally, there are various macro-level forces that may shape the effects of the pandemic on family lives. The first phase of the pandemic affected the three studied countries heterogeneously; e.g., in terms of the timing and the severity of containment strategies. Moreover, the socioeconomic and institutional features that characterize these national contexts might have had different levels of influence on relationship quality. As Luppi et al. (2020) reported, the lockdown restrictions reduced levels of physical intergenerational support. This loss of support might have influenced the quality of couples' relationships, especially that of couples with children in countries such as Italy and Spain, where grandparental child care tends to be more intensive. However, while the Italian government granted parents 30 additional days of parental leave, Spain has introduced the "Plan MECUIDA" to enable flexible employment and reductions in working hours (with corresponding reductions in wages) for employees with care responsibilities. Among the other relevant contextual characteristics are the differences in the three countries' social policy responses to COVID-19 (e.g., Luppi et al., 2021; Moreira et al., 2021). The Italian government was the first of these countries to introduce a temporary suspension of layoffs for economic reasons in order to protect employment, followed by Spain; whereas no such suspension was implemented in France. In both Italy and Spain, firms – including those operating in the many sectors not previously covered – were authorized to use existing temporary layoff and wage support schemes. In France, the main response was the development of short-term or flexible working hours (Moizard, 2020).

4 Data and empirical strategy

Our analyses are based on the results of the online survey Intergen-Covid (Arpino et al., 2020). Respondents were interviewed between April 14 and April 24, 2020, in France, Italy and Spain during periods of strict home confinement. The survey used CAWI (Computer Assisted Web Interviewing), and had a total sample size of 9,186 individuals, with approximately 3,000 respondents per country.

The questionnaire explored the core respondents' experiences and emotions during the first home confinement, including their feelings and social connections. The survey company Lucid collected the data, while imposing representative quotas at the country level by gender, age, region of residence and educational level. Quota sampling ensured that the final sample was virtually distributed according to the country benchmarks based on the statistics on key sociodemographic factors provided by the national statistical offices. Additionally, we used post-stratification weights to adjust for small deviations from the benchmark population statistics.

4.1 Sample

We selected respondents aged between 20 and 60 in a co-residential relationship (marriage or cohabitation).[3] Our final sample was $N = 3,587$ ($N = 1,197$ for Italy; $N = 1,357$ for Spain; and $N = 1,033$ for France).

4.2 Dependent variable

The dependent variable was the perceived change in the quality of the relationship at the time of the interview compared to before the lockdown (before January 31, 2020, in Italy and Spain; and before January 24, 2020, in France). More precisely, the respondents were asked the following question: "Since the first nationwide restrictions in response to the coronavirus went into effect in your country (date), have you experienced any of these changes?" A possible response was "worsened relationship with partner." The dependent variable took the value of [1] if the respondent reported experiencing a worsening of their relationship quality, and the value of [0] otherwise.

4.3 Explanatory and control variables

We were interested in examining the association between the change in relationship quality and the shifts in the emotional, paid work and organizational spheres during the first lockdown. Accordingly, we used the following main explanatory variables. Our indicator for the emotional sphere was having felt more lonely (whether the respondent did or did not feel lonely most of the time or often during the week before the interview). We relied on two indicators for the paid work sphere: namely, having lost one's job or having lost income.[4] Finally, our indicator for the organizational sphere was whether the respondent reported having more difficulties with organizing work (or school) from home.[5]

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[3]   We excluded from our analysis those aged 60 or older because if they experienced partnership instability, they would fall into the "gray divorce" category (Brown and Lin, 2012), which is a distinct phenomenon.

[4]   The question related to job loss and income loss was as follows: "Since the first nationwide restrictions due to the coronavirus went into effect in your country (date), have you experienced any of these changes? (Tick all that apply)." The potential answers were "suffered income loss" and "job loss."

[5]   The question related to organizational issues was as follows: "Since the first nationwide restrictions due to the coronavirus went into effect in your country (date), have you experienced any of these changes? (Tick all that apply)." The potential answer was "difficulties with organizing work or education from home."

Table 1:
Descriptive statistics

Variable	Mean	Std. Dev.	Min	Max
Gender	.441	.497	0	1
Age	43.5	10.6	20	60
Country				
Italy	.334	.472	0	1
Spain	.378	.485	0	1
France	.288	.453	0	1
Network support	.424	.494	0	1
Educational level:				
Primary or less	.085	.279	0	1
Secondary	.451	.498	0	1
Tertiary	.464	.499	0	1
In cohabitation (not in a marriage)	.297	.457	0	1
Feeling more lonely	.341	.474	0	1
Feeling more depressed	.519	.500	0	1
Income loss	.481	.500	0	1
Job loss	.090	.287	0	1
More organizational issues	.180	.384	0	1
At least one child aged 0–17	.516	.5	0	1

The following variables were also included in the equation: gender; age (in its linear form); country; having received understanding and emotional support from family members and/or friends during the lockdown (this operationalized the meso-level dimension related to the network of support); educational level (low: below upper secondary education, ISCED 0, 1 and 2; medium: up to upper high school, ISCED 3 and 4; and high: tertiary education, ISCED 5 and 6); partnership form (cohabitation or marriage); and having or not having at least one child younger than 17 years old.

The overall composition of the sample is illustrated in Table 1.

First, we present descriptive findings concerning the three spheres of interest. We analyzed the results for the three countries because of their small country-specific samples, and used country-specific weights to offer estimates adjusted according to the sampling quota scheme. Second, we report the average marginal effects (AMEs) of the emotional, paid work and organizational domains on relationship quality by using logistic regression models. Finally, we present moderation models by segmenting the analysis by gender, emotional support from social networks (family and/or friends) and country.

Figure 2:
Percentages of couples with a decline in relationship quality during the lockdown, by emotional, paid work and organizational spheres
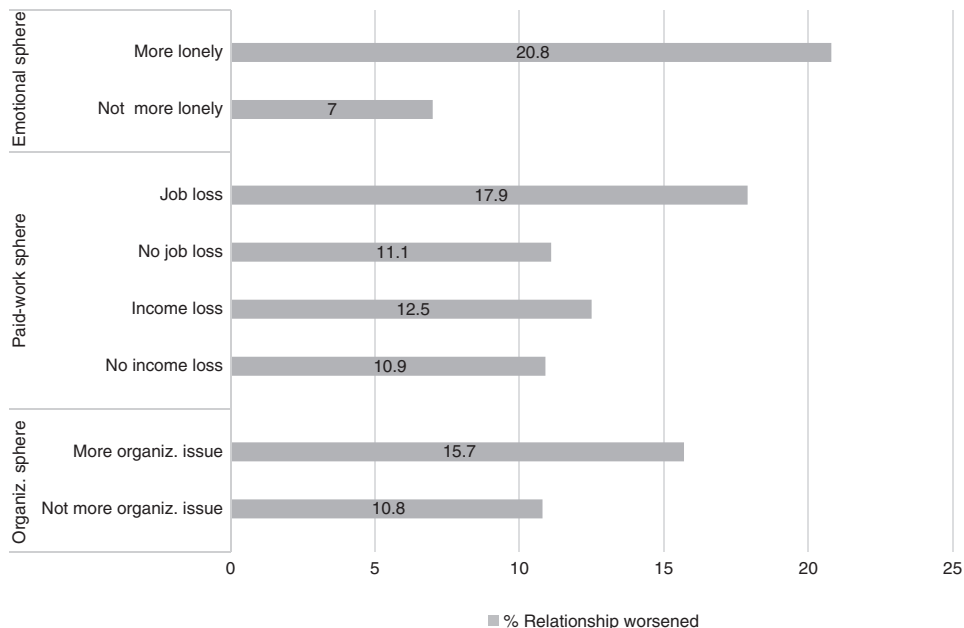
5 Results

The overall share of respondents who reported a decline in partnership quality was 11.86%. Broken down by country, this share was 12.51% in Italy, 11.31% in Spain and 11.83% in France. Figure 2 reports the weighted percentage of respondents who said they experienced a decrease in relationship quality according to the three domains. As expected, the respondents who experienced more frequent feelings of loneliness during the lockdown reported the highest rate of reduction in relationship quality (approximately 21%). For those who lost a job, the corresponding percentage was roughly 18%. The relationship between the decrease in relationship quality and the variable of feeling lonely more often was statistically significant at the .01 confidence level. This was also the case for those who had experienced both a job loss and organizational difficulties.

Moving on to the multivariable logistic regression models, Table 2 displays the coefficients of the association between the emotional sphere and relationship quality in their log-odds form. Model 1 represents the baseline, controlling for gender, age, country, the level of emotional support received from social networks during the lockdown, educational level, partnership form and having a child younger than

Table 2:

Estimates from a series of logistic regression models for worsening relationship quality as a function of variables related to the "emotional sphere" and individual characteristics. Log odds

	(M1) Baseline + predictors	(M2) With all spheres predictors	(M3) Only women	(M4) Only men	(M5) Italy	(M6) Spain	(M7) France	(M8) Without support network	(M9) With support network
Feeling more lonely	1.391***	1.391***	1.538***	1.217***	.989***	2.128***	1.302***	1.499***	1.290***
	(.221)	(.216)	(.241)	(.39)	(.291)	(.606)	(.254)	(.265)	(.356)
Gender (Ref. = woman)	−.345*	−.346*			−.615**	.31	−.699***	−.548**	−.127
	(.205)	(.207)			(.306)	(.448)	(.271)	(.26)	(.304)
Age	.007	.006	.001	.012	.006	.026	−.013	−.001	.018
	(.011)	(.01)	(.015)	(.016)	(.017)	(.019)	(.014)	(.014)	(.015)
Country (Ref. = Italy)									
Spain	.006	−.006	−.297	.415				−.144	.215
	(.284)	(.286)	(.356)	(.419)				(.362)	(.431)
France	−.034	.066	.055	−.164				−.371	.379
	(.185)	(.196)	(.223)	(.352)				(.267)	(.267)
Network support (Ref. = No network support)	−.228	−.271	−.428*	.012	−.488	−.451	.196		
	(.214)	(.208)	(.243)	(.370)	(.303)	(.59)	(.227)		
Education (Ref. = Primary)									
Secondary	−.084	−.168	−.065	−.215	−.433	.412	−.113	−.328	.330
	(.251)	(.245)	(.29)	(.419)	(.351)	(.484)	(.429)	(.303)	(.452)
Tertiary	.022	−.103	−.099	.065	−.205	.471	−.198	−.158	.369
	(.284)	(.279)	(.333)	(.432)	(.392)	(.516)	(.445)	(.343)	(.492)
In cohabitation (Ref. = in marriage)	.539**	.553**	.005	1.369***	.376	1.272**	.215	.628**	.475
	(.214)	(.220)	(.271)	(.325)	(.317)	(.522)	(.264)	(.256)	(.361)
Having a child < 17	.487**	.466**	.208	.925***	.772***	.169	.506*	.468*	.566*
	(.199)	(.199)	(.237)	(.337)	(.290)	(.459)	(.274)	(.243)	(.322)
Observations	3587	3587	2005	1582	1197	1357	1033	2065	1522
Pseudo R^2	.079	.091	.083	.108	.062	.157	.093	.1	.072

Note: Standard errors are in parentheses. *** $p < .01$, ** $p < .05$, * $p < .1$.

Figure 3:
Average marginal effects of the variables related to the "emotional sphere" on relationship satisfaction – computed from Table 2
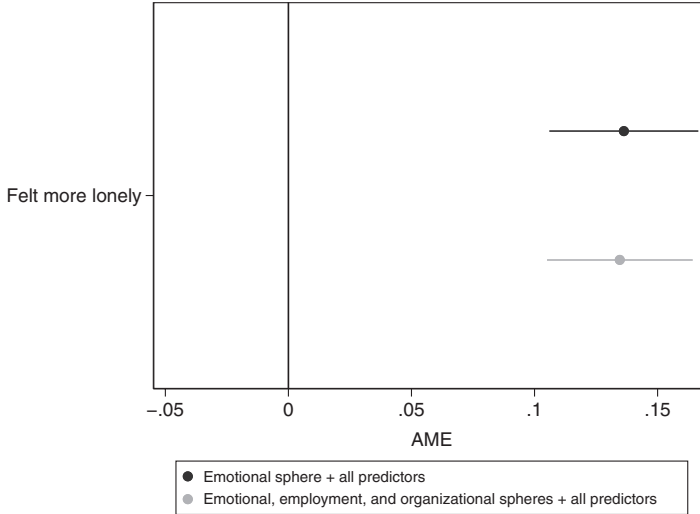
17 years old.[6] In Model 2, we added the other spheres' indicators to the baseline model in order to compare the results both with and without the controls related to other spheres.

Figure 3 graphically reports the AMEs of the indicators of the emotional sphere for two models (i.e., M1 and M2 of Table 2). As expected, we found that the respondents who had experienced an increase in feelings of loneliness were more likely to report a decrease in relationship quality during the lockdown compared to those who had not experienced such feelings. The AMEs were statistically significant, at between 13 and 14 percentage points ($p < .01$). Thus, our findings (partly) support H1.

We then explored the relationship between the paid work indicators and relationship quality. Table 3 displays the results of logistic regression models when testing to determine whether there was an association between job/income loss and a worsening of relationship quality. Again, the table first reports the coefficients related to the basic model (M1), and then adds the indicators of the other spheres of interest (M2).

Figure 4 reports the AMEs of having experienced a worsening of relationship quality due to paid work-related variables such as income and job loss.

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[6]   We ran robustness checks in which we included in the model the age of the youngest child and the number of children. The results did not change (results are available upon request).

Table 3:

Estimates from a series of logistic regression models for worsening relationship quality as a function of variables related to the "employment sphere" and individual characteristics. Log odds

	(M1) Baseline + predictors	(M2) With all spheres predictors	(M3) Only women	(M4) Only men	(M5) Italy	(M6) Spain	(M7) France	(M8) Without support network	(M9) With support network
Income loss	.295 (.204)	.340* (.207)	.179 (.238)	.474 (.341)	.114 (.281)	.933* (.541)	.005 (.243)	.621** (.260)	-.002 (.308)
Job loss	.398 (.339)	.401 (.321)	.476 (.383)	.287 (.611)	-.342 (.407)	.396 (.573)	1.116* (.61)	.645 (.450)	.018 (.481)
Gender (Ref. = woman)	-.390* (.202)	-.346* (.207)			-.650** (.306)	.195 (.452)	-.675*** (.241)	-.639** (.250)	-.182 (.300)
Age	.004 (.010)	.006 (.010)	-.001 (.014)	.008 (.015)	.004 (.017)	.011 (.021)	-.013 (.013)	-.002 (.013)	.016 (.015)
Country (Ref. = Italy)									
Spain	-.095 (.277)	-.006 (.286)	-.360 (.346)	.269 (.444)				-.179 (.361)	.108 (.431)
France	-.007 (.185)	.066 (.196)	.018 (.218)	-.085 (.338)				-.253 (.265)	.290 (.263)
Education (Ref. = Primary)									
Secondary	-.047 (.237)	-.168 (.245)	.013 (.281)	-.227 (.402)	-.316 (.350)	.181 (.482)	.038 (.401)	-.292 (.290)	.380 (.432)
Tertiary	.039 (.271)	-.103 (.279)	-.085 (.318)	.113 (.440)	-.118 (.394)	.158 (.528)	-.047 (.389)	-.215 (.333)	.412 (.471)
In cohabitation (Ref. = in marriage)	.505** (.211)	.553** (.220)	-.057 (.242)	1.408*** (.375)	.324 (.314)	1.207** (.524)	.180 (.251)	.548** (.249)	.486 (.366)
Having a child <17	.470** (.198)	.466** (.199)	.225 (.232)	.906** (.357)	.724** (.284)	.140 (.504)	.519** (.254)	.387 (.239)	.552* (.320)
Network support (Ref. = No network support)	.093 (.204)	-.271 (.208)	-.079 (.236)	.319 (.338)	-.238 (.299)	.053 (.508)	.459** (.222)		
Observations	3587	3587	2005	1582	1197	1357	1033	2065	1522
Pseudo R^2	.024	.091	.011	.074	.033	.063	.049	.052	.018

Note: Standard errors are in parentheses. *** $p < .01$, ** $p < .05$, * $p < .1$.

Figure 4:
Average marginal effects of the variables related to the "employment sphere" on relationship satisfaction – computed from Table 3
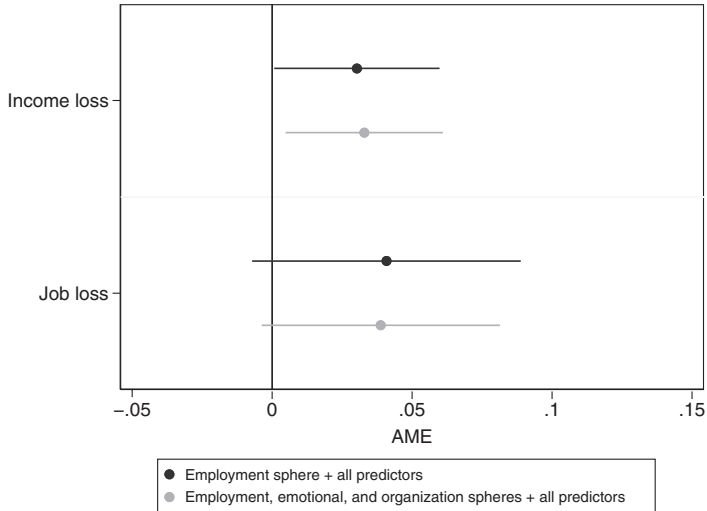
The respondents who said they had these experiences were more likely to report a decrease in relationship quality than those who did not. The AMEs were positive – with a magnitude of approximately 3–4 percentage points – but not statistically significant in the case of job loss (even if they were very close to a 10% level of significance).[7] Accordingly, H2 is not supported by the data.

Finally, Table 4 displays the log-odds related to the association between the organizational sphere and the dependent variable. As above, Model 1 contains the coefficients related to the basic model, whereas Model 2 also includes the indicators related to the other spheres.

In Figure 5, we can observe that the AMEs were positive (between five and six percentage points) and statistically significant at the 5% (M1) and 10% (M2) levels. This suggests that having more organizational burdens was associated with decreased relationship quality. Thus, our findings support H3.

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[7]   At the onset of the analysis, we included all control variables in a stepwise fashion (the results are available upon request for all models from Tables 2–4). The only difference we noted was that in Table 3, the variable "income loss" was significant once the model excluded the presence of a young (under age 15) child in the household.

Table 4:

Estimates from a series of logistic regression models for worsening relationship quality as a function of a variable related to the "organizational sphere" and individual characteristics. Log odds

	(M1) Baseline + predictors	(M2) With all spheres predictors	(M3) Only women	(M4) Only men	(M5) Italy	(M6) Spain	(M7) France	(M8) Without support network	(M9) With support network
More organizational issues	.542** (.264)	.502* (.272)	.125 (.257)	1.088*** (.403)	.459 (.310)	.767 (.553)	.432 (.398)	.622* (.359)	.526 (.387)
Gender (Ref. = woman)	-.391* (.202)	-.346* (.207)			-.647** (.308)	.148 (.455)	-.663*** (.249)	-.622** (.248)	-.155 (.304)
Age	.004 (.010)	.006 (.01)	-.001 (.014)	.011 (.015)	.006 (.016)	.019 (.020)	-.013 (.013)	-.002 (.013)	.015 (.015)
Country (Ref. = Italy)									
Spain	-.065 (.276)	-.006 (.286)	-.351 (.343)	.303 (.434)				-.219 (.365)	.144 (.412)
France	-.012 (-.065)	.066 (-.006)	-.020 (-.351)	-.082 (.303)				-.308 (-.219)	.359 (.144)
Education (Ref. = Primary)									
Secondary	-.064 (.237)	-.168 (.245)	.020 (.281)	-.277 (.385)	-.339 (.350)	.304 (.472)	-.059 (.407)	-.267 (.286)	.334 (.431)
Tertiary	-.104 (.276)	-.103 (.279)	-.133 (.323)	-.129 (.428)	-.185 (.388)	.044 (.549)	-.262 (.448)	-.310 (.329)	.248 (.489)
In cohabitation (Ref. = in marriage)	.512** (.212)	.553** (.22)	-.045 (.245)	1.516*** (.374)	.349 (.314)	1.109** (.532)	.207 (.249)	.570** (.247)	.462 (.386)
Having a child < 17	.453** (.198)	.466** (.199)	.210 (.231)	.946*** (.363)	.719** (.289)	.149 (.496)	.535** (.260)	.413* (.241)	.524 (.327)
Network support (Ref. = No network support)	.081 (.205)	-.271 (.208)	-.057 (.235)	.311 (.342)	-.291 (.289)	.170 (.485)	.430* (.228)		
Observations	3587	3587	2005	1582	1197	1357	1033	2065	1522
Pseudo R^2	.024	.091	.007	.093	.036	.043	.041	.037	.025

Note: Standard errors are in parentheses. *** $p < .01$, ** $p < .05$, * $p < .1$.

Figure 5:
Average marginal effects of the variables related to the "organizational sphere" on relationship satisfaction – computed from Table 4
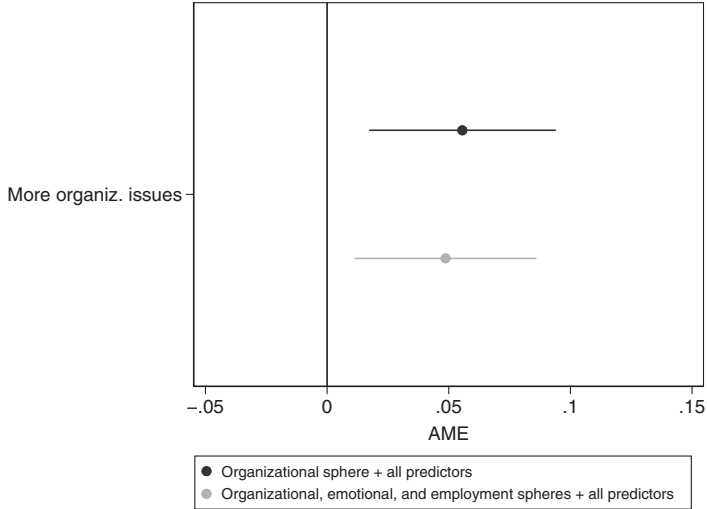

5.1 Pre-Existing Characteristics

Models 3 and 4 of Tables 2–4 display the results of the logistic regression models with the sample segmented by gender (M3 for women and M4 for men). Models 5, 6 and 7 of Tables 2–4 report the log odds for the three countries separately (M5 for Italy, M6 for Spain and M7 for France). Finally, Models 7 and 8 display the coefficients of two population groups, namely, those who did and did not receive emotional support from social networks.

In Figure 6, we report the AMEs corresponding to M2 of Table 2, as well as those that are related to M3 to M9, for each sphere of interest (Panel a: emotional, Panel b: employment and Panel c: organizational). The figure suggests that there were no differences by gender, support network or country for the "felt more lonely" indicator.

Focusing on the employment sphere, Panel b shows that, compared to the general M2 of Table 3, there were no significant differences by gender in the association between income/job loss and relationship quality (M3 and M4). However, when we consider each country individually, we see that in Spain, there was a positive and significant (at the .1 level) association between income loss and worsening relationship quality. In France, but not in Italy and Spain, we observed a positive association (significant at the .1 level) between job loss and worsening relationship quality. Moreover, Panel b shows that the respondents who had experienced income

Figure 6:
Average marginal effects of the variables related to the "emotional sphere," the "paid work sphere" and the "organizational sphere" on relationship satisfaction by gender, country and support network – computed from Tables 2–4
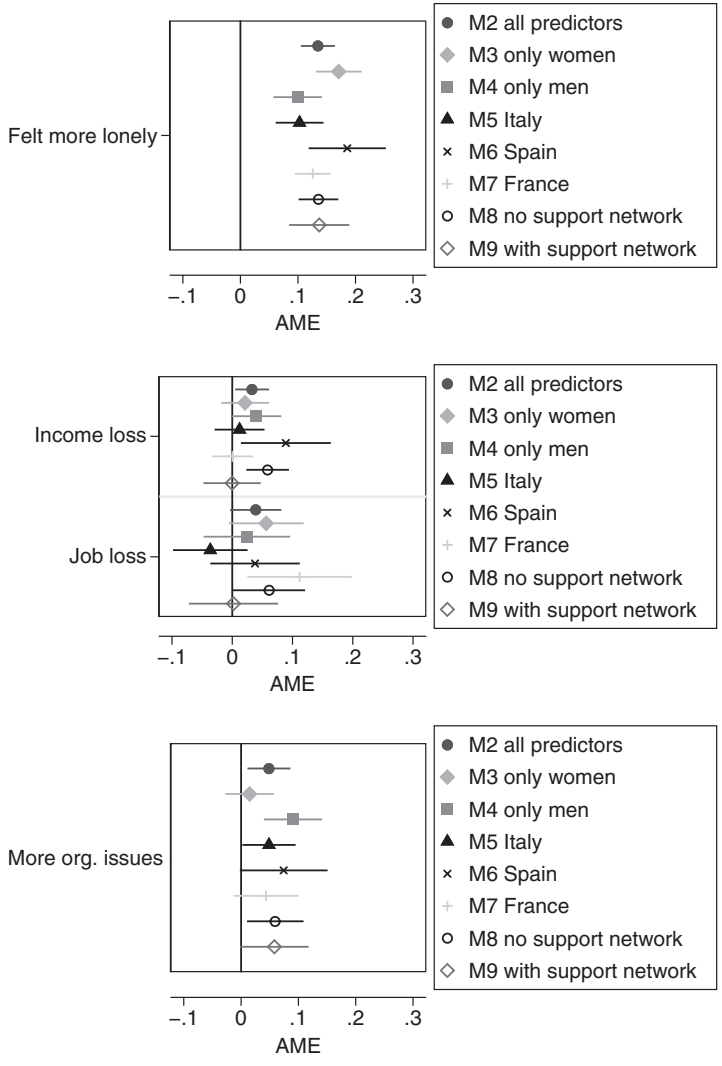
loss and were not receiving emotional support from family/friends were more likely to report worsening relationship quality (AME = .07, significant at the .05 level).

Finally, Panel c graphically presents the results from M2 to M9 of Table 4. The panel suggests that men in particular reported experiencing a more severe decline in

relationship quality when they were facing organizational issues. We observed no national differences or dissimilarities according to the level of network support.

6 Conclusions and discussion

As part of the "circuit breaker" policies designed to halt the spread of COVID-19, the governments of Italy, Spain and France (among many others) decided to impose highly restrictive lockdown measures from March to May 2020. "Non-essential" services were either severely limited or completely shut down, and the majority of workplaces, schools and universities closed. Home confinement measures, imposed as part of nationwide movement restrictions, forced household members to live together at home for several weeks. Our study looked at whether and how relationship quality declined during this strict lockdown period based on the changes survey respondents reported experiencing in their emotional, paid work and organizational spheres.

We found that relationship quality decreased for a non-negligible part of the population in all three countries. Moreover, our results provide evidence that this decline in relationship quality was mostly driven by emotional stressors. We also observed a somewhat limited effect for the organizational sphere: i.e., more difficulties in organizing working from home resulted in higher levels of anxiety, stress and depression; and, in turn, higher levels of relationship conflict.

These negative effects on relationship quality appeared to be relatively similar regardless of the respondents' gender, level of network support or country. What seemed to be most striking about the characteristics associated with declines in relationship quality was their regularity across countries with distinctive cultures and different welfare arrangements. This may have been due to the severity of the lockdown measures in the three societies. Future research should examine whether our findings are transferable to countries where the responses to the COVID-19 pandemic were milder.

This study has several limitations. First, as a self-reported measure of worsening relationship quality during the lockdown, our dependent variable may have been subject to several sources of bias, such as social desirability bias and ex-post rationalization. However, the collection of data while the pandemic was at a peak was also a strength, as it minimized potential recall bias, which will likely affect future studies based on surveys employing a retrospective approach. Second, the results may not be entirely generalizable because the data were based on an online survey, which could only target the population with an internet connection. However, online data collection was the only possible option during the lockdown. Moreover, using quota sampling and post-stratification weights, we made the sample representative of the national populations with respect to key sociodemographic variables. Performing quota sampling ensured that the final sample was virtually distributed according to the country benchmark statistics on key sociodemographic factors provided by the national statistical offices. Additionally, we used post-stratification weights to

adjust for small deviations in the sample from the benchmark population statistics. Finally, because we needed to keep the questionnaire of our online survey as short as possible (Revilla and Ochoa, 2017), our data did not include more suitable markers of the three spheres of interests. This was especially the case for the organizational sphere. Future studies using new surveys with retrospective designs may be able to overcome these limitations.

We conclude by highlighting the importance of conducting follow-up studies. Our analysis was confined to the examination of the short-term consequences of the pandemic, and only scrutinized the potential negative consequences of the lockdown experience. This is because even if a decrease in relationship quality does not lead to union dissolution, it increases the risk of instability. Studies based on the insights of marriage practitioners and family life educators have stressed that early interventions can prevent couples who are experiencing relationship stress from allowing the stress to become chronic, and, eventually, to cause them to separate (e.g., Cordova et al., 2001, 2005). Indeed, certain precautionary actions have been shown to lessen the negative impact of the pandemic on the psychological sphere, and to reduce levels of stress, anxiety and depression. Intervention approaches that provide emotional support and promote social cohesion would be useful for improving couples' well-being both during and immediately after a lockdown or a new pandemic wave (Wang et al., 2020). Future investigations, in line with other recent studies (e.g., Schmid et al., 2021), should also examine the potential positive effects of the pandemic on relationship quality, especially during the most advanced stages of the COVID-19 crisis. It will be crucial to determine what happened to couples' relationships after some time has passed since the initial emergency; as couples may have found ways to adapt to a new form of family life organization, with implications for their relationship quality.

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