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# Mediation Effect of Perceived Symptom Change on the Association between COVID-19 Perceptions and Well-Being Controlling for the Effect of Relationship Quality

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**Makale Bilgisi**

*Keywords:*

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quality,
well-being

**Abstract**

Most people had a perception of COVID-19 as an illness throughout the COVID-19 pandemic, and this inevitably resulted in developing psychological symptoms which in the end yielded to lower levels of well-being. These experiences affected the people who were in a relationship during the pandemic, hence the quality of their relationship was influenced by all these individual feelings. Regarding this context, the current study aimed to explore the mediation role of perceived symptom change in the association between well-being and COVID-19 perceptions, controlling for the effect of relationship quality. To achieve this goal, 174 ($N$ = 124 women, $N$ = 49 men) participants were recruited. Results of the study put forth that (1) there was a positive association between COVID-19 illness perception and symptom change, (2) there was a negative association between perceived symptom change and well-being, (3) there was a negative association between COVID-19 illness perception and well-being, (4) relationship quality was positively associated with well-being, and (5) the symptom change mediated the association between COVID-19 illness perception and well-being in the case relationship quality was considered as a covariate. Limitations and recommendations for further research are presented.

*Anahtar Kelimeler:*

kaygı,
COVID-19,
depresyon,
stres,
hastalık algısı,
ilişki kalitesi,
iyi oluş

**Öz**

COVID-19 pandemi döneminde, birçok kişi COVID-19'un bir hastalık olduğuna dair bir algıya sahip olmuş ve bu da kaçınılmaz olarak kişilerin depresyon, kaygı ve stres gibi birçok psikolojik belirti geliştirmesine, sonuç olarak da iyi oluşlarının azalmasına yol açmıştır. Pandemi döneminde bir romantik ilişki içinde olan kişilerin ilişkilerinin kalitesi de bu bireysel belirtiler ve duygulardan etkilenmiştir. Bu bağlam içinde, bu çalışma, COVID-19'a yönelik algı ile iyi oluş arasındaki ilişkide algılanan semptom değişiminin aracı rolünü, ilişki kalitesinin bu ilişkideki etkisini kontrol ederek incelemeyi amaçlamıştır. Bu amaca ulaşmak için, romantik bir ilişkide olan, 124'ü kadın ve 49'u erkek toplam 174 katılımcıya ulaşılmıştır. Çalışmanın sonuçları: (1) COVID-19 hastalık algısı ile semptom değişimi arasında olumlu ve anlamlı bir ilişki olduğunu, (2) algılanan semptom değişimi ile iyi oluş arasında olumsuz ve anlamlı bir ilişki olduğunu, (3) COVID-19 hastalık algısı ile iyi oluş arasında olumsuz ve anlamlı bir ilişki olduğunu, (4) ilişki kalitesinin iyi oluş ile olumlu ve anlamlı olarak ilişkili olduğunu ve (5) algılanan semptom değişiminin COVID-19 hastalık algısı ile iyi oluş arasındaki ilişkide, ilişki kalitesi ortak değişken (covariate) olarak ele alındığında, anlamlı bir aracı rolünün olduğunu ortaya çıkarmıştır. Çalışmanın sınırlıkları ve gelecek araştırmalar için öneriler de ayrıca belirtilmiştir.

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## Introduction

The World Health Organization (WHO) on March 11, 2020, announced the coronavirus disease 2019 (COVID-19) to be a pandemic, and stated that it was observed in 203 countries by March 30, 2020 (WHO, 2020). COVID-19 has influenced the entire world through a variety of strict precautions, including mandatory quarantines for people returning from abroad, work-from-home arrangements, lockdowns, school closures, the shutdown of non-essential services, the requirement to wear masks, and social isolation (Choi et al., 2021). In Turkey, 11th of March 2020 was the date the first case was observed, and Turkey has been up to the aforementioned arrangements along with the whole world.

The COVID-19 pandemic and all these related arrangements (e.g., curfew, travel bans, and quarantine) had tremendous impacts on the psychological and social states of people. Many studies focused on the psychological symptoms and well-being of the people in the time of the pandemic. It was indicated that people during the time of pandemic reported suffering from depressive symptoms (Huang et al., 2019; Lim et al., 2018; Özdin & Bayrak Özdin, 2020), anxiety (Ahmed et al., 2020; Guo et al., 2020; González-Sanguino et al., 2020; Huang & Zhao, 2020; Lei et al., 2020; Mazza et al., 2020; Moghanibashi-Mansourieh, 2020; Özdin & Bayrak Özdin, 2020), and stress (Mazza et al., 2020; Samadarshi et al., 2020; Wang et al., 2020) accompanied by lower levels of well-being (Özdin & Bayrak Özdin, 2020).

Although people did not have the accurate knowledge of what coronavirus was or what would be the causes and consequences of coronavirus during the early days of the pandemic, how they perceived it was an important indicator of their reactions, coping styles, psychological symptoms, and well-being. Based on Leventhal's Self-Regulation Theory, illness perception was defined as a parallel processing of individuals' cognitive and emotional appraisal of an illness or a stimulus (Leventhal et al., 1984). Cognitive representations of illness perception include the "identity, consequences, cause, timeline, and the cure or control" of the illness and emotional representations are negative responses such as fear and anxiety (Broadbent et al., 2006). Parallel to the early research in illness perception literature, the studies on coronavirus also reported that illness perception predicted anxiety, depressive symptoms (Aqeel et al., 2022), and stress (Neto et al., 2021) in the time of the pandemic raising concerns for both themselves and the people whom they were in close relationships with such as being anxious about being infected with the coronavirus or worrying about the health of the beloved one in addition to several concerns about the future (Lubrano et al., 2020).

Major life threats frequently cause people to experience a decrease in their well-being (Brose et al., 2021). COVID-19 has posed a serious threat to individuals around the globe. The precautions such as using masks, social isolation, quarantine, and curfews hold a protective

and preventive role for the spread of the coronavirus (Randall et al., 2022) however adding lots of uncertainties and psychological symptoms over the shoulders of the people, as well increasing their feelings of threat. Besides physical and psychological health concerns, most people had to face economic issues due to losing their jobs. In addition, most people had to adopt a new style of working with the shift to online and at-home working. Considering that most of the time of the individuals are spent at workplaces, uncertainties about the future of their jobs and economic situations deeply impacted people's well-being during the COVID-19 (Serim-Yıldız et al., 2024). Moreover, those who were still having undergraduate or graduate education had several concerns such as the need to adapt to online education, to academically perform well at these online education platforms, to be able to learn effectively in addition to graduation concerns (Oducado & Estoque, 2021). Overall, given the known connection between major life events and the occurrence of stress and uncomfortable emotions (e.g., depression, Kendler et al., 1999; anxiety, Laux et al., 1981), the COVID-19 pandemic put mental health at risk, which reduced well-being (Brose, et al., 2021). Besides, it was declared that well-being was poorer throughout COVID-19 (Grover et al., 2020) and negatively and significantly associated with illness perception (Aqeel et al., 2022) indicating that as the COVID-19 perception was more negative, the well-being was lower, too.

Along with the negative impacts of the restrictions, isolation, and lockdown during the pandemic on well-being, there have been adverse effects on the social life of the people. Individuals were allowed to leave their houses for a limited and restricted time frame, and this constituted an unusual situation where people had to be out of their routines, not only for individual well-being but for the relationships (Pieh, et al., 2020). A high-quality romantic relationship can be a huge resource for couples dealing with COVID-19-related stressors, according to recent research (e.g. Williamson, 2021). Supportive partnerships are undoubtedly among the most reliable predictors of well-being (Holt-Lunstad, et al., 2010). However, it might be difficult to maintain a high-quality relationship when under extreme stress (Neff & Karney, 2004), like during the COVID-19 pandemic. For example, a study conducted in Turkey aimed to investigate the couples' dyadic coping with the stressors of COVID-19 and put forth that COVID-19 related stress was associated with lower levels of relationship satisfaction (Genç et al., 2023). Another study depicted that, due to economic concerns, staying together for hours and days at home with the partner and the child/ren during the COVID-19 resulted in several role-division conflicts and led to unhealthy functioning of the romantic relationships (Spinelli et al., 2021) all of which have influenced the well-being of the partners, as well. Overall, it was revealed in the literature that individuals who had high levels of relationship quality displayed

better mental health with respect to individuals who had poorer relationship quality or no relationship (Pieh et al., 2020), pointing out the protective nature of relationship quality.

As aforementioned, during the early days of the pandemic, individuals tried to develop a perception about the coronavirus as an illness since it was not experienced before. As individuals' routines were changed dramatically in almost all domains of their lives (e.g., work from home, online shopping, homeschooling children, curfews, and so on), as they followed the current news about coronavirus via social media where they everyday learned about the increasing numbers of COVID-19 related deaths and upcoming precautions to prevent the virus, they inevitably developed a very negative perception about coronavirus. These dramatic changes along with several uncertainties resulted in increased stress, anxiety, and depressive symptoms as compared to life before the pandemic where life was more predictable and stable (Thombs et al., 2020; Young et al., 2023), which in the end led to lower levels of well-being. However, it was depicted that well-being was not only a function of psychological symptom change but relationship quality, as well since in the case partners were supportive to each other and experienced a highly satisfied and high-quality relationship during the COVID-19 pandemic, it was posited that they had a better mental-health. In this regard, we propose that relationship quality at the time of the pandemic might independently be associated with well-being, along with taking into consideration the associations of COVID-19 illness perception and perceived symptom change to the well-being of the people during the lockdown period.

**The Present Study**

All in all, we propose a mediation model wherein COVID-19 perception is related to well-being through symptom change. We considered the relationship quality as a covariate in the proposed model. In this regard, the present research aimed to explore how perceptions of COVID-19 might be associated with well-being. Particularly, we focused on the mediating role of perceived symptom change. In addition, we took into account the independent association between relationship quality and well-being. In sum, we address the following hypothesized effects:

H1: There will be a positive direct effect of COVID-19 illness perception on symptom change.
H2: There will be a negative direct effect of perceived symptom change on well-being.
H3: There will be a negative direct effect of COVID-19 illness perception on well-being.
H4: Relationship quality as a covariate will have a positive direct effect on well-being.

H5: COVID-19 illness perception will have an indirect effect on well-being through the mediation of perceived symptom change (see Figure 1).

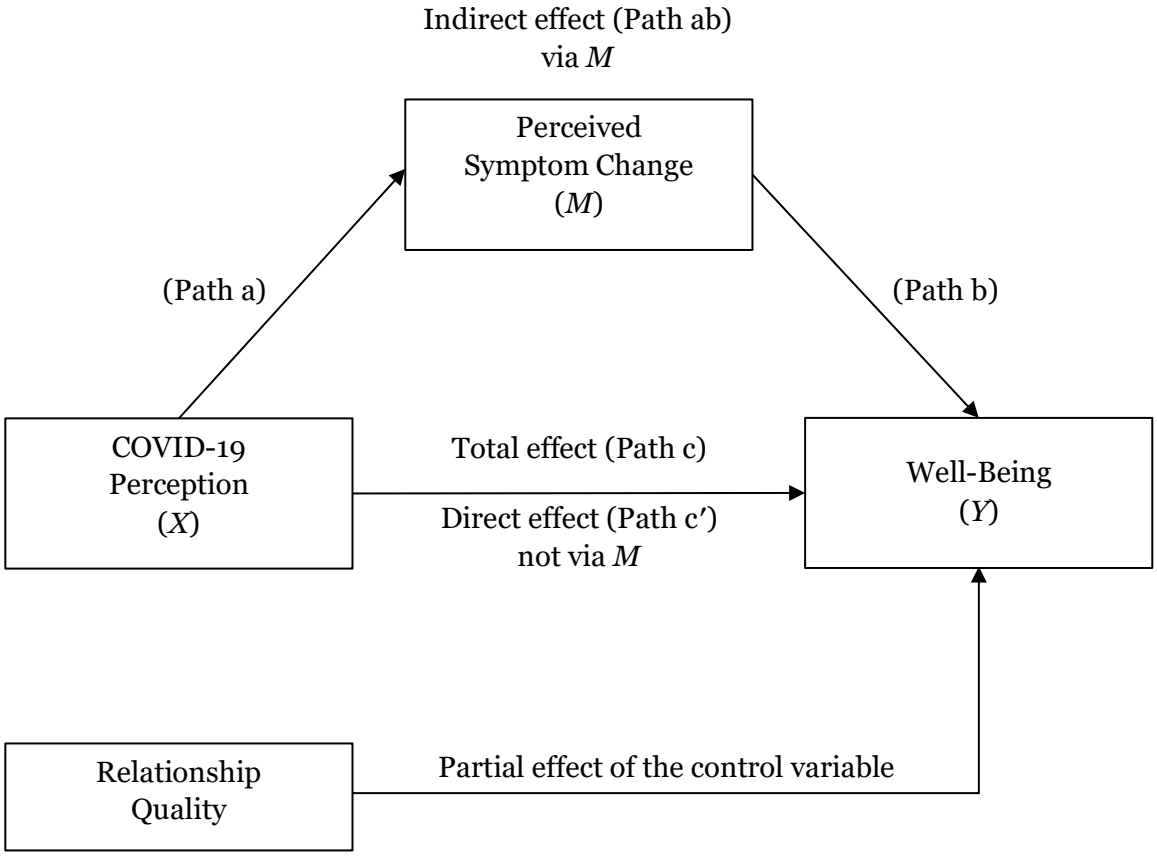


Figure 1. *The hypothesized mediation model (Model 4 in Hayes, 2018)*

## Method

### Participants

Participants of the study were recruited via convenient and purposive sampling. One hundred seventy-four individuals (*N* = 124 women, *N* = 49 men, *N* = 1 agender) participated in the study who had been in a relationship for 5 years on average (*M* = 60.66 months, *SD* = 74.52) and were mostly heterosexual (%90.6). Women's mean age was 27.67 (*SD* = 7.96) and men's 31.15 (*SD* = 8.94). More women had high school (46.8%, *N* = 58) and most men had undergraduate degrees (42.9%, *N* = 21). Of the sample, 57.5% were students who mostly were not employed before and during the pandemic (86.8%). Participants reported having an income between 0 – 4000 TL (68.4%, *N* = 119), 4001 – 8000 TL (18.4%, *N* = 32), and over 8001 TL (13.2%, *N* = 23).

## Materials

**Demographic Questions.** The demographic form was prepared by the last two authors of the current study. They consisted of personal, relational, and work-related questions. Personal questions comprised age, gender identity, sexual orientation, income, and education. Relational questions included relationship status, duration of relationship, and number of children if any. Work-related questions contained employment type and employment status during the pandemic.

**Brief Illness Perception Questionnaire (BIPQ).** The Turkish version (Karataş et al., 2017) of the Brief Illness Perception Questionnaire (BIPQ; Broadbent et al., 2006) was used to assess participants' COVID-19 perceptions. As recommended by the developers, the word *illness* in each item was replaced with the term *coronavirus*. BIPQ includes originally eight self-report items rated on an 11-point response scale and an open-ended question measuring the causes of the illness. In the present study, we used seven items to measure cognitive illness representations, assess emotional representations, and measure illness comprehensibility. Item 5 ("How much do you experience symptoms from your illness?") and the open-ended question were not included in the questionnaire because not everyone in the sample was COVID-19 positive. Reliability analyses revealed that items 3, 4, and 6 had low item-total and squared multiple correlations. Thus, they were discarded. The remaining four BIPQ items had acceptable internal consistency reliability (α = .72). Mean scores were computed to be used in the analyses and higher scores indicated negative perceptions about COVID-19.

**Depression Anxiety Stress Scale (DASS-21).** The Turkish version (Yıldırım et al., 2018) of the Depression Anxiety Stress Scale (Lovibond & Lovibond, 1995) was used to examine the emotional states of the participants. DASS-21 has 21 self-report items rated on a 4-point scale (1 = *Did not apply to me at all*, 4 = *Applied to me very much, or most of the time*). It has three subscales which are depression (e.g., "I found it difficult to relax"), anxiety (e.g., "I was aware of dryness of my mouth"), and stress (e.g., "I found it hard to wind down") with seven items in each subscale. Originally, participants are asked to rate their experiences over the past week. In the present study, taking March 13, 2020, as the reference date when the flight restrictions due to the COVID-19 had started in Turkey, participants were asked to respond to the DASS-21 considering their emotional states before and after this date following the suggestions of Randall et al. (2022). Items were averaged with higher scores reflecting increased depression, anxiety, and stress symptoms. Before and after DASS-21 scores showed good reliability for depression (α = .89, α = .94), anxiety (α = .84, α = .85), and stress (α = .89, α = .92). The difference between before and after restrictions for each item was computed and

averaged to yield a single perceived symptom change score (α = .92). Higher scores indicated perceived increase in symptoms.

**The Warwick-Edinburgh Mental Well-Being Scale (WEMWBS).** Mental well-being was evaluated with the Turkish version (Keldal, 2015) of the Warwick-Edinburgh Mental Well-Being Scale (Tennant et al., 2007). Participants rated 14 items of WEMWBS (e.g., "I am feeling optimistic about the future") on a 5-point scale (1 = *None of the time*, 5 = *All of the time*). Higher mean scores indicated better mental well-being. The Cronbach's alpha coefficient for the scale was .92 in the current research.

**Perceived Relationship Quality Components Inventory (PRQC).** To investigate the perceived relationship quality of the participants, the Perceived Relationship Quality Components Inventory (Fletcher et al., 2000) was adapted to Turkish in the current study. Translations of the items into Turkish were done by three bilingual psychological counselors. Then, a common translated version was evaluated by the Turkish authors.

PRQC has 6 subscales (*relationship satisfaction*, *commitment*, *intimacy*, *trust*, *passion*, and *love*) and a total of 18 items (e.g., "How much do you love your partner?") with a 7-point response scale (1 = *not at all*, 7 = *extremely*). The factor structure of PRQC was tested via confirmatory factor analysis in AMOS 21 (Arbuckle, 2012). Initial results yielded a mediocre fit of the six-factor model for the data, $\chi^2(120) = 382.59$, $p = .05$, and $\chi^2/df$ ratio was 3.19; CFI = .91, TLI = .89, NFI= .88, RMSEA = .11, SRMR = .07. Therefore, the modification indices were checked, and two correlated errors were added in the model. The modifications improved the model fit. CFA yielded a good fit of the six-factor model for the data. Results indicated a significant Chi-square statistic: $\chi^2(118) = 321.34$, $p = .05$, and $\chi^2/df$ ratio was 2.72; CFI = .93, TLI = .91, NFI= .90, RMSEA = .10, SRMR = .07. Factor loadings ranged between .66 and .97. Finally, latent variable correlations ranged between .35 and .98. Following the modifications, the fit indices were only marginally acceptable given the criteria by Hu and Bentler (1999). In a recent Monte-Carlo study on how various constraints might bias fit indices, Shi et al. (2019) concluded that "in small samples, compared with their population values, the sample RMSEA tended to be upwardly biased, and the sample CFI and TLI were downwardly biased" (p. 328). Given our sample size, our results are not unexpected yet acceptable. Finally, in this study, the mean of all items was used to have a single relationship quality score which yielded a Cronbach's alpha coefficient of .95.

## Procedure

Before conducting the research, the required permissions were obtained from the ethical board of the university where the third author is affiliated. Solicitation of the

participants together with the online survey link in the Qualtrics platform was shared through Instagram and Facebook. Data were collected between May 5, 2020, and June 3, 2020, during the COVID-19 lockdown period in Turkey. Interested participants were screened via the criteria followed: (1) being at least 18 years old, (2) accommodating in Turkey, (3) having a romantic relationship, (4) cohabitating with the partner, and (5) being in a relationship for at least 6 months. Eligible participants were directed to the research questionnaire which took approximately 20 minutes to fill out the questionnaires. Randomly selected 12 participants were compensated for their time with $10 and $15 Amazon gift cards.

## Results

To test the hypothesized model, COVID-19 perceptions (antecedent, *X*), symptom change (mediator, *M*), well-being (outcome, *Y*), and relationship quality (covariate, TIME) scores were subjected to simple mediation analysis in SPSS PROCESS Version 3 by using Model 4 (Hayes, 2018). Zero order correlations were also computed between the variables of the study and are presented in Table 1 together with variable means and standard deviations.

Table 1.

*Descriptive statistics and correlations among variables*

| | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| 1. COVID-19 Illness Perception | | | | |
| 2. Symptom Change | .29** | | | |
| 3. Well-Being | -.22* | -.35** | | |
| 4. Perceived Relationship Quality | .07 | .01 | .28** | |
| *M* | 6.76 | .15 | 3.60 | 5.92 |
| *SD* | 1.58 | .53 | .71 | .97 |

*N* = 174. * $p < .01$ ** $p < .001$

Results of simple mediation analysis (see Table 2) using relationship quality as a covariate depicted that COVID-19 illness perception significantly predicted symptom change (*H1*), $B = .10$, $SE = .03$, $p < .001$, and that symptom change significantly predicted well-being (*H2*), $B = -.42$, $SE = .09$, $p < .001$. COVID-19 illness perception was positively associated with well-being (*H3*) after controlling for symptom change, $B = -.07$, $SE = .03$, $p < .05$, suggesting partial mediation. In addition, relationship quality was positively associated with well-being (*H4*), $B = .22$, $SE = .05$, $p < .001$. The indirect effect of COVID-19 perception on well-being (*H5*) was examined by a bootstrap estimation approach which was conducted with 5000 samples (Hayes, 2018) and it was significant, $B = -.09$, $SE = .03$, 95% $CI = [-.14, -.04]$. Approximately 23% of the variance in well-being was accounted for by the predictors, $R^2 = .23$,

$F(3, 170) = 16.49$, $p < .001$. All in all, the hypotheses of the study were confirmed and support for the mediation model was obtained.

Table 2.

*Results of mediation analysis for COVID-19 perceptions on well-being through symptom change*

| | Well-Being (*Y*) | | | |
|---|---|---|---|---|
| | *B* | *SE* | *p* | 95% *CI* |
| NEGCP (*X*) | | | | |
| *X* to *M* (Path a) | .10 | .03 | < .0001 | [.05, .15] |
| Total Effect (Path c) | -.11 | .03 | < .008 | [-.17, .-05] |
| Direct Effect (Path c′) | -.07 | .03 | < .05 | [-.13, -.01] |
| SYMPC (*M*) | | | | |
| Direct Effect (Path b) | -.42 | .09 | < .0001 | [-.58, -.23] |
| Indirect Effect (Path ab) | -.09 | .03 | | [-.14, -.04] |
| Partial Effect of RELQ | .22 | .07 | < .0001 | [.09, .35] |

Note. $N = 174$. CI: Confidence Interval (bootstrapping with 5000 samples), NEGCP: COVID-19 Perception, SYMPC: Symptom Change, RELQ (Covariate): Relationship Quality.

## Discussion

The current study aimed to investigate how the well-being of people in a relationship might have been influenced during the lockdown period in the COVID-19 pandemic. We expected and observed that COVID-19 illness perception and symptom change were associated with well-being separately. However, this association was partially mediated by perceived symptom change after controlling for the perceived relationship quality.

The results of the current study indicated a positive association between COVID-19 illness perception and symptom change supporting the H1. Higher levels of COVID-19 illness perception resulted in increased psychological distress. This finding is parallel to the results of other studies which have displayed associations between COVID-19 illness perception and symptoms of both anxiety and depression (Aqeel et al., 2022; Wierenga et al., 2021) and stress (Neto et al., 2021). How participants perceive the emotional impact of the pandemic on them has been found to be associated with anxiety, stress, and depression (Stafford et al., 2021). Since COVID-19 was an unprecedented worldwide crisis rapidly spread out in the whole world, its transmission has severely affected the physical and mental wellbeing of communities globally (Lubrano et al., 2020). COVID-19 brought several uncertainties such as how it is going to be treated, how long it lasts, whether it is possible to overcome it, whether the vaccinations will prevent it, people were not able to name and give meaning to it with all these uncertainties (Randall et al., 2022). Considering that the data of the current study were collected during the lockdown period of the COVID-19 pandemic, all of the people were at their home and the only

way they could get socialized and to learn about the course of the coronavirus was via social media (Pellert et al., 2020) where fake information about the further precautions and the nature of coronavirus was to be shared in addition to the current death rates due to coronavirus. As a result of what they have heard through social media and as part of their experiences, people developed a perception about the coronavirus and its onset, its possible threats, and precautions and their perception of the COVID-19 was a negative illness perception and threatening leading inevitably all people all over the world to feel anxious, depressed, and stressed on how to protect themselves and their beloved ones. They got afraid of being infected, they got worries about the health of their families in addition to their economic concerns and their children's education life adding to their concerns about the future (Lubrano et al., 2020). Overall, since COVID-19 was unprecedented, it was perceived as a very threatening illness which results in several deaths all over the world. Major life threats frequently cause people to experience an increase in their psychological symptoms (Brose et al., 2021). Hence, it was very expected that due to this threatening perception of the coronavirus, people would experience more depressive, anxious, and stress symptoms when compared to the pre-COVID period of their lives. In this regard, it is thought that the finding of the current study verifies this context.

Results depicted that there was a negative association between symptom change and well-being indicating that the higher levels of psychological distress resulted in lower levels of well-being (H2) displaying consistency with the findings in the literature which indicate that self-perceived well-being was inversely associated with psychological distress (Rodriguez Espinosa et al., 2020). Overall, psychological symptoms predicted people's well-being during the pandemic in a negative direction (Chua et al., 2021). Uncertainties about the nature of COVID-19 and precautions such as wearing masks, lockdowns, in addition to job losses, social isolation, economic concerns, family-related stressors, resulted in anxiety, stress, and depression among individuals (Randall, et al., 2022). Since the data of the current study were collected in the lockdown period of COVID-19 pandemic in Turkey, all people were socially isolated, this means that they may have lost their social protective systems such as friends, sports, hobbies, families or job as a distractor from stressors and may have had experienced difficulties coping either individually or as a dyadic with all these COVID-19 related stressors (Randall et al., 2022). Hence, the findings of the current study may be explained as follows: as a result of experiencing difficulties coping with the COVID-19 related symptoms mentioned above, people may have had lower levels of well-being which can be verified by Kirby et al.'s (2022) study that has found a negative association between coping and well-being during the COVID-19 pandemic.

There was a negative association between COVID-19 illness perception and well-being in line with the H3. Higher levels of COVID-19 illness perception resulted in lower levels of well-being. This finding was parallel to the findings in the literature which stated that mental health was negatively associated with illness perception during COVID-19 (Aqeel et al., 2022). Well-being requires care (Galvin & Todres, 2011). However, since the data of this study were collected during the COVID-19 lockdown period in Turkey and since this lockdown was very extraordinary and threatening for lots of people, most people were not able to rely on their well-being and care for themselves. For most of the people the major issue was whether they and their loved ones will survive this or not (Serim-Yıldız et al., 2024). Individuals who were doing sports, socializing with friends and families, going to hairdressers, or joining social clubs, increase their well-being before COVID-19 pandemic lost all these resources as well. Hence, this may be the reason that perception of COVID-19 as threatening, losing their sources of socialization, hobbies, jobs, due to lockdown may have led to lower levels of well-being as the current study depicted.

Given that COVID-19 has resulted in psychological symptoms for individuals and couples related to how they perceived COVID-19, it was inevitable for the well-being of the partners in relationships to be influenced by these dimensions. As such, it was worth examining whether people's relationship quality played a protective role in their well-being considering all the psychological symptoms caused by COVID-19 pandemic, in these unprecedented times. In this regard, as proposed by H4, it was found in the present study that there was a positive association between well-being and relationship quality displaying that the higher the relationship quality the higher the well-being of the participants. Although it is known that the rates of intimate partner violence and accordingly the divorce rates have increased during the COVID-19 pandemic (Khodavirdipour & Samadi, 2022) due to several reasons such as living home together for about two months during the lockdown without any personal space, not being able to get any child support while before pandemic a caregiver or a grandmother held the responsibility for it, trying to adapt to online work and online education, while having a helper for household tasks before pandemic not having that support and the necessity to take that role, too (Serim-Yıldız et al., 2024), still there were partners who were able to maintain their relationships with a higher relationship quality. For example, the findings of Chua et al.'s (2021) study depicted that relationship quality components significantly explained a total of 30% variance in well-being among the couples. Also, the results of Pieh et al.'s study (2020) also revealed that high relationship quality was associated with better mental health during COVID-19 verifying the findings of the current study as well. Considering that perceived relationship quality comprises satisfaction, commitment, intimacy,

trust, passion, and love (Fletcher et al., 2000), having these in a relationship during a threatening period such as COVID-19 pandemic is thought to provide trust and support to individuals from their partners in high quality relationships. In these relationships, it is observed that partner responsiveness is also high and the couples who perceive their relationships as high quality tend also engage in dyadic coping with COVID-19 related stressors (Randall et al., 2022), hence not being drowned by the overwhelming stressors and uncertainties COVID-19 posited on the individuals, being in a high quality relationship may have held a protective role in terms of maintaining individual well-being.

As proposed by H5, the symptom change partially mediated the association between well-being and COVID-19 illness perception in the case relationship quality is considered as a covariate. The psychological impact of past epidemic outbreaks on the general populace is relatively understudied (Santabarbara et al., 2021) and to the knowledge of the researchers, there is no previous study that has investigated this, so the current study expands the literature with this finding. It is well-known that negative illness perception is associated with lower well-being as indicated by several studies in the literature (e.g., Hurt et al., 2014; Lee et al., 2019) and this is depicted in the current study, as well. However, this association was partially mediated by the perceived symptom change while controlling for the effect of perceived relationship quality on well-being. This means that while negative illness perception tended to decrease the well-being of people during COVID-19 pandemic, their negative illness perception led to increases in psychological symptoms and these increases in psychological symptoms lowered the well-being of individuals more. So, it can be concluded that even if people hold negative perceptions about COVID-19, if they are not able to protect themselves from developing psychological symptoms such as anxiety, depression, and stress they tend to have low well-being where contrary is possible, too. Here, it should also be noted that beyond individual effects such as psychological symptoms, a relational variable, perceived relationship quality, independently predicted well-being during COVID-19 pandemic as well. This means that in times of crisis situations such as COVID-19, having a satisfying, committed, intimate relationship having love, trust, and passion, too (Fletcher et al., 2000) may carry a protective role for keeping the well-being strong.

## Limitations

This study carries several limitations. Firstly, because of COVID-19, data collection was run with self-report online measures. Participants were able to sign into an online survey on their smartphones or PCs. Relying on online survey methods was limited to participants who have access to such technology.

Secondly, sampling-related issues need to be addressed. For one, sample size of the present research was relatively low given the demands of multivariate statistics applied to our data (Fritz & MacKinnon, 2007; Kline, 2011). The relatively low sample size limited between-group analyses such as testing gender differences and the differences between students and non-students who have been involved in a romantic relationship. Since the data collection was held during the lockdown period, the extraordinary circumstances due to lockdown limited researchers to reach a gender-balanced sample and the gap in the sample size between different gender groups prevented the researchers from making gender comparisons in terms of the study variables. Previous research indicated that women show more interest than men as participants in research concerning certain, stereotypically feminine topics such as affect and family relations (Signorella & Vegega, 1984), which might create a selection bias. This is a problem documented in sexuality (Dickinson et al., 2012) and friendship (Demir et al., 2017) research. In the present study, the variables of interest might be argued to be categorized within the domains of moods, emotion, and family relationships, perhaps inflating women's participation in the study. As women in our sample outnumber men by a factor of 2.5, we should note an inherent selection bias in our research, which might have biased the results. Besides, most of the sample comprised low-income and unemployed university students. The rest of the sample included employed and middle-income non-student participants. These two groups may have been compared in terms of the study variables, but the relatively low sample size prevented the researchers from conducting these comparisons. Similarly, data were collected utilizing convenient and purposive sampling strategies which may be considered as threats to external validity (Fraenkel et al., 2012). Although convenient and purposive sampling techniques and online data collection are useful for reaching populations, they limit the researcher's control over the data collection period.

Thirdly, across the current study, participants were mostly students, from the middle SES group, and most of them were in heterosexual relationships. Together, these demographics limit the study's generalizability. Hence, this study is generalizable only to this specific group.

The fourth limitation is its cross-sectional design which prevents any arguments on the causal directions of perceived symptom change, COVID-19 illness perception, well-being, and relationship quality. Moreover, due to the utilization of cross-sectional design, inferences about the continuity of symptom change, alteration in COVID-19 illness perception, development of well-being, and relationship quality throughout the pandemic cannot be driven in this study.

Lastly, participants' relationship status was not considered in the present study. Although one of the eligibility criteria for being involved in this study was to be cohabitating, we did not know whether the participants were in a romantic relationship or married. Considering the family life cycles, being married, having children, being in the first marriage or not, and having ex-spouses could have an influence on the relationship quality.

## Future Directions and Conclusion

Filling a notable gap in the literature, this study tested the mediating role of symptom change in the association between COVID-19 perception and well-being, with relationship quality considered as a covariate. Despite the significant results, future studies could collect additional samples to examine their psychological symptoms and well-being during and after COVID-19. Moreover, how psychological symptoms, well-being, COVID-19 perception, and relationship quality have shown differences these days where the regulations regarding the pandemic have been softened all over the world, is worth investigating.

**Authors' contribution:**
This study was carried out as part of a cross-cultural project, of which the last two authors were the primary investigators. They guided the study in all its steps and the paper was proofread by them. The first author was the primary investigator of this project on behalf of Turkey team. The first and the third authors were responsible for data collection. In addition, the first author was mainly responsible for writing the introduction and discussion sections along with the third author. The first author was also responsible for writing the method section with the second author. Second author was responsible for writing the results section.
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Ethics approval for this study was obtained from Middle East Technical University Human Research Ethics Committee, with the reference number 28620816/166 and protocol number 166 ODTU 2020.

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# Algılanan Semptom Değişiminin, İlişki Kalitesinin Etkisi Kontrol Edildiğinde, İyi Oluş ve COVID-19 Algısı arasındaki Aracı Rolü

## Özet

COVID-19 pandemisi tüm dünya ile birlikte Türkiye'yi de etkisi altına almış ve bireyler üzerinde depresyon, kaygı, düşük iyi oluş hali (Özdin ve Bayrak Özdin, 2020), ve stres (Mazza ve arkadaşları, 2020) gibi olumsuz etkilere yol açmıştır. Kişilerin COVID-19'u nasıl algıladığının olumsuz semptom geliştirme ihtimallerini de etkilediği görülmüştür. Bireylerin özellikle yaşamsal tehditlerle karşılaştıklarında iyi oluşlarında düşüş yaşanmasının olası olduğu da alanyazın çalışmalarınca ortaya konmuştur. COVID-19'un bireyler üzerindeki belirtilen olumsuz etkilerinin yanı sıra ve zaman zaman bu etkilere bağlı olarak ilişkiler üzerinde de istenmeyen etkileri olduğu görülmüştür. Seyahat ve sokağa çıkma yasakları ile karantina gibi COVID-19 pandemisini kontrol altına alabilmek için uygulanan kısıtlamaların bireylerin sosyal yaşamlarını ve kaliteli ilişkiler sürdürebilmelerini olumsuz şekilde etkilediği söylenebilir. Kaliteli ve doyurucu sosyal ve romantik ilişkiler sürdürmenin olumsuz yaşam olaylarını deneyimlerken koruyucu rolü olduğu bilinmektedir (Pieh ve arkadaşları, 2020). Bu nedenle kişinin iyi oluşunun sadece yaşanan olumsuz deneyimle belirlenebileceğini söylemek yanlış olur ve koruyucu bir faktör olarak ilişki kalitesinin de değerlendirilmesi gerekir. Bu doğrultuda, bu araştırmanın amacı COVID-19 algısı ile iyi oluş arasındaki ilişkide algılanan semptom değişiminin aracı rolünü ilişki kalitesini kontrol ederek incelemektir.

Veriler amaçlı ve uygun örneklem yöntemi ile erişilen 174 (124 kadın, 49 erkek, 1 cinsiyet belirtmemiş) katılımcıdan toplanmıştır. Katılımcıların ortalama ilişki süresi 60.60 aydır (SS = 74.52). Kadın katılımcılar için ortalama yaş 27.67 (SS = 7.96) erkek katılımcılar için ise 31.15 (SS = 8.94) olarak bulunmuştur. Veriler Kısa Hastalık Algısı Ölçeği (Karataş ve arkadaşları, 2017), Depresyon Kaygı Stres Ölçeği (Yıldırım ve arkadaşları, 2018), Warwick-Edinburgh Mental İyi Oluş Ölçeği (Keldal, 2015) ve bu çalışmada Türkçe adaptasyonu yapılan Algılanan Romantik İlişki Kalitesi Ölçeği (Fletcher ve arkadaşları, 2000) aracılığıyla elde edilmiştir. Orijinalinde Depresyon Kaygı Stres Ölçeği (Yıldırım ve arkadaşları, 2018) katılımcılara geçen hafta içerisindeki deneyimlerini belirtmelerini ister. Bu araştırmada katılımcılardan her bir maddeyi okuyarak deneyimlerini COVID-19 yasakları kapsamında uygulanan uçuş yasaklarının Türkiye için başlangıç tarihi olan 13 Mart 2020 öncesi ve sonrası için iki sefer değerlendirmeleri istenmiştir. İki değerlendirme arasındaki fark hesaplanmış ve semptom değişimi değişkeni oluşturulmuştur. Bu ölçeklere ek olarak katılımcıların kişisel özelliklerine, ilişkilerine ve iş yaşamlarına dair bilgiler edinmeyi hedefleyen bazı demografik sorular sorulmuştur. Veriler çevrimiçi olarak Qualtrics platformu aracılığıyla Türkiye'de

COVID-19 nedeniyle uygulanan sokağa çıkma yasakları döneminde (5 Mayıs 2020 ve 3 Haziran 2020 arasında) toplanmıştır. Gönüllü kişilerin araştırmaya katılabilmeleri için aranan kriterler 18 yaş ve üstünde olmak, Türkiye'de yaşıyor olmak, bir romantik ilişki içerisinde olmak, ilişkide olduğu partnerle 6 ay veya daha uzun süredir birlikte olmak ve hâlihazırda birlikte yaşamaktır. Katılımcılar arasında yapılan bir çekiliş sonrasında 12 kişiye 10 ve 15 dolarlık Amazon hediye çeki verilmiştir.

Yapılan Pearson korelasyon analizleri sonucunda COVID-19 hastalık algısı ile semptom değişimi arasında pozitif anlamlı ilişki ($r$ = .29, $p$ < .001), COVID-19 hastalık algısı ve iyi oluş arasında negatif anlamlı ilişki ($r$ = -.22, $p$ < .01), semptom değişimi ve iyi oluş arasında negatif anlamlı ilişki ($r$ = -.35, $p$ < .001) ve ilişki kalitesi ve iyi oluş arasında beklendiği gibi pozitif anlamlı ilişki ($r$ = .28, $p$ < .001) bulunmuştur. Son olarak, COVID-19 hastalık algısı ile iyi oluş arasındaki ilişkide ilişki kalitesi değişkeni kontrol edildiğinde semptom değişiminin kısmi aracı olarak hareket ettiği bulunmuştur.

Çalışmanın bulguları, alanyazın çalışmalarıyla tutarlılık gösterse de COVID-19 hastalık algısı ile iyi oluş hali arasında algılanan semptom değişiminin, ilişki kalitesi ortak değişken olarak ele alındığında, kısmi aracılık rolünün olması çalışmanın özgün bir bulgusudur. Araştırmacıların bilgisi dahilinde alanyazında benzer bir çalışma bulunmamaktadır. Bu sebeple, araştırmanın bu temel bulgusunun alanyazını genişlettiği düşünülmektedir.

Bu araştırma sonuçları yorumlanırken verilerin çevrimiçi elde edilmesinin yarattığı kısıtlılıklar, örneklemin demografik özellikleri (çoğunluğun heteroseksüel, orta sosyoekonomik düzeyden gelen öğrenciler olması), araştırma deseninin kesitsel olması gibi sınırlılıklar göz önünde bulundurulmalıdır. Bütün bu kısıtlılıklara rağmen bu araştırma COVID-19 hastalık algısı ile iyi oluş arasındaki ilişkide semptom değişiminin aracı rolünü ilişki kalitesini kontrol ederek incelemiş ve kısmi aracılık rolünü ortaya koyarak alanyazındaki bir boşluğu doldurmuştur.