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Changes in loneliness and coping strategies during COVID-19

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Abstract

The social distancing measures implemented to slow the spread of COVID-19 impacted many aspects of people's lives. Previous research has reported negative consequences of these measures for people's psychological well-being, and that people differed in the impact on their psychological well-being. The present study aimed to describe the different coping strategies Dutch people used to deal with these measures and to link these strategies to loneliness. In addition, the study aimed to examine mean-level changes in loneliness and to explore individual differences in loneliness change. We used data from 2009 participants of a panel study of representative Dutch households. We assessed coping strategies used during the first wave of the COVID-19 pandemic in May 2020 and examined changes in loneliness between October 2019 (before COVID-19) and May 2020 (during the first wave of COVID-19). First, results showed that most people employed specific coping strategies. The most frequently used social strategies were chatting and (video)calling; the most frequently used non-social strategies were going outside, doing chores, watching TV, reading and self-care. Second, people who used more coping strategies reported lower levels of loneliness. Third, analyses

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revealed an average increase in loneliness between October 2019 and May 2020. Fourth, we observed two significant interaction effects, showing a stronger positive link between the number of social coping strategies and initial loneliness levels among those with a partner or living with others than for those who were single or lived alone. Yet, no moderating effects on changes in loneliness were found: people using more coping strategies did not differ in loneliness changes from people using fewer coping strategies. Together, findings suggest that loneliness increased in the Netherlands during the first phase of COVID-19 and that, while people's coping strategies were related to loneliness levels, they did not buffer against loneliness increases.

KEYWORDS

COVID-19, loneliness, mental health, pandemic, social and non-social coping strategies, social isolation

1 | INTRODUCTION

The COVID-19 pandemic has had negative consequences for psychological well-being, especially loneliness, for many people around the globe (OECD, 2021). Research suggests that loneliness increased due to social distancing measures (Entringer & Gosling, 2022; Tull et al., 2020), although not all studies report increases in loneliness (e.g., Hansen et al., 2021; Luchetti et al., 2020) and there are substantial individual differences in the extent to which increases in loneliness occur (Bu et al., 2020; Hansen et al., 2021). The present study aimed to obtain an overview of the coping strategies people employed to deal with the social distancing measures and to link them to changes in loneliness in a large longitudinal sample from the Netherlands.

Social coping strategies include chatting with family and friends (Baloran, 2020), using social media (Bonsaksen et al., 2021; Pahayahay & Khalili-Mahani, 2020), and helping others in the community (Bowe et al., 2021). Non-social coping strategies include relaxation, reading, hobbies, watching TV (Baloran, 2020; Faulkner et al., 2020), and following a daily routine (Roca et al., 2021). However, information on the types and frequencies of unique coping strategies that people employed specifically to deal with the novel stressors of COVID-19 is still limited. In the present study, we therefore explored a broad array of both social and non-social coping strategies that people used specifically to deal with the limitations in social contact. We also examined the total number of coping strategies participants employed, as higher numbers might indicate that people can flexibly adapt to the demands of a new situation (Dawson & Golijani-Moghaddam, 2020).

Evidence suggests that employing coping strategies was linked to well-being during COVID-19. For example, a cross-sectional study from the US reported that coping strategies explained 54% of variance in well-being (Umucu & Lee, 2020). Social coping strategies might be especially effective to prevent loneliness, because they might buffer the negative effect of the social distancing measures on social isolation (Bonsaksen et al., 2021; Pancani et al., 2021). There is evidence suggesting that social support during COVID-19 was related to lower levels of loneliness (Groarke et al., 2020) and psychological distress (Yu et al., 2020), and higher levels of well-being (Umucu & Lee, 2020). Yet, there is also some evidence suggesting that non-social coping was associated with psychological well-being. Doing new things at home (Hoffart et al., 2020), exercise games (Borges Viana & Barbosa De Lira, 2020), pursuing hobbies

(Fullana et al., 2020), humor, and religion (Umucu & Lee, 2020) were related to lower loneliness, depression, anxiety, and higher well-being. We therefore examined the link between specific coping strategies and loneliness.

The present study had four aims. First, we described the frequency and distribution of social and non-social coping strategies used by a representative group of Dutch citizens to deal with social distancing measures during COVID-19. The same was done for the loneliness scores in May 2020. Second, we examined the association between coping strategies and loneliness during the pandemic (May 2020). We expected a negative correlation between the use of coping strategies (especially social strategies) and loneliness (Hypothesis 1). Third, we studied mean-level changes in loneliness between October 2019 (before COVID-19) and May 2020. We anticipated an increase in loneliness at a group level (Hypothesis 2) and explored individual differences in this change. Fourth, we explored the association between coping strategies and changes in loneliness. We hypothesized that a greater increase in loneliness is related to using less coping strategies (Hypothesis 3).

2 | METHODS

2.1 | Participants and procedure

Data came from the Longitudinal Internet Studies for the Social Sciences (LISS) panel (Scherpenzeel, 2011), an ongoing representative Dutch household study that started in 2008. For this study, a questionnaire was added in May 2020 to study social contacts and coping during the COVID-19 pandemic. This questionnaire was sent to all 2399 LISS panel participants who filled out the last core questionnaires that assessed personality (May 2019) and social integration and leisure (November 2019) (see codebook: <https://osf.io/v9b9g>).

The response rate was 83.7%, leading to a sample of 2009 participants who completed at least part of the questionnaires used in this study. Participants' ages ranged from 17 to 102 years ($M = 56.35$, $SD = 20.44$). The sample included 987 males (49.1%). Most participants ($n = 1688$, 84%) lived with family, 38 (1.9%) lived with others, and 282 (14%) lived alone. Regarding relationship status, 1529 participants (76.1%) had a partner, whereas 480 did not have a partner. Regarding education level, 8.6% of the sample completed primary school, 22.7% pre-vocational secondary education, 11.1% higher secondary education, 21.1% secondary vocational education, 25.1% higher professional education, and 10.7% university education. The average gross monthly family income was 4982 euros ($SD = 3219$). See Knoef and de Vos (2009) for detailed information on the ethnic composition and overall representativeness of the LISS panel.

2.2 | Materials

2.2.1 | Coping strategies

A list of social and non-social strategies was constructed based on previous research, tips shared on social media, and in original media. The introduction was: "Because of the Coronavirus, there are limitations in the possibilities for social contact compared to before the pandemic. Please indicate what you did to deal with this." This was followed by a list of 14 social strategies (e.g., "calling with video (e.g., Skype)") and 20 non-social strategies (e.g., "Watching TV (movies/Netflix)"). For each strategy, participants indicated whether they did (1) or did not (0) use it (Table 1).

TABLE 1 Overview of the frequency of use of social and non-social coping strategies.

Coping strategies	N	%
Social coping strategies		
Chatting via private message (e.g., WhatsApp)	1241	62.3
Calling without video	1198	60.1
Video calling (e.g., Skype)	1064	53.4
Meeting people outside the house (e.g., taking a walk)	688	34.5
Sending letters, postcards or gifts to others	677	34.0
Sharing and talking about news regarding corona	649	32.6
Visiting someone or having someone over for a visit	561	28.1
Sharing photos and/or videos (e.g., Instagram)	558	28.0
Sharing quality time with household members (e.g., focus on children)	523	26.2
Sex	346	17.4
Being active on online communities (e.g., Facebook, Twitter)	343	17.2
Offering help to others (e.g., doing groceries, watching children)	299	15.0
Video calling to share online activities (e.g., games, sporting together)	270	13.5
Setting goals for a minimum amount of social contact (e.g., call at least once a day)	134	6.7
None of the above	192	9.6
Non-social coping strategies		
Going outside	1370	68.7
Housekeeping, decorating and home improvement jobs	1238	62.1
Watching TV (movies/Netflix)	1201	60.3
Reading	1061	53.2
Self-care (eating healthy, getting enough sleep)	1023	51.3
Staying informed about the corona crisis	915	45.9
Gardening	936	47.0
Listening to the radio/music	866	43.5
Spending more time on work	540	27.1
Sports (a workout at home, etc.)	495	24.8
Activities (games, hobbies) to do alone (looking at old photos, making music)	474	23.8
Spend more time with pets	332	16.7
Humor (looking at funny pictures, memes, etc.)	321	16.1
Establishing a routine in the day (e.g., setting a time for activities)	248	12.4
Prayer	237	11.9
Avoiding the news	157	7.9
Taking courses (webinars, etc.)	153	7.7
Meditation	117	5.9
Masturbation	101	5.1
Writing a diary	48	2.4
None of the above	129	6.5

Note: Data were missing for 16 participants.

2.2.2 | Loneliness

Loneliness was measured using the 6-item short form of the De Jong Gierveld and van Tilburg (2010). We averaged the 6 items to obtain a mean score. It assesses social and emotional experiences of loneliness (e.g., "I miss people around me") on a 3-point scale with 1 = "no," 2 = "more or less" and 3 = "yes." Cronbach's alpha in the present study was acceptable ($\alpha = .83$ in October 2019 and $\alpha = .77$ in May 2020).

2.3 | Analyses

For Aim 1, we provided descriptives of coping and loneliness in May 2020, during the pandemic. For Aim 2, we examined relationships between coping strategies, loneliness in May 2020, and demographics. For Aim 3, we used a latent growth curve model to study changes in loneliness from October 2019 (i.e., before the pandemic) until May 2020 and explored individual differences in change by using difference scores (loneliness May 2020 minus loneliness October 2019). For Aim 4, we used LGMs to study whether coping strategies were associated with individual differences in change. In all LGMs, we controlled for non-normality in the loneliness measure by using maximum likelihood estimation with robust standard errors (MLR). By separating measurement error in the observed variables from the underlying latent growth factors, we obtained more accurate estimates of the effect of coping strategies on the growth parameters. See <https://osf.io/dr57w/> for Mplus code and output.

3 | RESULTS

3.1 | Aim 1: Descriptives of coping strategies and loneliness

Table 1 describes how many participants indicated that they used each social and non-social strategy (ordered from high to low). Most participants selected at least one social strategy (90.4%) and at least one non-social strategy (93.5%). Chatting, calling and video calling were amongst the most popular social strategies, each with more than 50% of the participants using it. Going outside, doing housekeeping and chores around the house, watching TV, reading and self-care were among the most popular non-social strategies, again with more than 50% of the participants employing them. In total, participants selected between 0 and 13 (out of 14) social strategies ($M = 4.29$, $SD = 2.77$), between 0 and 20 (out of 20) non-social strategies ($M = 5.95$, $SD = 3.25$), and between 0 and 31 (out of 34) total strategies ($M = 10.23$, $SD = 5.47$).

Figure 1 shows that loneliness scores were relatively low ($M = 1.36$, $SD = 0.39$) and also skewed (i.e., a floor effect), indicating that many individuals reported low levels of loneliness. For the loneliness score, 25% of the values were 1.0, 50% below 1.33, and 75% below 1.5.

3.2 | Aim 2: Relationships between coping strategies, loneliness and demographics

Table S1 (see <https://osf.io/qeksa>) shows the link between coping strategies, loneliness, and demographic variables. Using social and non-social strategies was associated with lower loneliness. The associations with social strategies are on average stronger than with non-social strategies. The strongest associations were found for the following social coping strategies: video calling, meeting others outside, visiting others and sending letters, and for the following non-social strategies: gardening, housekeeping, going outside, reading and working. Associations with count variables show a similar pattern, indicating that using more (especially social) coping strategies was associated with

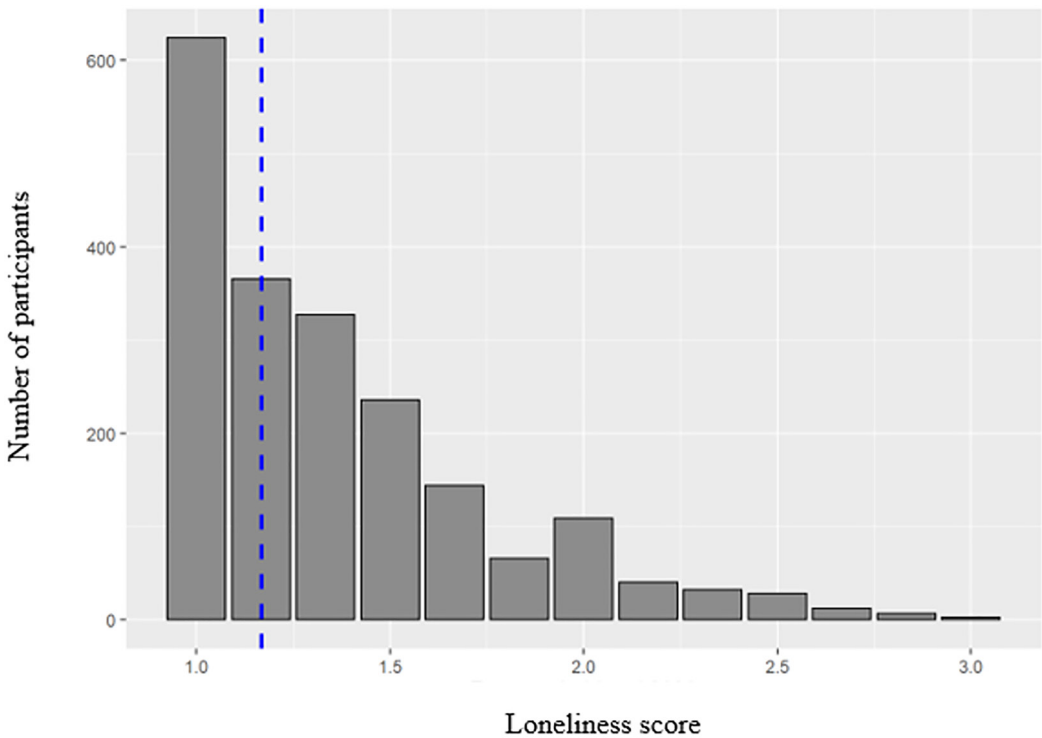


FIGURE 1 Distribution of loneliness scores in May 2020.

lower loneliness. Also, a higher income, having a partner and living with family or others was associated with lower loneliness.

3.3 | Aim 3: Changes in loneliness during COVID-19

Using latent growth curve modeling, we found mean-level increases in loneliness in the subsample of $n = 1993$ participants (age range 17–102 years) followed from October 2019 to May 2020 (Table S2; see <https://osf.io/pzfu3> and Figure 2). Despite this increase, the average score remained low during COVID-19 in May 2020 (i.e., 1.31 in October 2019 and 1.36 in May 2020). To evaluate effect sizes, we transformed the loneliness measures to T -scores. T -scores have a mean of 50 and a standard deviation of 10. Differences between groups or over time of 2, 5, and 8 T -scores can be interpreted as small, medium, and large, respectively (Cohen, 1988). The T -scores were based on the complete representative LISS panel sample from 2019 ($N = 5005$). The longitudinal sample in the current study had a slightly lower mean score on loneliness in 2019 compared to this larger sample (49.5 instead of 50.0) but rose above this average during the COVID-19 pandemic in May 2020. The average increase in loneliness was about 1 T -score, indicating a small effect (Table S2).

Our participants showed large differences in how loneliness changed between October 2019 and May 2020. Difference scores (loneliness May 2020 minus loneliness October 2019) are shown in Figure 3. The possible difference scores ranged from -2 (extreme decrease) to 2 (extreme increase). The difference score ranged from -1.83 to 1.67 . More than 600 respondents (34.9%) remained stable in their loneliness (i.e., a difference score of 0). A substantial group (25.7%) decreased in loneliness. The third and largest group increased in loneliness (39.4%) from October 2019 to May 2020. Most scores fell between -0.5 and 0.5 , which means that an extreme decrease or increase in loneliness was rare.

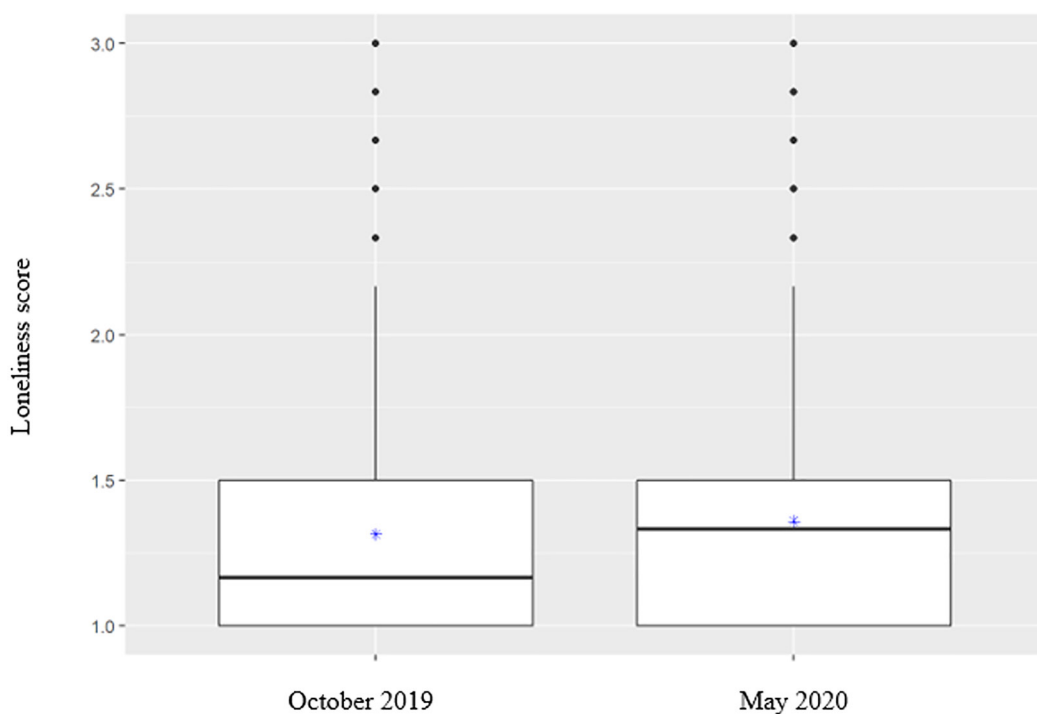


FIGURE 2 Average increase in loneliness. Loneliness was measured on a scale of 1 (*not lonely*) to 3 (*very lonely*). The line indicates the median, the asterisk the mean.

3.4 | Aim 4: Changes in loneliness during COVID-19 related to coping strategies

We examined whether changes in loneliness were related to coping during COVID-19. These analyses were done by using latent growth curve modeling in Mplus. Table S2 (see <https://osf.io/pzfu3>) shows that—contrary to our expectations—changes in loneliness were not significantly related to total coping, social coping or non-social coping measured in May 2020. Thus, the use of coping strategies seems to be associated with perceived loneliness in the moment rather than changes in loneliness over time.

We additionally explored whether changes in loneliness were predicted by income, age, having a partner, living alone or with others, and gender. Age was the only significant predictor of changes in loneliness (Table S2; see <https://osf.io/pzfu3>), indicating that older individuals showed stronger increases in loneliness than younger individuals (Figure 4). Next, we explored whether the effects of coping strategies on (changes in) loneliness were moderated by these covariates. We found two significant interaction effects, indicating that the positive association between the number of social coping strategies and the initial level of loneliness was stronger when people had a partner and when they lived with others than when they were single or lived alone. All other interactions between the number of social coping, non-social coping, and total coping strategies and these covariates did not significantly predict the initial level of loneliness. Additionally, no interaction effects between the demographic variables and coping strategies on changes in loneliness were found (Table S3; see <https://osf.io/h87n6>).

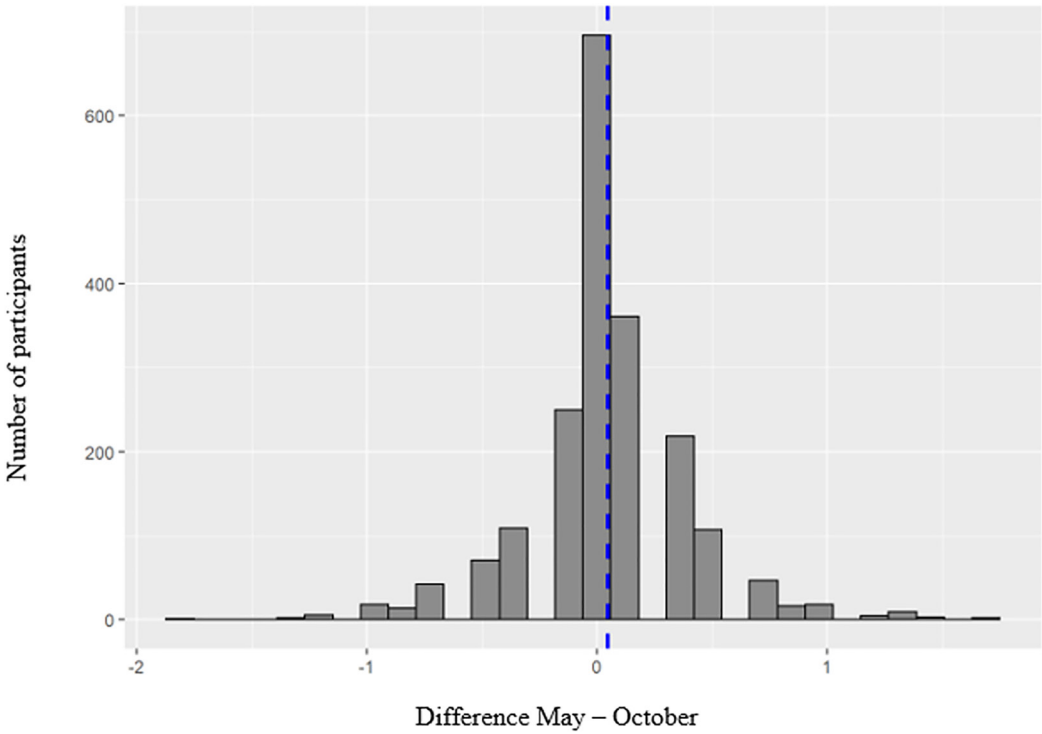


FIGURE 3 Distribution of changes in loneliness from October 2019 to May 2020. The x-axis represents the difference in loneliness between May 2020 and October 2019. A score below zero represents a decrease and a score above zero represents an increase in loneliness.

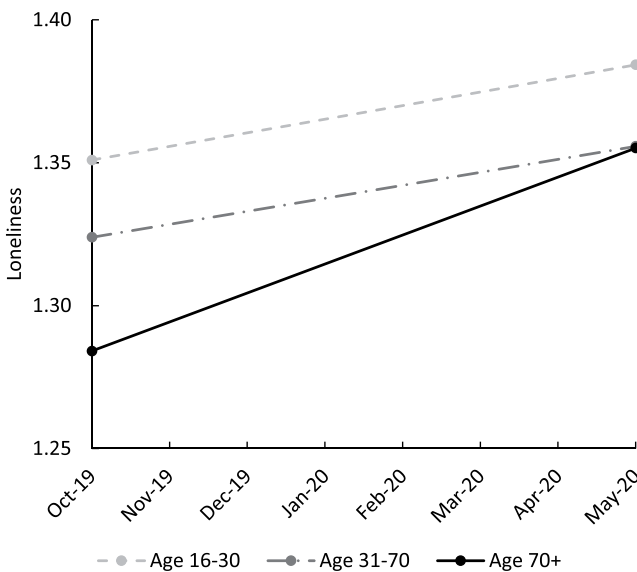


FIGURE 4 Changes in loneliness from October 2019 to May 2020 for three age groups.

4 | DISCUSSION

The present study examined coping strategies and loneliness during the COVID-19 pandemic. First, we described the specific coping strategies people used during the first wave of COVID-19 in the Netherlands. Results indicate that the majority used specific coping strategies to deal with social distancing measures. Chatting and (video)calling were the most popular social coping strategies, and going outside, doing chores, watching TV, reading and self-care were the most popular non-social coping strategies. Second, we examined the link between coping strategies (different types and the number) and loneliness. In line with Hypothesis 1, a higher number of coping strategies was associated with lower levels of loneliness. Concerning the specific types of contact, some interesting patterns appeared: Among the social strategies, face-to-face contact (e.g., video calling, meeting outside) showed the largest negative association with loneliness (while online contact had weak associations), followed by making time for someone (sending letters or gifts, offering help). This is in line with previous research showing that higher social support is linked to lower levels of loneliness during the pandemic (Groarke et al., 2020). Among the non-social strategies, active strategies (e.g., housekeeping and gardening) showed the largest negative association with loneliness. Some non-social strategies that were found to be beneficial for well-being in previous research, such as humor (Umucu & Lee, 2020) and pursuing hobbies (Fullana et al., 2020), were not linked to lower loneliness in this sample.

In line with Hypothesis 2, and with some previous studies (Entringer & Gosling, 2022; Tull et al., 2020), we found a mean-level increase in loneliness between October 2019 (before COVID-19) and May 2020 (during COVID-19), which suggests that the COVID-19 pandemic took its toll on the social lives of people. Yet, in the search for contributors to this decline, we did not find the expected negative link between coping strategies and *changes* in loneliness (Hypothesis 3). It is noteworthy that we only found cross-sectional associations between coping strategies and loneliness, but coping strategies did not seem to *buffer against* decreases in loneliness. One explanation could be that loneliness in fact is a predictor of coping strategies, and that people who already had high levels of loneliness before the pandemic were less likely to actively cope with social distancing measures. Indeed, in previous studies loneliness negatively predicted the use of social strategies over time (Nurmi & Salmela-Aro, 1997). In addition, our findings showed that the decline in loneliness was more pronounced in younger than in older adults, which is in line with research pointing to younger adults having been more negatively affected by the social restrictions (Kuhn et al., 2021).

Our study has some noteworthy practical implications. First, policymakers should consider both physical and mental health when addressing pandemics, given the rise in loneliness during the COVID-19 pandemic. Although the overall effect on loneliness was small, effects might accumulate over longer time periods. Second, we identified both younger (16–30 years old) and older individuals (above 70 years old) as at-risk groups that should receive special attention in similar circumstances in prevention programs and therapy. Younger individuals were more at risk of their loneliness becoming a mental health problem because they already had higher levels of loneliness before the pandemic, emphasizing the need for early support. While older individuals started with lower loneliness levels, they showed the strongest increases, which might intensify when social distancing measures are taken for a longer time. Third, our finding that loneliness was linked to the number of strategies cross-sectionally but not longitudinally suggest that people who were already lonely before the COVID-19 pandemic were less equipped to engage in coping strategies. While people used various coping strategies, they did not effectively counter loneliness over a year. Relying solely on individual efforts may therefore not suffice; policymakers should develop measures to combat loneliness in our society.

We hope this study motivates future research to address the following limitations. First, longer follow-up studies are needed to examine the timeline of the increase of loneliness and if, when, and for whom the changes reversed. Second, loneliness was assessed with a short scale; longer scales should be used in the future and might want to differentiate social and emotional loneliness. Third, the processes underlying the (potentially bidirectional) link between number of coping strategies and loneliness should be studied, which may help explain the moderation effect of having a partner and living with others on their cross-sectional association. Fourth, even though we included many

(34) coping strategies, we only measured whether people used strategies, not the frequency. Also, the association between coping strategies and loneliness might have been influenced by people's subjective evaluations. Specifically, Cohen et al. (2020) showed that only activities that were deemed meaningful were found to be related to decreases in negative affect during COVID-19.

In summary, this study made three major contributions. First, by asking participants of an existing large nationally representative sample about their experience of the (novel) COVID-19 pandemic, we could provide a comprehensive overview of the types of coping strategies people used that is more generalizable than what could be obtained by smaller convenience samples. Second, most studies do not have a pre-COVID-19 assessment of loneliness. By using assessments of loneliness before (October 2019) and during COVID-19 (May 2020), we could examine changes and found increases in loneliness across 7 months. Interestingly, coping strategies were linked with loneliness cross-sectionally, but did not predict its changes. Finally, the panel data set allowed us to explore whether changes in loneliness and effects of coping strategies varied across demographic groups to identify people at risk (i.e., younger adults).

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CONFLICT OF INTEREST STATEMENT

No conflict of interest exists.

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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