



Family Life During and Beyond COVID-19: The Impact of Relationship Quality on Caregivers' Management of Paid Work, Caregiving, and Self-Care

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Sarah C. Hunter^{1,2} , Chelsea E. Mauch^{1,3}, Kate Ridley⁴,
Jessica Shipman^{1,2}, Damien W. Riggs⁴ ,
John Coveney^{1,2}, Rebecca Feo^{1,2}, and
Rebecca K. Golley^{1,2}

Abstract

This multi-method project examined how Australian caregivers navigated family life during the COVID-19 pandemic in 2020 and subsequent impact on family health behaviours. Participants were invited to complete all three phases. In phase 1, 115 caregivers completed an online survey, focussed on 2020 experiences of COVID-19. In phase 2, 96 of the participants completed a use-of-time recall and 80 completed a dietary recall examining participants' health behaviours including how they spent their time, their physical activity, and diet quality. Phase 3 involved 24 of the participants completing an online

¹Caring Futures Institute, Flinders University, Bedford Park, SA, Australia

²College of Nursing and Health Sciences, Flinders University, Adelaide, SA, Australia

³Health and Biosecurity, Commonwealth Scientific and Industrial Research Organisation, Adelaide, SA, Australia

⁴College of Education, Psychology and Social Work, Flinders University, Adelaide, SA, Australia

Corresponding Author:

Sarah C. Hunter, Caring Futures Institute, Flinders University, Sturt Road, Bedford Park, SA 5042, Australia.

Email: sarah.hunter@flinders.edu.au

story completion task, focussed on understanding participants' sense-making of COVID-19. Through triangulating analyses of the three phases, this project identified how poor relationship quality negatively affected families' experiences of significant disruptions and transitions. This project provides a nuanced picture of how COVID-19 in 2020 impacted family life and highlights the importance of caregiver relationship quality for family health and wellbeing.

Keywords

24-hour dietary recall (ASA24), time use, physical activity, pandemic, story completion, COVID-19

Introduction

Heterosexual family life has seen considerable changes over recent decades, in part due to evolving social and economic conditions (e.g. perceptions of masculinity and fathering, female workforce participation, childcare arrangements, flexible workplace arrangements, and access to extended family support). These have had significant impacts on how family life is understood and enacted.

Whilst the gendered division of labour is narrowing in heterosexual families, many men in families continue to do less housework and caregiving than their partners, even when both parents are engaged in full-time paid work (Wilkins, Laß, Butterworth, & Vera-Toscano, 2019). The tensions around gendered expectations of parenting and the division of labour impact family wellbeing, including relationship and parenting satisfaction and physical and mental health (Borgkvist, Moore, Elliott, & Crabb, 2018; Craig & Churchill, 2020; Riggs & Bartholomaeus, 2020).

The COVID-19 pandemic presents itself as a once-in-a-generation social experiment about family life. It has had a profound effect globally, not just as a medical phenomenon but also in its impacts on individuals and society (Carroll et al., 2020; Jiloha, 2020; Karageorghis et al., 2021). Beyond the direct impacts of the virus, there have been a multitude of indirect effects. In particular, it has had significant impacts on family life (Chu, Schwartz, Towner, Kasparian, & Callaghan, 2021). Social-distancing and isolation measures have seen a large proportion of adults – including parents – spending more time at home, balancing work, housework, self-care, and caregiving. Many families have lost employment and income, and continue to be governed by various regulations concerning, for example, social distancing as a key tactic to stop COVID-19 spread (Chu et al., 2021; Hand, Baxter, Carroll, & Budinski, 2020).

The result of this: these unprecedented times have disrupted the taken-for-granted routines and structures that have upheld and maintained modern family life. The COVID-19 pandemic gives us a unique opportunity to examine how parents and caregivers have negotiated and managed family life during this time. Research examining the pandemic highlights the importance of unpaid care work and how it continues to fall primarily upon women in heterosexual families (Bahn, Cohen, & van der Meulen Rodgers, 2020). It is argued that while the pandemic is having a disproportionately negative impact upon heterosexual women's unpaid workload in the home, it arguably presents an opportunity for a gendered renegotiation of care and house responsibilities (Alon, Doepke, Olmstead-Rumsey, & Tertilt, 2020).

The Current Study

To understand how the COVID-19 pandemic has impacted Australian family life, this multi-method project, conducted in three phases, examined how Australian parents and caregivers navigated the COVID-19 pandemic in 2020 and the subsequent impact on family health behaviours. Specifically, this project sought to:

1. Characterise the time caregivers/parents devote to domestic tasks (household tasks caregiving) during COVID-19 disruptions and transitions.
2. Understand lifestyle behaviours (diet quality, use of time, and sleep) during COVID-19 disruptions and transitions.
3. Explore how caregivers/parents made sense of the impacts of COVID-19 on family life.

Methods

This cross-sectional multi-method study used quantitative and qualitative methods. Data were collected in three phases. Participants were invited to complete all three components. In phase 1, participants completed an online survey focussed on their experiences of COVID-19 and its impact on their family life. Phase 2 focussed on examining participants' health behaviours and involved a telephone-based use-of-time recall and an online dietary intake recall. Finally, phase 3 involved participants completing an online story completion task. Phase 3 was focussed on understanding participants' sense-making of the COVID-19 pandemic impacts on family life. Data were collected between July and October 2020. Ethics approval was provided by the Flinders University Human Research Ethics Committee (project no. 2091). Participants were provided with a study information sheet and required to give consent in order to access the phase 1 online survey. Participants were given a

\$10 voucher following completion of phase 2 and an additional \$15 voucher following completion of phase 3. Reporting guidelines for cross-sectional research (Strengthening the Reporting of Observational Studies in Epidemiology-Nutritional Epidemiology (STROBE-nut)) (Lachat et al., 2016) and qualitative research (consolidated criteria for reporting qualitative research (COREQ)) were used (Tong, Sainsbury, & Craig, 2007).

Materials

COVID-19 Survey. An online survey was administered via Qualtrics (www.qualtrics.com). The survey included questions regarding individual and family demographics, such as age, gender, country of birth, education, employment status, income, and household structure. Questions regarding relationship problems, feeling rushed, satisfaction with the division of household tasks and childcare, and fairness in the division of household tasks were from the Household, Income, Labour Dynamics in Australia (HILDA) survey (Melbourne Institute, 2020). The Positive and Negative Affect Scale (PANAS) (Watson, Clark, & Tellegen, 1988) and the Fatigue Assessment Scale (FAS) (Michielsen, De Vries, & Van Heck, 2003) were also included. Participants were asked to complete the HILDA questions retrospectively for the pre-COVID-19 period (before the 23rd of March 2020) and early-COVID-19 period (23rd of March to 15th of May 2020) in Australia, and for the present time (i.e. at survey completion between the 26th of July and 13th of October 2020). The PANAS and FAS were completed retrospectively for the pre-COVID-19 period only, along with the present (i.e. at survey completion).

Use-of-Time Recall. Use-of-time data were collected using the Multimedia Activity Recall for Children and Adults (MARCA) (Gomersall, Olds, & Ridley, 2011). The MARCA is a computerised self-report instrument where participants recall their daily activities in 5-min segments using a segmented day format. The MARCA was administered by a computer-assisted telephone interview where participants were asked to recall their previous 48 h. Interviews were scheduled at times that suited the participant which subsequently determined which 2 days of the week were recalled. During the recall, the interviewer coded each reported activity by choosing from over 500 discrete activities organised under categories in the MARCA. The physical intensity of each activity was assigned based on a linked compendium of energy costs in multiples of resting metabolic rate (METs), based on the Compendium of Physical Activities (Ainsworth et al., 2011). The MARCA is a valid and reliable self-report recall instrument with test-retest intraclass correlation coefficients of 0.99–1.00 for key outcomes (including moderate to vigorous physical activity (MVPA), screen time, and sleep) and convergent validity of $\rho = 0.72$ for MVPA and $r = 0.77$ for sedentary behaviour

compared with device-worn measures of physical activity and sedentary behaviour (Gomersall et al., 2011; Gomersall, Pavey, Clark, Jasman, & Brown, 2015).

Diet Intake Recall. Dietary intake was assessed using the Automated Self-Administered 24-hour Dietary Assessment Tool (ASA24), Australian version (2016), developed by the National Cancer Institute, Bethesda, MD, United States. The ASA24 is an online tool for collecting 24-hour dietary recall data using the seven-pass method (i.e. meal-based quick list, meal gap review, detail pass, forgotten foods, final review, last chance, and usual intake) with digital photographic measures to aid portion size estimation (Subar et al., 2012). Compared to dietary intake assessed via the plate wastage method, the ASA24 estimates energy intake within 0.52 kcal (95% CI -236, 237) (Kirkpatrick et al., 2014). Foods are linked to 8-digit food codes from the Australian Food Supplement and Nutrient Database (AUSNUT) 2011-3 (FSANZ, 2020). Participants were supported to login to the ASA24 website at the end of the MARCA telephone interview and encouraged to complete the 24-hour recall that day.

Story Completion Methodology

The third phase used a story completion methodology to understand how participants made sense of COVID-19 and its impacts on Australian family life. Story completion methodology (Gravett, 2019) involves participants being given a story ‘stem’ which consists of at least one complete sentence. Participants are then invited to finish the story in their own words. This method differs from self-reporting techniques in that instead of describing personal experiences, participants are writing about a hypothetical scenario which allows exploration of their perceptions and understandings surrounding a specific topic. In our study, we included three story stems focussed on different aspects of family life (household tasks, childcare, working from home). Several different versions were drafted by the first author (SCH), and the research team came together to workshop and determine the final wording for each stem. In all story stems, the main protagonist was Alex, Jordan, or Sam. Names of the protagonist were intentionally non-gender specific to allow participants to interpret the stem in their own way in relation to gender roles. [Appendix A](#) provides the story stems and instructions given to participants. Participants were randomly assigned a story stem.

Setting and Participants

Eligible participants were adults residing in Australia who were living in a family as parents (through any method: conception, adoption, or foster care

being some examples). This manuscript includes only the first caregiver recruited per household. A convenience sample was recruited via advertised (sponsored) paid advertisements on social media platforms Twitter and Facebook. Flyers were distributed via Healthy Development Adelaide and various playgroups in South Australia and Victoria.

Data Preparation

COVID-19 Survey. Relationship problems were rated on 5-point Likert scale from ‘not many’ to ‘very many’ and collapsed into a dichotomous variable indicating ‘few’ (1–2) and ‘many’ (3–5). The FAS included 10 items to assess the level of fatigue experienced (e.g. ‘I am bothered by fatigue’), each being scored on a 5-point Likert scale from ‘never’ to ‘always’. Two items required reverse coding before scores were summed to produce a total score between 10 and 50, with higher scores indicating higher levels of fatigue. The PANAS included 20 items, 10 reflecting positive affect and 10 negative affect. Participants indicated the extent to which they felt positive or negative traits over a specified period on a 5-point Likert scale from ‘very slightly or not at all’ to ‘extremely’, with scores for items summed to produce an overall score out of a maximum of 50 for positive and negative affect. A dichotomous ‘lockdown’ variable was created comparing participants residing in Victoria to those residing elsewhere, as at the time of survey completion, residents of the state of Victoria were under state-wide ‘stay at home’ orders due to a COVID-19 outbreak, while the remainder of Australia were under comparatively few restrictions.

Use-of-Time Recall. Use-of-time variables derived from the MARCA were daily minutes spent in: sleep; moderate to vigorous physical activity (MVPA); screen time; household tasks; and childcare. MVPA was defined as activities requiring 3 or more METs (metabolic equivalent of task where 1 MET is equivalent to resting). Screen time included watching television, playing video games, and using a computer or tablet for either work or recreational purposes. Household tasks consisted of predominantly indoor chores, such as cleaning, laundry, and food preparation. Childcare activities included feeding, dressing, bathing, and playing. Daily minutes spent in each of the use-of-time variables were averaged across the 2 days of recall.

Diet Intake Recall. The Dietary Guideline Index (DGI) derives a total diet score representing compliance with Australian Dietary Guidelines (NHMRC, 2013) and was used as proxy for diet quality. It comprises 11 components reflecting the concepts of variety, adequacy, quality, and moderation reflected in the ADGs (Hendrie, Baird et al., 2017). The validated scoring algorithm compares reported intake to age- and gender-specific cut-off points to derive food group

score and a total index score. Intake data were converted to serves of the five food groups (bread and cereals, vegetables and legumes, fruit, dairy and alternatives, and meat and alternatives) and discretionary choices (i.e. energy dense and nutrient poor foods and beverages) using the AUSNUT classification structure (FSANZ, 2020) and the Australian Bureau of Statistics Discretionary Food Flag (ABS, 2014). The index scoring system was then applied to the food group intake data providing the diet quality variable. A higher score indicates better compliance with the dietary guidelines.

Data Analysis

Quantitative Data. Quantitative data analyses were conducted in SPSS version 26 (IBM, US). Descriptive statistics included mean and standard deviation for age in years, satisfaction with childcare and household tasks, and FAS and PANAS scores; median and interquartile range for use of time and diet quality; and count and percent for sociodemographics, relationship problems, fairness in the division of household tasks, and feeling rushed. Univariate analyses, including independent t-tests, chi-square tests, and Mann–Whitney U tests were conducted to determine if there were differences on key variables between those in lockdown and those not in lockdown at the time of survey completion, and to explore the association between relationship problems and satisfaction with the division of childcare and household tasks. Hierarchical regression models were then conducted, using data from partnered participants only, to explore the association between relationship problems, and diet quality and use of time, when controlling for satisfaction with the division of household tasks and childcare, and key demographics. Variables were entered in three steps (1) gender (reference group = female), lockdown status (reference group = not in lockdown), and age (in years); (2) relationship problems (reference group = few); and (3) satisfaction in the division of childcare and household tasks. Outcomes were diet quality score and the number of minutes spent sleeping, in moderate and vigorous physical activity, using screens, doing household tasks, and caring for children. The regression sample of between 62 and 74 (i.e. those with complete data for all relevant variables) allowed for 10–12 participants per variable, which meets recommendations of at least 5–20 participants per variable for regression analyses (Austin & Steyerberg, 2015).

Qualitative Data. The qualitative story completion data were analysed using content analysis (Elo & Kyngas, 2008). The completed stories were first read by all members of the research team in order to familiarise themselves with the data. A research assistant systematically coded the stories using descriptive labels. The team then came together to review the systematic coding and deductively analysed against the quantitatively data analyses.

Results

A total of 115 first caregivers per household completed the phase 1 survey. In phase 2, 89 (77%) of the participants who completed the survey completed a use-of-time recall and 76 (66%) completed a dietary intake recall. Finally, 24 (21%) of the participants completed the story completion task in phase 3 (see [Figure 1](#) for flow of participants through phases).

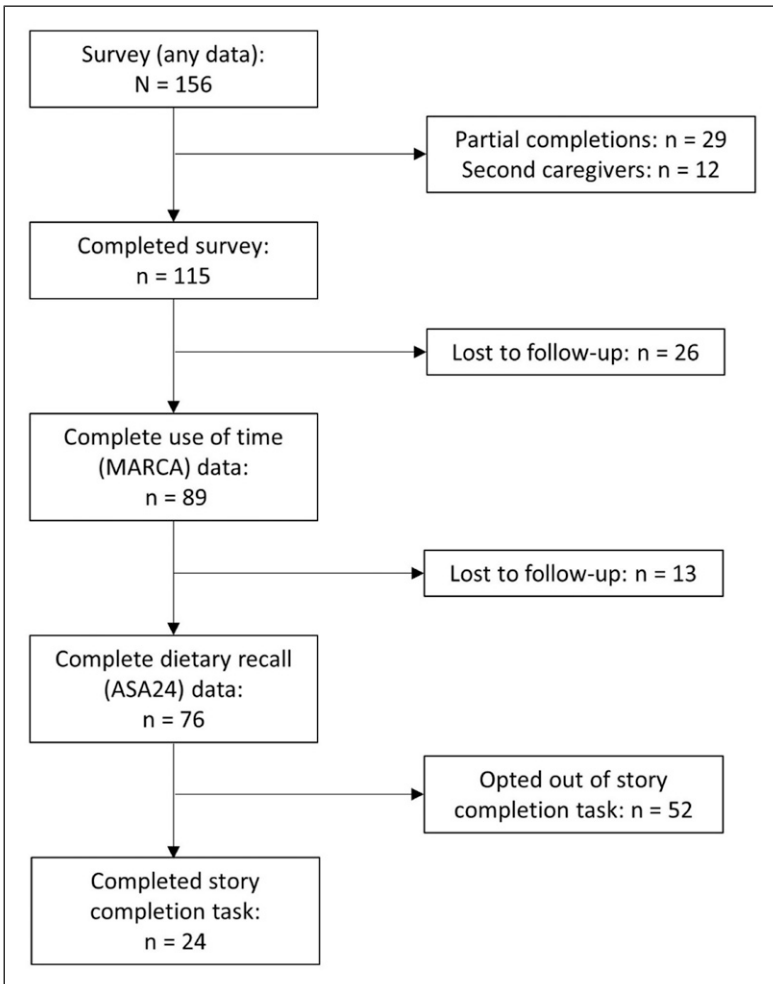


Figure 1. Flow of participants through phases of the family life during and beyond COVID-19 study.

The proportion of dietary recalls that were completed on a weekend day was 21/76 (28%), and 34/89 (38%) participants recalled at least one weekend day in their 48 h use-of-time recall. The mean (SD) age of participants was 40.2 (8.2) years, with most identifying as female (110/115, 96%) born in Australia (94/115, 82%) and residing in South Australia (42/115, 36%) and Victoria (39/115, 34%). Most had a university education (81/115, 70%) and were partnered (102/115, 89%), with around 10% identifying as either homosexual or bisexual (12/115). A relatively even proportion of participants were parents of one (38/115, 34%), two (44/115, 39%), and three or more (31/115, 27%) children, with 55% (63/115) having at least one child aged between 6 and 12 years, and 43% (50/115) having at least one child aged between 2 and 5 years. Around a third (35/115, 30%) of participants worked part-time and a fifth (25/115, 22%) full-time, with just over half (65/115, 56%) earning an individual salary less than \$60k AUD. The demographics of the regression sample ($n = 74$) were similar (data available on request), however only included partnered participants.

Quantitative Results

Table 1 presents survey results for relationships, wellbeing, use of time, and diet quality across the three time points (pre- and early-COVID-19 recalled retrospectively and at survey completion). Self-reported satisfaction with the division of household tasks and childcare, and perceived fairness in the division of household tasks, was relatively consistent between the retrospectively reported pre-COVID-19 and early-COVID-19 time points, and at survey completion. A similar proportion of participants reported an increase in satisfaction (23/99, 23%), as those who reported a decrease in satisfaction (26/99, 26%), suggesting that a number of participants experienced some extent of change in satisfaction over the course of COVID-19 pandemic in 2020. More participants reported many relationship problems during early-COVID-19 (40/100, 40%) and at survey completion (36/100, 36%), compared with pre-COVID-19 (23/99, 23%), with a third (33/99, 33%) reporting increased relationship problems between pre-COVID-19 and survey completion. More participants reported rarely or never feeling rushed during early-COVID-19 (41/115, 36%) and at survey completion (20/115, 17%) than pre-COVID-19 (5/115, 4%), with 44% (50/115) reporting an overall reduction in feeling rushed (compared with 20% (23/115) feeling more rushed). The positive affect subscale of the PANAS was lower at survey completion than pre-COVID-19, while negative affect and the FAS (fatigue) score was slightly higher (Table 1). Compared to those not in lockdown, those in lockdown (i.e. residents of Victoria at time of survey completion) reported having greater negative affect ($p = .029$) and spent more time sleeping ($p = .039$) (Table 2).

Table 1. Relationships, Wellbeing, Use of Time, and Diet Quality in the Study Sample (Maximum Available Sample $N = 115$).

Variable	Category	Pre-COVID-19 (Before 23rd March 2020) ^b				Early-COVID-19 (23rd March to 15th May 2020) ^b				At Survey Completion (26th July to 13th October 2020)	
		n	M (SD) or Median (IQR)	n	M (SD) or Median (IQR)	n	M (SD) or Median (IQR)	n	M (SD) or Median (IQR)	n	M (SD) or Median (IQR)
Satisfaction with division of childcare ^c	Out of maximum 10 (mean (SD))	100	6.2 (2.9)	99	5.8 (3.1)	99	6.1 (3.0)	99	6.1 (3.0)	99	6.1 (3.0)
Satisfaction with division of household tasks ^c	Out of maximum 10 (mean (SD))	100	5.8 (2.9)	100	5.7 (3.1)	100	5.8 (3.1)	100	5.8 (3.1)	100	5.8 (3.1)
Fairness in the division of household tasks	Much more than my fair share	98	40 (40.8)	97	37 (38.1)	97	37 (38.1)	97	37 (38.1)	97	37 (38.1)
	A bit more		26 (26.5)		31 (32.0)		26 (26.8)		26 (26.8)		26 (26.8)
	My fair share		24 (24.5)		23 (23.7)		29 (29.9)		29 (29.9)		29 (29.9)
	A bit less		6 (6.1)		4 (4.1)		3 (3.1)		3 (3.1)		3 (3.1)
	Much less than my fair share		2 (2.0)		2 (2.1)		2 (2.1)		2 (2.1)		2 (2.1)
Relationship problems	Few	99	76 (76.8)	100	60 (60.0)	100	64 (64.0)	100	64 (64.0)	100	64 (64.0)
	Many		23 (23.2)		40 (40.0)		36 (36.0)		36 (36.0)		36 (36.0)
Feeling rushed	Almost always	115	25 (21.7)	115	20 (17.4)	115	22 (19.1)	115	22 (19.1)	115	22 (19.1)
	Often		47 (40.9)		18 (15.7)		28 (24.3)		28 (24.3)		28 (24.3)
	Sometimes		38 (33.0)		36 (31.3)		45 (39.1)		45 (39.1)		45 (39.1)
	Rarely/never		5 (4.3)		41 (35.7)		20 (17.4)		20 (17.4)		20 (17.4)
Positive affect ^d	Range 10 to 50 (mean (SD))	115	32.8 (7.6)	—	—	115	26.9 (8.0)	—	—	115	26.9 (8.0)
Negative affect ^d	Range 10 to 50 (mean (SD))	115	19.5 (6.3)	—	—	115	22.8 (8.7)	—	—	115	22.8 (8.7)

(continued)

Table 1. (continued)

Variable	Category	Pre-COVID-19 (Before 23rd March 2020) ^b		Early-COVID-19 (23rd March to 15th May 2020) ^b		At Survey Completion (26th July to 13th October 2020)	
		n	n (%), M (SD) or Median (IQR)	n	n (%), M (SD) or Median (IQR)	n	n (%), M (SD) or Median (IQR)
Fatigue ^d	Range 10 to 50 (mean (SD))	115	23.5 (5.1)	—	—	115	26.9 (7.0)
Moderate/vigorous activity ^e	Minutes (median (IQR))	—	—	—	—	89	42.5 (20.0, 75.0)
Sleep ^e	Minutes (median (IQR))	—	—	—	—	89	497.5 (450.0, 533.8)
Screen time ^e	Minutes (median (IQR))	—	—	—	—	89	187.5 (98.8, 317.5)
Household tasks ^e	Minutes (median (IQR))	—	—	—	—	89	102.5 (62.5, 153.8)
Childcare ^e	Minutes (median (IQR))	—	—	—	—	89	77.5 (28.8, 141.3)
Diet quality score ^f	Of max 100 (median (IQR))	—	—	—	—	76	40.7 (31.7, 58.7)

^aSample size varies across variables due to missing data and questions that were not applicable to some participants.

^bData collected retrospectively at survey completion between 26th July and 13th October 2020.

^cHigher values indicate a greater level of satisfaction.

^dHigher values indicate more of the attribute.

^eData collected using the Multimedia Activity Recall for Adults and Children (MARCA). Moderate/vigorous activity included activities eliciting 3 or more METs; screen time consisted of watching television, playing video games, and using a computer or tablet for either work or recreational purposes. Household tasks consisted of predominantly indoor chores, such as cleaning, laundry, and food preparation. Childcare activities included feeding, dressing, bathing, and playing. (Gomersall et al., 2011).

^fDiet quality score = Dietary Guideline Index (DGI) (Hendrie, Baird et al., 2017; Hendrie, Rebuffi et al., 2017) calculated from data collected via the Automated Self-Administered 24-Hour Dietary Assessment Tool (Subar et al., 2012); higher values indicate higher dietary quality.

Table 2. Relationships, Wellbeing, Use of Time, and Diet Quality of Those in Lockdown Compared With Those Not in Lockdown at Survey Completion (26th July to 13th October 2020) (Maximum Available Sample $N = 115$).^a

Variable	In Lockdown (Victorian Residents)		Not in Lockdown (Rest of Australia)		T-Test/ χ^2 /Mann-Whitney U	p Value
	n	n (%), M (SD) or Median (IQR)	n	n (%), M (SD) or Median (IQR)		
Satisfaction with division of childcare ^b	33	6.2 (3.3)	66	6.0 (2.8)	t (97) -0.31	.756
Satisfaction with division of household tasks ^b	33	6.0 (3.3)	67	5.6 (3.0)	t (98) -0.59	.558
Fairness in the division of household tasks	33	16 (48.5) 14 (42.4) 3 (9.1)	64	47 (73.4) 15 (23.4) 2 (3.1)	χ^2 4.91 (1)	.027 ^{*c}
Relationship problems	34	10 (29.4) 24 (70.6)	66	26 (39.4) 40 (60.6)	χ^2 0.59 (1)	.444
Feeling rushed	39	9 (23.1) 5 (12.8) 14 (35.9) 11 (28.2)	76	13 (17.1) 23 (30.3) 31 (40.8) 9 (11.8)	χ^2 7.83 (3)	.050
Positive affect ^d	39	26.5 (8.0)	76	27.1 (8.1)	t (113) 0.82	.709

(continued)

Table 2. (continued)

Variable	In Lockdown (Victorian Residents)		Not in Lockdown (Rest of Australia)		T-Test/ X^2 /Mann-Whitney U	p Value	
	Category	n	n (%)	M (SD) or Median (IQR)			
Negative affect ^d	Of max 50 (mean (SD))	39	25.4 (9.5)	76	21.4 (7.9)	t (113) -2.23	.029*
Fatigued	Range from 10 to 50 (mean (SD))	39	28.6 (7.5)	76	26.0 (6.7)	t (113) -1.86	.065
Moderate/vigorous activity ^e	Minutes (median (IQR))	28	33.8 (10.6, 60.0)	61	45.0 (20.0, 100.0)	U 691.00	.149
Sleep ^e	Minutes (median (IQR))	28	515.0 (473.1, 555.0)	61	490.0 (441.3, 525.0)	U 1087.50	.039*
Screen time ^e	Minutes (median (IQR))	28	185.0 (115.6, 303.8)	61	187.5 (85.0, 317.5)	U 913.50	.599
Household tasks ^e	Minutes (median (IQR))	28	106.3 (56.3, 148.1)	61	102.5 (66.3, 158.8)	U 805.50	.668
Childcare ^e	Minutes (median (IQR))	28	67.5 (23.1, 126.9)	61	77.5 (31.3, 150.0)	U 782.50	.527
Diet quality score ^{6g}	Of max 100 (median (IQR))	24	43.3 (33.5, 56.8)	52	40.2 (31.0, 60.5)	U 613.00	.902

^aSample size varies across variables due to missing data and questions that were not applicable to some participants.

^bHigher values indicate a greater level of satisfaction.

^cLess than my fair share² and 'my fair share' collapsed into one category for chi-square analysis due to cell counts less than 5 (violating chi-square assumptions).

^dHigher values indicate more of the attribute.

^eData collected using the Multimedia Activity Recall for Adults and Children (MARCA) (Gomersall et al., 2011). Moderate/vigorous activity included activities eliciting 3 or more METs; screen time consisted of watching television, playing video games, and using a computer or tablet for either work or recreational purposes. Household tasks consisted of predominantly indoor chores, such as cleaning, laundry, and food preparation. Childcare activities included feeding, dressing, bathing and playing.

^fDiet quality score = Dietary Guideline Index (DGI) (Hendrie, Baird et al., 2017, Hendrie, Rebuli et al., 2017) calculated from data collected via the Automated Self-Administered 24-Hour Dietary Assessment Tool (Subar et al., 2012).

^gHigher values indicate higher dietary quality.

*p < .05.

Those reporting many relationship problems had lower satisfaction in the division of childcare and household tasks, across both retrospectively reported time periods, and at survey completion (Table 3). In regression models using data at time of survey completion only and controlling for gender, lockdown status, and age, relationship problems and satisfaction with the division of household tasks and childcare were not associated with diet quality or time spent on MVPA, household tasks, or childcare (Table 4). Standardised coefficients (beta) showed that being in lockdown ($\beta = 0.25$) and having higher satisfaction with the division of childcare ($\beta = 0.41$) were associated with more time spent sleeping. Being older ($\beta = 0.29$) and having a lower satisfaction with the division of household tasks were associated with more time spent using screens ($\beta = -0.43$). Being older was also associated with more time spent on household tasks ($\beta = 0.29$) and less time spent on childcare tasks ($\beta = -0.42$). Sensitivity analyses controlling for the number of weekend days recalled in the use-of-time data did not change regression outcomes.

Table 3. Independent T-Test Analyses Between Relationship Problems and Satisfaction With the Division of Childcare and Household Tasks in the Study Sample ($n = 97$).

	Few Relationship Problems		Many Relationship Problems		Independent T-Test	p Value
	n	Mean (SD)	n	Mean (SD)		
Pre-COVID-19 (before the 23rd March 2020) ^a						
Satisfaction with the division of childcare	74	6.6 (2.6)	23	5.0 (3.2)	$t(95) 2.47$.015*
Satisfaction with the division of household tasks	74	6.2 (2.8)	23	4.8 (3.1)	$t(95) 2.10$.038*
Early-COVID-19 (23rd March to 15th May 2020) ^a						
Satisfaction with the division of childcare	58 ^b	6.5 (2.6)	39	4.9 (3.6)	$t(95) 2.41$.019*
Satisfaction with the division of household tasks	59	6.2 (2.7)	39	5.0 (3.5)	$t(96) 1.80$.077
At survey completion (26th July to 13th October 2020)						
Satisfaction with the division of childcare	62	6.6 (2.5)	35	5.1 (3.3)	$t(95) 2.48$.015*
Satisfaction with the division of household tasks	63	6.5 (2.7)	35	4.6 (3.4)	$t(96) 3.00$.004*

^aData collected retrospectively at survey completion between 26th July and 13th October 2020.

^bSample size varies due to missing data.

* $p < 0.05$.

Table 4. Regression Analyses of Relationship Problems, Satisfaction With the Division of Childcare and Diet Quality ($n = 62$)/Use of Time ($n = 74$)^a at Survey Completion (26th July to 13th October 2020) in the Family Life During and Beyond COVID-19 Study Sample.

	Diet Quality ^b		Sleep ^c		MVPA ^c		Screen Time ^c		Housework (HW) ^c		Childcare (CC) ^c	
	B (SE)	β	B (SE)	β	B (SE)	β	B (SE)	β	B (SE)	β	B (SE)	β
Gender ^d	3.97 (12.20)	0.05	-50.91 (26.80)	-0.21	-25.85 (41.51)	-0.08	100.49 (70.16)	0.16	-29.60 (38.57)	-0.09	-32.66 (51.09)	-0.07
Lockdown status ^e	-2.75 (5.86)	-0.07	28.86 (13.37)	0.25*	-37.54 (20.72)	-0.22	9.42 (35.02)	0.03	-4.69 (19.25)	-0.03	-11.27 (25.50)	-0.05
Age (years)	0.36 (0.30)	0.17	-0.59 (0.73)	-0.09	1.32 (1.12)	0.14	4.69 (1.90)	0.29*	2.61 (1.04)	0.29*	-5.02 (1.38)	-0.42**
Relationship probs ^f	-0.02 (5.44)	0.00	-19.06 (13.19)	-0.16	6.72 (20.44)	0.04	44.99 (34.54)	0.15	-10.78 (19.00)	-0.07	-30.91 (25.15)	-0.14
Satisfaction div CC	0.74 (1.37)	0.11	7.75 (3.46)	0.41*	-0.33 (5.36)	-0.01	17.15 (9.07)	0.35	-8.37 (4.98)	-0.32	-7.20 (6.60)	-0.20
Satisfaction div HHT	1.07 (1.29)	0.17	-4.55 (3.20)	-0.25	3.93 (4.96)	-0.15	-19.58 (8.38)	-0.43*	6.98 (4.61)	0.28	6.44 (6.10)	0.19
Adjusted R ²	-0.016		0.154**		0.013		0.104*		0.094*		0.126*	
R ² change	0.066		0.061		0.019		0.067		0.036		0.016	

Abbreviations: CC = childcare; div = division; HHT = household tasks.

^aOnly the final step of each hierarchical model has been presented.

^bDiet quality score = Dietary Guideline Index (DGI) (Hendrie, Baird et al., 2017, Hendrie, Rebulli et al., 2017) calculated from data collected via the Automated Self-Administered 24-Hour Dietary Assessment Tool (Subar et al. 2012).

^cData collected using the Multimedia Activity Recall for Adults and Children (MARCA) (Gomersall et al., 2011). Moderate/vigorous activity included activities eliciting 3 or more METs; screen time consisted of watching television, playing video games, and using a computer or tablet for either work or recreational purposes. Household tasks consisted of predominantly indoor chores, such as cleaning, laundry, and food preparation. Childcare activities included feeding, dressing, bathing and playing.

^dReference category = female.

^eReference category = not in lockdown.

^fReference category = few.

** $p < .05$; *** $p < .01$.

Qualitative Results

Of the 24 participants who completed the story completion task, 8 participants completed story stem 1, 8 participants completed story stem 2, and 8 completed story stem 3. The total word count of the analysed material is 3194. The stories ranged from 24 words to 359 words, with an average of 128 words. Despite participants being randomised to the different story stems, we developed three main themes across the stems, these included time, household practices, and family relationships.

Theme 1: Time. Across all three story stems, we developed a significant and recurring theme of participants speaking about time. Participants responded to the story stems through reference to perceived increase in time due to being at home more and not having outside activities to engage in (e.g. not having to commute). Participants commented on the ‘additional days’ (MP) and ‘additional free time’ (APM), and this was framed in a positive light, with some participants acknowledging that there are some things about ‘their old life that they don’t miss’ (MP). This discussion of having more time aligns with the quantitative finding of participants reporting an overall reduction in feeling rushed compared to pre-COVID-19 life. Participants responded to the story stems in a way that demonstrates how COVID-19 shifted participants perspective and how they value time:

As things start to return to normal Jordan thinks about what she’d like to keep from this experience- mostly she thinks the quiet time after school was good and she’d like not to be running around to quite so much. It’s a reminder too that weekends have the opportunity to be more than time to prep for the week ahead.
(AR)

However, the story completion task also demonstrated that it was not as straight forward as participants feeling that the story stem fictional characters would be unilaterally positive as a direct result of increase in time. Time was also positioned as precarious, with some participants framing COVID-19 as requiring the fictional characters to put a ‘pause’ (NEB) on life and wanting to ensure they didn’t ‘waste’ it (NEB):

...the “life pause” of COVID is frightening and he’ll [sic] anything he can to ensure it’s not a wasted pause on a short life... (NEB)

Further, participants suggested that for the fictional characters the positive response to an increase in time diminished, and the novelty wore off, as the pandemic continued:

At first he enjoyed the extra time at home finding lots of things around the house to keep him busy but as the time went on he and the weather got colder he lost interest in these tasks. (KP)

This first theme of time demonstrates how participants perceived families in the story stems negotiated the structural changes of family life, that is, being home more and less outside of home activities, and the resulting emotional responses. The next two themes demonstrate how participants discussed how these structural changes impacted how the fictional characters in the story stems spent their time in regard to household practices and family relationships.

Theme 2: Household Practices. Across all three story stems, participants spoke about the ways in which COVID-19 impacted the household practices of chores and cleaning undertaken by the fictional characters. Following on from the previous theme of time, participants spoke about how more time spent at home resulted in more chores, creating a sense of tension and frustration for the fictional characters. This highlights the ways in which COVID-19 – and the need to stay at home – was perceived by participants to have disrupted the structures that maintain family life for the fictional characters and the subsequent disorder it created.

Sam felt an enormous burden as (almost) inevitably the household tasks, which had now increased due to the family being around all the time, fell on her shoulders. She got on with it, as nobody else would otherwise, but at times she felt physically and mentally exhausted. Suddenly, her normally clean and tidy house felt messy, as she struggled to fit in the extra household tasks in her life, on top of everything else. (AB)

On Saturdays Sam's husband drove the kids to a variety of sporting activities while Sam took the opportunity to tidy up and get on top of domestic chores. Now with everyone at home, the amount of meal preparation, cleaning and tidying has dramatically increased, but Sam is still the only one doing most of this work. (TAM)

Here, we can see the importance AB ascribed to household tasks for Sam. Despite the labour required to keep house chores going, even if physically and mentally exhausted, it was positioned as a priority to maintain. Further, in TAM's response to Sam's situation, we can see how previously their family structure was maintained, but now having everyone at home has created tension and difficulty in achieving the household tasks.

However, in contrast to these stories of household tasks creating frustration and exhaustion, some participants wrote about how COVID-19 provided the

fictional characters with more time to prioritise household tasks in a positive and meaningful way:

Being at home more Sam and the family had plenty more time to work on the household tasks. They were using the dryer less and were able to get those little things done that normally don't get done like cleaning the ceiling fans, the windows, the pantry and getting out in the garden more. Everybody was a lot less stressed and able to relax more in their clean and tidy home. (SK)

Sam enjoys the additional time her partner spends at home, which has created more opportunities for a more equitable division of household chores and childcare duties. (IF)

Family relationships and dynamics in these stories impact how household practices are enacted and how individuals feel about divisions of labour. This aligns with the quantitative finding of those reporting many relationship problems having lower satisfaction with the division of childcare and household tasks. For some having more time together as a family created a positive impact on household tasks, whereas for others it created significant stress. This aligns with the final theme focused on how COVID-19 impacted family relationships.

Theme 3: Family Relationships. The final theme focusses on how participants spoke about the ways in which the relationships of the fictional character's family, in particular the sense of connection and bonding between parents and children, were shaped in different ways through COVID-19 lockdowns. As identified in the quantitative results, participants equally reported an increase and decrease in their own overall satisfaction over the course of the pandemic. These findings make sense in the context of participants' story responses discussing opportunities for fictional characters to focus on family relationships, speaking about the characters being provided with the chance for 'quality time together' (IF) and 'reconnection' (ST). However, participants also identified the realities of how lockdown can impact intimate family relationships. Therefore, participants appeared to orient to how negotiating family connection is affected by COVID-19 lockdown in a variety of positive and negative ways.

Some participants described COVID-19 as positively enabling more intimacy and connection with children for the fictional characters in the story stems, for example, having the time to play board games (GK), do crafts, and walk or bike with the children to school (JA).

They spent more time enjoying one another's company, making memories and new routines. (RH)

Without the extra commute time and social requirements of office-based work, Alex and the kids spend more quality time together. They do craft activities and order some robotics kits to build together. (FV)

FV and RH discuss how the pandemic provided the fictional characters with more time together which resulted in an increase in ‘quality’ activities. But for others, family connection came through a shared experience of the mess and challenges of lockdown as something that families might ‘muddle through together’ (ST). Others presented a sense of ambivalence about family relationships for the fictional characters, for example, feeling simultaneously ‘lucky to have this time together, while also feeling resentment for each other as they have lost their options for escape’ (JS).

Acknowledgement of the pandemic creating tension and resentment within families and relationships provides insight into the quantitative finding of an increase in reported relationship problems over the course of the pandemic. In one story stem response, TC describes how an increase in physical presence compounded a sense of worry and concern about the impact on mental health and relationships for the fictional character. TC described the need to look beyond the immediate to an imagined future, where things would be ok:

She knows this is just a blip in their lives and that things will get better - at some point. Perhaps they will all look back on this time and wonder how they managed to survey [sic], so long in the same house together without rupturing the ties that bind them. Perhaps they’ll realise that it wasn’t that hard after all. They are strong. (TC)

Thus, for some, the story completion task was an opportunity to demonstrate how COVID-19 represented a threat to family relationships and the need to dig deep in different ways in order to overcome the threat. There were acute challenges in navigating and working on relationships, describing times when it became a tricky and sometimes unwelcome burden.

As the days and weeks wore on, the cracks began to show. The family found it difficult to find their ‘me’ time since someone always interrupted, and tempers were getting shorter. (SRR)

These story completion responses provide insight into the quantitative finding of positive affect being lower and negative affect being slightly higher during the pandemic compared with pre-COVID-19. Nearly all the story completions highlighted that there was an expectation or assumption that families were able to experience an increase in enjoyment in their familial relationships during the pandemic. However, this expectation or aspirational ideal created tension for families, evidence in the story from SS, who said:

Alex felt a quiet murderous rage each time another parent commented on how close and connected their family had become. [...] Alex's colleagues talked about sourdough and watching a lot of Netflix and how great it was to "slow down". Alex woke up early and cried a little at the start of each day. (SS)

Discussion

The COVID-19 pandemic has presented itself as a once in a generation social experiment and an opportunity to examine the social structures that uphold and maintain modern family life. This study explored how the COVID-19 pandemic has impacted Australian family life through a three-phase multi-method study. Specifically, we sought to characterise the time caregivers/parents devote to domestic and lifestyle behaviours during the pandemic and how caregivers/parents make sense of the impacts of COVID-19 on family life.

Parents and caregivers in this study reported changes in satisfaction and an increase in relationship problems over the course of the COVID-19 pandemic in 2020. They also reported a reduction in feeling rushed, however, a decrease in positive affect, and increase in negative affect. Supplemented with our qualitative content analysis, where we identified three themes focussed on time, household practices, and family relationships, our findings can be interpreted in a way that demonstrate the importance of family relationships for how a pandemic is navigated and the subsequent impact on self-care and care work. Studies examining unpaid care work (i.e. childcare and household tasks) during the COVID-19 pandemic have highlighted that women in heterosexual relationships continue to be disproportionately held responsible for care activities and that the pandemic contributed to intensifying this (Bühler et al., 2021). However, our study demonstrates that it is more complex than simply women doing all of the work. Instead, what we have highlighted is the significance of family relationships and dynamics on how care work and household tasks are distributed or, more importantly, the perception of, and satisfaction with, how they are distributed.

Specifically, in our study, we identified that a similar number of participants reported an increase in overall satisfaction in the division of household and childcare task as those who reported a decrease in satisfaction. At the outset, this demonstrates a varied response to experiences of the COVID-19 pandemic. Further, whilst participants reported a reduction in feeling rushed, they reported an increase in fatigue as well as an increase in negative affect, during the pandemic compared with life before COVID-19. These findings speak to the complexity of navigating a contemporary pandemic and the associated lockdowns and restrictions.

In the Australian context, the state of Victoria experienced one of the longest global lockdowns related to COVID-19 (Czeisler et al., 2021), and our

participants who were residing in Victoria, at the time of completing the survey, reported higher negative affect than those not in a lockdown. This reinforces the significant impact of lockdown on individuals overall mental health and wellbeing (Czeisler et al., 2021).

Focussing on how participants spent their time, we identified that older participants spent more time on household tasks and less time spent on childcare tasks. Further, parents in a lockdown at the time of completing the study who reported a higher satisfaction with the division of childcare spent more time sleeping, whereas older participants who had a lower satisfaction with the division of household tasks, spent more time using screens. While the use-of-time data were only collected at one time point, these observations suggest that in challenging times, satisfaction with how care for others is distributed within a family may have an impact of self-care behaviours. Further, our findings support studies identifying how time use during the COVID-19 pandemic impacted mental health and wellbeing. For example, Bu, Steptoe, and Mak and Fancourt (2021) identified how time spent on chores was associated with improved mental health and wellbeing, whereas time spent watching television was associated with declined mental health and wellbeing.

In order to further understand these findings and gain insight into how participants made sense of the pandemic, our story completion analysis identified three key themes relating to COVID-19: time, household practices, and family relationships. What we found was that participants ascribed importance to time, suggesting that the fictional characters in the story stems were likely to have enjoyed this feeling of having more time, whereas others felt like the characters were wasting time or felt lost as time went on. This experience of time interacted with household practices where participants reported that the fictional characters were likely to experience feelings of tension and frustration around an increase of chores and not being able to get on top of them, whereas others felt the characters had more time to focus on chores in a more meaningful and positive way. Finally, this notion of time and household tasks interacted with how participants spoke about family relationships. Some participants spoke about the fictional characters enjoying having more time to spend together and feeling reconnected, whereas others felt the characters were likely to be overwhelmed by the close proximity and pressure to feel satisfied with this increased time together as a family.

Strengths and Limitations

Our study has a notable strength. The multi-method approach allowed for an examination of family life during the COVID-19 pandemic in a unique way. Using the story completion methodology allowed us to provide a narrative to supplement and make sense of the quantitative findings. However, this

approach resulted in the study design having three phases and retention across the phases was difficult. Further, our participants were mostly women in heterosexual contexts.

Conclusions and Future Directions

Overall, this study demonstrates how COVID-19 has disrupted the foundations of modern family life and has challenged the industrialised individual agent. The COVID-19 pandemic has revealed the importance of family dynamics and family relationships for overall health and wellbeing. This aligns with the recently published Caring Life Course theory, a unifying theory of care and self-care across the life course (Kitson et al., 2022) that demonstrates how strong care networks impact and influence our capacity and capability to provide care for self and for others.

Understanding family life and care work from a life course perspective allows us to appreciate the importance of transitions and key points. COVID-19 has been a universal transition for families and has highlighted how crucial relationships are. The capacity and capability to care for self and others is contingent on our relationships. While we started to address this, our findings raise questions around the gendered nature of family relationships and its impact on care for self and others. A recent study (Auóardóttir & Rudólfadóttir, 2020) revealed the gendered discourses on family life during the pandemic; therefore, a more detailed analysis of our story completion data through a discursive or critical feminist lens is warranted. Further, more research is needed to examine how diverse families negotiated the COVID-19 pandemic in comparison to perceived heteronormative contexts.

The COVID-19 pandemic has demonstrated that the structures surrounding our lives are uncertain and, at times, unstable. A lesson to be learned from the pandemic is that we need to promote and develop social resources (i.e. interpersonal relationships and networks of care; Elmer, Mephram, & Stadtfeld, 2020) that can be drawn on in times of crisis. Therefore, if we want to prepare, as a society, for the ongoing impacts of COVID-19 as well as prepare for future transitions and/or pandemics, we need to focus on interventions that support family relationships, as opposed to interventions focussed on health outcomes.

Appendix A

Phase 3 Story Stems and Follow-Up Questions

The story stems and instructions were as follows:

1. *Sam experienced many changes due to COVID-19 restrictions (lockdown). Sam and the rest of their family spent a lot more time at home than what they usually would.*

Describe how Sam and their family managed household tasks during this time. You can have the following questions in mind if you like: How does Sam feel about how they are managing household tasks? How is family life going? What has Sam learnt from this?

2. *During COVID-19 restrictions(lockdown), Jordan and their family were spending more time at home. Jordan's children were unable to spend time with their friends and extended family members after school and on weekends. They were also unable to attend their regular after school activities.*

Describe what this is like for Jordan's family. You can have the following questions in mind if you like: How does Jordan feel? How does Jordan balance work and family life? What has Jordan learnt from this experience?

3. *Before COVID-19 restrictions (lockdown) Alex worked full-time with a commute. They also dropped off and picked up their child(ren) to and from school. Due to restrictions Alex's work was reduced to three days a week and they had to work from home.*

Describe what this was like for Alex. You can have the following questions in mind: How does Alex feel? How does Alex spend the two days not in paid work? Does Alex have more time not commuting? What has Alex learnt from this experience?

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ORCID iDs

Sarah C. Hunter  <https://orcid.org/0000-0002-3407-0774>

Damien W. Riggs  <https://orcid.org/0000-0003-0961-9099>

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