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The impact of changing personal relationship dynamics on quality of life throughout the UK COVID-19 lockdowns – a mixed methods study

Research Article

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Abstract:

Background – The COVID-19 pandemic resulted in multiple UK-wide lockdowns, which prevented individuals from meeting friends and family outside their confined households. Prior work suggests this sudden change in social relationship dynamics had a negative impact on mental and well-being outcomes throughout the pandemic. The present study aimed to characterise the influence of changing personal relationship dynamics upon change in life satisfaction within the context of the UK lockdowns.

Method – A longitudinal survey of two waves was distributed to UK individuals following the first and third UK lockdowns. Changes in personal relationships were operationalised as binary variables, and a life satisfaction index was created using the difference in life satisfaction between waves. Multiple linear regression was used to investigate the association between relationship deterioration, change, or improvement and life satisfaction index, controlling for gender and age. A thematic analysis was conducted on written responses to identify factors that may have impacted change in quality of life throughout the pandemic.

Results – Life satisfaction significantly decreased after the initial 2020 lockdown. Within individual survey waves, we observed significant associations between personal relationship dynamics and life satisfaction. No significant association was observed between relationship dynamics within confinement and life satisfaction index. Qualitative analysis identified ten themes that might have also affected life satisfaction change.

Conclusion – Improving personal relationships likely only had a minor impact on positive adaptation and overall quality of life during the pandemic. Future studies would benefit from a greater sample size, to allow the study of specific relationships' impact on quality of life.

Keywords: *COVID-19 • Pandemic • Mental health • Resilience • Social networks • Social relationships*

1. Introduction

The COVID-19 pandemic resulted in a UK-wide "lockdown" on the 26th March 2020, which significantly changed individuals' routines and opportunities to cultivate social connections, with most workplaces, schooling, and activities having been moved from in-person to online to reduce infection spread (Battisti et al., 2022). In the United Kingdom, the initial measures confined everyone – essential workers and shops excluded – within their households up until the beginning of May 2020, when a conditional plan for lifting lockdown was released, allowing people who could not work from home to return to the workplace, but still limiting any other face-to-face contact. Schools and non-essential shops were re-opened in June 2020, and other restrictions were lifted in August 2020, although by September 2020, the government had imposed restrictions on the maximum number of people gathering in one space, banned travel for non-essential purposes (i.e. holidays), encouraged remote working, and enforced a 10 pm curfew on the hospitality sector. A second national lockdown was enforced from the 5th of November 2020 to the 2nd of December 2020 to prevent, in the words of the then-Prime Minister Boris Johnson, a "medical and moral

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disaster for the NHS." This second lockdown saw the introduction of a tiered system enforcing stricter rules in zones with higher infection rates, such as limiting travel between zones. This was followed by a third lockdown, which began 4th of January 2021, with restrictions gradually eased throughout 2021 (Institute for Government, 2022).

Personal networks are notoriously susceptible to change during major lifetime events. For example, when individuals leave school, enter a new workplace, get married, have children, move or migrate, or when they lose significant others. During these periods of change, family, friends, and acquaintances' relationships tend to restructure around new places, interests, routines, and commitments (Alwin et al., 2018; Bidart & Lavenu, 2005; Fischer & Oliker, 1983; Lubbers et al., 2010). As lockdown reduced the possibilities of maintaining regular face-to-face contacts with people living outside individual households, personal networks were inevitably affected. In some cases, reduced daily activities may have provided individuals with more time to stay in touch remotely, while confinement could have strengthened household relationships by allowing more time together. However, overall levels of social isolation and loneliness increased, particularly among older adults (Ernst et al., 2022; Heidinger & Richter, 2020). Prolonged confinement also intensified challenges in households with unhealthy or harmful relationships, as reflected in concerns over rising domestic abuse and child maltreatment during the pandemic (Chandan et al., 2020). Ultimately, confinement had the potential to either enrich or deteriorate personal networks, both outcomes carrying significant implications for quality of life and well-being during the pandemic. It is well-established that maintaining the quality of these personal networks within and outside an individual's household plays a significant role in reducing the risk of mental health issues and promoting quality of life (Demir et al., 2007; Werner-Seidler et al., 2017; Whisman & Baucom, 2012). Reinforcement of the quality and frequency of interactions, either remotely or in person, could have buffered the negative impact of the lockdown on life satisfaction. In contrast, a deterioration in relationships both within and outside someone's household could have exacerbated the negative impact on life satisfaction.

There is an abundance of recent literature investigating the general influences of the COVID-19 lockdowns on quality of life (Brooks et al., 2020; Ferreira et al., 2021; Koc et al., 2022; Pieh et al., 2021). However, there are few studies, if any, to our knowledge, which explore the changes in personal relationships within confinement *between* the UK lockdowns, and the subsequent impact of these changes on quality of life. Each lockdown presented a unique societal context for individuals living in confinement. For example, the first lockdown began when very little was known about COVID-19, whereas the third lockdown began when the UK COVID-19 vaccination programme had already started. It is also important to note that the allowing of "social bubbles" between confined households was not incorporated into restrictions until after the initial lockdown (Institute for Government, 2022), and so it would be reasonable to expect that each lockdown had a different impact on the dynamics of personal relationships and quality of life.

Collating data from two panel surveys distributed following the first and third UK lockdowns, we took a longitudinal mixed-methods approach to investigate how changes in personal relationships within confinement influenced positive adaptation between the first and third UK lockdowns. Given the largely subjective nature of life satisfaction as an outcome, we opted for a mixed methodology approach, in which we identified quantitative trends in the association between relationship dynamics and positive/negative adaptation, followed by a thematic analysis of open-ended responses to explain the context of our findings. We infer an individual's adaptation from the change in life satisfaction score between waves, with the rationale that a change in perceived quality of life despite a significant change to daily routines captures individual resilience (Luthar & Cicchetti, 2000). Considering the established role of personal relationships in maintaining good mental health and quality of life, we hypothesised a linear relationship between the improvement of personal relationships within confinement and increased positive adaptation between lockdown waves, and the same for relationship deterioration and negative life satisfaction.

2. Methods

2.1 Data collection

Data was used from a retrospective survey titled "Life in Lockdown: the impact of coronavirus lockdown on personal experiences and social relationships." This was first circulated online in May 2020, following the initial UK lockdown, and remained open until October 2020 to maximise response numbers. The survey was advertised via social media (professional X/Facebook accounts of co-authors) as well as University WordPress releases, reaching a total of 960 individuals, of which 778 completed the full questionnaire.

The survey questions covered a wide variety of topics, including sociodemographic information, current living situation (i.e. confinement with partner/spouse or children), information relating to the improvement or deterioration of relationships within and outside of confinement, political beliefs, working situation, emotions felt, and life satisfaction.

Between March 2021 and April 2021, an abridged version of the initial survey was sent to initial respondents, with a greater focus on personal relationships and changes in circumstances since the initial lockdown. Together with closed questions related to improvement or deterioration in personal relationships, the second wave survey also asked three open-ended questions following a nested mixed methods design, with the qualitative questions being embedded in the quantitative survey.

Of the original 960 individuals, 425 were reached by the follow-up survey, and 300 completed the questionnaire. Sociodemographic information descriptive statistics from respondents who submitted answers for both survey waves (n = 300) are reported in Table 2, while survey items used for analysis are shown in Table S1. Both surveys received ethical approval from the University of Manchester Research Ethics Committee 2020-9811-15758 and 2021-11264-18039.

2.2 Data preparation and statistical analysis

Data preparation and statistical analyses were carried out using R version 4.3.1, using the *tidyverse* package. Raw data from both survey waves were merged using the respondent identifier and filtered to include only respondents who submitted to both waves of the survey. Respondents were asked to rate their overall life satisfaction on a scale of 1–10, where a score of 1 indicated very low satisfaction and a score of 10 indicated very high satisfaction. To account for individual variation across waves in our regression analyses, a "life satisfaction index" variable was created by subtracting the wave 2 score from the wave 1 score, where a positive value indicated a positive change, and a negative value indicated a negative change.

During each survey wave, respondents were asked if any relationship improved or deteriorated within their confined household and to select with whom the relationship changed from a list. To quantify the improvement or deterioration in any relationship with at least 1 other person in confinement across both lockdowns, we created three binary variables for *any* relationship improvement, deterioration, and change across both waves, which were used as predictors in the regression analysis.

To filter for sub-samples as part of the qualitative component, a five-tier system was employed (Table 1). This tiered system was used to operationalise change in *any* relationship with one or more people, although it was subsequently also used to quantify change in specific relationships (i.e. relationship with a partner/spouse, or children).

To investigate the association between partner relationship change and life satisfaction improvement/deterioration, data were filtered to include respondents who reported being confined with their partner in wave 1 and reported no change in the number of people they were confined with in wave 2. To investigate the association between child relationship change and life satisfaction change, data were filtered to include respondents who reported being confined with 1 or more of their children in wave 1, and reported no change in the number of people they were confined with in wave 2.

A one-way analysis of variance (ANOVA) was used to investigate significant differences between self-reported life satisfaction at each time point (pre-lockdown, wave 1, and wave 2). Linear regression models were used to investigate associations between relationship change, improvement, or deterioration and the life satisfaction index, controlling for gender and age. Ethnicity, household income, and educational attainment were not specified in our regression models due to a lack of diversity in the sample and to avoid adding unnecessary complexity to the model, considering the

Relationship improvement tier	Criteria
1	Relationship(s) deteriorated in both waves with no improvement in either wave
2	Relationship(s) deteriorated only in 1 wave with no improvement in the other
3	Relationship(s) did not change
4	Relationship(s) improved in 1 wave only with no deterioration in the other
5	Relationship(s) improved in both waves with no deterioration in either wave

Table 1. Breakdown of criteria for relationship improvement and deterioration tiers 1–5 used to quantify gross relationship improvement or deterioration between survey waves 1 and 2 for specifying our analytic samples in the qualitative analysis.
Source: Author's contribution.

Characteristic	Count	Percentage
Gender		
Male	64	21
Female	236	79
Age category		
18–29	64	21
30–49	99	33
50+	137	46
Ethnicity		
White (UK)	180	60
White (Irish)	7	2
White (Other)	30	10
White and Asian	4	1
Multiple ethnic background	2	<1
Asian/Asian British (Indian)	4	1
Asian/Asian British (Pakistani)	1	<1
Asian (other)	1	<1
Other (not listed)	1	<1
No answer	70	23
Educational attainment		
No qualifications	1	<1
GCSE or O-Level	5	2
A-levels	20	7
Other school qualifications	1	<1
Undergraduate degree	114	38
Post graduate degree	134	45
Vocational qualifications	16	5
Others	7	2
No answer	2	1
Household income		
Less than £15,000	25	8
£15,000 to £19,999	15	5
£20,000 to £24,999	16	5
£25,000 to £29,999	25	8
£30,000 to £34,999	27	9
£35,000 to £39,999	24	8
£40,000 to £44,999	19	6
£45,000 to £54,999	24	8
£55,000 to £59,999	14	4
£60,000 to £64,999	18	6
£70,000 to £74,999	13	4
£75,000 to £79,999	14	5
More than £80,000	46	15
No answer	20	7

Table 2: *Continued*

Table 2. Sociodemographic information descriptive statistics from respondents who submitted answers for both survey waves (n = 300).

Source: Author's contribution.

relatively small sample. As age and gender were included as covariates in the model, respondents who did not provide information on age or gender were excluded from analyses. The model of change in life satisfaction across waves is summarised in the following equation:

$$Y_{\text{life satisfaction index}} = \beta_0 + \beta_1 X_{\text{relationship deterioration}} + \beta_2 X_{\text{relationship change}} + \beta_3 X_{\text{relationship improvement}} + \beta_4 X_{\text{gender}} + \beta_5 X_{\text{age}} + \varepsilon.$$

2.3 Thematic analysis

The second wave survey asked the following open-ended questions:

Has anything major happened in your life since the lockdown of March 2020 (you moved house, you gave birth, you lost a loved one, you changed job, etc.)?

How have you felt during the lockdown which started in January 2021 compared to the lockdown in March 2020?

And finally, are there any remarks or comments you would like to add about the conditions of your accommodation, work situation, activities, and personal relationships during the pandemic and lockdowns?

Our analytical approach incorporated a pattern-based selection of recurrent themes (Guest et al., 2012), within quantitatively derived sub-groups (Creswell & Clark, 2017). Where a theme (i.e. *loss of a loved one*, *loss of job/redundancy*, etc.) was identified a total of three or more times across all sub-groups, it was considered a recurrent theme. Recurrent themes were matched with two subgroups of answers to the closed questions' survey, obtained by filtering the data by life satisfaction index and gross relationship change level (1–5):

1. Relationship(s) improved, and life satisfaction increased (where relationship improvement tier >3 and positive adaptation index >0)

2. Relationship(s) improved, and life satisfaction decreased (where relationship improvement tier >3 and positive adaptation index <0).

2.4 Mixed methodology approach

In the present study, we adopted a hybrid concurrent-sequential mixed methodology approach, with elements of a sequential explanatory approach (Ivankova et al., 2006; Shorten & Smith, 2017). Although quantitative and qualitative data were collected concurrently for the present study, analysis followed a sequential design, in which interpretation of linear regression models guided the later thematic analysis of qualitative responses (Creswell & Clark, 2017). In the quantitative phase, we aimed to understand first whether changing personal relationships were significantly associated with a change in life satisfaction – we observed this in individual waves, but not longitudinally. Given the modest quantitative evidence underlying the importance of changing personal relationships, in the qualitative phase, we aimed to understand other contextual factors that might diminish the impact of improving relationships on quality of life. In the thematic analysis, we specifically focus on subgroups of respondents who reported relationship improvement, not relationship deterioration, as we sought to understand why quality of life might decrease *despite* improving personal relationships.

By integrating data on changes in life satisfaction, changes in personal relationships, and the themes identified in the thematic analysis of the open ended questions, the mixed methodology adopted in this study allows us to investigate the impact of relationship improvement with significant others, and especially with a partner/spouse and with children, on quality of life during the three periods of confinement in the United Kingdom.

3. Results

3.1 Sociodemographic information

Descriptive statistics of respondents participating in both waves are reported in Table 2. We asked respondents to provide information on ethnicity, household income, and education. In the United Kingdom, school qualifications follow the progression of General Certificate of Secondary Education (GCSE) (O-Levels served a similar purpose and preceded GCSEs before 1988), marking the end of compulsory education, Advanced Levels (A-levels) – required for entry to university studies; students can then move towards higher or vocational qualifications. See Tables S2–S4 for descriptive statistics of various sub-samples, including individuals reporting no change in the number of household members, individuals confined with their partner during both waves, and individuals confined with their children during both waves. No respondents identified as Black/African/Caribbean, Arab, Asian/Bangladeshi, or Asian/Chinese. The majority of respondents identified as female (79%), and most were educated to undergraduate degree level or above (83%). Considering the overrepresentation of female and highly educated respondents, and low ethnic diversity, we acknowledge that this sample is not representative of the UK population in 2020–2021.

3.2 Self-reported life satisfaction changed significantly following the initial UK lockdown in March 2020 but did not change again during the third lockdown in January 2021

The overall change in life satisfaction scores between each relevant time point is visualised in Figure 1. The mean scores for pre-lockdown, March 2020, and January 2021 were 7.36, 5.76, and 5.58, respectively. A one-way ANOVA was conducted to determine if differences in life satisfaction between lockdown periods were significant, followed by a post-hoc Tukey test. Significant differences in life satisfaction score were observed for pre-lockdown to March 2020 (estimated difference = −1.61, 95% confidence interval [CI] [−2.03, −1.20], $p < 0.001$) and for pre-lockdown to January 2021 (estimated difference = −1.80, 95% CI [−2.22, −1.38], $p < 0.001$). No significant difference was observed between the March 2020 and January 2021 lockdowns (estimated difference = −0.19, 95% CI [−0.60, −0.23], $p = 0.54$).

3.3 Improving/deteriorating relationships was significantly associated with increasing/decreasing life satisfaction score in each wave – but not longitudinally

Within individual survey waves – we observed a significant positive relationship between improving personal relationships and life satisfaction score in wave 1 (β = 1.211, 95% CI [0.706, 1.717], $p < 0.001$, adjusted R^2 = 0.145) and wave 2 (β = 0.782, 95% CI [0.230, 1.334], p = 0.006, adjusted R^2 = 0.05). Conversely, we found a negative

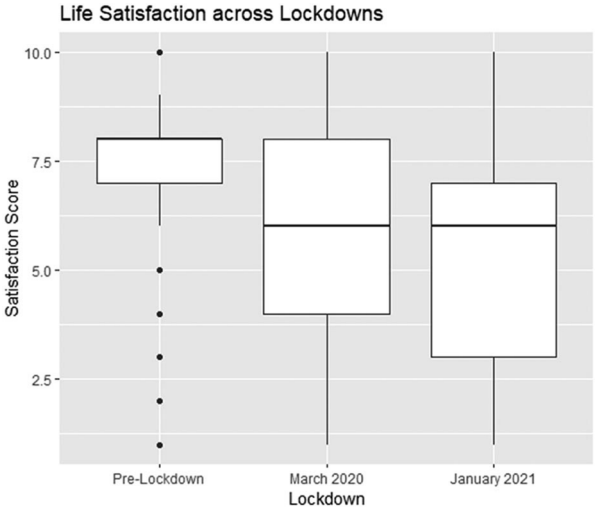

Figure 1. Boxplot of retrospective life satisfaction scores from n = 300 respondents at three time points: pre-lockdown, March 2020, and January 2021. Axes: x = lockdown period and y = satisfaction score (1–10), with standard error included as error bars.
Source: Author's contribution.

Relationship improvement with at least 1 other (any) individual within confinement Subgroup	Sample size	Recurrent theme	Count
Relationship(s) improved and life satisfaction Increased	41	Being unable to see elderly relatives	0
		Death of a loved one	2
		Developing depression	0
		Family illness	2
		Feeling fortunate/lucky	5
		Friends/family moving out	0
		Moving home	12
		No major life changes occurred	5
		Not being able to see family	1
		Redundancy/changing work situation	8
Relationship(s) improved and life satisfaction Decreased	64	Being unable to see elderly relatives	3
		Death of a loved one	7
		Developing depression	1
		Family illness	7
		Feeling fortunate/lucky	5
		Friends/family moving out	4
		Moving home	6
		No major life changes occurred	2
		Not being able to see family	7
		Redundancy/changing work situation	7

Table 3. Summary of recurrent themes observed in subgroups where the relationship between overall relationship improvement throughout confinement and change in life satisfaction was investigated.
Source: Author's contribution.

relationship between deteriorating relationships and life satisfaction in wave 1 (β = −1.614, 95% CI [−2.281, −0.946], p < 0.001, adjusted R^2 = 0.145) and wave 2 (β = −1.003, 95% CI [−1.814, −0.191], p = 0.015, adjusted R^2 = 0.05).

We observed no significant relationship between individual change in life satisfaction score between waves and overall relationship improvement (β_1 = 0.159, 95% CI [−0.950, 1.269], p = 0.777, adjusted R^2 = 0.010), deterioration (β = 0.026, 95% CI [−0.740, 0.794], p = 0.946, adjusted R^2 = 0.010) or change (β = −0.387, 95% CI −1.652, 0.878], p = 0.547, adjusted R^2 = 0.010) across waves – though we observed a trend in the estimates in similar directions to the analysis of individual survey waves.

Preliminary analysis highlighted that a large proportion of respondents reported being confined with their partner/spouse (47%) or with 1 or more children (19%) throughout both lockdowns – therefore, we conducted a similar analysis within these sub-groups to investigate the impact of these specific relationships. No significant association was observed between relationship improvement (β = −0.949, 95% CI [−3.049, 1.150], p = 0.373, adjusted R^2 = −0.012), deterioration (β = −0.975, 95% CI [−2.849, 0.898], p = 0.305, adjusted R^2 = −0.012), or change (β = 0.640, 95% CI −1.591, 2.872], p = 0.571, adjusted R^2 = −0.012) within confinement and life satisfaction index across both lockdowns in the partner/spouse sub-group. Similarly, no significant association was observed between relationship improvement (β = −0.503, 95% CI [−3.211, 2.204], p = 0.710, adjusted R^2 = −0.002), deterioration (β = −1.424, 95% CI [−3.602, 0.752], p = 0.195, adjusted R^2 = −0.002), or change (β = 0.175, 95% CI [−2.987, 3.338], p = 0.912, adjusted R^2 = −0.002) within confinement and life satisfaction index across both lockdowns within the children sub-group.

3.4 Qualitative analysis of open-ended responses relating to major life changes between lockdown waves

Ten recurrent themes (shown in Tables 3 and 4) were identified across all subgroups: *being unable to see elderly relatives*, *death of a loved one*, *developing depression*,

Relationship improvement with partner/spouse Subgroup	Sample size	Recurrent theme	Count
Relationship improved and life satisfaction Increased	21	Being unable to see elderly relatives	0
		Death of a loved one	1
		Developing depression	0
		Family illness	0
		Feeling fortunate/lucky	5
		Friends/family moving out	0
		Moving home	5
		No major life changes occurred	3
		Not being able to see family	0
		Redundancy/changing work situation	2
Relationship improved and life satisfaction Decreased	30	Being unable to see elderly relatives	3
		Death of a loved one	3
		Developing depression	3
		Family illness	5
		Feeling fortunate/lucky	1
		Friends/family moving out	0
		Moving home	4
		No major life changes occurred	4
		Not being able to see family	3
		Redundancy/changing work situation	7

Table 4. Summary of recurrent themes observed in filtered subgroups where the relationship between relationship improvement with a partner/spouse throughout confinement and change in life satisfaction was investigated.

Source: Author's contribution.

family illness, *feeling fortunate/lucky*, *friends/family moving out*, *moving home*, *no major life changes occurred*, *not being able to see family*, and *redundancy/changing work situation.* There were comparatively more individuals in the *Relationship(s) improved and life satisfaction decreased* subgroups who provided responses containing themes relating to major negative life events, such as *death of a loved one*, *family illness*, and *not being able to see family. Moving home* was a consistent theme across both subgroups, as was *redundancy/changing work situation* within the "overall relationship improvement" group.

4. Discussion

We observed a significant overall decrease in life satisfaction after the initial 2020 lockdown, as expected. However, this did not change significantly between the first and third UK lockdowns. The plateau of life satisfaction scores may reflect individuals' adaptation to living within confinement throughout the UK lockdowns. As high variation in life satisfaction responses at both lockdown time points was observed, we used individual changes in life satisfaction between lockdowns as a measure of positive adaptation during the pandemic.

We hypothesised a positive linear relationship between the improvement of 1 or more relationships within confinement and the change in self-reported life satisfaction between lockdown waves. We found no significant association between the overall improvement, deterioration, or change of confined relationships across lockdowns and change in life satisfaction, although trends were observed in the hypothesised directions. Improving confined relationships in each lockdown wave individually was associated with a significant positive change in life satisfaction across lockdowns, and relationship deterioration had an opposite effect. This significant cross-sectional but not longitudinal effect of relationship change on life satisfaction suggests personal relationship dynamics within confinement may have had a short-term but not sustained effect on perceived quality of life, and may be less relevant for positive adaptation across the lockdowns. This contrasts with prior work emphasising the importance of relationship quality to change in life satisfaction (Gustavson et al., 2016; Roth et al., 2024). Though prior work has not examined the influence of personal relationship dynamics in the context of confinement during the COVID-19 pandemic, which introduced unique stressors influencing individual change in quality of life.

As indicated in the qualitative component of our analysis, individual experiences throughout the pandemic varied greatly. Many individuals who demonstrated a positive change in overall relationship improvement but a negative change in life satisfaction also reported significant negative life events occurring between lockdown time points. For example, it is unlikely that improving relationships within confinement would completely offset the impact of losing a loved one or the financial stress of redundancy. It is perhaps more likely that the improvement of personal relationships throughout confinement acted as a buffer against the impact of negative life events on quality of life – perceived social support has previously been identified as a moderator of stress throughout the COVID-19 pandemic (Rui & Guo, 2022). Interestingly, *moving home* was a consistent theme across both subgroups, as was *redundancy/changing work situation* within the "overall relationship improvement" group, which may reflect the importance of home (Sheldrick et al., 2022) and work (Chan et al., 2023) environments in influencing the quality of life during the pandemic overall. Integrating with the quantitative component of our analysis, overall, these findings suggest that recent events and experiences likely have had a greater impact on reported quality of life than more stable or slowly changing factors, including changing personal relationship dynamics during confinement.

Similar analyses were conducted in the partner/spouse and children relationship subgroups, though we observed no significant effects of improving or weakening these relationships on life satisfaction change. This contrasts with prior literature suggests that the emotional health of parents and children was closely related throughout the pandemic (Bate et al., 2021) and that partner/spouse relationships may serve as a buffer in the face of existential threats (Florian et al., 2002).

5. Limitations and future directions

The greatest limitation of this study is the lack of sufficient sample size to investigate the impact of specific relationships on quality of life, with sufficient statistical power. We also acknowledge that the operationalisation of relationship change does not fully capture the nuances of relationship dynamics during each lockdown and excludes individuals who followed alternative relationship trajectories (i.e. the relationship deteriorated in wave 1 and then improved in wave 2) and that the only measures of quality of life used were self-reported life satisfaction scores – which may have been significantly influenced individual

factors such as mood or recentness of influential life events. We also acknowledge that the longitudinal component of our analysis does not account for individuals with stable life satisfaction scores – it may be that individuals reporting improving relationships across waves also report consistently high life satisfaction scores, or vice versa for relationship deterioration.

Future studies investigating the impact of personal relationships on quality of life in the presence of significant societal stressors would benefit from more diverse sampling, additional survey waves, additional sub-measures of life satisfaction (i.e. mental health, financial stability, safety at home), and longitudinal designs. Conducting follow-up interviews may also enrich qualitative analyses and provide much-needed individual context to disentangle the impact of specific personal relationships from other influencing factors.

6. Conclusion

Self-reported life satisfaction decreased significantly after the initial UK lockdown, but did not change again significantly following the third UK lockdown. Within individual survey waves, we observed significant associations between personal relationship dynamics and life satisfaction. No significant association was observed between personal relationship dynamics within confinement and change in quality of life between lockdowns. Qualitative analysis indicated individual experiences varied greatly across lockdowns, and there are a variety of individual factors that may have impacted the quality of life, such as bereavement, work, and home-related life changes occurring between lockdowns. Future studies would benefit from a greater sample size to allow the study of how specific relationships might impact quality of life within confinement.

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Author contributions

All authors contributed to the conceptualisation and completion of the project. Ryan J. Shepherd carried out the main analyses and produced the first draft of the manuscript. Elisa Bellotti and Emilie Vrain designed and distributed the survey, collected the data, and conducted preliminary analyses. Ryan J. Shepherd and Elisa Bellotti finalised the manuscript.

Conflict of interest statement

The authors have no financial or non-financial interests to disclose.

Ethics

Ethical approval was received from the University (Ref: 2020-9811-15758; 15/06/2020 for first wave survey. Ref: 2021-11264-18039; 02/03/2021 for second wave survey). Respondents provided consent to the use of information prior to participating in each survey, for analysis and publication.

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