

Time Spent on Informal Childcare and Parents' Mental Health During the COVID-19 Pandemic: Is there a Gender Difference?

"This thesis has been written as a study assignment under the supervision of an Utrecht University teacher. Ethical permission has been granted for this thesis project by the ethics board of the Faculty of Social and Behavioral Sciences, Utrecht University, and the thesis has been assessed by two university teachers. However, the thesis has not undergone a thorough peer-review process so conclusions and findings should be read as such."



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Abstract

Introduction: It is important to understand the potential positive and negative consequences of COVID-19 measures. Therefore, the aim of this study was to investigate the impact of changes in informal childcare time on parents' well-being, with a focus on gender. It was hypothesized that increased childcare time would negatively impact mental health, moderated by gender. *Methods:* This study merged three datasets from the LISS panel, encompassing comprehensive information on childcare time, mental health, gender, and other relevant factors. Data were analyzed with multiple linear regression and the PROCESS tool. *Results:* Contrary to expectations, changes in childcare time did not significantly influence parents' mental health. Gender did not moderate the relationship between childcare time and mental health. However, parents' mental health in 2019 appeared to influence their mental well-being in 2020, indicating pre-existing conditions were important during the pandemic. *Discussion:* The study revealed that mothers increased their time in childcare more than fathers, aligning with previous research. However, contrary to expectations, these changes in childcare time did not significantly influence parents' mental health. Moreover, gender did not moderate the relationship between childcare time and mental health as hypothesized. Notably, the study demonstrated that parents' mental health prior to the pandemic significantly influenced their mental health during the lockdown. This finding emphasizes the importance of considering pre-existing mental health conditions when addressing the well-being of parents during crisis situations. *Conclusion:* Overall, this study adds valuable insights to the existing literature, challenging preconceived notions about the relationship between childcare, gender, and mental health. By considering the complexities of these factors, policymakers can create informed policies that prioritize the mental health of parents and promote a more equitable and supportive society.

Introduction

Problem description

At the onset of 2020, families worldwide found themselves facing a new set of challenges that posed risks to their health, safety, and overall well-being (Brown, 2020). Parents, in particular, experienced heightened stress levels, with reports of increased anxiety, hopelessness, tension, and sleep difficulties (Almeida, 2022). The additional responsibilities in childcare and household tasks were perceived as burdensome for most parents, leading to a higher likelihood of experiencing negative emotions (Bujard et al., 2020; Sprang & Silman, 2013).

The World Health Organization declared a pandemic on March 12, 2020, as COVID-19 rapidly spread and caused thousands of fatalities worldwide (Ciotti et al., 2020). To contain the spread of the virus, governments implemented social distancing measures, which entailed staying at home and maintaining a specific distance from others (Del Boca, 2020; Maragakis, 2020). Consequently, schools were among the first institutions to close, significantly impacting families (Almeida et al., 2022; Blanden, 2021). Childcare facilities also shut down as a result, and the need for grandparents to provide care diminished due to the increased infection and mortality risks they faced (Yerkes et al., 2020; Li et al., 2020; Peeri et al., 2020). These circumstances severely limited parents' options for both formal and informal childcare.

While COVID-19 was not the sole global public health issue, its long-term effects on families are anticipated to be detrimental (Brown, 2020). However, the pandemic appears to have had a more significant impact on women than men. This disparity can be attributed, in part, to the higher representation of women in essential public sectors such as healthcare and education (Queisser et al., 2020). These occupations, often undervalued and underpaid, assumed increased importance during the COVID-19 crisis. Moreover, the temporary closure of female-dominated businesses like retail, hospitality, and catering further exacerbated the disproportionate effect of lockdown measures on women (Yerkes et al., 2020). Consequently, it is expected that women will experience a greater impact on their mental health compared to men during and after the COVID-19 pandemic.

In addition to these stressors, an important consideration is the potential effect of increased childcare responsibilities on parental well-being. This study aims to investigate the impact of changes in informal childcare time on parents' well-being, taking gender into account. Gender is a crucial factor, as previous research indicates differences in mental health outcomes (Afifi, 2007) and the division of informal childcare (Koster et al., 2022). The COVID-19 pandemic provides an intriguing case for this research, as it resulted in a significant increase in the amount of time parents spent on childcare (Andrew et al., 2020).

Scientific and social relevance

Extensive research has been conducted on the impact of COVID-19 on mental health, particularly focusing on school-aged children and adolescents (Cullen et al., 2020; Pfefferbaum & North, 2020; Talevi et al., 2020; de Miranda et al., 2020; Nearchou et al., 2020; Pfefferbaum, 2021; Schuurman et al., 2021). These studies have revealed a decline in well-being among these groups when schools closed and social distancing measures were implemented. However, there is a notable lack of research examining the mental health of

parents during local school closures, with limited consideration given to gender differences. Existing studies that do consider gender often focus solely on the division of childcare and domestic work, neglecting the examination of mental well-being (Zamberlan et al., 2021). Investigating potential disparities in mental health between fathers and mothers in times of school closures is scientifically relevant as it contributes to a more comprehensive understanding of the issue. Additionally, it provides an opportunity to test the applicability of existing theories within the context of a pandemic.

The exploration of these hypothetical inequalities holds social relevance as well. Research has demonstrated that stressed parents are more prone to engaging in harsh parenting behaviors, including abuse and neglect (Beckerman et al., 2017; Brown, 2020). Furthermore, the emotional and mental state of parents significantly influences child development (May, 2021). Children with parents experiencing severe psychological distress exhibit slower progress in reading, communication, and math skills (Mensah & Kiernan, 2010). They also demonstrate lower levels of personal, social, and emotional growth (Mensah & Kiernan, 2010).

Considering the impact of the pandemic on both parental and child mental health, it becomes imperative to understand the potential positive and negative consequences of COVID-19 measures. This knowledge can inform future policymaking in response to crises, emphasizing the importance of prioritizing parents' mental well-being (Spinelli et al., 2020).

Overview of existing research

Parents have frequently been researched in the context of the pandemic. Division of work and care between mothers and fathers is often considered. Hipp and Bünning (2021) found that mothers still performed more unpaid work (e.g., domestic work and childcare) compared to fathers during the lockdown. According to Zamberlan and colleagues (2021), when a woman earned the most, she still invested more time in unpaid work. Additionally, it was found that men did increase their time in unpaid work during the lockdown, however, this increase was only small (Farré et al., 2020). The burden fell unequally on mothers, who already did most of the unpaid work before COVID-19. Farré and colleagues concluded that the gender gap in both paid and unpaid work increased during COVID-19 in the short-term.

Another outcome of COVID-19 that has been researched is mental well-being. There is not much research about parents, but some results show that parents' mental well-being has declined significantly more compared to non-parents (Blanden et al., 2021). Various studies also investigated the effect of school closures on the mental well-being of parents. It was

found that when a school was completely closed, mental health problems increased for both the parent and child, compared to when a school was completely open (Kishida et al., 2021; May et al., 2021). However, within these studies, parents are researched as one group and gender is not considered to be of influence. A study that did look at gender, was that of Blanden and colleagues (2021). It was found that for both the mother and father their mental health declined, but this decline was greater for mothers. The fathers' mental health did not seem to have been significantly impacted by the school closing (Blanden et al., 2021). Results of another study (Yamamura & Tsustsui, 2021) showed that school closures led to mothers of students suffering from worse mental health compared to other women, while fathers' mental health did not differ from that of other men. It was stated that this gender difference could be explained by the finding that mothers have, on average, taken on more childcare during COVID-19 (Blanden et al., 2021; Yamamura & Tsustsui, 2021).

It can be concluded that an adequate amount of research has been executed about the division of unpaid work between parents, and the effect that the pandemic and school closures had on the mental well-being of parents. However, the possible explanation for the difference in well-being between mothers and fathers due to the closure of schools has not been researched yet. This could very well be the increase in childcare. Specifically, in connection with the difference in increase of the amount of childcare between mothers and fathers. This study will try to shine a light on this.

Theoretical approach

The "doing gender" approach suggests that housework and childcare have traditionally been assigned as women's responsibilities, leading to their symbolic association with femininity and gender roles (Greenstein, 1996). Consequently, men may demonstrate their masculinity by refusing to engage in these tasks (gender display), while both partners may conform to traditional gender norms (gender deviance neutralization). This results in women shouldering a greater share of domestic work and/or childcare, while men assert their masculinity by avoiding such responsibilities (Carlson & Lynch, 2017). Categorical thinking, a concept in social psychology, supports this traditional gender entitlement by promoting broad generalizations about gender roles and expectations (Connell, 2012). For instance, men are encouraged to suppress "feminine" emotions like worry and insecurity associated with sadness and anxiety, and instead exhibit "masculine" traits such as assertiveness, dominance, and independence (Rosenfield, 2010).

The transactional theory of stress and coping can contribute to understanding parental

mental well-being (Lazarus & Folkman, 1984). According to this theory, the successful management of a specific situation is crucial for one's well-being (Folkman, 1984; Lazarus & Folkman, 1984). When a situation is perceived as stressful, individuals assess their ability to control the resulting discomfort (Dewe & Cooper, 2007). Insufficient coping mechanisms can lead to subjective stress (Tischler & Petermann, 2011). Parental stress often arises from the perceived mismatch between the demands placed on parents and the available resources to meet those demands (Biggs et al., 2017; Troster, 2011).

The family systems theory suggests that families are composed of interconnected subsystems (Broderick, 1993) and that external disruptions can upset the balance within families (Minuchin, 1985). Research indicates that environmental stressors impact family functioning and well-being (Allen et al., 2000; Pedersen & Revenson, 2005). The family stress model (Conger et al., 1992) further explains how external stressors can disrupt families, subsequently affecting the well-being of individual family members.

In the context of this study, COVID-19 and school closures can be seen as external stressors for parents, particularly due to the absence of social support resulting from social distancing measures, such as support from grandparents (Yerkes et al., 2020). Additionally, the relevance of these theories to the research will be further discussed in relation to the research question.

Interdisciplinarity

This research takes an interdisciplinary approach to comprehensively understand the issue at hand. It incorporates gender studies from sociology, recognizing the significance of gender and its societal implications (Greenstein, 1996). This broad perspective offers insights into the macro-level dynamics of gender roles and relationships.

Psychological theories such as the transactional theory of stress and coping and the family stress model, derived from psychological perspectives (Lazarus & Folkman, 1984), contribute to understanding the stressors associated with increased childcare responsibilities and their impact on parental well-being. The family systems theory, rooted in psychoanalysis (Kerig, 2011), sheds light on the dynamics within the family unit, providing a comprehensive understanding at the meso-level.

Furthermore, this research examines the individual perspective at the micro-level, focusing on mental health from a psychological standpoint. By delving into the psychological aspects, a deeper exploration of the topic is achieved.

By employing interdisciplinary methods and drawing from sociology and psychology,

this research aims to provide a holistic understanding of the issue. The integration of different levels and theoretical backgrounds enhances overall comprehension and contributes to a nuanced analysis of the topic at hand.

Research question

The existing literature highlights a knowledge gap regarding the impact of informal childcare time on the mental health of parents, specifically considering gender differences. Therefore, this study aims to address the research question: *“To what extent does time spent on informal childcare have an effect on the mental health of Dutch parents of children aged between 0-17 during the COVID-19 pandemic, and to what extent is this relation moderated by gender?”*.

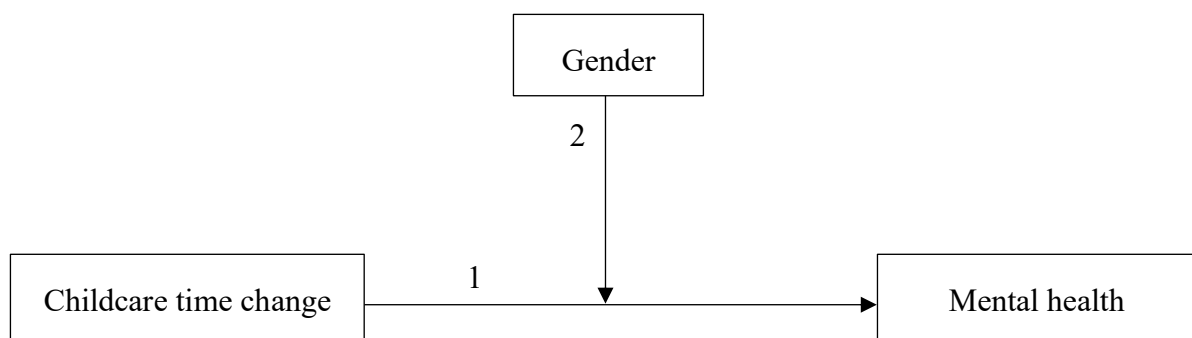
Based on categorical thinking and the "doing gender" approach, women are expected to shoulder increased childcare responsibilities during COVID-19, leading to higher stress levels and decreased mental well-being due to reduced resources (transactional theory of stress and coping). Additionally, external factors disrupting families (family systems theory) impact the well-being of all members (family stress model). This indicates that men will also experience decreased mental health during COVID-19, but mothers are anticipated to face the greatest decline due to their childcare responsibilities.

Building upon the existing research and theoretical framework, the study will examine the proposed conceptual model (see Figure 1) and test the following hypotheses.:

- *H1*: It is expected that having a higher time change in childcare during COVID-19 will lead to a decrease in mental health of parents;
- *H2*: It is expected that the effect of change in childcare time during COVID-19 on parents' mental health is moderated by gender.

Figure 1

Conceptual model



Method

Design and procedures

For this research, three datasets were merged, combining survey questionnaires from the LISS Core Study conducted by CentERdata. The LISS Core Study is a longitudinal study center that provides comprehensive social core information about its panel members (LISS Panel, n.d.). The LISS panel is a representative online survey panel selected through a true probability sample based on Statistics Netherlands' Dutch population registers (CBS). This study adopts a quantitative approach, utilizing clear and reliable measurements for the concepts under investigation. This approach offers an objective perspective and allows for the utilization of a large sample size, enhancing the statistical power of the analysis (Field, 2018).

Participants and recruitment

All individuals in the sample were approached in traditional manners (by letter, followed by a phone call and/or a home visit) with an invitation to participate in the panel. Persons who were not included in the original sample cannot participate, so there is no possibility of self-selection (Scherpenzeel, 2009).

The first dataset is “Gender inequalities in times of the COVID-19 pandemic > Wave 2” (July 2020, $N_{\text{invited}} = 1.213$, response = 75.7%) (Yerkes et al., 2021). The second dataset is “Health > Wave 12” (November & December 2019, $N_{\text{invited}} = 5.954$, response = 86.4%) (CentERdata, 2010). The third dataset is almost the same as the second dataset, but Wave 13 was collected a year later (September & October 2020, $N_{\text{invited}} = 6.832$, response = 83.6%). When combining the data, only participants who filled in all three questionnaires remained. Moreover, participants that did not have a partner and did not have at least one underaged child living with them were excluded. A dataset of 447 participants remained (53.9% female, 46.1% male, $M_{\text{age}} = 43.39$, $SD_{\text{age}} = 7.259$).

Variables of interest and operationalization

The questions of the “Gender inequalities in times of the COVID-19 pandemic > Wave 2” and “Health > Wave 12 & 13” studies that are used to analyze the conceptual model and hypotheses. Appendix A, B and C can be seen for an overview.

Independent variable: Childcare time change during the pandemic

The change in time spent on childcare during the pandemic was measured with the question: "Overall, how many hours more or less did you spend on caring for the children, per week in the month of June, compared to the situation prior to the corona crisis?". The question could be answered with a slider ranging from -40 to 40, meaning hours. The answers were recoded into three categories: more (>0), less (<0), and equal (0) amount of time spent in childcare. It is important to note that the answer is subjective as it is a perceived estimate by the parents.

Dependent variable: Mental health 2020

The Mental Health Inventory was used to evaluate mental health as part of the Health dataset. This measurement has five items and responses ranged from 0 (never) to 6 (continuously) on a Likert scale. The question "This last month..." was followed by a statement like "I felt very anxious" (see Appendix C for all five statements). Recoded negative elements were added to the scores of positive elements. Participants then received a score between 0 and 30.

Moderator: Gender

Participants' gender was considered to analyze the moderation (man = 1, woman = 2). Only heterosexual couples are included and researched in this study.

Control variables

To enhance internal validity and minimize the impact of confounding factors (Field, 2018), control variables will be introduced in the study. The presence of paid work among participants and whether one of the parents held an essential occupation (e.g., healthcare, education) will be examined. This is crucial because individuals in vital professions had access to emergency care and schooling for children aged 0 to 12 in the Netherlands (Yerkes et al., 2020). Additionally, the survey included questions regarding participants' age, educational attainment, and work sector. Other factors considered were the presence or absence of children at home, employment situation, and expectations from employers during the lockdown. Furthermore, parents' mental health in 2019 was also included in the analysis. By considering these variables, a more comprehensive understanding of the relationship between parental mental health and the COVID-19 pandemic can be achieved.

Data analyses

Analyses were performed using IBM SPSS Statistics 28. Before any other analyses were conducted, two new variables were generated to create one score for the mental health of

parents for the years 2019 and 2020. The reliability was checked for both new variables. For 2019 this was $\alpha = .861$ and for 2020 $\alpha = .876$.

To assess the relationship between changes in childcare time and parental mental health during the pandemic, a correlation table was generated, controlling for other relevant variables. Multiple linear regression was then employed to examine the impact of changes in childcare time on mental well-being. Additionally, the PROCESS tool, developed by Hayes (2012), was utilized to conduct a moderation analysis. This analysis determines whether gender moderates the relationship between changes in childcare time and mental well-being. By employing these statistical techniques, the study aims to provide insights into the potential moderating effect of gender on the relationship of interest.

Assumption checks linear regression

The assumption of normality was significant for both Kolmogorov-Smirnov and Shapiro-Wilk tests ($p = <.001$). The distribution of the data was therefore not normal. However, according to the central limit theorem this is no issue as the sample size is large (>100) (Field, 2018). The assumptions of multicollinearity, homoscedasticity, and independence were controlled for.

Assumption checks moderation

The dependent and independent variables should be continuous within moderation analyses, which they were in this research. The moderator variable should be dichotomous, which is the case with gender (female, male). Moreover, linearity, multicollinearity, homoscedasticity, and normality were checked and controlled for. Additionally, independent errors were tested with the Durbin-Watson test and showed that there was no concern ($d = 1.307$).

Results

Descriptives

Mothers increased their time spent in childcare more (53%) compared to fathers (46%). Moreover, more fathers were found to be mentally healthy (i.e. scoring 20+) (87%) compared to mothers (83%).

Control variables

The first step was generating a correlation table including the dependent and independent variables and all possible variables that could influence the relationship between the dependent and independent variables. Pearson correlation was used as the variables are

quantitative and because a linear relation is expected (Field, 2018).

Table 1 presents the correlation output, revealing several significant variables in relation to the change in time spent on childcare. These include age ($r = -.140, p = .003$), sector ($r = -.109, p = .021$), middle ($r = .136, p = .004$) or high ($r = -.121, p = .010$) educational attainment, working in industrial production ($r = -.153, p = .001$), having children at home due to COVID-19 ($r = .113, p = .018$), particularly when being partly at home ($r = .139, p = .003$). Additionally, several variables were found to be significant in relation to parents' mental health in 2020, including age ($r = .102, p = .031$), educational attainment ($r = .109, p = .022$), low educational attainment ($r = -.130, p = .006$), having paid work ($r = -.174, p = .008$), working in an essential job ($r = .174, p < .001$), sector ($r = .126, p < .008$), working in utilities, production, distribution, or trade ($r = -.118, p = .012$), and parents' mental health in 2019 ($r = .650, p < .001$).

No other variables were found to be significant in relation to the dependent and independent variables. All variables mentioned above were included as control variables in the multiple regression and moderation analyses.

Table 1

Correlation table for potential control variables

		1. Change time childcare ^a	2. Mental health 2020 ^b
1. Change time spent on childcare ^a	Pearson's <i>r</i>	-	-.028
	Sig. (2-tailed)	.	.559
2. Parents' mental health 2020 ^b	Pearson's <i>r</i>	-.028	-
	Sig. (2-tailed)	.559	.
3. Age	Pearson's <i>r</i>	-.140**	.102*
	Sig. (2-tailed)	.003	.031
4. Educational attainment	Pearson's <i>r</i>	-.080	.109*
	Sig. (2-tailed)	.093	.022
a. Low	Pearson's <i>r</i>	-.010	-.130**
	Sig. (2-tailed)	.835	.006
b. Middle	Pearson's <i>r</i>	.136**	.024
	Sig. (2-tailed)	.004	.616

c. High	Pearson's <i>r</i>	-.121*	.067
	Sig. (2-tailed)	.010	.158
5. Having paid work	Pearson's <i>r</i>	.060	-.174***
	Sig. (2-tailed)	.208	<.001
6. Working in essential job	Pearson's <i>r</i>	-.060	.174***
	Sig. (2-tailed)	.207	<.001
7. Sector	Pearson's <i>r</i>	-.109*	.126**
	Sig. (2-tailed)	.021	.008
a. Industrial production	Pearson's <i>r</i>	-.153***	.003
	Sig. (2-tailed)	.001	.480
b. Utilities, production, distribution/trade	Pearson's <i>r</i>	-.045	-.118*
	Sig. (2-tailed)	.343	.012
8. Children at home due to COVID in June	Pearson's <i>r</i>	.113*	-.002
	Sig. (2-tailed)	.018	.963
a. Child(ren) at home	Pearson's <i>r</i>	-.077	0.020
	Sig. (2-tailed)	.104	.671
b. Child(ren) not at home	Pearson's <i>r</i>	-.061	-.045
	Sig. (2-tailed)	.195	.347
c. Child(ren) partly at home	Pearson's <i>r</i>	.139**	.019
	Sig. (2-tailed)	.003	.689
9. Parents' mental health 2020	Pearson's <i>r</i>	-.042	.650***
	Sig. (2-tailed)	.380	<.001

Note. *. Correlation is significant at the .05 level.

** . Correlation is significant at the .01 level.

***. Correlation is significant at the .001 level.

a. Change in time spent in childcare is the independent variable.

b. Parents' mental health in 2020 is the dependent variable.

H1: Effect of change in time of childcare on parents' well-being

The first hypothesis aimed to examine whether a higher change in time spent on childcare during COVID-19 would lead to a decrease in parents' mental health. To test this hypothesis, multiple linear regression with forced entry was conducted. The dependent variable was parents' mental health, while the change in time spent on childcare and control variables served as independent variables. Model 1 did not yield significant results ($F(1, 445) = .6983, p = .409$). However, Model 2 showed significance ($F(8, 437) = 43.151, p < .001$). Notably, in Model 2, the change in time spent on childcare was not found to be significant in relation to parents' mental health ($t = .701, p = .484$). On the other hand, parents' mental health in 2019 exhibited significance ($t = 17.082, p < .001$) in the analysis.

These findings indicate that changes in the time parents spent on childcare did not significantly change their mental health. The observed main effect when considering the control variables may be attributed to parents' mental health in 2019. Consequently, the first hypothesis was rejected.

Table 2

Model summary^a of the multiple regression analyses

Model	R	R ²	Adjusted R ²	S _e	R ² change	F change	df1	df2	Sig. F change
1 ^b	.039	.002	-.001	3.92871	.002	.683	1	445	.409
2 ^c	.665	.442	.430	2.96439	.441	43.151	8	437	<.001*

Note. a. Dependent variable: parents' mental health 2020

b. Constant: change in time spent on childcare: less, more, equal.

c. Constant: change in time spent on childcare, age, middle education, low education, paid work, sector: industrial production, sector: utilities, production, distribution and trade, child(ren) partly at home in June 2020, parents' wellbeing 2019.

*. Correlation is significant at the .05 level.

Table 3

Coefficients model ^a of the multiple regression analyses

Model		β	S_e	Beta	t	p
1 ^b	(Constant)	23.275	.479	-	48.616	<.001*
	Change time childcare	.254	.307	.039	.827	.409
2 ^c	(Constant)	8.802	1.372	-	6.415	<.001*
	Change time childcare	.166	.236	.026	.701	.484
	Age	.026	.020	.048	1.314	.190
	Low education	0.493	.435	-.043	-1.134	.257
	Middle education	.087	.314	.010	.277	.782
	Paid work	-1.149	.454	-.092	-2.534	.012
	Sector: Industrial production	.414	.489	.031	.845	.398
	Sector: Utilities, trade, etc.	-3.038	1.737	-.063	-1.750	.081
	Child partly home	-.193	.298	-.023	-.648	.517
	Mental health 2019	.635	.037	.626	17.082	<.001*

Note. a. Dependent variable: parents' mental health 2020

b. Constant: change in time spent on childcare: less, more, equal.

c. Constant: change in time spent on childcare, age, middle education, low education, paid work, sector: industrial production, sector: utilities, production, distribution and trade, child(ren) partly at home in June 2020, parents' wellbeing 2019.

*. Correlation is significant at the .05 level.

H2: The moderating effect of gender

The second hypothesis proposed that the effect of change in childcare time during COVID-19 on parents' mental health would be moderated by gender. The moderation effect was examined using the PROCESS tool in SPSS. The model demonstrated significance, as shown in Table 4 ($F(11, 435) = 3.3224, p < .001$). However, the interaction term formed by the

variables of change in childcare time and gender did not yield a significant effect ($b = -0.647$, 95% CI [-0.9906, 0.8612], $t = -0.1373$, $p = .8908$) (Table 5). Notably, a significant effect was observed for the conditional effect of parents' mental health in 2019 on their mental health in 2020 among participants at the mean of change in childcare time ($b = 0.6357$, 95% CI [0.5626, 0.7088], $t = 17.0879$, $p < .001$).

To conclude, the results suggest that gender does not play a significant role in the relationship between change in time spent on childcare and parents' mental health. Therefore, the second hypothesis is rejected. However, it appears that parents' mental health in 2019 may influence the relationship between their change in childcare time and their mental health in 2020. This aspect will be further discussed.

Table 4

Model summary moderation^a

R	R ²	F	df1	df2	<i>p</i>
.6654	.4428	31.4293	11	435	< .001*

Note. a. Dependent variable is parents' mental health in 2020.

*. Correlation is significant at the .05 level.

Table 5

Model moderation with PROCESS^a

	B	t	<i>p</i>	95% CI	
				LL	UL
Constant	288.4532	.8946	.3715	-345.3052	922.2116
Change_c	.2931	.3969	.6919	-1.1584	1.7446
Gender	-.3623	-1.1993	.2310	-.9560	.2314
Interaction	-.0647	-.1373	.8908	-.9906	.8612
Age	.0239	1.1640	.2451	-.0165	.0644
Education	.0433	.3659	.7146	-.1892	.2758
Paid work	-.2797634	-.8685	.3856	-912.8563	353.3294

Ess. work	-.2786	-.8652	.3874	-.9114	.3542
Industr. pr.	.4327	.8571	.3919	-.5595	1.4248
Utilities	-3.0595	-1.7519	.0805	-6.4918	.3728
Childp. home	-.1653	-.5538	.5800	-.7518	.4213
Mentalth_2019	.6357	17.0879	< .001*	.5626	.7088

Note. a. Dependent variable is parents' mental health in 2020.

*. Correlation is significant at the .05 level.

Discussion

Overview main findings & other research and theory

This study aimed to investigate the relationship between changes in parents' childcare time and their mental health, as well as the potential moderating effect of gender. The research questions focused on understanding the impact of informal childcare time on the mental health of Dutch parents during the COVID-19 pandemic, and whether gender played a role in this relationship.

Descriptives

Results were in accordance with Hipp and Bünning (2021) and Farre et al. (2020) their finding that mothers perform more unpaid work compared to fathers. The data in the current study does not show how much time parents spent exactly on childcare, however, it does show that mothers increased their time in childcare more than fathers. This suggests that mothers still spent more time on childcare overall, as other research shows that mothers already spent more time than fathers before COVID-19 (Yerkes et al., 2020). This is in accordance with the “doing gender” approach (Greenstein, 1996) and categorical thinking, as the tasks seem to be somewhat traditionally divided.

Effect of change in time of childcare on parents' well-being

Furthermore, it was expected that having a higher time change in childcare during COVID-19 would lead to a decrease in parents' mental health during COVID-19. This expectation was in line with the transactional theory of stress and coping (Lazarus & Folkman, 1984), which states that life transitions can be perceived as stressful. However, the results of this study indicate that changes in childcare time did not significantly influence parents' mental health.

One possible explanation for these insignificant results is that the transition to

pandemic life and increased childcare time may not have been as challenging to adapt to as initially believed. When this is the case, the experienced stress would be lower than anticipated, and the transactional theory of stress and coping would not apply. Additionally, the data collection period in July coincided with a positive time in the Netherlands, with schools reopening and the vacation month. These factors may have influenced the reported childcare time and potentially reduced the level of stress experienced by parents during the data collection phase.

The moderating effect of gender

Moreover, it was expected that gender would moderate the relationship between childcare time and mental health. It was assumed that mothers would experience more negative effects on mental health because of devoting more time to unpaid work. Nonetheless, results did not support this expectation. One possible explanation for this finding is the discrepancy in parental involvement reported by mothers and fathers. One possible explanation for this finding is the discrepancy in parental involvement reported by mothers and fathers. Research suggests that fathers tend to report higher involvement than mothers perceive (Charles et al., 2018). This discrepancy can lead to underreporting of information about male spouses, which may impact the validity and reliability of the data. High levels of parental stress have also been found to reduce agreement between self-report and observational measures (Herbers et al., 2017).

Mental health 2019

Furthermore, the study revealed that parents' mental health in 2019 significantly influenced their mental health in 2020. This finding aligns with research by Zhou et al. (2020), which highlights the strong influence of pre-existing health conditions on current mental health. Therefore, it is not surprising that the effects of childcare time on mental health diminish when considering prior mental health data.

Strengths and limitations

This research has its strengths but also limitations. A major strength is the large sample size obtained through the LISS panel, which enhances representativity. The LISS panel draws data from Dutch population databases (CBS), providing a realistic probability sample for Statistics Netherlands. Therefore, the results can be generalized to the overall Dutch population (Murad et al., 2018). However, a limitation arises in generalizing the results to populations of countries with different policies. COVID-19 response policies varied among countries, such

as allowing essential workers to access childcare facilities. This was the case in, for example, Ireland and Italy. However, the definition of essential workers differed across countries (Pickett et al., 2021). Moreover, some countries had other policies about social distancing, which can influence having grandparents provide childcare or not and the work-family balance due to having to telework or not (Allen et al., 2015). This in turn can influence employee's health (Shipman et al., 2021). These situational differences hinder generalizability to other countries.

Another strength is the control variables. By including control variables, the internal validity will be enhanced as the influence of confounding variables will be limited. This helps prevent research bias and strengthens the reliability of the conclusions made in this study (Bhandari, 2021). However, an issue arises with the independent variable, "time spent on childcare." Participants had to recall and compare the hours spent caring for children before and during the pandemic, which is prone to memory errors and can negatively affect internal validity.

Moreover, several datasets were used and combined. The questionnaire used to measure time spent on childcare was completed in July 2020. This was, as mentioned before, a positive time with school reopening and vacation time. In contrast, the health dataset was collected in September and October 2020, during a significant increase in infections and a new lockdown (Ministerie van Justitie en Veiligheid, 2020). The collection of data during different phases of the pandemic jeopardizes internal validity.

Implications and recommendations

This research confirms previous findings that mothers spent more time on childcare than fathers during COVID-19. To address gender disparities, policymakers should consider this difference when formulating childcare policies and policies affecting parents' unpaid work. However, it is important to note that this increased unpaid work does not seem to impact parents' mental health as expected. On the other hand, pre-existing mental health was found to influence mental health during the lockdown. Therefore, policymakers should take into account the effects of policies on vulnerable individuals with pre-existing mental health challenges, as they may be more adversely affected.

Regarding limitations, future research should address them. First, the reliability of self-reports and mothers' reports about their male partners should be improved. A more objective measurement of time spent on childcare, such as participants taking notes of childcare-related activities, would enhance reliability and minimize biases. Additionally,

future studies should consider measuring stress, as it may influence outcomes and self-reports (Herbers et al., 2017). Lastly, the questionnaires within this research were not collected at the same time. It is advised to make sure that in further research the data will be collected at the same time to account for situational factors.

Conclusion

This study examined the relationship between changes in parents' childcare time, gender, and mental health during the COVID-19 pandemic. The findings contribute to our understanding of how these factors intersect and impact parental well-being.

The study revealed that mothers increased their time in childcare more than fathers, aligning with previous research. However, contrary to expectations, these changes in childcare time did not significantly influence parents' mental health. Moreover, gender did not moderate the relationship between childcare time and mental health as hypothesized. These unexpected findings challenge conventional assumptions and highlight the complexity of the relationship between childcare, gender, and mental health.

Notably, the study demonstrated that parents' mental health prior to the pandemic significantly influenced their mental health during the lockdown. This finding emphasizes the importance of considering pre-existing mental health conditions when addressing the well-being of parents during crisis situations.

The study's contributions extend to policy implications. Policymakers should consider the gender disparities in childcare and unpaid work when formulating policies, aiming to minimize these gaps. However, it is crucial to recognize that the increased unpaid work did not have the anticipated negative impact on parents' mental health. Instead, pre-existing mental health conditions played a more significant role. Policymakers should take this into account to develop inclusive policies that support the well-being of all individuals, particularly those with pre-existing mental health challenges.

Overall, this study adds valuable insights to the existing literature, challenging preconceived notions about the relationship between childcare, gender, and mental health. By considering the complexities of these factors, policymakers can create informed policies that prioritize the mental health of parents and promote a more equitable and supportive society.

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Appendix A

Questions used from “Gender inequalities in times of the COVID-19 pandemic > Wave 1” dataset (Yerkes et al., 2021).

Has at least one child living at home aged < 18 years

0 No

1 Yes

The household head lives together with a partner (wedded or unwedded)

0 No

1 Yes

Did you have paid work in the month of June?

1 Yes

2 No

Did your partner have paid work in the month of June?

1 Yes

2 No

The government has indicated a number of occupations as ‘essential occupations’. This includes:

- care (including youth care and social support)
- childcare
- public transport
- the food chain (e.g. supermarkets)
- transport industry
- waste/garbage collection/processing
- media and communication
- education
- emergency services
- necessary government processes

Did you work in a essential occupation in the month of June?

- 1 Yes
- 2 No

Did your partner work in a essential occupation in the month of June?

- 1 Yes
- 2 No

Do you have children who were at home in the month of June because of the corona crisis, but who would normally be at school or at day care?

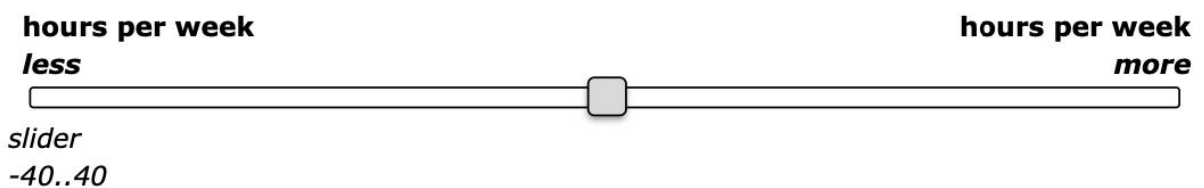
If your child or children had holiday in the month of June, then consider the weeks during which they did not have holiday.

- 1 Yes, my children were at home in June
- 2 No, my children attended school/day care as usual in June
- 3 My children were partly at home and partly in school/day care in June
- 4 Not applicable

Overall, how many hours *more or less* did you spend on the following activities, per week in the month of June, compared to the situation prior to the corona crisis?

If you took holiday in June, please consider the weeks during which you were not on holiday. Did you take holiday throughout the month of June? Then choose 'Not applicable'.

if qh20b063 = 1: qh20b091 Caring for the children



Appendix B**Questions used from "Health > Wave 12" dataset (CentERdata, 2010).****ch19l011 - ch19l015**

The following questions are about how you felt over the past month.

Please choose the answer that best describes how you felt during this past month.

This past month

1 = never

2 = seldom

3 = sometimes

4 = often

5 = mostly

6 = continuously

ch19l011 I felt very anxious

ch19l012 I felt so down that nothing could cheer me up

ch19l013 I felt calm and peaceful

ch19l014 I felt depressed and gloomy

ch19l015 I felt happy

1 never

2 seldom

3 sometimes

4 often

5 mostly

6 continuously

Appendix C**Questions used from "Health > Wave 13" dataset (CentERdata, 2010).****ch20m011 - ch20m015**

The following questions are about how you felt over the past month.

Please choose the answer that best describes how you felt during this past month.

This past month

1 = never

2 = seldom

3 = sometimes

4 = often

5 = mostly

6 = continuously

ch20m011 I felt very anxious

ch20m012 I felt so down that nothing could cheer me up

ch20m013 I felt calm and peaceful

ch20m014 I felt depressed and gloomy

ch20m015 I felt happy

1 never

2 seldom

3 sometimes

4 often

5 mostly

6 continuously