



# The Wellbeing of Working Mothers before and after a COVID-19 Lockdown

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## **Authors' contributions**

*This work was carried out as a collaboration between both authors. Author APS designed the study, wrote the protocol and the online survey. He also conducted the statistical analysis and wrote the first draft of the manuscript. Author AJ designed the study, contacted the participants and managed the project. Both authors read and approved the final manuscript.*

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## **ABSTRACT**

**Background:** This is the third article from a project on the wellbeing of staff, students, and parents at a Welsh-medium Secondary School. It focuses on the wellbeing of working mothers before COVID-19 lockdown, immediately after lockdown, and perceptions of the longer-term impact of the pandemic. The research used the wellbeing process model, which examines predictors of positive and negative wellbeing outcomes.

**Aims:** The study had three aims. First, to examine whether the wellbeing process model can be applied to working mothers. Secondly, to investigate the addition of new variables to the model. Finally, to investigate the impact of the COVID-19 lockdown and identify predictors of post-lockdown wellbeing.

**Methodology:** The research was carried out with the informed consent of the volunteers (N=202; mean age = 42.7 years, standard deviation (sd) = 8.5) and the approval of the School of Psychology, Cardiff University, ethics committee. An online survey was conducted, and regressions were carried out to investigate associations between the predictor variables and the wellbeing

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outcomes. Predictors of post-lockdown wellbeing were also investigated.

**Results:** The pre-COVID results generally agreed with the predictions of the wellbeing model. Positive wellbeing was associated with job resources, social support, psychological capital and healthy lifestyle. It was negatively associated with negative coping and daytime sleepiness. Negative wellbeing was associated with job demands, negative coping, daytime sleepiness and finding stressful situations threatening. It was negatively associated with social support, a healthy lifestyle and stable personality. Positive wellbeing after the lockdown was associated with job resources and stable personality. It was negatively associated with social isolation and negative wellbeing. Social isolation was associated with the negative effect of the pandemic on longer-term wellbeing, and a healthy lifestyle was negatively associated with this variable.

**Conclusion:** The results confirmed that the wellbeing process model applies to Welsh working mothers. Lockdown during COVID-19 affected wellbeing, with the stress of isolation being the most significant influence.

*Keywords: Working mothers; Wellbeing Process; COVID-19; Welsh secondary school; Lockdown.*

## 1. INTRODUCTION

### 1.1 The Welsh Secondary School Project

This article is the third paper from a research project investigating the wellbeing of stakeholders in a Welsh Medium Secondary School. The research examined wellbeing before a COVID-19 lockdown and then assessed the immediate impact of the lockdown and the implications of COVID for long term wellbeing. The first paper [1] reported results from a survey presented in the Welsh language that investigated the teachers' wellbeing. The initial aim was to determine whether the wellbeing model used in the project applied to this sample. A second aim was to evaluate the addition of new variables to the model. Finally, the survey investigated the short- and longer-term effects of lockdown on wellbeing. The teachers reported high stress levels. Negative job characteristics, such as high demands and negative coping styles (wishful thinking; avoidance) predicted stress and mental health problems. Positive wellbeing (happiness; life satisfaction) was predicted by high psychological capital (self-esteem, self-efficacy, and optimism), social support and positive coping (e.g. problem-focused coping). The negative short and longer-term effects of COVID were predicted by social isolation and fear of infection.

The second paper [2] reported results from a similar survey given to the students. In this group, negative wellbeing was predicted by student stressors, negative coping and was negatively associated with psychological capital. Positive wellbeing was associated with psychological capital, social support and negatively with daytime sleepiness. Immediately

after lockdown, positive wellbeing was associated with psychological capital and negatively associated with academic stress, fear of infection and social isolation. Fear of infection and social isolation also predicted a future negative impact of COVID.

The present article reports results from a survey sent to working parents. This questionnaire was in English as not all parents were Welsh speakers. Over 90% of the respondents were female, and the present article reports the results from this group. Again, the main aim pre-COVID was to examine whether the present wellbeing models applied to working mothers. Additional variables were added to the model, and the survey provided data to examine these new predictors (healthy lifestyle; flow) and outcomes (flourishing; general health). Working mothers were an interesting group to examine in the context of the COVID lockdown. Like others, there was the fear of infection and isolation. Job security was also threatened, with some being at risk of unemployment and others on furlough. Finally, many of their children were learning at home, and the parents had to deal with this novel and challenging issue.

### 1.2 The Wellbeing of Working Mothers

Research has often shown that working mothers report greater stress because of balancing job and family demands [3,4]. Having to maintain these multiple roles can lead to difficulties in work-life balance. While this is often the case in the UK, other research, mainly from Asia, suggests that the wellbeing of women is improved by employment. This view is supported by research that shows that for women, working has less of a negative impact than

unemployment. It should also be pointed out that there has been little research on the wellbeing of working women using a model of wellbeing that includes multiple predictors and positive and negative outcomes. The present study provided an opportunity to examine this topic.

### 1.3 The DRIVE and Well-being Process Models

The starting point for the current wellbeing approach was the Demands-Resources-Individual Effects (DRIVE) model [5]. This model included established predictor variables such as job resources (e.g., control and support), job demands and coping styles. Research [6,7] showed that these directly predicted mental health outcomes, but there was less evidence for interactions between predictors. The subsequent development of the wellbeing model [8,9] included positive outcomes measures (e.g., job and life satisfaction, happiness, and positive affect). Individual difference measures were increased with the inclusion of psychological capital (self-esteem, optimism, and self-efficacy). Traditional health and safety outcomes (e.g., accidents; work efficiency; absenteeism and presenteeism) were also added. This led to a new measuring instrument, the Wellbeing Process Questionnaire [10-12], which has been used with general worker samples, university staff, nurses [13-15] and blue-collar workers [16]. Results show that the model applies to different job types and in different countries [17,18]. Generally, positive predictors (e.g., job resources, social support, psychological capital) are associated with positive wellbeing (happiness; positive affect; and job and life satisfaction). The absence of negative characteristics may also have a weaker effect on positive wellbeing. In contrast, negative characteristics (job demands; negative coping) predict stress and mental health problems, and, again, the absence of positive factors may have a small association with these outcomes.

### 1.4 Objectives

#### 1.4.1 The present study: Pre-lockdown

The present study's first aim was to examine whether the wellbeing process model's predictions applied to the present sample. In addition, new variables have been added to the model, and these new factors were examined in the context of the established variables.

#### 1.4.2 The present study: Post lockdown

Research has shown that COVID lockdown has led to mental health problems [19-22]. The causes of this are loneliness, economic insecurity, risk of infection and information overload. The present study examined the impact of the COVID lockdown, with the short and longer-term changes in wellbeing that accompany such experiences. Analyses were also carried out to examine whether wellbeing before the lockdown predicted the response to it.

## 2. METHODOLOGY

An online survey methodology was used (the Qualtrics platform), and data were collected after the first UK COVID-19 lockdown (April-June 2020).

### 2.1 Participants

The participants were mothers of students at a Welsh-medium secondary school in South Wales. They were invited to participate by the second author. A sample size of about 100 is required to test the wellbeing process model. A sample of 202 completed the survey. Their demographic characteristics were:

- Mean age 42.7 years sd = 8.5.
- 98.2% white.
- 10.6% smokers.
- 16.5% single, 77% married/cohabiting, 6.5% separated/divorced.
- No formal educational qualifications: 5.1%, O level: 27.2%, A level: 5.5%, City & Guilds/National diploma: 19.4%, BA/BSc 16.1%, Higher degree/Professional Qualification: 26.7%.
- Income: up to £10,000: 14.7%, £10-20,000: 27.5%; £20-30,000: 27.5%, £30-40,000: 17.1%; £40-50,000: 9.5%; >£50,000: 3.8%.
- They carried out a variety of jobs, some part-time.

### 2.2 Measures

The survey included the English version of the Wellbeing Process Questionnaire [23], and the independent variables were components of the wellbeing process model:

- Negative work characteristics (e.g., high job demands)

- Negative coping styles (Wishful thinking; Self-Blame; Avoidance)
- Psychological capital (self-esteem, self-efficacy, and optimism)
- Positive work characteristics (e.g., job control)
- Social support
- Positive coping styles (Problem-focused coping; seeking support)

The data were transferred to the IBM SPSS version 27 statistical package for analysis. Regression analyses were used to identify significant predictors of the wellbeing outcomes.

### 3. RESULTS

#### 3.1 Pre-COVID-19 Lockdown Wellbeing

The outcome variables were:

- Negative wellbeing outcomes (e.g., perceived stress at work, anxiety and depression)
- Positive wellbeing outcomes (e.g., happiness, job satisfaction, positive affect)
- Flourishing
- General Health

These regression analyses examined the applicability of the wellbeing process model to the current sample. Linear regressions were performed, including established predictors as the independent variables. Separate analyses were performed for positive and negative wellbeing scores, general health and flourishing as the outcomes. The results of the regression for positive wellbeing are shown in Table 1. Positive wellbeing was significantly associated with job resources, social support, psychological capital, a healthy lifestyle and negatively associated with negative coping and daytime sleepiness.

The survey included the Smith COVID-19 Questionnaire [24], which collected measures of health status, hygiene, communication about COVID-19, perceived risk of infection, and current and long-term wellbeing.

**Table 1. Predictors of positive wellbeing**

Model	Unstandardized coefficients		Standardized coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	8.914	5.415		1.646	.101
Job resources	.244	.068	.184	3.594	.000
Social support	.258	.073	.176	3.537	.001
Negative Coping	-.251	.105	-.126	-2.377	.018
Psychological capital	.686	.134	.321	5.128	.000
Daytime Sleepiness	-.716	.230	-.139	-3.110	.002
A healthy lifestyle	.689	.297	.109	2.321	.021

**Table 2. Predictors of negative wellbeing**

Model	Unstandardized coefficients		Standardized coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	38.594	5.988		6.446	.000
Job demands	.315	.092	.172	3.433	.001
Social Support	-.279	.081	-.179	-3.453	.001
Negative coping	.266	.117	.126	2.286	.023
Daytime sleepiness	1.240	.257	.223	4.822	.000
A healthy lifestyle	-1.027	.328	-.153	-3.130	.002
A stable personality	-1.334	.328	-.242	-4.062	.000
I find stressful situations threatening.	.635	.286	.111	2.223	.027
Flow (feeling immersed in your job and having full involvement and engagement in your duties)	.710	.262	.118	2.713	.007

**Table 3. Predictors of flourishing**

Model	Unstandardized coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-.225	1.173		-.192	.848
Job demands	-.044	.018	-.146	-2.446	.015
Positive Coping	.078	.036	.151	2.152	.033
Psychological capital	.179	.029	.479	6.163	.000
Flow(feeling immersed in your job and having full involvement and engagement in your duties)	.175	.051	.178	3.418	.001

**Table 4. Predictors of wellbeing immediately after lockdown**

Model	Unstandardized coefficients		Standardized coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	3.378	1.341		2.519	.013
Job resources	.031	.015	.132	2.033	.044
Stable personality	.199	.069	.219	2.873	.005
Negative wellbeing	-.032	.014	-.210	-2.305	.022
Social isolation	-.153	.043	-.214	-3.549	.000

Job demands, negative coping, daytime sleepiness, finding stressful situations threatening and flow were significantly associated with negative wellbeing. Social support, a healthy lifestyle, and a stable personality had significant negative associations with the negative wellbeing outcome (see Table 2).

The following regression examined predictors of flourishing (feeling good, being successful, feeling that life is going well, and having a sense of belonging). Flourishing was significantly positively associated with psychological capital, positive coping and flow. Job demands were significantly negatively associated with flourishing (see Table 3).

The final regression had general health as the outcome. The only significant predictor was a healthy lifestyle (beta =0.69 t = 11.56 p <0.001).

**3.2 Post COVID-19 Lockdown**

Regarding COVID status, 86.3% were uninfected, 6.3% had a current illness, and 7.4% had a previous illness. Relatives, work colleagues, friends and neighbours had the following frequencies of COVID 19:

- 7.1% immediate family
- 8.9% other relatives
- 14% work colleagues
- 16.6% friends
- 20% neighbours.

21.2% knew a person who had died from COVID. There was good compliance with hygiene (handwashing and social isolation: 95.4% compliance). 50.8% were highly stressed by the risk of illness, and 44.2% were highly stressed by social isolation.

A regression was carried out to examined predictors of current wellbeing. Positive wellbeing was significantly associated with job resources and a stable personality. It was significantly negatively associated with negative wellbeing pre-lockdown and social isolation (see Table 4).

The survey's final question asked about perceptions of the longer-term negative impact of the pandemic on wellbeing (Do you think COVID-19 will harm your long-term wellbeing?). A regression was carried out to identify predictors of this variable. Stress from social isolation was significantly associated with a high negative impact and a healthy lifestyle with a low negative impact (see Table 5).

**Table 5. Predictors of the pandemic having a negative effect on long-term wellbeing**

Model	Unstandardized coefficients		Standardized Beta	t	Sig.
	B	Std. Error			
(Constant)	-.191	2.014		-.095	.925
A healthy lifestyle	-.242	.101	-.176	-2.394	.018
Social isolation	.350	.065	.389	5.395	.000

**4. DISCUSSION**

The present study aimed to address several gaps in the research literature. There has been previous research on working mothers but no prior studies considering multiple wellbeing predictors and outcomes. The present study confirmed that established positive wellbeing predictors had their usual associations with positive and negative wellbeing outcomes. In general, positive predictors such as job control and support, psychological capital and social support were strongly associated with positive wellbeing. Negative predictors such as job demands, and negative coping had negative associations with the positive outcomes. The pattern was reversed for adverse outcomes.

The study also included new predictor variables and outcomes. Daytime sleepiness was found to be associated with adverse outcomes. In contrast, a healthy lifestyle was generally associated with positive outcomes. General health was only predicted by a healthy lifestyle. Flourishing (feeling good, being successful, feeling that life is going well, and having a sense of belonging) was associated with established predictors, namely psychological capital, positive coping, and job demands (negative associated). It was also strongly associated with a new variable, namely flow, which reflects feeling immersed in one's job and having full involvement and engagement in one's work.

The present study investigated wellbeing before COVID-19, and also the effects after the first UK lockdown. 86.3% of the sample were uninfected, but over a third knew people with COVID-19. The COVID-19 questionnaire measured the communication about COVID-19, hygiene, risk of infection, social isolation, and the current and potential long-term effects on wellbeing. Wellbeing before lockdown predicted wellbeing immediately after it. Job resources and having a stable personality were positively associated with wellbeing, whereas previous negative wellbeing had a negative association with current positive wellbeing. The stress from social isolation was

also negatively associated with positive wellbeing after the lockdown. Social isolation was also associated with perceptions of a negative long-term effect of COVID-19. Having a healthy lifestyle had a protective effect against the adverse long-term effects of the pandemic.

The present study has limitations. First, the sample is from one location in Wales, and further research is required to determine whether the results generalize to other areas with different types of jobs. The WPQ is now well established, and the present findings show that it predicts different aspects of the wellbeing of working mothers. The pre-COVID data were collected retrospectively which is not ideal, as the experience of the COVID lockdown may have influenced these ratings. However, the same profile of wellbeing predictors was obtained as those found in cross-sectional and longitudinal studies. The associations between pre-COVID wellbeing and the post-lockdown scores may reflect the timing of the data collection.

The COVID-19 questionnaire probably needs some modification to cover a broader range of issues related to COVID-19. For example, loneliness and problematic internet use have led to problems during lockdown [25]. There has also been economic uncertainty and job insecurity during the pandemic. Distance-learning and home tutoring have also taken place, and the strengths and weaknesses of this for the education of children and the wellbeing of the parents need to be investigated [26]. More detailed analyses of the family characteristics are also needed. This will include how children in the home affect the wellbeing of working mothers. Similarly, the role of the father is also important in determining levels of wellbeing of the working mothers. The present study was completed prior to vaccination, but this will become another theme that has to be addressed by future research. More detailed information on the nature of work during COVID is also required, as this may vary from job to job, and will impact on the wellbeing not only of the mother but the whole family.

## 5. CONCLUSION

In summary, the present study has shown that the wellbeing process model applies to working mothers. The research also extended the model by showing that new variables increased the predictive power and the profile of outcomes in the model. Wellbeing after the lockdown was predicted by certain aspects of wellbeing before the pandemic and the experience of social isolation, which also influenced perceptions of the longer-term impact of COVID-19. These findings provide a foundation for future research incorporating the critical factors identified in other research in the area.

## ETHICAL APPROVAL

The present research was approved by the School of Psychology, Cardiff University, Ethics Committee.

## CONSENT

The survey was carried out with the informed consent of the volunteers.

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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