Ethics, truth, and values in political economy research: Implications for entrepreneurship and innovation

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Abstract

We examine the impact of unpaid work on mental health during the COVID-19 pandemic using a rich longitudinal survey data from the UK. We find that the pandemic significantly increased mental health problems, particularly among women. Our study also reveals that increased hours of unpaid work, including housework and caregiving are associated with worsening mental health outcomes for both men and women. These findings highlight the urgent need for policies addressing the mental health burden of unpaid labor during crises.

Keywords: COVID-19; Gender Disparities; Mental Health; Social Work; Unpaid Work.

1. Introduction

Mental health has become one of the most pressing challenges of the 21st century. Beyond the demands of an increasingly complex and rapidly changing society, recent economic crises and natural disasters have further exacerbated mental health disorders. Studies show that problems such as depression, anxiety, substance abuse, suicidal behaviour, and post-traumatic stress often emerge after major crises (Chaves et al., 2013). The COVID-19 pandemic was no exception. It generated unprecedented challenges with global repercussions, intensifying not only concerns about physical health but also the prevalence of mental health problems (OECD, 2021; Santomauro et al., 2021).

This study uses a comprehensive longitudinal dataset that spans the period before, during, and after the pandemic to examine key mental health issues arising from COVID-19. Prior research suggests that women may experience poorer psychological outcomes than men during crises (e.g., González-Sanguino et al., 2020; Özdin & Bayrak Özdin, 2020). We therefore assess whether women reported higher levels of mental health problems than men as a result of the pandemic. Given the rise in unpaid work during this period, we also investigate whether such tasks contributed to deteriorating mental health.

The relevance of these questions goes beyond individual well-being. Mental health and the unequal distribution of unpaid work are closely linked to economic productivity, entrepreneurship, and innovation. High levels of psychological distress undermine creativity, risk-taking, and resilience—traits essential for entrepreneurial activity. At the same time, excessive unpaid work, particularly for women, may restrict time and energy for entrepreneurial initiatives or innovative work, thereby exacerbating gender disparities in business creation and career advancement. Understanding these dynamics is therefore critical not only for public health policy but also for fostering inclusive and sustainable economic development.

Our approach compares the same individuals' mental health before and during/after the pandemic (paired samples). Unlike many studies based on short-term surveys, our analysis relies on data collected over an extended period of the pandemic, officially declared over by the World Health Organization in May 2023. This broader time horizon enables more robust conclusions about the impact of unpaid work on mental health.

The findings underscore the urgent need for policies aimed at reducing the mental health burden of unpaid work during crises, which are increasingly likely in the future. Such policies are also crucial for sustaining workforce productivity, supporting entrepreneurial activity, and encouraging innovation.

The paper is structured as follows: Section 2 presents the literature review; Section 3 outlines the data and methodology; Section 4 reports the results and discussion; and Section 5 provides conclusions.

2. Literature Review

Several studies have examined the mental health consequences of the COVID-19 pandemic. However, this study is the first to use a comprehensive longitudinal dataset covering the period before, during, and after the pandemic. We first test whether mental health problems increased during the pandemic (Hypothesis H1). Previous research suggests that women may experience poorer psychological outcomes than men (e.g., González-Sanguino et al., 2020; Özdin & Bayrak Özdin, 2020). Accordingly, Hypothesis H2 assesses whether women reported higher levels of mental health problems.

One of the main explanations advanced in the literature concerns the overload of unpaid work. Unpaid work is defined as all services performed within the household for its members without financial compensation, such as housework and caregiving (Pinquart & Sörensen, 2007; Vitaliano, 2003). The concept of role overload (Robinson & Spitze, 1992) holds that human energy is limited: when individuals perform multiple roles simultaneously, the likelihood of strain and adverse effects on health increases. This mechanism became particularly evident during the pandemic, when lockdowns, restrictions on movement, school closures, and social distancing sharply expanded unpaid tasks.

Evidence shows that women were especially affected (Xue & McMunn, 2021; OECD, 2021; Alfonzo et al., 2023; Madia et al., 2023). During the lockdown period, they devoted significantly more hours to childcare and household responsibilities, often reducing paid working hours to accommodate these demands (Xue & McMunn, 2021). Men also increased their involvement in unpaid work, but the imbalance in household responsibilities remained, leading to mental health deterioration in both genders. On this basis, Hypothesis H3 proposes that unpaid work negatively affects the mental health of men and women alike.

Another strand of literature highlights fairness and equity in the division of household tasks. Unequal or unfair distributions of unpaid work are associated with greater psychological distress (Robinson & Spitze, 1992). Moreover, the low prestige attributed to household work, its physically demanding nature, and the fact that it is often performed in isolation further contribute to its negative impact on well-being. While these issues are not explored in depth in this paper, they remain relevant for future research.

This study contributes to the literature by comparing the same individuals' mental health before and during/after the COVID-19 pandemic (paired samples). Unlike other analyses that rely on surveys collected over a short period, our data span a large part of the pandemic (which the World Health Organization declared officially over in May 2023). This extended timeframe allows for more robust conclusions about the impact of unpaid work on mental health.

3. Methods

3.1. Data

We conduct our empirical analysis using data from *Understanding Society*, a longitudinal household panel survey that provides evidence on life in the United Kingdom. The study, based at the Institute for Social and Economic Research at the University of Essex, has been conducted annually since 2009 and covers a wide range of social, economic, and behavioural dimensions.

For this paper, we use data from Waves 10 and 12 of the main survey. The questionnaires were administered either face-to-face or by telephone. Wave 10 contains data from 34,318 participants interviewed between

January 2018 and May 2020, while Wave 12 is composed of 29,270 respondents interviewed between January 2020 and May 2022.

After combining the two waves, we ensured that all participants were in paid work in both periods. Applying this restriction, we obtained a final sample of 9,997 individuals (3,997 men, representing 43.5%, and 5,200 women, representing 56.5%). The participants' age at the beginning of the Wave 10 interviews ranged from 18 to 69 years, with a mean of 43.31 years (SD = 12.04).

3.2. Measuring Instruments

The General Health Questionnaire (GHQ-12), developed by Goldberg (1972), is a widely used instrument for detecting psychological distress (Hystad & Johnsen, 2020). Designed as a screening tool, it identifies individuals who probably have, or are at risk of developing, psychiatric disorders. It measures a range of mental health issues, including depression, anxiety, somatic symptoms, and social withdrawal (Jackson, 2007).

The GHQ-12 consists of 12 questions, each assessed on a 4-point Likert scale (see Table 1 for item descriptions). In this study, each item was recoded to take values from 0 to 3 points (0, 1, 2, 3), with 0 assigned to the least symptomatic response and 3 to the most symptomatic response. Higher scores indicate poorer mental health, while lower scores reflect better mental health (Andrich & van Schoubroeck, 1989).

In addition, we applied a binary scoring method (0, 0, 1, 1). For each item, 0 was given to the two least symptomatic responses and 1 to the two most symptomatic responses. The binary scores were then summed across the 12 items, producing a total score between 0 and 12. A lower total score indicates better mental health, while a higher score suggests a greater likelihood of mental disorders (Bell et al., 2005).

Following the recommended cut-off of 3/4 (Hatton et al., 2017), respondents with scores above 3 were classified as GHQ positive (probable psychiatric disorder), while those scoring 3 or below were classified as GHQ negative (Hayes, 2014).

Table 1: General health questionnaire (GHQ-12).

GHQ1 — **Concentration:** Have you recently been able to concentrate on whatever you're doing? (1- Better than usual; 2- Same as usual; 3- Less than usual; 4 - Much less than usual)
GHQ2 — **Loss of sleep:** Have you recently lost much sleep over worry? (1- Not at all; 2- No more than usual; 3- Rather more than usual; 4- Much more than usual)
GHQ3 — **Playing a useful role:** Have you recently felt that you were playing a useful part in things? (1- More so than usual; 2- Same as usual; 3- Less so than usual; 4- Much less than usual)
GHQ4 — **Capable of making decisions:** Have you recently felt capable of making decisions about things? (1- More so than usual; 2- Same as usual; 3- Less so than usual; 4- Much less capable)
GHQ5 — **Constantly under strain:** Have you recently felt constantly under strain? (1- Not at all; 2- No more than usual; 3- Rather more than usual; 4- Much more than usual)
GHQ6 — **Problem overcoming difficulties:** Have you recently felt you couldn't overcome your difficulties? (1- Not at all; 2- No more than usual; 3- Rather more than usual; 4- Much more than usual)
GHQ7 — **Enjoy day-to-day activities:** Have you recently been able to enjoy your normal day-to-day activities? (1- More so than usual; 2- Same as usual; 3- Less so than usual; 4- Much less than usual)
GHQ8 — **Ability to face problems:** Have you recently been able to face up to problems? (1- More so than usual; 2- Same as usual; 3- Less able than usual; 4- Much less able)
GHQ9 — **Unhappy or depressed:** Have you recently been feeling unhappy or depressed? (1- Not at all; 2- No more than usual; 3- Rather more than usual; 4- Much more than usual)
GHQ10 — **Losing confidence:** Have you recently been losing confidence in yourself? (1- Not at all; 2- No more than usual; 3- Rather more than usual; 4- Much more than usual)
GHQ11 — **Believe worthless:** Have you recently been thinking of yourself as a worthless person? (1- Not at all; 2- No more than usual; 3- Rather more than usual; 4- Much more than usual)
GHQ12 — **General happiness:** Have you recently been feeling reasonably happy, all things considered? (1- More so than usual; 2- About the same as usual; 3- Less so than usual; 4- Much less than usual)

Source: Own elaboration.

Although originally developed as a unidimensional construct, exploratory analyses in several studies have revealed two- or three-factor structures (Hystad & Johnsen, 2020).

3.3. Data Analysis

In the first step, we combined Waves 10 and 12 into a single database. All statistical analyses were performed using IBM SPSS Statistics 28. The individual identification code allowed us to pair responses from the two waves, excluding participants who did not respond in either. Under these conditions, the dataset comprised 26,095 individuals.

To define two temporal periods—before the pandemic and during/after the pandemic—Wave 10 included only interviews conducted up to 31 January 2020, while Wave 12 included only participants who responded from 1 February 2020 onwards (the first case of COVID-19 in the UK was detected on 31 January 2020). At this stage, the database contained 24,606 participants. We then restricted the sample to individuals who were in paid work in both waves and who answered all 12 GHQ-12 items. After applying these restrictions, the final sample consisted of 9,197 individuals.

To characterize participants, we analyzed absolute and relative frequencies (percentages). For the quantitative variable age, we report minimum, maximum, mean, and standard deviation.

Following Kline (2016), item sensitivity was assessed using skewness ($|Sk| \leq 3$) and kurtosis ($|Ku| \leq 10$). The suitability of applying exploratory factor analysis (EFA) to the GHQ-12 construct was evaluated using the Kaiser-Meyer-Olkin (KMO) sample adequacy index (values greater than 0.8 indicate good adequacy) and Bartlett's test of sphericity ($p < 0.05$) (Pestana & Gageiro, 2014).

We applied the principal components method to extract factors, retaining factor loadings above 0.50 (Hair et al., 2014). Varimax rotation and the Kaiser criterion (eigenvalues greater than 1) were used to determine the number of factors to retain. Reliability of the GHQ-12 items was assessed using Cronbach's alpha, with values above 0.7 considered acceptable (Hair et al., 2014). Correlations between GHQ-12 factors were analyzed using Pearson's correlation. To test hypotheses, we employed the Student's t-test for paired samples and the Student's t-test for independent samples. Statistical significance was set at $p < 0.05$ (Marôco, 2018).

4. Findings and Discussion

4.1. Factor Analysis and Reliability

The skewness and kurtosis coefficients of the GHQ-12 items show absolute values below 1.80 and 7.32, respectively, and therefore fall within the parameters defined by Kline (2016). To assess the adequacy of the data for factor analysis, Bartlett's test of sphericity and the Kaiser–Meyer–Olkin (KMO) index were applied to both Wave 10 and Wave 12. The results confirm good suitability for exploratory factor analysis (Wave 10: $\chi^2(66) = 51{,}237.268$, $p < 0.001$, KMO = 0.930; Wave 12: $\chi^2(66) = 55{,}382.292$, $p < 0.001$, KMO = 0.930), consistent with the recommendations of Pestana and Gageiro (2014).

The exploratory factor analysis of the 12 GHQ-12 items revealed a two-factor structure in both waves (Table 2). Together, these factors explained 58.88% of the total variance in Wave 10 and 59.96% in Wave 12. The first factor, labelled *General Dysphoria* (items 2, 5, 6, 9, 10, and 11), explained 32.07% of the variance in Wave 10 and 32.52% in Wave 12. This factor includes items primarily related to anxiety and depression. The second factor, labelled *Social Dysfunction* (items 1, 3, 4, 7, 8, and 12), explained 26.81% of the variance in Wave 10 and 27.44% in Wave 12. This two-factor structure is consistent with previous findings (Centofanti et al., 2019).

Cronbach's alpha for the full 12-item GHQ-12 was 0.900 in Wave 10 and 0.906 in Wave 12. The Cronbach's alpha values for the two factors in both waves exceeded 0.80, which, according to Hair et al. (2014), indicates high internal consistency. These results support the reliability of the GHQ-12 for assessing mental health in this sample and are consistent with earlier studies (Centofanti et al., 2019; Politi et al., 1994).

Table 2: Results of applying factorial analysis to GHQ-12 in waves 10 and 12.

Items	Wave 10		Wave 12	
	Factor 1	Factor 2	Factor 1	Factor 2
GHQ1: concentration		0.55		0.57
GHQ2: loss of sleep	0.72		0.72	
GHQ3: playing a useful role		0.71		0.75
GHQ4: capable of making decisions		0.78		0.80
GHQ5: constantly under strain	0.76		0.80	
GHQ6: problem overcoming difficulties	0.76		0.78	
GHQ7: enjoy day-to-day activities		0.66		0.56
GHQ8: ability to face problems		0.71		0.72
GHQ9: unhappy or depressed	0.80		0.78	
GHQ10: losing confidence	0.76		0.75	
GHQ11: believe worthless	0.66		0.63	
GHQ12: general happiness		0.63		0.63
Eigenvalues	3.85	3.22	3.90	3.29
% Explained variance	32.07	26.81	32.52	27.44
Cronbach's alpha	0.883	0.826	0.889	0.824

Source: Own elaboration.

The correlation between the two factors of the GHQ-12 was positive and significant ($p < 0.001$) in both waves (Wave 10: $r = 0.809$; Wave 12: $r = 0.811$). This strong correlation (Marôco, 2018) indicates that higher levels of anxiety and depression are associated with greater difficulties in carrying out daily activities and coping with problems.

4.2. Mental Health Comparison Between Waves

Table 3 presents the GHQ-12 items during/after the pandemic (Wave 12). Mental health indicators worsened compared to the pre-pandemic period (Wave 10), supporting the evidence that COVID-19 contributed to a rise in mental health problems. The Student's *t*-test for paired samples shows that the increase was statistically significant for almost all items, except for item 10 (losing confidence). Therefore, there is strong statistical evidence that the pandemic exacerbated mental health problems, which provides partial support for Hypothesis 1.

In the UK, the maintenance of confidence during and after the pandemic may be explained by higher investment in mental health services, awareness campaigns, the expansion of online support services, stronger community networks, and government initiatives to protect workers and provide financial assistance.

Table 3: Results of the comparison of GHQ-12 between waves 10 and 12.

Items	Wave	*M*	*SD*	*t* test
GHQ1: concentration	12	1.19	0.49	7.79^{***}
	10	1.14	0.47	
GHQ2: loss of sleep	12	0.91	0.76	9.48^{***}
	10	0.83	0.72	
GHQ3: playing a useful role	12	1.08	0.51	6.36^{***}
	10	1.04	0.49	
GHQ4: capable of making decisions	12	1.07	0.40	8.35^{***}
	10	1.02	0.41	
GHQ5: constantly under strain	12	1.07	0.76	2.40^{**}
	10	1.05	0.73	
GHQ6: problem overcoming difficulties	12	0.80	0.72	3.53^{***}
	10	0.77	0.71	
GHQ7: enjoy day-to-day activities	12	1.25	0.60	17.93^{***}
	10	1.12	0.49	
GHQ8: ability to face problems	12	1.08	0.41	6.09^{***}
	10	1.05	0.43	
GHQ9: unhappy or depressed	12	0.93	0.80	6.81^{***}
	10	0.87	0.78	
GHQ10: losing confidence	12	0.77	0.78	0.51
	10	0.76	0.78	
GHQ11: believe worthless	12	0.46	0.70	4.72^{***}
	10	0.43	0.68	
GHQ12: general happiness	12	1.14	0.56	10.14^{***}
	10	1.06	0.54	

Note: $^{***}p < 0.001$, $^{**}p < 0.01$. **Source:** Own elaboration.

Table 4 reports the results of the Student's *t*-test for independent samples (by gender). The findings provide robust evidence that women had significantly poorer average mental health outcomes than men in both waves ($p < 0.001$), thus empirically supporting Hypothesis 2. We argue that the disproportionate burden of unpaid work during the COVID-19 pandemic intensified women's mental health disorders. Most of the additional workload linked to COVID-19 fell on women (Del Boca et al., 2022), particularly childcare due to school closures and caring for sick family members, which contributed to higher levels of psychological distress.

Table 4: Results of the comparison of GHQ-12 between gender in Waves 10 and 12.

Wave	Items	Male (n = 3997)		Female (n = 5200)		t test
		M	*SD*	*M*	*SD*	
10	GHQ1: concentration	1.10	0.43	1.17	0.49	-8.19***
	GHQ2: loss of sleep	0.74	0.70	0.90	0.73	-10.79***
	GHQ3: playing a useful role	1.02	0.48	1.05	0.50	-3.66***
	GHQ4: capable of making decisions	0.99	0.39	1.04	0.42	-5.74***
	GHQ5: constantly under strain	0.99	0.71	1.09	0.74	-6.60***
	GHQ6: problem overcoming difficulties	0.72	0.68	0.80	0.72	-5.78***
	GHQ7: enjoy day-to-day activities	1.09	0.47	1.14	0.50	-4.84***
	GHQ8: ability to face problems	1.02	0.40	1.08	0.46	-6.86***
	GHQ9: unhappy or depressed	0.80	0.75	0.93	0.79	-7.89***
	GHQ10: losing confidence	0.65	0.74	0.85	0.80	-11.93***
	GHQ11: believe worthless	0.37	0.64	0.47	0.71	-6.81***
	GHQ12: general happiness	1.04	0.51	1.08	0.56	-3.81***
12	GHQ1: concentration	1.14	0.44	1.23	0.52	-9.24***
	GHQ2: loss of sleep	0.78	0.72	1.02	0.77	-14.95***
	GHQ3: playing a useful role	1.05	0.48	1.10	0.54	-4.56***
	GHQ4: capable of making decisions	1.03	0.37	1.09	0.43	-6.49***
	GHQ5: constantly under strain	0.96	0.72	1.15	0.78	-12.35***
	GHQ6: problem overcoming difficulties	0.73	0.67	0.85	0.74	-7.86***
	GHQ7: enjoy day-to-day activities	1.20	0.56	1.29	0.62	-7.20***
	GHQ8: ability to face problems	1.06	0.37	1.11	0.44	-5.85***
	GHQ9: unhappy or depressed	0.84	0.77	1.00	0.82	-9.39***
	GHQ10: losing confidence	0.64	0.72	0.86	0.81	-14.02***
	GHQ11: believe worthless	0.40	0.65	0.51	0.74	-7.30***
	GHQ12: general happiness	1.11	0.51	1.16	0.59	-4.95***

Note: $^{***}p < 0.001$. **Source:** Own elaboration.

4.3. Classification of Individuals Regarding Mental Health

There are also statistically significant differences in the GHQ-12 construct (Wave 10: M = 1.65, SD = 2.90; Wave 12: M = 1.98, SD = 3.13, t(9196) = 9.10) and its factors: General Dysphoria (Wave 10: M = 0.93, SD = 1. 60; Wave 12: M = 1.04, SD = 1.69, t(9196) = 5.89) and Social Dysfunction (Wave 10: M = 0.73, SD = 1.45; Wave 12: M = 0.94, SD = 1.60, t(9196) = 11.28). These results imply that the COVID-19 pandemic affected individuals' mental health.

Table 5 shows there were around 13.5 per cent (n = 548) males and 20.1 per cent (n = 1068) females with a score above 3 before Covid-19 (Wave 10). Since the number of cases increased with the pandemic, we observe that in Wave 12 we have 15.3% (n = 619) of males and 24.8% (n = 1320) of females. This implies that, overall, before the pandemic 17.6% of individuals had mental health problems (GHQ-12) and during the pandemic the percentage increased to 21.1%.

Table 5: Distribution of individuals by wave, by sex and by total GHQ-12 score.

	Wave 10				Wave 12			
	Male (*n* = 3997)		Female (*n* = 5200)		Male (*n* = 3997)		Female (*n* = 5200)	
Score	*n*	%	*n*	%	*n*	%	*n*	%
0	2560	64.0	2861	55.02	2424	60.6	2427	46.7
1	503	12.6	679	13.06	513	12.8	765	14.7
2	246	6.2	379	7.29	257	6.4	403	7.8
3	140	3.5	213	4.10	184	4.6	285	5.5
4	110	2.8	160	3.08	125	3.1	250	4.8
5	92	2.3	164	3.15	93	2.3	173	3.3
6	64	1.6	142	2.73	65	1.6	154	3.0
7	53	1.3	122	2.35	60	1.5	144	2.8
8	67	1.7	118	2.27	66	1.7	141	2.7
9	43	1.1	109	2.10	66	1.7	115	2.2
10	38	1.0	80	1.54	43	1.1	100	1.9
11	43	1.1	98	1.88	56	1.4	111	2.1
12	38	1.0	75	1.44	45	1.1	132	2.5

Source: Own elaboration.

The individuals were classified in the two waves as follows: with a GHQ-12 score above 3 they were referred as GHQ positive; and with a score of less than or equal to 3 they were named GHQ negative. Table 6 highlights that 1218 individuals (402 men and 816 women) before the COVID-19 were classified as GHQ negative, and after/during the pandemic were classified as GHQ positive.

Table 6: Crossing of classifications in the two waves.

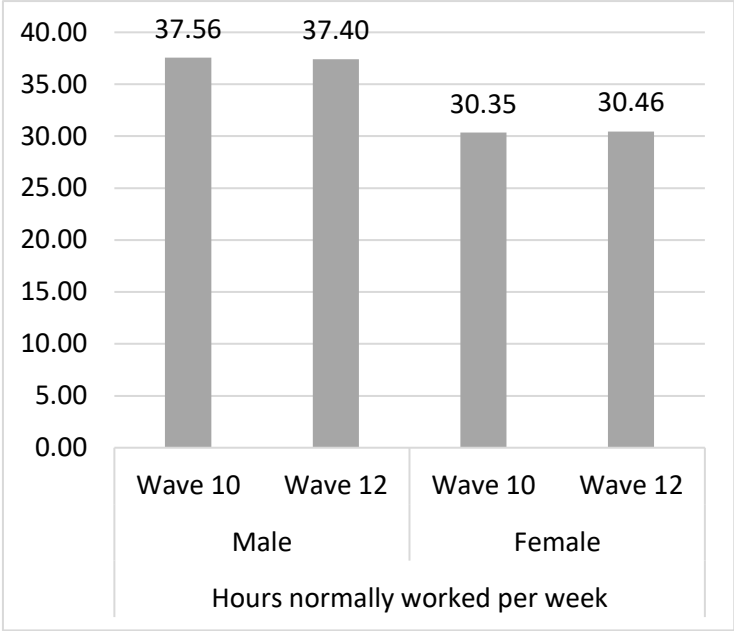
	Gender		Wave 12		Total
		Classification	GHQ Negative	GHQ Positive	
Wave 10	Male	GHQ Negative	3047	402	3449
		GHQ Positive	331	217	548
		Total	3378	619	3997
	Female	GHQ Negative	3316	816	4132
		GHQ Positive	564	504	1068
		Total	3880	1320	5200

Source: Own elaboration.

4.4. Mental Health and Unpaid Work

Figure 1 shows the number of paid hours that individuals worked per week in waves 10 and 12, by gender. With regard to men, in sample terms, the average number of hours of paid work per week decreased from Wave 10 (M = 37.56, SD = 8.61) to 12 (M = 37.40, SD = 8.31). However, this difference is not statistically significant (t (3996) = -1.31, p > 0.05). In what it relates to women, the number of paid hours increased from 30.35 (SD = 10.11) in Wave 10 to 30.46 (SD = 9.95) in Wave 12, but the increase was not statistically significant (t(5199) = 0.98, p > 0.05).

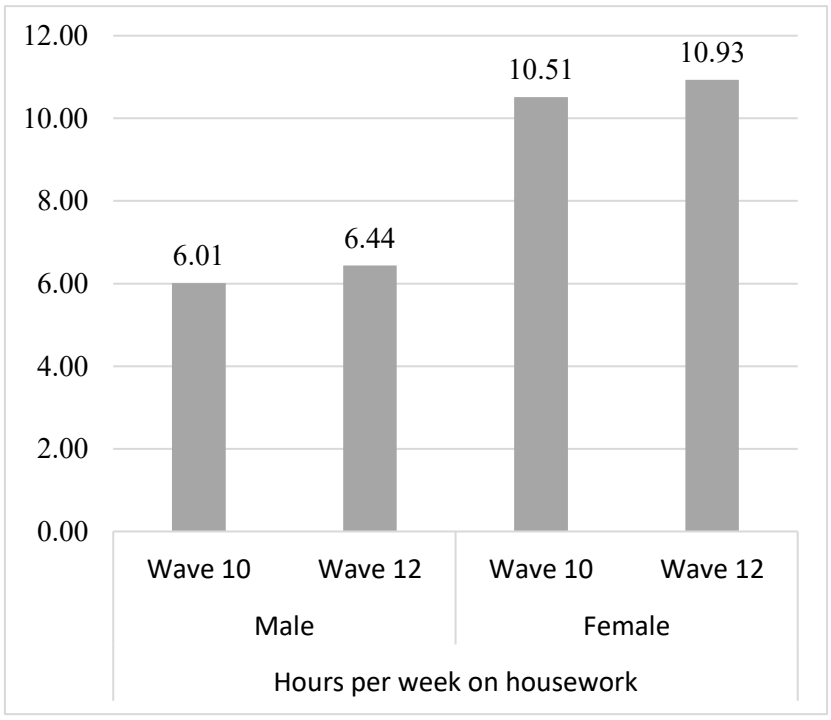
Figure 1: Number of hours normally worked per week in Waves 10 and 12.



Source: Own elaboration.

Figure 2 shows the number of hours per week dedicated to housework in waves 10 and 12, by gender. The number of hours per week that men dedicated to housework increased significantly ($t(3996) = 4.79$, $p < 0.001$) from Wave 10 ($M = 6.01$, $SD = 5.15$) to 12 ($M = 6.44$, $SD = 5.31$). In what it relates to women, the number of hours dedicated to housework also increased significantly ($t(5199) = 4.03$, $p < 0.001$). The number of hours dedicated to housework in Wave 10 was approximately 10.51 ($SD = 7.33$) and increased in Wave 12 to 10.93 ($SD = 7.70$).

Figure 2: Number of hours per week on housework in Waves 10 and 12.



Source: Own elaboration.

In order to analyze whether unpaid work affects mental health we divided the sample into two groups. We follow this procedure because the number of hours of unpaid work and mental health problems increased with the pandemic: Cluster 1 is made up of individuals whose number of hours dedicated to domestic work per week increased from Wave 10 to Wave 12, and Cluster 2 is made up of the remaining individuals who were not in these conditions.

Table 7 shows that individuals in Cluster 1 have worse mental health (i.e., those with higher levels of both the General Dysphoria and Social Dysfunction and with a higher value in the GHQ-12 construct that analyses mental health). Through the application of the Student's t-test to compare independent samples, we can conclude that an increase in the number of hours of unpaid work (hours dedicated per week to housework and taking care of disable people or other people at home) affects mental health of both men and women, which empirically supports Hypothesis 3. It is important to highlight that in what relates to Social Dysfunction, there are not significant differences in the men's group.

Table 7: Results of the comparative analysis between unpaid work and mental health.

		Unpaid work clusters						
		Cluster 1			Cluster 2			
Gender	Variables	*n*	*M*	*SD*	*n*	*M*	*SD*	*t test*
Male	General Dysphoria	1854	0.83	1.52	2143	0.74	1.49	1.82*
	Social Dysfunction	1854	0.77	1.43	2143	0.71	1.40	1.50
	GHQ-12 Total	1854	1.60	2.81	2143	1.45	2.74	1.75*
Female	General Dysphoria	2427	1.31	1.85	2773	1.19	1.75	2.38**
	Social Dysfunction	2427	1.17	1.75	2773	1.04	1.67	2.57**
	GHQ-12 Total	2427	2.47	3.43	2773	2.23	3.26	2.60**

Note: $^{**}p < 0.01$, $^{*}p < 0.05$. **Source:** Own elaboration.

5. Conclusion

This study provides robust evidence that the increase in unpaid work during the COVID-19 pandemic contributed to the worsening of mental health. Women were disproportionately affected, given their pre-existing heavier share of household and caregiving responsibilities. This additional burden intensified their psychological distress compared with men.

At the same time, our findings confirm that unpaid work exerts a negative impact on mental health for both men and women. The increase in unpaid hours during the pandemic was associated with higher levels of general dysphoria and social dysfunction, reflecting the strain of combining multiple roles under crisis conditions.

These findings carry important policy implications. Targeted measures are needed to reduce the mental health burden of unpaid work, including better support systems, a fairer division of domestic tasks, and expanded access to mental health services. Workplace policies must also adapt to the reality of increased caregiving and household responsibilities during crises.

Nevertheless, the study has limitations that should be acknowledged. First, the analysis relies on self-reported data, which may be affected by subjective bias. Second, the sample was restricted to individuals in paid employment across both waves, excluding unemployed and informal workers who may have experienced even greater challenges. Third, the study is based on the UK context, which limits the external validity of the findings

to other countries with different welfare regimes or cultural norms. Finally, while the theoretical framework highlights role overload and fairness, additional variables could strengthen the analysis and provide a more comprehensive understanding.

Future research should therefore extend the analysis to different labour market groups and cultural contexts, and include objective measures of workload and fairness in task distribution. Long-term longitudinal studies are also needed to examine whether the effects identified persist beyond the pandemic.

Overall, this work contributes to the literature by showing that the COVID-19 pandemic has deepened gender disparities in unpaid work and mental health. Addressing these challenges requires coordinated policy responses, societal awareness, and organisational innovation. By mitigating the mental health consequences of unpaid work, we can foster individual well-being and social resilience during and beyond global crises.

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