

Is it us or is it covid? COVID-19 related stress and relationship quality among adult couples

A systematic review

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Abstract

Background

The COVID-19 pandemic has significantly impacted global mental health, leading to widespread psychological distress. Disruptions like lockdowns and social distancing have affected couples' daily lives and altered their relationship quality. Despite growing interest in the field, there is a lack of research investigating the association between COVID-19 related stress and relationship quality over the three years of the pandemic. This systematic review aims to fill this gap by exploring the broader temporal scope and gaining a deeper understanding of the association between COVID-19 related stress and romantic relationships and the factors influencing changes in relationship quality.

Methods

The study used a systematic review methodology following the PRISMA guidelines. The search for relevant studies was conducted in May 2023. Studies that reported an association between COVID-19 related stress and relationship quality, satisfaction or marital satisfaction were included, and data extraction was performed to capture relevant study characteristics, outcome measures and possible moderators and mediators. The risk of bias in the included studies was evaluated using the JBI checklist for cross-sectional studies.

Results

The review included 5 studies, with a total of 18,486 participants, published between 2020 and 2023. Most studies used cross-sectional surveys and examined the association between COVID-19 related stress and relationship quality, satisfaction, or marital satisfaction. The results showed a consistent negative association between COVID-19 related stress and relationship satisfaction, as well as marital satisfaction, with some variations observed in different countries. Additionally, communication typologies and perceived partner dyadic coping were identified as significant moderators, influencing the association between COVID-19 related stress and relationship outcomes. Dyadic coping was also found to have a mediating effect on the relationship between COVID-19 distress and relationship satisfaction.

Discussion and conclusion

The findings from the included studies suggest that higher COVID-19 related stress is associated with lower relationship quality. Effective coping strategies and supportive communication patterns were identified as moderating factors that influenced the impact of stress on relationships. Further research is needed to explore the complex relationship between COVID-19 related stress and relationship quality, and incorporating these findings into interventions and support systems can enhance relationship well-being during crises.

Introduction

Background

In December 2019, the outbreak of a virus emerged in Wuhan, China (Huang et al., 2020). The World Health Organization (WHO) classified the outbreak, named coronavirus (COVID-19), as a public health emergency of international concern in the beginning of 2020, posing a significant danger to especially nations with fragile health systems (Sohrabi et al., 2020). The infectious nature of COVID-19 led to a global health crisis, generating widespread impacts on the well-being of populations across all age groups.

Beyond the impact on physical health, uncertainty about the ongoing of the pandemic, the possibility of contracting an illness and the restrictions imposed by the governments resulted in an increase of mental health related problems (Killgore et al., 2021). The implementation of stay-at-home policies and quarantines resulted in limitations that hindered individuals' opportunities for social interaction. Consequently, this led to significant modifications in lifestyle, changes in working conditions, temporary unemployment, and financial concerns (Brooks et al., 2020). According to the National Institute of Mental Health and Neurosciences (NIMHANS, 2020), the pandemic's sudden restrictions and instructions for social distancing caused stress, boredom, irritation, adjustment disorder, frustration or aggressive behavior. Moreover, loneliness, depression, and anxiety were possible consequences (Lakhan et al., 2020).

During the first year of the pandemic, various common mental health concerns such as stress, worry, fear, rage, and sleeplessness were observed across different generations (Roy et al., 2020). Withdrawal from social situations and physical disconnection from others seemed to contribute to psychological maladjustment, leading to psychological distress (Constantino et al., 2019; Dozois, 2021). Such stress can be attributed to two sources: internal and external stressors (Bhattacharjee & Ghosh, 2021). Internal stressors encompass the emotional strain of isolation, concerns about personal health and the health of loved ones, as well as the fear of contracting the virus (Bhattacharjee & Ghosh, 2021). External stressors, such as potential job loss or social isolation, can also contribute to feelings of stress (Bhattacharjee & Ghosh, 2021). A longitudinal study (Daly & Robinson, 2021) provided evidence for the influence of the stress sources, demonstrating that participants who associated COVID-19 with an increased health risk, which may be classified as internal stressor, experienced a significant 20.7% increase in psychological distress from the beginning of March until April 2020.

Nevertheless, stress does not only affect individual well-being but also has implications for interactions with significant others, particularly in the context of romantic

relationships (Randall & Bodenmann, 2017). A possible counterplay of stress, and particularly COVID-19 related stress and romantic relationships emerged since the beginning of the pandemic in 2020 as a growing field of interest in research. Thus, the following section will provide an overview of the relevant findings investigating COVID-19 related stress and its possible impact on romantic relationships.

COVID-19 and relationships – current state of research

Given the considerable lifestyle changes resulting from the pandemic, such as restrictions on leaving the house, uncertainty about the future, and disruptions to daily routines, romantic relationships may have also been affected. One important alteration was the amount of time individuals spent with their partners based on the implementation of stringent social distancing and stay-at-home measures. These measures influenced the quantity of time couples spend together. For couples who were not cohabitating before the onset of the pandemic, restrictions imposed during lockdowns may have presented significant challenges in terms of physical interaction, since they were unable to see each other during these restrictive periods (Walsh, 2020). On the other hand, for couples who lived together, stay-at-home orders often meant both partners were working from home, not following their daily routines. As a result, partners found themselves sharing the same living space without the usually implemented breaks for physical activities or dates with friends (Carlson et al., 2021).

Such drastic changes acted as external stressors to individuals (Pietromonaco & Overall, 2020), disrupting what was perceived as normal relationship functioning (Falconier et al., 2014). Partners that experienced more shared time during the pandemic were prone to interpersonal and intrapersonal stress, as financial difficulties, chronic stress and social disconnection can negatively impact relationship satisfaction (Bodenmann et al., 2015; Karney et al., 2005). Similar findings were revealed in a literature review investigating the impact of COVID-19 on romantic relationships from 2020 to September 2021 (Bevan et al., 2022). They confirmed that stress played a role in relationship functioning at the beginning of the pandemic. They described relationship functioning as the quality, satisfaction and dynamics of relationships including communication, coping, social support and conflict. They discovered that higher levels of relationship satisfaction were associated with fewer challenges like stress and depressive symptoms. Also, high levels of stress were observed especially during lockdowns.

Estlein et al. (2022) investigated the impact of lockdowns on couples during the initial year of COVID-19. They clustered the inspected term “relationship”, focusing on romantic

relationships among adults, in four main themes, namely: relationship quality, sexuality, daily adjustment and intimate partner violence. The review had three primary objectives: firstly, to provide a comprehensive overview of the various aspects of romantic couples' lives that were influenced during the initial year of the pandemic, secondly, to gain insight into the specific changes that occurred within these areas during a specific time period; and thirdly, to identify the factors that predicted these changes. Their findings varied in outcomes. Some couples experienced positive changes, such as strengthened bonds and increased relationship quality, as they had more time together and engaged in positive activities. These couples also reported better sexual intimacy. Additionally, satisfied couples found it easier to adjust to the changing routines brought about by the pandemic and could effectively communicate about stress. Contrasting that, other couples faced difficulties during the pandemic, experiencing increased relational stress, conflicts, and sexual distress. Factors like adjusting to a new reality, work demands, ongoing uncertainty, social distancing, worries about loved ones and economic hardship contributed to these challenges.

Romantic relationships in which the partners are understanding and engage in a positive way of dealing with challenges, seems to be of high importance during tough times and difficult situations (Pietromonaco & Overall, 2020), since being supported and cared for by the partner can help reduce the impact of COVID-19 related stressors (Balzarini et al., 2022) and higher attentive support from the partner is associated with higher self-satisfaction by both partners (Kuhn et al., 2018). Higher levels of support (showing understanding, helping) and lower levels of negative communication (criticism) as a reaction to COVID-19 related stress are associated with better relationship satisfaction (Bar-Shachar et al., 2022). These findings align with previous research demonstrating how important partner's reactions are to their satisfaction in times of stress (Falconier et al., 2015).

Coping seems to be another a strong predictor for relationship satisfaction during stressful events (Falconier et al., 2015). Research has shown that stress due to the COVID-19 pandemic can increase pre-existing problems and result in more conflicts among partners (Pietromonaco & Overall, 2020), highlighting the influence of individual attributions and ways of coping. This assumption was also examined in a study investigating possible effects of COVID-19 on romantic relationship quality and attributions (Williamson, 2020). Relationship quality was referred to the level of satisfaction that individuals experience in their intimate relationships. Attributions referred to the explanations that individuals give for the causes of events or behaviors in their relationships. In this study, Williamson specifically examined causal attributions (e.g., the reasons individuals give for why things happen in their

relationships) and responsibility attributions (e.g., the extent to which individuals attribute responsibility for events or behaviors to themselves or their partners). The findings revealed that the early weeks of the pandemic did not negatively impact relationship satisfaction on average. In fact, individuals became more forgiving and less inclined to attribute their partner's negative behaviors to internal characteristics, instead attributing them to the stress of the pandemic. However, during the early months of the pandemic, small moderation effects, like coping, were discovered. Individuals who had positive coping strategies, like open communication and support and were able to avoid conflict with their partner, experienced a slight increase in relationship quality and adaptive attributions, further enhancing their already high functioning. On the other hand, individuals who reported poor coping skills and high levels of conflict experienced a slight decrease in relationship quality and adaptive attributions, further exacerbating their distressed functioning.

Research has shown that coping resources can vary by socioeconomic status of the couple (Conger et al., 2010). One study investigated the possible association between psychological well-being and romantic relationships and integrating socioeconomic factors as influences, adapted the vulnerability-stress-adaptation model (VSA) by Karney and Bradbury (1995) in their research (Pietromonaco & Overall, 2020). The model predicts that a combination of internal vulnerabilities (e.g., mental-health, attachment insecurities) and external stressors (e.g., job loss, social isolation) potentially influence the overall quality and stability of the relationship by disrupting the couples' ability to collaborate and find solutions together (Ross et al., 2022). The study used the model to observe how pandemic-related isolation and separation may impact couples' relationships. They found out that couples that suffered less economic loss and had less feelings of isolation were less likely to experience a decrease in relationship quality, especially if they communicated effectively and supported one another. The pandemic and accompanying lockdowns may have benefited these couples by providing opportunity to have more time together for activities that encourage relationship improvement (Gable et al., 2006). In contrast to that, couples belonging to groups with disproportionately high risks of pandemic-related stress, loss and isolation (racial/ethnic minorities, parents) may have the most difficulty adapting to the crisis and putting their relationships at danger (Pietromonaco & Overall, 2020). Furthermore, adaptive dyadic mechanisms (good communication, responsive support) may be insufficient to address persistent difficulties. Bar-Shachar et al. (2022) supported these findings by stating that partners' attachment anxiety was associated with heightened relationship problems and decreased relationship satisfaction when individuals are facing higher levels of stress.

Most of the current research suggest that COVID-19 related stress impacts romantic relationships, even though it varies in its intensity and is not the same for all couples. It is thus important to note, that research also provided contrary findings. According to one study (Biddle et al., 2020), individuals in a romantic relationship did not experience significant alterations in their relationship satisfaction, happiness, or commitment during COVID-19. 54.6% of the participants reported no change in their relationship, 27.9% of the participants reported a slightly stronger relationship since the outbreak of the pandemic and 17.5% a more tensed relationship. One study aligning with these results (Holmberg et al., 2021), proposed that during highly restrictive periods, the perceived positive impacts on romantic relationships were significantly higher than the perceived negative effects. Although the study did not provide specific reasons for why there were more positive effects, participants mentioned common positive themes including appreciating the relationship and taking advantage of increased time together. Furthermore, it was noted that the pandemic might have provided an opportunity for couples to work on their relationship and prioritize it, which may have contributed to the perceived positive effects.

Concluding, some couples experienced positive changes or no significant alterations, others faced challenges and tension due to COVID-19 related stress. The evidence highlights the importance of considering individual differences and factors, such as pre-existing relationship problems or different coping mechanisms, that may influence how couples perceive their romantic relationship during stressful covid times. Despite the growing research on the current topic, there is a research gap concerning the impact on relationship quality. Furthermore, the existing body of research investigating the association between COVID-19 stressors and relationship quality remains limited in temporal scope, since no systematic review has included all three years of COVID-19 so far. Bevan et al. (2022) conducted a descriptive literature review that investigated the impact of COVID-19 on personal relationships from 2020 to September 2021 and the systematic review by Estlein et al. (2022) focused on the impact of COVID-19 on mental health and well-being during the first year of the pandemic. Both studies were conducted during the initial phase of the COVID-19 pandemic but since the pandemic continued and literature on the topic has expanded rapidly, it is necessary to investigate the topic within an extended timeframe to capture the evolving nature of the effects of the pandemic on couples. Further research is necessary to gain a comprehensive understanding whether relationship quality remained the same or changed, as couples faced ongoing challenges during the pandemic.

Conceptual framework for the current study

Definition of COVID-19 related stress

For the purpose of this study, it is crucial to define and understand COVID-19 related stress.

COVID-19 related stress encompasses the psychological response to the circumstances of the coronavirus disease (Ye et al., 2020). It emerges due to various factors such as concerns about contracting the virus, the health and safety of oneself and loved ones, disruptions to daily routines, uncertainties about the future. This stress is characterized by heightened levels of anxiety, fear, and psychological distress (Ye et al., 2020). It is triggered by the multifaceted challenges, including health risks, social isolation. Individuals experiencing COVID-19 related stress may exhibit symptoms of anxiety, depression, which impacts their overall mental well-being (Wang et al., 2020; Tan et al., 2020).

COVID-19 related stress is influenced by both internal and external factors. Internal factors pertain to personal attributes, attitudes, and psychological traits that shape an individual's reaction to the pandemic. External factors encompass elements that are outside of an individual's control, such as the pandemic's impact on the economy or social distancing measure (Liu et al., 2020)

Definition of relationship quality

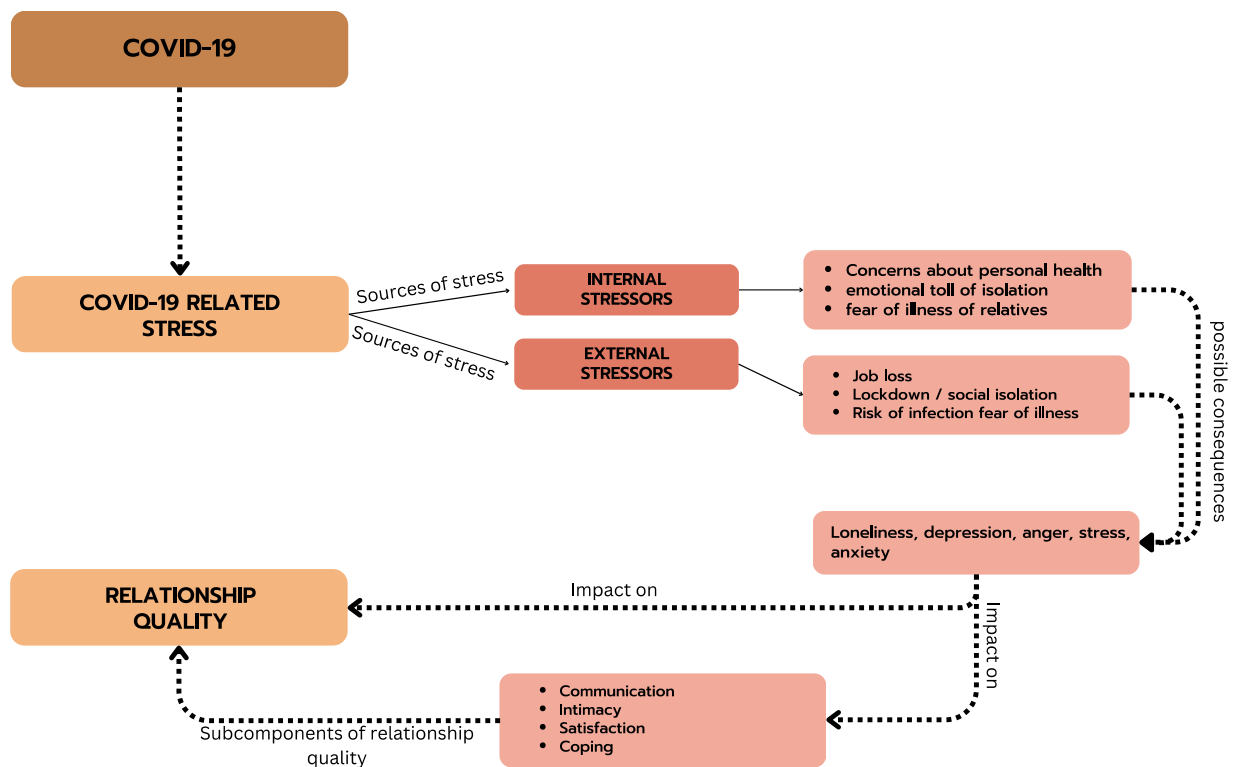
To provide a comprehensive understanding of relationship quality, this study incorporates different definitions from scientific research. It is a complex construct that entails diverse aspects of interpersonal dynamics and experiences within a relationship. By combining multiple definitions and perspectives, the multifaceted nature of relationship quality can be captured.

Relationship quality can be defined as an enduring connection between two individuals, characterized by a consistent pattern of interaction and impact, indicating a stable alliance (Hinde, 1993; Reis, 2001). It involves the individuals' evaluation of the romantic relationship, including their positive or negative feelings towards the relationship (Hardie & Lucas, 2010; Morry et al., 2010). Additionally, relationship quality involves various aspects of attention within the relationship, such as directing attention towards the relationship itself, observing interactions, making comparisons, and noticing differences between individuals in their relationship and communication. This also includes the presence of internal representations and conscious reflections regarding the specific relationship (Acitelli, 2008). Moreover, relationship quality has multiple dimensions. It can be described as the subjective evaluation of a romantic relationship. It encompasses various aspects such as affection,

intimacy, care and understanding (Farooqi, 2014). Whereas high-quality relationships entail subjective experiences like affection, intimacy, and nurturance, feelings of security and satisfaction (Clark et al., 1986), low relationship quality is marked by conflict, irritation, and antagonism (Dush & Amato, 2005). It is suggested that nurturing and satisfying relationships have a positive impact on an individual's health and well-being, while stressful and contentious relationships can be detrimental to their overall system (Goleman, 2006).

Figure 1

Visual conceptualization of the theoretical framework



Explanation of the conceptualization

The visual conceptualization was developed based on information and knowledge gathered from previous literature with the aim to combine various research findings, connect propositions and thereby formulate a theoretical framework for this current review.

As previously mentioned, lifestyle changes resulting from restrictions, lockdowns, and the overall uncertainty surrounding the pandemic have often led to COVID-19 related stress, which can be attributed to two main sources, namely internal and external stressors

(Bhattacharjee & Ghosh, 2021). These stressors might have been social isolation, job loss (Pietromonaco & Overall, 2020) or concerns about one's personal health and the health of loved ones (Bhattacharjee & Ghosh, 2021). An experience of these stressors often led to a decrease in mental well-being (Lakhan et al., 2020), with loneliness, depression, anger, stress or anxiety as consequences (Lakhan et al., 2020). Furthermore, research demonstrated impacts of stress due to COVID-19 on romantic relationships (Estlein et al. (2022)). Positive and negative associations have been discovered. While experiencing COVID-19 related stress, some couples reported increased relational stress, conflicts and sexual distress. Other couples on the other hand, reported increased relationship quality and strengthened bonds (Estlein et al. 2022), since they had more time for activities that encouraged their relationship improvement. Next to relationship quality, subcomponents such as communication, intimacy, satisfaction, and coping (Bevan et al., 2022) also appeared as important factors or investigations. It was shown that these components were both, positively and negatively impacted by COVID-19-related stress (Pietromonaco & Overall, 2020) and thus had an impact on relationship quality (Bar-Shachar et al., 2022; Williamson, 2020). Couples that reported good communication patterns or coping mechanisms experienced higher levels of relationship quality (Williamson, 2020) while partners that experienced high levels of stress and social disconnection showed lower relationship satisfaction (Bodenmann et al., 2015).

In summary, an association between COVID-19 related stress and relationship quality becomes evident. Stressors and their ensuing consequences impact feelings of stress or anxiety, which in turn impacts directly the couple's perception and evaluation of relationship quality or its subcomponents. Ultimately, the assessment of the subcomponent also has an impact on the quality of the relationship. Therefore, it is of great importance to investigate not only relationship quality as a construct but also the subcomponents in relation to COVID-19 related stress.

Objective and research question of the current study

The conceptual framework of the current study proposes the hypothesis that psychological distress resulting from COVID-19 related stressors can be associated with relationship quality. Specifically, the hypothesis suggests that relationship quality will be impacted in diverse ways, depending on factors like coping mechanisms or communication. Thus, the aim of this systematic review is to expand on existing literature by covering a broader temporal scope and gaining a deeper knowledge of romantic relationships, if they are impacted by COVID-19 related stress and what factors might influence the quality of

relationships. The current review is going to investigate the research question: “What is the association between COVID-19 related stress and relationship quality in romantic partnerships, considering individual coping abilities and communication patterns?”

Knowledge gained from this research can inform the development of targeted interventions and support systems that aim to enhance relationship well-being during times of crisis. Mental health practitioners can use these findings to design effective strategies that help reduce the negative impact of stress on relationships and foster healthier dynamics. Policymakers can incorporate these research outcomes into their decision-making processes, enabling the implementation of programs that prioritize relationship support and resilience during stressful times. The insights generated from this research can thus contribute to a better understanding of how to support and promote healthy relationships during crisis, benefiting both individuals and the broader community.

Methods

To address the research question, the present study used a systematic review methodology following the guidelines outlined in the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) (Page et al., 2021). This PRISMA statement incorporates a checklist consisting of 27 items and a flow diagram, both used to minimize bias and enhance the transparency of reporting findings.

Search strategy

The search for suitable studies was conducted in May 2023 to identify relevant studies within the specified timeframe from January 30, 2020, to April 30, 2023. Three databases were chosen for the search procedure. *PsycINFO*, *PubMed* and *Scopus*. Only published studies written in the English language and available as "full text" in the selected databases were considered eligible. To find relevant studies, specific search terms were selected. The final terms were chosen after conducting preliminary test searches and a consultation with an information specialist from the University of Twente. In the database PubMed, MeSH terms were used to improve the accuracy of the search. By using standardized terms, the search strategy can find all relevant articles, even if different words or phrases have been used. Not all terms could be used as mesh terms, so other terms were used. The following search terms were used: "covid-19" OR *coronavirus* OR *covid* OR "covid pandemic" OR *pandemic* AND *stress* OR *distress* OR "covid stress" OR "psychological stress" AND "romantic relationship" OR "romantic couple" OR "relationship satisfaction" OR "relationship quality" OR

“relationship happiness” OR “couple satisfaction” OR “adult couples” OR “couple quality” OR “couple happiness” OR “quality of love”.

Table 1

Complete search strategy

Database	Search string	Total hits / final search
PubMed	(((("COVID-19"[Mesh]) OR "Coronavirus"[Mesh]) OR "Pandemics"[Mesh]) AND "Stress, Psychological"[Mesh]) OR "Psychological Distress"[Mesh]AND "Romantic relationship*" OR "romantic couple*" OR "relationship satisfaction" OR "relationship quality" OR "relationship happiness" OR "couple satisfaction" OR "adult couples" OR "couple quality" OR "couple happiness" OR "quality of love"	338
Scopus	(TITLE-ABS-KEY ("covid- 19" OR coronavirus OR covid OR "c ovid pandemic" OR pandemic) AND TITL E-ABS- KEY (stress OR distress OR "covid stress" OR "psychological stress") AND TITLE-ABS- KEY ("romantic relationship*" OR "romantic couple*" OR "relationship satisfaction" OR "relationship quality" OR "adult couples" OR "couple quality" OR "couple satisfaction" OR "quality of love"))	155

PsycInfo	(covid-19 OR pandemic OR coronavirus OR covid) AND (stress OR distress OR covid stress OR psychological stress) AND (romantic relationship OR couples OR romantic couple OR relationship quality OR couple satisfaction OR couples OR marriage OR relationship satisfaction OR quality of love OR relationship quality OR adult couples)	308
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Inclusion and exclusion criteria

To be eligible for the systematic review, studies had to report an association between covid-19 related stress and relationship quality. Adults in romantic relationships aged 18 and above were included. Married, unmarried, opposite sex and same sex partners were eligible. No geographical restrictions were made, resulting in inclusion of all nationalities and countries. Quantitative and mixed-methods studies have been included. Participants who responded to the questionnaires both individually and jointly were included in the analysis. Studies published between the years 2020 and 2023 were included.

As COVID-19 related stress is a widespread construct, it is important to choose concepts that capture the construct of COVID-19 stress precisely. By operationalizing COVID-19 related stress, the focus is on understanding specific psychological impacts and consequences of the pandemic on individuals and their relationships. Since researchers have different definitions and understandings of the concept, there are several ways to measure COVID-19 related stress. Additionally, the analysis of this study will only focus on the domain of stress and exclude other domains. The inclusion of the following measurement tools was based on several considerations. The perceived stress scale (PSS-10), depression anxiety scale (DASS-21) and the K-10 provide comprehensive assessment of different aspects of psychological distress and have been used in research assessing COVID-19 related stress. Including studies that used these standardized tools ensures consistency and comparability across the selected studies. Although these tools were not originally designed explicitly for assessing COVID-19 related stress, they have been used and adapted various studies to capture stress and psychological distress experienced during the pandemic. Thus, the current study will consider research that applied both, original questions as well as questions adapted to COVID-19.

A selection of established measurement tools was chosen to assess relationship quality during the COVID-19 pandemic. These tools, such as the Dyadic Adjustment Scale (DAS), Couples Satisfaction Index (CSI), Quality of Marriage Index (QMI), The Relationship Assessment Scale (RAS, Relationship Assessment Measure (RAM) and the

Perceived Relationship Quality Component Inventory (PRQC) have been often used in prior research to evaluate dimensions like satisfaction, stability, intimacy, and communication. Their versatility, reliability, and previous application make them suitable for comprehensively examining how the pandemic influenced diverse aspects of relationships. Certain stress assessment tools and relationship quality measures were excluded from this systematic review to maintain a coherent and targeted investigation into the impact of COVID-19 on relationship dynamics. Stress assessment tools and relationship quality measures that lacked a substantial history of use in relevant research or did not address the pandemic's effects on stress or observed relationship quality or its subcomponents were excluded to maintain the study's rigor and relevance.

Reports lacking original data such as book chapters, summaries, literature reviews, essays, non-research articles and unpublished studies were excluded.

Listed overview of inclusion and exclusion criteria

Inclusion criteria

1. Studies reporting an association between COVID-19 related stress and relationship quality.
2. Participants aged 18 and above in romantic relationships.
3. Eligibility for married, unmarried, opposite-sex, and same-sex partners.
4. No geographical restrictions - studies from all nationalities and countries included.
5. Inclusion of quantitative and mixed-methods studies.
6. Analysis included participants who responded individually and jointly to questionnaires.
7. Studies published between 2020 and 2023.

Exclusion criteria

1. Studies focusing on domains other than COVID-19 related stress.
2. Research not capturing specific psychological impacts and consequences of the pandemic on individuals and relationships.
3. Stress assessment tools and relationship quality measures lacking a history of use in relevant research or not addressing the pandemic's effects.

4. Reports lacking original data: book chapters, summaries, literature reviews, essays, non-research articles, and unpublished studies.

Stress assessment tools

Perceived Stress Scale (PSS-10). The Perceived stress scale (PSS-10) (Cohen et al., 1983) is a 10-item questionnaire assessing stress levels in adults and young individuals. It measures the extent to which individuals perceive their current life situation during the past month as unpredictable, overwhelming and uncontrollable. The PSS-10 in its original form and with possible adaptations regarding covid-19 were considered for inclusion. By including studies utilizing the PSS-10 this systematic review ensures consistency and comparability within the context of the current study.

Depression Anxiety Stress Scale (DASS-21). It is a self-report scale that assesses depression, anxiety and stress. It measures the severity of the symptoms over time (Brown et al., 1997). The DASS consists of 42 items, with 14 items for each of the three subscales: Depression, Anxiety, and Stress. Respondents rate the frequency and severity of each symptom over the past week on a four-point Likert scale, ranging from 0 (did not apply to me at all) to 3 (applied to me very much or most of the time)

K-10. The tool was developed by Kessler et al. in 2002 and is a widely used psychological screening tool designed to assess psychological distress and measure overall mental health. It consists of ten questions that capture the individual's emotional state and psychological well-being over the past four weeks. Each question is rated on a five-point Likert scale, ranging from "none of the time" to "all of the time."

Relationship quality tools

These components and their respective tools were selected based on previous studies, examining relationship quality.

Dyadic Adjustment Scale (DAS) (Spanier, 1976). It measures the quality of a marriage as well as an unmarried relationship by investigating different aspects of the relationship quality such as intimacy, satisfaction, communication and consensus.

Couples Satisfaction Index (CSI) (Funk & Rogge, 2007). This index is a self-report measure to assess aspects of relationships such as relationship satisfaction, communication and conflicts.

The Quality of Marriage Index (QMI) (Norton, 1983). It is a measurement tool assessing dimensions such as satisfaction, stability and support. It has moreover been utilized in research exploring the impact of stress on relationships.

The Relationship Assessment Scale (RAS) (Hendrick et al., 1998). It is a self-report measure examining the individuals' feelings of fulfillment, validation, intimacy and commitment.

Relationship Assessment Measure (RAM) (Burgoyne, 2001). It is a self-report measure that assesses relationship quality and satisfaction among same sex relationship partners.

Perceived Relationship Quality Component Inventory (PRQC) (Fletcher et al., 2000). The PRQC is a questionnaire that measures marital quality. It has six facets of relationship quality: satisfaction, commitment, intimacy, trust, passion and love.

Table 2

Overview of included measurement tools for COVID-19 related stress and relationship quality

Name of assessment tool	Type of Assessment	Aspects covered	Uniqueness / Purpose	Score range	Cut-off value for stress and relationship quality & satisfaction
Depression Anxiety Stress Scale (DASS-21) (Brown et al., 1997)	Assessment of depression, anxiety, and stress	Stress, anxiety, depression	Comprehensive assessment of emotional states	0-63	Depression ≥ 10 Anxiety ≥ 6 Stress ≥ 10 (Nilges & Essau, 2021)
Perceived Stress Scale (PSS-10) (Cohen et al., 1983)	Assessment of psychological distress	Stress	Focuses solely on psychological distress	0-40	Distress ≥ 10 (Kim, 2013)
Dyadic Adjustment Scale (DAS) (Spanier, 1976)	Assessment of quality of a marriage and relationships	Relationship quality	Comprehensive assessment of relationship facets	0 - 151	≥ 97 (Vaughn & Baier, 1999)
The Quality of Marriage Index (QMI) (Norton, 1983)	Assessment of satisfaction, stability and support within a relationship	Relationship quality	Focuses on satisfaction, stability and support	6 - 45	≥ 35 (Zimmermann et al., 2019)
The Relationship Assessment Scale (RAS) (Hendrick et al., 1998)	Assessment of feelings of fulfillment, validation, intimacy and commitment	Relationship quality	Emphasizes emotional connection and fulfilment	7 - 35	The higher the score, the more satisfied is the participant with the relationship

Relationship Assessment Measure (RAM) (Burgoyne, 2001)	Assessment of relationship quality and satisfaction among same sex partners	Same sex couples, relationship quality	Specifically designed for same-sex couples	0 - 10	Higher scores indicating higher levels of satisfaction and positive perception of relationship functioning
Perceived Relationship Quality Component Inventory (PRQC) (Fletcher et al., 2000)	Assessment of marital quality	Relationship quality	Provides multidimensional view of marital quality	18 - 126	Higher scores indicating higher levels of mental well-being
Couples Satisfaction Index (CSI) (Funk & Rogge, 2007)	Assessment of relationship satisfaction	Relationship satisfaction	Focuses on relationship satisfaction	0 – 81	≥35 (Funk & Rogge, 2007)

Data extraction

Firstly, title and abstract screening of the search results was conducted and duplicates were removed. Following, the remaining articles were screened and assessed based on the inclusion and exclusion criteria. The screening was performed using the web-based program Covidence. A comprehensive data extraction table was developed to capture relevant information from every included study in a standardized format and facilitate the analysis and synthesis of the results. Thus, the data extraction inherited the following study characteristics: (1) Author(s); (2) Publication Year; (3) Study design; (4) Sample size; (5) Country. Data extraction regarding the sample characteristics contained, if indicated, the following information: (1) mean age; (2) gender (percentage of females); (3) married/unmarried (percentage of married couples). Additionally, information regarding the research question and objective was be extracted as follows: (4) Measurement tools; (5) outcome measures such as mean and standard deviation for both variables. Finally, the studies were extracted by their statistical outcome measures, including potential moderators and mediators. Furthermore, the association between COVID-19 related stress and relationship quality as well as the p-values were described. A PRISMA flow chart to visualize the screening procedure was created.

Data synthesis

Following the SWiM guidelines, a comprehensive narrative synthesis was conducted to analyze the findings of the selected studies. The SWiM guidelines offer a structured approach to narrative synthesis, emphasizing transparency and rigor in the process (Campbell et al., 2020). The synthesis process followed these guidelines.

Initially, a systematic and thorough extraction of data was performed from each study included, ensuring the comprehensive capture of key aspects related to stress and relationship quality. The extracted data was then organized and categorized based on common themes, dimensions, and aspects covered by the assessment tools. This categorization facilitated the identification of patterns and variations across the studies. The narrative synthesis enabled a comprehensive exploration of the collected data by integrating and summarizing findings from diverse studies. It highlighted any convergences, disparities, or unique insights brought forth by different assessment tools. Consistent with the SWiM guidelines, the narrative synthesis did not apply a statistical analysis of results, since it focused on qualitatively describing, comparing, and interpreting the findings.

The SWiM guidelines underscore the importance of transparently reporting the synthesis process, acknowledging potential limitations, and discussing the implications of the

synthesized findings. Consequently, the decision to not pursue a meta-analysis was rooted in considerations aligned with Cochrane guidelines. These guidelines suggest that meta-analysis typically requires a sufficient number of studies to ensure statistical power and meaningful outcomes. However, since the review's objective was to offer an insight by examining potential moderators and mediators influencing the association between COVID-19-related stress and relationship quality, their inclusion enriched understanding while potentially introducing additional heterogeneity. Each individual moderator and mediator factor possesses distinct characteristics, potentially leading to variations in study designs, methodologies, or results. This diversity might make it more intricate to draw generalized conclusions. Hence, a narrative synthesis was perceived as the suitable approach.

An effect direction heatmap of all included studies was created, complementing the narrative synthesis by providing a summary of the association of the two inspected variables observed in each study. The heatmap supports the identification of consistency or inconsistency across the included studies, meaning that it can show what studies indicate a positive effect (increased COVID-19 related stress is associated with higher relationship quality), indicated by a triangle pointing upwards, or a negative effect (increased COVID-19 related stress is associated with lower relationship quality), indicated by a triangle pointing downwards. Each study has columns representing the analyzed variable. In this case, the columns were "relationship quality", "relationship satisfaction", "marital satisfaction". The cells of each column have color-coded triangles and represent and indicate the direction of the effect observed in each study. The color scheme includes five different colors, dark green indicating $p < 0.001$, light green indicating $0.001 \leq p < 0.05$, dark blue indicating $0.05 \leq p < 0.1$, light blue indicating $0.1 \leq p < 0.25$ and grey indicating $p \geq 0.25$. Figure 3 displays the different effects of each study.

Quality assessment

In order to evaluate potential bias, the JBI checklist for cross-sectional studies was employed and the questions were tailored to the respective variables of investigation. The JBI Checklist for cross-sectional Studies entails eight questions assessing the quality of the study. Each question could be answered with "Yes," "No," "Unclear", if no statement has been made regarding the question or "Not Applicable (N/A)". A percentage scale has been established to differentiate between "low," "moderate," and "high" risk of bias. A score ranging from 100% to 75% indicated a low risk, 75% to 50% indicated a moderate risk, and less than 50% indicated a high risk of bias.

To ensure interrater reliability, it is generally recommended to conduct the quality assessment with the involvement of multiple researchers. As the checklist was completed by a single researcher, there remains a possibility of bias occurrence. The complete overview of every study can be found in Table 2. The adapted questions were as follows:

1. Did the researchers provide a clear description of the inclusion criteria for the sample, (couples above 18 years old, being in a romantic relationship)?
2. Did the researcher provide comprehensive information about the general population, age, gender, marital status, country?
3. Did the researchers use the pre-determined screening tools for assessing COVID-19 related stress and relationship quality?
4. Were COVID-19 related stress and relationship quality measures clearly described, appropriate and indicated an association between the two variables including the probability level?
5. Did the researchers identify confounding variables influencing the association between COVID-19 related stress and relationship quality?
6. Did the researchers provide a statistical contextualization and explanation of the confounding variables?
7. Were the outcomes related to COVID-19 related stress and relationship quality measured using valid approaches?
8. Was the statistical test used clearly described and suitable for the two variables?

Results

Included Articles

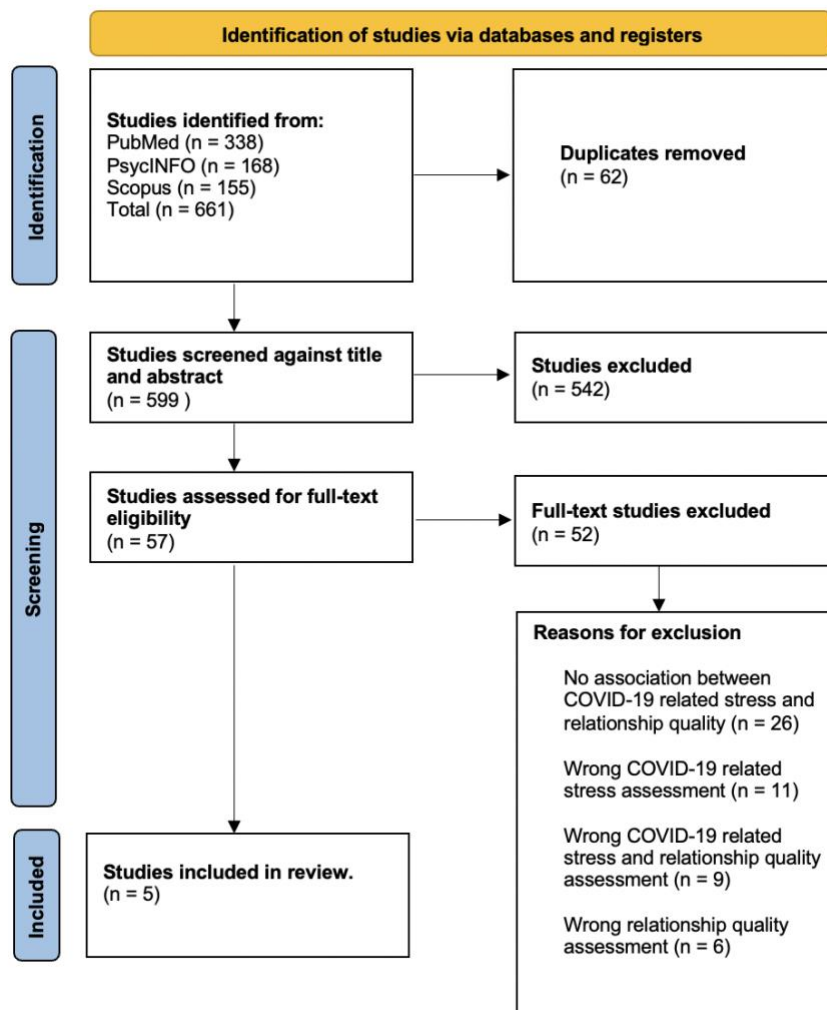
661 studies were extracted from the databases PubMed (n = 338), PsycINFO (n = 168) and Scopus (n = 155) followed by an exclusion of 62 duplicates. The remaining 599 studies were screened against title and abstract. A total of 542 studies were found to be ineligible and were subsequently excluded from further analysis.

Most excluded studies in this step investigated relationships among families, specifically parent-child relationships. The remaining 57 studies were subsequently examined in the full-text screening. 26 studies did not investigate an association of COVID-19 related stress and relationship quality. Eleven studies were excluded since they didn't apply the inclusion criteria to investigate COVID-19 related stress and moreover, they defined both variables, COVID-19 and relationship quality differently from the pre-determined inclusion

criteria. Another nine studies classified and measured the association between COVID-19 related stress and relationship quality incorrectly. Relationship quality as a variable has not been assessed correctly by 6 studies. Finally, five studies met the eligibility criteria. Figure 2 is a flowchart displaying the process of article identification.

Figure 2

Prisma flowchart (Page et al., 2021)



Study characteristics

The final selection of studies (n = 5) had a total of 18,486 participants with a sample size range of 124 – 14,020. The range of the mean age was 31.10 to 44.43. In total, 63,52% of the participants were female. One of the studies did not report the marital status (Fivecoat et al., 2022) and one study solely included married participants (Tong et al., 2023). Out of the remaining three studies, 64,2% of the participants were married. Four studies conducted a

cross-sectional survey, performing the measurement at one point in time (Fivecoat et al., 2022; Genç et al., 2021; Pieh et al., 2020; Tong et al., 2023), one study presented a repeated cross-sectional design (Randall et al., 2021). Randall et al. (2021) included samples from the following 27 countries: Austria, Belgium, Canada, Germany, Greece, Ireland, Italy, Netherlands, Portugal, Spain, Switzerland, Turkey, United Kingdom, United States of America, Hungary, Romania, Bangladesh, India, Indonesia, Malaysia, Pakistan, South Korea, Israel, Ghana, Brazil, Chile, Australia. Fivecoat et al. (2022) conducted their study within the USA, Genç et al. (2021) used a Turkish sample, Tong et al. (2023) conducted their study among Chinese couples and Pieh et al. (2020) performed their survey in Austria. As previously determined, all research papers studied both relevant variables, nevertheless, most studies examined also other concepts besides stress and relationship quality. Tong et al. (2023) also investigated an association between COVID-19 related stress and the general mental health using a different questionnaire than pre-determined, Randall et al. (2021) were interested in dyadic coping and Fivecoat et al. (2022) additionally studied relationship instability, physical aggression, relationship closeness and partner support.

Table 3

Characteristics of studies

First author, year	Country	N =	Mean Age (SD)	% Female	Marital status	Study design	Measurement covid-19 stress	Measurement relationship quality
Randall et al. (2021)	Austria, Belgium, Canada, Germany, Greece, Ireland, Italy, Netherlands, Portugal, Spain, Switzerland, Turkey, United Kingdom, United States of America, Hungary, Romania, Bangladesh, India, Indonesia, Malaysia, Pakistan, South Korea,	14,020	36 (11.3)	77.4%	57.6%	Repeated cross-sectional design	Depression, Anxiety, and Stress Scale-21 (DASS-21)	Perceived Relationship Quality Component Inventory (PRQC)

	Israel, Ghana, Brazil, Chile, Australia							
Genç et al. (2021)	Turkey	233	36.2 (9.29) for males 32.45 (7.67) for females	65%	80%	Cross-sectional survey	Depression Anxiety Stress Scale (DASS-21)	Dyadic Adjustment Scale (DAS)
Pieh et al. (2020)	Austria	733	36.95 (9.11)	49.9%	55%	Cross-sectional survey	The Perceived Stress Scale-10 (PSS-10)	The Quality of Marriage Index (QMI)
Fivecoat et al. (2022)	USA	146	31.10 (5.86)	51.4%	/	Cross-sectional survey	The Perceived Stress Scale-10 (PSS-10)	The Couples Satisfaction Index (CSI-16)
Tong et al. (2023)	China	3,354	41.32 (5.09)	73.9%	All participants are married	Cross-sectional survey	The Perceived Stress Scale-10 (PSS-10)	The Quality of Marriage Index (QMI)

Quality assessment

Among the studies included, four paper (Genç et al., 2021; Pieh et al., 2020; Randall et al., 2021; Tong et al., 2023) indicated a low risk of bias, while one study (Fivecoat et al., 2022) demonstrated a moderate risk of bias.

Table 4
Quality Assessment Cross-Sectional Studies

Study	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Percentage score	Risk of Bias
Genç et al. (2021)	Yes	Yes	Yes	Yes	N/A	N/A	Yes	Yes	100%	Low
Fivecoat et al. (2022)	No	Yes	No	Yes	N/A	N/A	U	Yes	62.5%	Moderate
Pieh et al. (2020)	Yes	Yes	Yes	Yes	N/A	N/A	Yes	Yes	100%	Low
Randall et al. (2021)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100%	Low
Tong et al. (2023)	Yes	Yes	Yes	Yes	N/A	N/A	Yes	Yes	100%	Low

Note. Abbreviations: JBI, Joanna Briggs Institute; Y: Yes; N: No; N/A: not applicable

Characteristics of assessment tools

Two articles examined the variable “COVID-19 related stress” by assessing depression, anxiety and stress using the Depression Anxiety Stress Scale-21 (DASS-21) (Genç et al., 2021; Randall et al., 2021) (whereas the remaining three articles assessed psychological distress by using the Perceived Stress Scale-10 (PSS-10).

Regarding the variable “relationship quality”, one study assessed relationship quality among married couples, using the Perceived Relationship Quality Component Inventory (PRQC), two studies assessed relationship satisfaction using the Quality of Marriage Index (QMI), one study assessed relationship satisfaction and communication with the Couples Satisfaction Index (CSI-16) and finally, one study assessed relationship satisfaction, intimacy and communication using the Dyadic Adjustment Scale (DAS). Detailed information about the authors, assessment tools, units of assessment tools and the means of the variables can be found in Table 4.

Table 5

Characteristics of assessment tools

Author (first), year	Assessment tool COVID-19 stressor	Units of assessment tool (scale)	Covid-19 stress mean (SD)	Assessment tool relationship quality	Units of assessment tool (scale)	Relationship quality mean (SD)
Genç et al. (2021)	Depression Anxiety Stress Scale (DASS-21)	Points (4-point Likert scale (1= never felt stressed to 4= very often felt stressed))	37.30 (13.83) for males 36.45 (10.85) for females	Dyadic Adjustment Scale (DAS)	Points (Likert scale, with higher scores indicating greater relationship satisfaction)	36.07 (7.86) for males 37.57 (7.19) for females
Fivecoat et al. (2022)	The Perceived Stress Scale-10 (PSS-10)	Points (5-point Likert scales measuring past month stress frequency from never (1) to very often (5))	15.41 (5.83) for males 19.37 (6.75) for females	The Couples Satisfaction Index (CSI-16)	Points (4-point likert scale, with higher scores indicating higher satisfaction)	65.68 (13.20) for males 64.90 (13.84) for females
Pieh et al. (2020)	The Perceived Stress Scale-10 (PSS-10)	Points (Likert scale from 0 to 4, with higher scores indicating higher stress severity)	15.97 (7.47)	The Quality of Marriage Index (QMI)	Points (4-point Likert scale)	36.95 (9.11)
Randall et al. (2021)	Depression, Anxiety, and Stress Scale-21 (DASS-21)	Points (4-point Likert scale ranging from 1 = did not apply to me at all to 4 = applied to me very	9.38 (8.11)	Perceived Relationship Quality Inventory (PRQC)	Points (7-point Likert scale ranging from 1 =	103.167 (22.86)

		much, or most of the time)			not at all to 7 = extremely)	
Tong et al. (2023)	The Perceived Stress Scale-10 (PSS-10)	Points (5-point Likert scale, with 1= never and 5 = always), the higher the average score the more severe the perceived stress	Not indicated	Quality of Marriage Index (QMI)	Points (7-point Likert scale (1 = very strong disagreement and 7 = very strong agreement, the higher the score the happier)	Not indicated

Note. Randall et al. (2021) included heterosexual, homosexual, bisexual and queer participants, Tong et al. (2023) and Pieh et al. (2020) didn't report the sexuality, Fivecoat et al. (2022) and Genç et al. (2021) included only heterosexual participants.

Narrative analysis

COVID-19 related stress, relationship quality, satisfaction and coping mechanisms

In an exploration of the interplay between COVID-19 related stress, relationship quality, and the moderating and mediating roles of coping strategies, two studies contribute valuable insights. Randall et al. (2021) conducted a comprehensive cross-sectional study across 27 countries, with a participant pool of 14,020 individuals. Using the Depression, Anxiety, and Stress Scale-21 (DASS-21) to investigate COVID-19 related stress and the Perceived Relationship Quality Component Inventory (PRQC) to assess relationship quality, their findings initially suggested the following: While the general impact of COVID-19 related stress on relationship quality was not statistically significant ($b = -0.05$, 95% $CI = [-0.56, 0.45]$), a more refined analysis showed significant variations. Participants reporting above-average COVID-19 related stress encountered notably lowered relationship quality ($b = -0.18$, 95% $CI = [-0.25, -0.12]$). Furthermore, a difference emerged among nations, with 18 countries showing a negative association between stress and relationship quality, while others, such as the USA, Turkey, Bangladesh, Israel, Pakistan, and South Korea, exhibited an absence of such a connection. Contrarily, Germany, Hungary, Indonesia, and Italy showed the strongest negative correlation between COVID-19 related stress and relationship quality.

Turning to Genç et al. (2023), their cross-sectional study with 233 Turkish participants used the Depression Anxiety Stress Scale (DASS-21) to measure COVID-19 stress and the Dyadic Adjustment Scale (DAS) to investigate relationship satisfaction. Their outcomes show that COVID-19 related stress correlated with lower relationship satisfaction. In this context, relationship satisfaction was negatively affected by COVID-19 distress, with a regression coefficient of -0.39 for males and -0.45 for females, indicating that higher levels of COVID-19 related stress were associated with lower levels of relationship satisfaction.

Both studies, Randall et al. (2021) and Genç et al. (2023) furthermore studied the perceived partner dyadic coping as moderator or mediator. Randall investigated the moderating role of perceived partner dyadic coping with the Dyadic Coping Inventory (DCI) (Bodenmann, 2005), which assesses perceptions of the partner's coping in times of stress. They explored how partners' shared coping strategies influence the association of COVID-19 related stress and relationship quality. The review found that countries with above-average perceived partner positive dyadic coping reported significantly higher relationship quality ($b = 7.98$, 95% $CI = [0.52, 15.44]$). Similarly, individuals who reported above-average perceived partner positive dyadic coping also reported higher relationship quality ($b = 10.24$, 95% $CI = [9.02, 11.47]$). The study's significance was further enhanced by another interaction: higher

levels of perceived partner positive dyadic coping appeared to buffer the negative link between COVID-19 related stress and relationship quality ($b = 0.14$, 95% CI = [0.09, 0.18]). Conversely, a higher prevalence of perceived partner negative dyadic coping was associated with lower relationship quality ($b = -5.60$, 95% CI = [-7.31, -3.89]). Notably, an interaction between negative dyadic coping and COVID-19 related stress showed a negative association with relationship quality ($b = -0.06$, 95% CI = [-0.10, -0.02]).

Genç et al. (2023) further explored perceived dyadic coping as a mediator, also using the Dyadic Coping Inventory (Bodenmann, 2005). Firstly, relationship satisfaction was significantly associated with dyadic coping ($r = .63$, $p < .001$ for males; $r = .65$, $p < .001$ for females). For both genders, the results indicated an association between high levels of distress and lower levels of dyadic coping with a regression coefficient of -0.46 for males and a regression coefficient of -0.39 for females, meaning that an increase of COVID-19 distress results in a decrease of the ability to cope. Furthermore, dyadic coping had a positive effect on relationship satisfaction, with a regression coefficient of 0.45 for males and 0.45 for females. This indicates that higher levels of dyadic coping were associated with higher levels of relationship satisfaction.

COVID-19 related stress, relationship satisfaction and communication

The three remaining studies conducted by Fivecoat et al. (2022), Tong et al. (2023) and Pieh et al. (2020) collectively shed light on the interplay between COVID-19 related stress and relationship satisfaction within romantic relationships.

Fivecoat et al. (2022) examined the association between perceived stress and relationship satisfaction among American participants using the Perceived Stress Scale (PSS-10) and the Couple Satisfaction Index (CSI-16). Their sample of 146 individuals indicated a significant relationship between stress and relationship satisfaction for both genders. Over 80% of participants reported satisfaction with their relationships, with slightly higher rates among females (84.9%) compared to males (89.9%). Furthermore, there was a notable gender difference in stress levels due to COVID-19, with 13.7% of females experiencing high stress compared to 1.4% of males. However, the study did not conduct a statistical calculation for the association between stress and satisfaction.

Tong et al. (2023) conducted a study in China with a larger sample size ($n = 3,354$) to explore the correlation between COVID-19-related stress and marital satisfaction. They used the Perceived Stress Scale (PSS-14) and the Quality Marriage Index, while also introducing communication typologies as moderating variables. The results revealed a negative association ($\beta = -.30$, $p < .001$) between perceived stress and marital satisfaction. Moreover,

they identified that different communication patterns significantly moderated the COVID-19 related stress-satisfaction association. Four communication types were discerned: low communication, moderate communication, positive communication, and contradictory communication. Low communication typology ($n = 343$) indicating low levels of constructive and destructive communication, moderate communication ($n = 1,450$) indicating medium levels of constructive and destructive communication and positive communication ($n = 1,387$), showing high levels of constructive and low levels of destructive communication. The remaining 174 participants reported contradictory communication, characterized by high levels of constructive and destructive communication. Interestingly, all communication types exhibited a moderating effect on the perceived stress-marital satisfaction relationship, with low communication showing the strongest effect ($\beta = -.41, p < .001$) and positive communication showing no significant effect ($\beta = -.02, p = .346$).

Pieh et al. (2020) contributed to this synthesis by investigating the connection between perceived stress and relationship satisfaction in Austria. Their cross-sectional study featured a sample of 733 participants, utilizing the PSS-10 for stress measurement and the Quality of Marriage Index (QMI) for relationship satisfaction assessment. The results for the relationship satisfaction were divided in “poor relationship” ($n = 190, M = 24.15 (SD = 8.08)$), “good relationship” ($n = 543 M = 41.43 (SD = 3.42)$) and “no relationship” (control group). For the purpose of this study, the “no relationship” group was not included in the analysis. Stress was significantly different for both relationship quality groups. The results indicate a statistically significant effect of stress on relationship satisfaction $F(2,1004) = 36.64; p < .001; \eta^2 = .068$, meaning that individuals with a good relationship scored better on the stress measure than those with poor relationship quality. The mean (and standard deviation) for the association between stress and good relationship quality was $M = 14.82, SD = 6.9$ and the mean and standard deviation for the association between stress and poor relationship was $M = 19.12, SD = 7.13$, resulting in a total mean and standard deviation of $M = 15.9, (SD = 7.47)$.

Collectively, the synthesis shows a consistent theme: a negative relationship between perceived stress and relationship satisfaction. All three studies reveal that higher levels of stress are associated with lower levels of satisfaction within romantic relationships. This conclusion holds across different cultural and gender contexts. Tong et al. (2023) further investigated the moderating role of communication typologies, providing insight into the mechanisms through which stress affects marital satisfaction.

However, some differences exist among these studies. Differences in sample size, demographics and methodologies might impact the generalizability of findings.

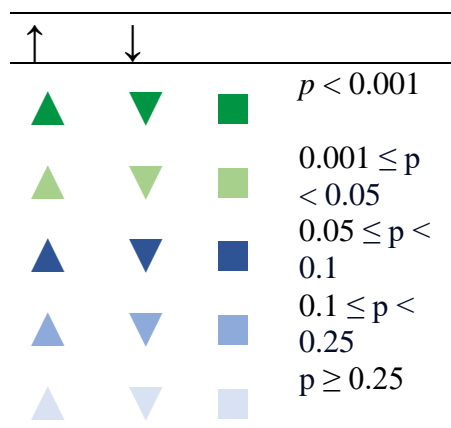
In conclusion, these studies collectively substantiate the existence of a negative association between perceived stress and relationship satisfaction, highlighting the relevance of stress management and effective communication strategies in maintaining healthy romantic relationships, especially during challenging times like the COVID-19 pandemic.

Effect direction heatmap

Figure 3

Effect direction heatmap of the association between COVID-19 related stress and relationship quality

Study	N =	RQ	RS	MS
Genç et al. (2023)	N = 233		▼	
Fivecoat et al. (2022)	N = 146		▼	
Pieh et al. (2020)	N = 733	▼		
Randall et al. (2021) *	N=14,020	▼		
Tong et al. (2023)	N=3,354			▼



Higher COVID-19 stress is associated with an increase (↑) or decrease (↓) in relationship quality

RQ = relationship quality, RS = relationship satisfaction, MS = marital satisfaction

* *Randall et al. (2021) was the only study conducted as a repeated cross-sectional study*

Discussion

The current study aimed to gain insight into the interplay of COVID-19 related stress and romantic relationships. To achieve this, relevant findings from five included studies were systematically reviewed and narratively summarized. The research question “What is the association between COVID-19 related stress and relationship quality in romantic partnerships, considering individual coping abilities and communication patterns?” was formulated and explored within the context of previous literature and identified research gaps.

Randall et al. (2021) contributed valuable insights by uncovering a nuanced relationship between COVID-19 related stress and relationship quality. Their study highlighted that while the general impact of stress on relationship quality might not be statistically significant, supporting factors demonstrated significant variations. This aligns with the broader literature, which indicates that the effect of stress on relationships can be complex and context-dependent (Randall et al., 2021; Pietromonaco & Overall, 2020). Genç et al. (2023) further provided the understanding by revealing a negative correlation between COVID-19 related stress and relationship satisfaction. Their findings underscored the variability in relationships in times of heightened stress levels. Interestingly, the study also highlighted the role of positive dyadic coping skills in relationship satisfaction, aligning with previous research by Lee (2020), which emphasized the importance of couples shared coping strategies in maintaining high relationship quality.

These findings may be attributed to various explanations. Since the study was carried out in 27 different nations, cultural and contextual variations may have had an impact on the association between relationship quality and COVID-19 stress. Individuals' experiences with stress and capacities for coping can thus be influenced by cultural norms, societal supports to resources strengthening bonds (REF). Chun et al. (2007) explains this assumption by pointing out that the network of social contacts is narrower for individualistic cultures than for collectivistic and threatening one's autonomy in lockdowns or limitations of personal freedom, may be more stressful for individualistic people, whereas threatening interconnections like social distancing requirements may pose higher stress levels for collectivistic individuals. Furthermore, collectivists indicated lower psychological distress during the pandemic, emphasizing interdependence and sociability (Germani et al., 2020). While interpreting these findings it should be considered that uncertainty about the future in times of crisis is also higher in individualistic cultures and thus linked with an increased fear

of COVID-19 and lower mental well-being (Satici et al., 2020). These elements might have influenced the differences in relationship quality seen in various nations.

Pieh et al. (2020) brought gender dynamics into focus, illustrating that women experienced more daily stress due to COVID-19 compared to men. This aligns with Jackson et al. (2014), who found out that women were less satisfied with their marriage during the pandemic. Moreover, Pieh et al. (2020) showed the potential role of partner support as an influencing factor for relationship quality. This is consistent with the broader understanding that supportive relationships act as crucial resources for dealing with stress (Pietromonaco & Collins, 2017). Previous research addressing this issue found out that relationship quality is a protective factor for men, since men with higher relationship quality had fewer pandemic-related stress, while these results were not the case for women. However, women paid more attention to the relationship status (Kozakiewicz et al., 2023). Furthermore, women experienced more daily stress due to COVID-19 compared to men and were less satisfied with their marriage (Jackson et al., 2014). Additionally, the study by Pieh et al. (2020) raises an important consideration regarding the amount and quality of the partner's support in influencing relationship quality amid COVID-19 stress. Couples reporting a good relationship quality may have a strong emotional bond, enabling more emotional support and understanding to each other. As a result, they may be better equipped to navigate stressors related to the pandemic, leading to lower stress levels and a higher quality of relationship.

Fivecoat et al. (2022) found, in their sample, high levels of relationship satisfaction and minimal negative experiences, meaning that the participants rated their relationships positively, even if they reported experiencing stress related to the pandemic. They contributed the insight that high levels of relationship satisfaction could persist even in the presence of pandemic-induced stress. These assumptions can be supported by Williamson (2020) who found no significant impact of the pandemic on relationship satisfaction in the early weeks of the pandemic. A factor contributing to these trends could be that couples may attribute COVID-19 related stress to factors outside the relationship and not relate distress to problems in the relationship (Horneffer & Fincham, 1996).

In a broader context, these findings underscore the interplay between COVID-19 related stress and relationship quality. As stated in broader literature, coping strategies and communication play important roles in shaping how stress impacts relationship outcomes. Furthermore, these findings align with previous research on the importance of supportive relationships in buffering negative effects of stress (Pietromonaco & Collins, 2017).

By analyzing the research, some limitations among the studies became vivid. (1) By applying cross-sectional designs, only a single and specific point in time is captured. Therefore, the ability to determine causality between the two variables is limited. Applying longitudinal designs can provide insights into changes over time and track a possible influence of confounding variables. (2) Self-report measures increase the chance of response biases because they only rely on individuals reporting their experiences and emotions, which can be influenced by factors like the social desirability bias (Caputo, 2017), which in turn, can affect the accuracy and reliability of the collected data. There are several ways to mitigate such biases. It may be beneficial to ensure anonymity and confidentiality of responses to encourage honest answers. Furthermore, clear instructions emphasize the importance of providing honest responses. It could also be beneficial to use diverse samples that represent the population that is studied and to educate participants and explain why honest and thoughtful responses are crucial. Cultural and contextual factors can vary across different nations, influencing individuals' experiences with stress and coping. Therefore, generalizability should be approached with caution.

The research question “what is the association between COVID-19 related stress and relationship quality in romantic partnerships, considering individual coping abilities and communication patterns?” could be partially answered in this systematic review.

The findings suggest that COVID-19 related stress can negatively impact romantic relationships and emphasized the role of coping strategies and communication. However, it is important to note that the association between COVID-19 related stress and relationship quality is influenced by more factors, which may vary across settings and populations, and should therefore be observed throughout the process of research on this topic, since moderators help explain why the relationship between COVID-19 related stress and relationship quality might differ among individuals and couples and including moderators might enhance variability among the investigation of specific associations. As for dyadic coping and its correlation with relationship satisfaction, it was to this day, merely studied among young and middle-aged married participants (Gabriel et al., 2016) with not enough attention on older individuals. This is of relevance, since research on older couples has shown reduced conflict potential and a level of expertise on regulating their own and their partners feelings (Fingerman & Charles, 2010). This indicates, that among older couples, other variables could determine relationship satisfaction. Additionally, different studies found other factors that could predict relationship satisfaction and quality during stressful COVID-19 times and need therefore to be kept in mind. The moderating role of contextual factors could

explain results from the cross-sectional study by Randall et al. (2021), since it has become evident, that racial or ethnic minorities may have more difficulties adapting to COVID-19 and so putting their relationships at danger (Pietromonaco & Overall, 2020), especially if adaptive dyadic mechanisms like good communication or support may be insufficient.

The relevance for mediators should also be stated. Identifying mediators offers opportunities for intervention that might replace the “one-size-fits-all approach”, which is especially necessary due to different potentially influencing contextual factors like the socioeconomic status (REF). Interestingly, a previous study found that worry about COVID-19 in general was associated with worse relationship quality and it was also associated with lower perception of the pandemic as a source of conflict. This means that stress may reduce conflict about the COVID-19 related source of stress but still negatively impact the relationship, suggesting a nuanced association between COVID-19 related stress and relationship quality (From et al., 2023).

Regarding the aspect that the research question has only been partially answered, several aspects come to play. One aspect is the lack of investigations regarding all subcomponents formulated in the theoretical framework. This review found evidence for associations between COVID-19 related stress and relationship quality, relationship and marital satisfaction and included influencing factors like communication and coping mechanisms, but no study investigated intimacy in this context. Furthermore, 26 studies were excluded since they did not meet the pre-determined inclusion criteria, which was justified with several reasons: Including studies that solely used different tools or definitions might introduce significant heterogeneity and complicate the synthesis process. By narrowing the scope, the analysis was kept more cohesive and interpretable. Furthermore, different tools and measures could have impacted the results due to differences in sensitivity, reliability and validity. Including studies that apply diverse measures, and in this case, no excluded study applied comparable questionnaires, may have led to a challenge in terms of meaningful conclusions. Lastly, the exclusion of the studies was also influenced by the quality and relevance of the research. Some studies lacked methodology or failed to adequately address the research question. Since the current study operates in a young research field and formulated a detailed research question, it was crucial to balance between comprehensiveness and focus and thus enhancing the quality of this review.

Strengths and limitations

The present systematic review aimed to investigate the impact of COVID-19 related stress on relationship quality by synthesizing and analyzing relevant research findings. The inclusion of studies provides a better understanding of the association between the two variables. It is important to acknowledge the strengths but also limitations of the current systematic review.

The review has several strengths. The first strength is that it covered a broad temporal scope, including studies from the start of the pandemic in 2020 until 2023. Doing that, it captures the evolving nature of the effects of the pandemic on relationship quality. Among previous systematic reviews, examining the present association, no review has yet included studies from all three years of COVID-19. Another strength is the multidimensional approach. By implementing several aspects, namely relationship quality, marital satisfaction and relationship satisfaction, a more nuanced understanding of how psychological stress can impact different aspects of romantic relationships was provided. Moreover, the analysis integrated moderating and mediating factors. Doing that, the complexity of the topic can be recognized and act as a guidance for further research.

Still, some limitations need to be acknowledged. In terms of sample characteristics, the included studies focused on adults aged 18 and above. Still, relationship dynamics of younger individuals or older couples were not captured and the findings might thus be not generalized to different age groups, age gaps or relationship stages. While pre-determined scales were used to assess COVID-19 related stress and relationship quality, these measures might not have fully grasp the complexity of these constructs since they might not capture culturally specific stressors or factors like different economic backgrounds or couples with pre-existing relationship challenges. The current studies predominantly focused on the short-term effects of COVID-19 related stress and relationship quality. Longer-term impacts, both positive and negative were not captured, limiting the understanding of how relationships evolve in the face of stress. Finally, the reliance on self-report measures may lead to social desirability bias, indicating the importance of different measures and approaches for investigations.

Implications for future research and practice

Future researchers in the field should focus on several key aspects that have not been discussed in the current systematic review. Firstly, there is a need for more research on the long-term effects of COVID-19 related stress on relationship quality. While the present

review covered a broad temporal scope, ranging from the start of the pandemic in 2020 until 2023, future studies should extend this timeframe even further to examine the lasting impacts of the pandemic on relationships. Longitudinal studies spanning multiple years can shed light on how relationship quality changes or develops over time, allowing a better understanding of the association and how a potential recovery from the stressors, as the pandemic officially ended, impacted long relationships. Understanding the unique challenges within this context provides a deeper knowledge of the impact across different domains of life. Furthermore, research should try to understand the underlying mechanisms that explain the association between stress and relationships. This could involve relational dynamics as mediators or moderators. By identifying such mechanisms, researchers can develop targeted interventions and strategies to reduce the negative impact of stress and enhance relationship resilience during crisis.

Looking forward, researcher should consider addressing these limitations through studies that utilize a more inclusive approach to sample characteristics and cultural context and thus provide a more comprehensive understanding of the evolving dynamics between stress and romantic relationships.

In terms of future practice or practitioners in the mental health field, a development and implementation of interventions promoting healthy coping strategies and effective communication, should be prioritized. An example for that may involve providing couples with resources and tools to manage stress together, such as stress reduction techniques and support for emotional well-being. Here it is crucial to consider gender differences when designing interventions or support (Cholankeril et al., 2023). Furthermore, practitioners should not only focus on the individual well-being of each partner but also consider the broader context of the relationship, including factors such as socioeconomic status, access to resources and social support networks.

Conclusion

In conclusion, this systematic review has provided a valuable starting point for understanding the impact of COVID-19 related stress on romantic relationships. It pointed out the need for further research that sheds light on possible effects of COVID-19 related stress on relationships after the acute periods of COVID-19, since stress levels and couples relationship quality can uncover unknown patterns over time and change even further. By acknowledging its limitations and building upon its insights, future research can incorporate these findings, targeting interventions and support systems and can enhance

relationship well-being during crisis, benefiting individuals, couples and communities as a whole.

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