## ANNALS OF PSYCHOLOGY/ROCZNIKI PSYCHOLOGICZNE 2023, XXVI, 2, 177–194

DOI: https://doi.org/10.18290/rpsych2023.0011

## EMPLOYEE LIFE SATISFACTION: THE ROLE OF COVID-19-RELATED FEAR AND WORRIES AND EMPLOYEE RESOURCES

Blanka B. Kondratowicz, Anna M. Zawadzka, and Magdalena Iwanowska

Institute of Psychology, University of Gdańsk

The aim of the study was to explore the factors that could alleviate the negative consequences of the COVID-19 pandemic on employee life satisfaction. We analyzed personal resources such as belief in free will and self-evaluated work efficiency, as well as condition and energy resources related to working conditions (i.e., employment stability, remuneration, and change on mode of work) as moderators of the relationship between COVID-19 fear and COVID-19 worries and life satisfaction. The results showed that life satisfaction among employees was negatively associated with COVID-19 worries, belief in free will and remuneration level. However, it was not associated with COVID-19 fear. The results also indicate that belief in free will may be a personal resource that increases life satisfaction only when the level of this arousal is low in the case of worries of COVID-19.

Keywords: employees; life satisfaction; COVID-19 fear and worries; resources; belief in free will.

During the COVID-19 pandemic, employees were confronted by an unprecedented sense of uncertainty, which considerably increased the level of stress and led to a decrease in the sense of security. Some of the employees lost their jobs (cf. GfK,

BLANKA B. KONDRATOWICZ, https://orcid.org/0000-0002-3678-5554; ANNA M. ZAWADZKA, https://orcid.org/0000-0003-1350-3881; MAGDALENA IWANOWSKA, https://orcid.org/0000-0002-0878-9523. Correspondence concerning this article should be addressed to Blanka Kondratowicz, Uniwersytet Gdański, Instytut Psychologii, ul. Jana Bażyńskiego 4, 80-309 Gdańsk, Poland; e-mail: blanka. kondratowicz@ug.edu.pl.

Handling editor: Wacłąw Bąk, John Paul II Catholic University of Lublin. Received 5 January 2021. Received in revised form 24 May 2022, 10 March 2023, 29 March 2023. Accepted 13 June 2023. Published online 7 July 2023.

2020¹), and many feared that they would lose their jobs (cf. Pracuj.pl, 2020²). This makes it an immensely important research problem to identify the factors that might alleviate the negative consequences of the pandemic situation for the well-being of employees.

The study presented in this article was meant to answer the following questions: Are COVID-19 fear and COVID-19 worries related to employee life satisfaction, and if so, how? Do personal resources such as belief in free will and self-evaluated work efficiency moderate the relationship between COVID-19 fear and COVID-19 worries and life satisfaction? Does the condition and energy resources related to working conditions moderate the relationship between COVID-19 fear and COVID-19 worries and life satisfaction? In order to answer these questions, we conducted a correlational study. The theoretical basis and the methodology of the study are presented below.

## **COVID-19 Fear and Worries, and Well-Being**

A pandemic alters the way people function on a daily basis, both in their private and professional lives (Serafini et al., 2020) and, especially in its first stage, it causes an increase in fear and anxiety associated with the threat of an unknown disease (Epstein, 2021). The panic caused by COVID-19 is to a great extent a fear of losing one's health and life, at the root of which there is the universal feeling of terror present—namely, the fear of death (Solomon et al., 1991). The threat of a serious disease may justify the fear of death and scholars of Terror Management Theory (TMT) claim that terror is in fact naturally present in everyone's life. The threat of death suffices to make people aware of their own mortality (Solomon et al., 1991). The emergence of COVID-19 and the consequent exposure to media debate and everyday conversations relating to it also make people aware that their lives are extremely fragile and that it is impossible to cheat death (Pyszczynski et al., 2021).

Experiencing terror may result in negative emotional outcomes (Solomon et al., 1991), such as COVID-19 fear, which entails concerns for one's physical health and safety, and COVID-19 worries, which refer to the feeling of insecurity regarding what the future might bring and how everyday life might change in terms of work, social contacts or self-development, for example. The first studies on the conse-

 $<sup>^{1}</sup>$  The survey was conducted between March 20 and 23, 2020, using the CAWI method on a representative random-quota sample of N = 500 Polish respondents.

 $<sup>^2</sup>$  The survey was conducted between April 23 and 28, 2020, using the CAWI method on a sample of N = 1894 (users of Pracuj.pl portal).

quences of life during the COVID-19 pandemic indicate that the pandemic has caused a decrease in the well-being of people all over the world (Germany: Gerhold, 2020; USA: The Marist College Institute for Public Opinion, 2020), and therefore, based on the preliminary findings of those studies, we expected that also in Poland there would be a negative relationship between COVID-19 fear and COVID-19 worries and life satisfaction.

## Personal, Condition, and Energy Resources Supporting Well-Being in Health Crisis

In accordance with TMT as well as with the Conservation of Resources Theory (CRT) people use different resources in order to cope with fear and worries and to reduce them to a psychologically acceptable level (Hobfoll et al., 2018; Pyszczynski et al., 2021; Solomon et al., 1991). During the COVID-19 pandemic, some resources may have served employees in a specific way to help them cope with the situation. On the one hand, such resources may include personal resources related to regaining a sense of control, e.g. belief in free will, and positive self-concepts, e.g. self-evaluated work efficiency; on the other hand, condition and energy resources related to working conditions.

A personal resource that is significant for well-being and coping with the stress of every human being is the belief in free will, which refers to the sense of responsibility for the things that happen in one's life and for the actions one takes (Baumeister & Brewer, 2012; Carey & Paulhus, 2013). It appears that higher levels of belief in free will promote a greater sense of personal control (Gooding et al., 2017), a beneficial effect on health, while also being associated with a lower tendency to develop panic disorders or experience depressive symptoms (Ent & Baumeister, 2014). Belief in free will may also be an important aspect of an employee's performance at work and subjective well-being: the stronger the belief in free will, the higher the levels of employee performance (Stillman et al., 2010), improved health, greater satisfaction with life and work (Feldman et al., 2018; Gooding et al., 2017; Stillman et al., 2010), as well as more positive emotions (Kondratowicz-Nowak & Zawadzka, 2014, 2018).

Self-efficiency is one of the main constituents of core-self-evaluation, which in turn enhances satisfaction in one's private and professional life (Erez & Judge, 2001; Judge et al., 2005). At work, one of the elements of self-efficacy is work efficiency. Previous results show that employees feel more satisfied when they are convinced that their performance level is better than usual (Fisher, 2003).

Workers' resources also include energy and condition resources, such as money (i.e., remuneration), employment stability (i.e., type of contract), and tools (i.e., the mode of work) associated with employees' sense of security. The first factor to alleviate existential anxiety and which may be a resource in helping to cope with difficult circumstances is money (cf. Gąsiorowska et al., 2018). Also, according to the COR theory (Hobfoll et al., 2018), money is an important resource that enables access to other resources relevant to an individual's activities and goals.

Another resource that enables access to other resources is having a permanent job (cf. Hobfoll et al., 2018). Research shows that the sense of uncertainty with regard to employment reduces life and job satisfaction (Guest, 2004; De Witte, 1999) and has a deleterious effect on workers' well-being (Sparks et al., 2001). Work on the basis of a full employment contract leads to different results: it increases a worker's sense of security (Dolecińska, 2016) and improves the level of employee satisfaction (Czerw & Borkowska, 2010).

A third factor that may reduce anxiety and be a resource for the workers is the way in which they work (tools). During the COVID-19 pandemic many workers changed their mode of work from on-site to remote—in the so-called home office (Baert et al., 2020). Remote working was a form of isolation from the spread of the virus. Isolation, in turn, leads to a reduction in the number of infections and in effect, lowers the fear of the disease (Epstein, 2021). Conclusions from studies on remote work during the COVID-19 pandemic indicate that workers approved of this mode of work and that it contributed to an increase in their performance (Baert et al., 2020).

Based on the research findings outlined above, in the present study, we expected that significant moderators of the relationship between COVID-19 fear and COVID-19 worries and life satisfaction would include the level of remuneration, the form of employment, and change in the mode of work.

### **The Present Study**

This study sought to achieve three research aims. The first aim was to analyze the relationship between COVID-19 fear and COVID-19 worries and life satisfaction. The second aim was to test the moderating role of the belief in free will and self-evaluated work efficiency in the relationship between COVID-19 fear & COVID-19 worries and life satisfaction. The third aim was to test selected working conditions as moderators of the relationship between COVID-19 fear and COVID-19 worries and life satisfaction.

The theories behind, and the results of, previous studies lead us to formulate the four hypotheses. Firstly, previous studies showed that both situations of uncertainty and fear, as well as those involving exposure to death, were associated with an experience of negative emotions and might decrease well-being (cf. Germany: Gerhold, 2020; USA: The Marist College Institute for Public Opinion, 2020). We, therefore, hypothesized (H1): COVID-19 fear (H1a) and COVID-19 worries (H1b) are negatively related to employee life satisfaction.

Secondly, since the research findings indicating that people who believe in free will cope better with uncertain, frightening situations than those who hold no such belief (Baumeister & Brewer, 2012; Gooding et al., 2017; Kondratowicz-Nowak & Zawadzka, 2014; Kondratowicz et al., 2018; Stillman et al., 2011), we formulated Hypothesis H2: A higher level of belief in free will weakens the negative relationships between COVID-19 fear (H2a) and COVID-19 worries (H2b) and life satisfaction.

Thirdly, since work efficiency may reflect a positive evaluation of one's own work and job self-efficacy (Fisher, 2003), and because these in turn are employees' protective resources (Erez & Judge, 2001; Judge, 2009; Solomon et al., 1991; Stillman et al., 2010), we formulated Hypothesis H3: A higher level of work efficiency weakens the negative relationships between COVID-19 fear (H3a) and COVID-19 worries (H3b) and life satisfaction.

Lastly, bearing in mind the research findings indicating that in the face of threat and a sense of uncertainty stemming from the pandemic, the working conditions that bring a sense of stability and security may be of considerable significance for well-being (Dolecińska, 2016; Guest, 2004), we proposed that the factors moderating the relationship between COVID-19 fear and COVID-19 worries and life satisfaction may include employment stability, remuneration level and the change in the mode of work (from on-site to remotely). We, therefore, formulated Hypothesis H4: Having employment stability, higher remuneration and no change in the mode of work weaken the negative relationships between COVID-19 fear (H4a) and COVID-19 worries (H4b), and life satisfaction.

#### **METHOD**

### Description of the Health Crisis Situation of the COVID-19 Pandemic

This study was conducted between April 1 and June 6, 2020, at the mid-stage of the pandemic, during the lockdown and the subsequent gradual lifting of some of the lockdown restrictions. It was a time when great numbers of viral infections

were reported (WHO, 2020), and there were many changes in the way people lived on a daily basis, including the requirement to wear masks, the restrictions regarding shopping in retail outlets, and a directive to switch to remote learning (Cybulska & Pankowski, 2020). The restrictions began to be gradually lifted (GOV, 2020).

### Sample

The study included 175 workers (aged M = 36, 29, SD = 10.43). 58.9% were women and 40% were men, and 1.1% of participants indicated their gender as "other". The majority of participants held a master's degree (67.4%), 14.9% held a bachelor's degree and 17.7% had a diploma in secondary education. The participants were mostly from large towns and cities (between 20,000 and more than 100,000 inhabitants) (85.7%) and from towns with fewer than 20,000 inhabitants (14.3%).

#### **Procedure**

All procedures performed in the study were in accordance with the ethical standards of the institutional research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards. The study was anonymous and voluntary and before commencing the study, we obtained informed consent from the participants. We conducted the study online via the Google Forms platform. The link to the questionnaire was promoted in local and university media. The respondents completed a set of questionnaires.

#### Materials

### Measurement of COVID-19 Fear and COVID-19 Worries

The measurement of COVID-19 fear and COVID-19 worries was inspired by the published methods (e.g. Kroencke et al., 2020). The questionnaire measuring COVID-19 fear and worries consisted of two subscales: the COVID-19 fear subscale consisted of 3 items concerning health anxiety (e.g., "I am anxious about my health"), and the COVID-19 worries subscale consisted of 5 items considered impediments to everyday functioning and future anxiety (e.g., "I am worried about my future and that of my loved ones"). The participants rated the extent to which they

agreed with each item on a 5-point scale (from 1 = strongly disagree to 5 = strongly agree). The higher the score, the higher the fear or worries of COVID-19.

We performed a Confirmatory Factor Analysis to test the internal validity of the COVID-19 fear and worries questionnaire (N = 371, 71.2% women, 28.2% men, 0.5% other). The two-factor model performed satisfactory ( $\chi^2 = 68.67$ , df = 19, CFI = .943, GFI = .958, RMSEA = .08). All items loaded significantly on the two factors [the lowest .40 and the highest .90]. Cronbach's alphas reliability in this study were satisfactory:  $\alpha = .77$  for COVID-19 fear subscale,  $\alpha = .79$  for COVID-19 worries subscale.

## Measurement of Life Satisfaction

To measure life satisfaction, we used a method inspired by Czapiński and Panek (2009) by asking the respondents to answer five questions concerning the degree of satisfaction with various life domains (e.g., "How satisfied are you with your relations with others?" "How satisfied are you with your job?"). The items were rated on a scale from 1 = very unsatisfied to 9 = very satisfied. Overall life satisfaction was the sum of the respondent's answers. Cronbach's alpha reliability for this study was satisfactory ( $\alpha = .78$ ).

## Measurement of Personal Resources

To measure belief in free will, we used the subscale from the Free Will and Determinism Plus (FAD-Plus) scale (Paulhus & Carey, 2011; Polish adaptation by Kondratowicz-Nowak et al., 2018). The belief in free will subscale consists of 5 items (e.g., "People have complete control over the decisions they make"). Each item is rated on a 5-point scale (from 1 = strongly disagree to 5 = strongly agree). The Cronbach's alpha value for this subscale was satisfactory,  $\alpha = .70$ .

Self-evaluated work efficiency was measured by means of a question about the participants' subjective evaluation of their work efficiency during the pandemic: "What is your evaluation of your work efficiency now, during the pandemic?" The participants answered the question using a 5-point scale:  $1 = much \ lower \ than \ usual$  to  $5 = much \ higher \ than \ usual$ . The decision to use this type of measurement was due to the fact that short scales are commonly used in social sciences because due to their accuracy compared to classical long scales is comparable (Czerwiński et al., 2019), including single-item scales (Postmes et al., 2013).

## Measurement of Energy Resources and Condition Resources

Employment stability was measured by means of a question about the form of employment. The participants indicated their responses, choosing from: "self-employed", "employment contract", or "mandate contract/specific-task contract". In the analyses, we considered two categories: 1—stable employment (in the case of participants working under an employment contract) and 2—unstable employment (in the case of participants working under a mandate contract or specific-task contract, or self-employed).

The remuneration received was determined with a question regarding the participants' monthly net earnings. They answered using a 6-point scale, from  $1 = PLN\ 0$  to  $PLN\ 2000$  to  $6 = more\ than\ PLN\ 10.000$ .

The change in the mode of work was measured by means of two questions: the first one concerned the mode of work before COVID-19 and the second one concerned the mode of work during the COVID-19 pandemic. The participants had the following answers to choose from: "I work on-site", "I work remotely from home", "I work partly on-site and partly remotely". Based on answers to these two questions, we distinguished three categories of change in the mode of work: 0 = no change (the same mode of work before and during the pandemic), 1 = partial change (change from "work on-site" to "partly from home and partly on-site"), 2 = complete change (from "work on-site" to "work from home"). In the analysis we considered these three categories.

#### RESULTS

## Relationship Between COVID-19 Fear and COVID-19 Worries, and Life Satisfaction

The statistical software IBM SPSS 26 was used for the analyses. In the first step of the analyses, Pearson's *r* correlation analysis was performed and are presented in Table 1.

**Table 1**Correlations Between Tested Variables

Variable	1	2	3	4	5	6	7	8	9
1. COVID-19 fear	-								
2. COVID-19 worries	.41**	_							
3. Belief in free will	.01	.03	_						
4. Self-evaluated work efficiency	05	26**	.17*	-					
5. Stable employment	06	.14	08	18*	-				
6. Unstable employ- ment	.06	16*	.08	.19*	09	_			
7. Remuneration level	10	30**	.20**	.28**	35**	.16*	_		
8. Change of mode of work	.18*	.11	.02	14	.24**	.07	22**	-	
9. Life satisfaction	06	24**	.19*	.11	12	01	.24**	06	-

*Note.* Level of significance \* p < .05, \*\* p < .01.

Afterwards, we conducted the Linear Regression Analysis (method: enter) to test the first hypothesis. When COVID-19 fear and COVID-19 worries were entered into analysis (with other variables as covariates e.g. gender, age, belief in free will, work efficiency, remuneration level, contract type, changes in the mode work) a 12% variance was accounted for in the employees' life satisfaction (R = .35,  $R^2 = .12$ , F(9, 162) = 2.49, p = .011). COVID-19 worries were negatively associated with life satisfaction ( $\beta = -.22$ , p = .011; LLCI = -.39, ULCI = -.06, p = .014). Both belief in free will ( $\beta = .16$ , p = .041; LLCI = .01, ULCI = .34, p = .078) and remuneration level ( $\beta = .18$ , p = .048; LLCI = .02, ULCI = .33, p = .028) were positively associated with life satisfaction. COVID-19 fear, work efficiency, change of the mode of work, employment stability, and age and sex were statistically insignificant predictors (see Table 2).

Variable	В	s.e.	В	t	p	Bca LLCI	Bca ULCI	p
Genderx	.19	.16	.10	1.20	.233	13	.49	.248
Age	.003	.008	.03	.33	.741	01	.02	.739
COVID-19 fear	.05	.09	.05	.58	.566	12	.23	.551
COVID-19 worries	23	.09	22	-2.56	.011	39	06	.012
Self-evaluated work efficiency	.001	.08	.001	.01	.99	16	.18	.988
Belief in free will	.16	.08	.16	2.06	.041	01	.34	.078
Remuneration level	.18	.09	.18	1.98	.048	.02	.33	.028
Stable employment	21	.21	.08	-1.003	.317	63	.25	.337
Change of mode of work	01	.08	01	17	.869	15	.13	.848

 Table 2

 Predictors of Life Satisfaction of the Employees

 $R = .35, R^2 = .12, F(9, 162) = 2.49, p = .011$ 

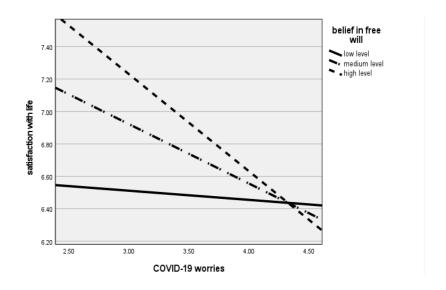
Note. Employment stability was transformed into instrumental variable with work non-stability.

The results obtained supported the H1 for the COVID-19 worries (H1b) but not for the COVID-19 fear (H1a).

# Belief in Free Will as a Moderator of the Relationship Between COVID-19 Fear and COVID-19 Worries, and Life Satisfaction

The moderating effects were tested with regression analysis using the PROCESS bootstrapping macro procedure (Hayes, 2018). There was no significant moderating effect of belief in free will on the relationship between COVID-19 fear and life satisfaction ( $\Delta R^2 = .02$ ,  $\Delta F(1, 171) = 3.35$ , p = .07). This means that Hypothesis H2a was not supported. Belief in free will moderated the relationship between COVID-19 worries and life satisfaction (b = -.39, LLCI = -.69, ULCI = -.09, t = -2.53, p = .01). Overall, the moderation model accounted for significant unique variance in participants' reported life satisfaction:  $\Delta R^2 = .03$ ,  $\Delta F(1, 171) = 6.40$ , p = .01. The conditional effects were found to be statistically significant for medium (effect = -.36, SE = .11, t = -3.35, p = .001, LLCI = -.58, ULCI = -.15) and high (effect = -.60, SE = .14, t = -4.26, p < .001, LLCI = -.88, ULCI = -.32) levels of belief in free will.





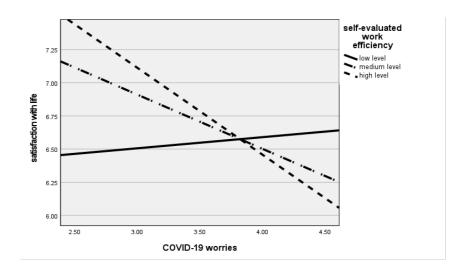
As Figure 1 shows, for employees with medium and high levels of belief in free will an increase in COVID-19 worries was linked with a decrease in life satisfaction, whereas for employees with low levels of free will an increase in COVID-19 worries was related to no changes in life satisfaction. This means Hypothesis H2b was not supported. Stronger belief in free will was related to higher life satisfaction only when COVID-19 worries were low.

# Work Efficiency as a Moderator of the Relationship Between COVID-19 Fear and COVID-19 Worries, and Life Satisfaction

There was no significant moderation effect of work efficiency on the relationship between COVID-19 fear and life satisfaction ( $\Delta R^2 = .01, \Delta F(1, 171) = 2.13, p = .15$ ). This means that Hypothesis H3a was not supported. Work efficiency moderated the relationship between COVID-19 worries and life satisfaction: b = -.25, LLCI = -.44, ULCI = -.06, t = -2.54, p = .01. Overall, the moderation model accounted for significant unique variance in participants' reported life satisfaction:  $\Delta R^2 = .03$ ,  $\Delta F(1, 171) = 6.44, p = .01$ . The conditional effects were found to be statistically significant for medium (effect = -.40, SE = .11, t = -3.47, p < .001, LLCI = -.64,

ULCI = -.17) and high (effect = -.66, SE = .16, t = -3.90, p < .001, LLCI = -.98, ULCI = -.32) levels of work efficiency.

Figure 2
Work Efficiency as a Moderator of the Relationship Between C-19 Worries and Life Satisfaction



As Figure 2 shows, for participants with medium and high levels of work efficiency, the negative relationship between COVID-19 worries and life satisfaction is stronger. Hypothesis H3b was therefore unsupported. High and medium levels of work efficiency were associated with higher life satisfaction only if the level of COVID-19 worries was low.

# Working Conditions as Moderators of the Relationship Between COVID-19 Fear and COVID-19 Worries, and Life Satisfaction

The analysis showed no significant moderating effect for any of the working conditions on the relationship between COVID-19 fear (employment stability:  $\Delta R^2 = .005$ ,  $\Delta F(1, 171) = .78$ , p = .377; remuneration:  $\Delta R^2 = .02$ ,  $\Delta F(1, 168) = 3.29$ , p = .07, and mode of work:  $\Delta R^2 = .007$ ,  $\Delta F(1, 171) = .12$ , p = .732) and COVID-19 worries (employment stability:  $\Delta R^2 = .003$ ,  $\Delta F(1, 171) = .43$ , p = .502, remuneration:  $\Delta R^2 = .004$ ,  $\Delta F(1, 168) = .70$ , p = .405, and mode of work:  $\Delta R^2 = .001$ ,  $\Delta F(1, 171) = .03$ , p = .873) and life satisfaction. In the case of working conditions, Hypothesis H4 was not supported.

#### DISCUSSION AND CONCLUSION

In our study, we found that COVID-19 worries were a significant predictor of life satisfaction. We, therefore, extended the findings of previous studies on the negative link between the COVID-19 pandemic and well-being (cf. Gerhold, 2020; The Marist College Institute for Public Opinion, 2020) among employees: the higher the level of worries associated with an uncertain and difficult future, the lower the life satisfaction of employees. The presence of this effect only for COVID-19 worries and not for COVID-19 fear may indicate that a decrease in well-being during the initial stages of a health crisis is primarily associated with a fear of losing resources such as deteriorating social relationships and impaired occupational functioning (Hobfoll et al., 2018) as well as the need to adapt to sudden changes resulting from restrictions (Buss, 2003; GOV, 2020). The lack of relationship with COVID-19 fear may be interpreted in relation to TMT. When thoughts of death are center-stage, people attempt to expunge them from their consciousness. In view of the results revealing a significant correlation between life satisfaction and COVID-19 worries and no significant correlation with COVID-19 fear—one may also wonder which of the two theories—TMT or COR—provides a better explanation for the harmful effects associated with the occurrence of anxiety during a health crisis. Especially, since recent replications of TMT studies have failed to confirm the strong effect anxiety of death on attitudes and behaviours (Chatard et al., 2020).

The results supported neither H2a, which concerns the moderating role of belief in free will in the relationship between the center of attention COVID-19 fear and life satisfaction, nor H2b, concerning the role of belief in free will as a moderating factor in the relationship between COVID-19 worries and life satisfaction. In this study, we observed that belief in free will may be a personal resource that increases life satisfaction only when the level of this arousal is low in the case of worries about COVID-19. The observed result is consistent with the Yerkes–Dodson law (Teigen, 1994): an excessively high level of arousal—in this case, worries—may incapacitate an individual. When an individual experiences a very high level of arousal, cognitive mechanisms cease to function—the priority now is the protection of health and life. Therefore, in a situation of low rather than medium or high levels of COVID-19 worries, belief in free will may have been a way for employees to maintain a certain level of well-being during the pandemic.

The study failed to confirm H3a and H3b. The results showed that only at low levels of COVID-19 worries was work efficiency accompanied by higher life satisfaction. This is inconsistent with what other researchers have reported (Fisher,

2003), as well as with the assumptions of COR: it shows that this personal resource fails to work in the very stressful circumstances of the pandemic.

Hypotheses H1, H2a, and H3a were unconfirmed in the case of COVID-19 fear, which was only positively related to age and gender (being a woman). The gender score is compatible with the results that indicate that during the COVID-19 pandemic, women felt fear and anxiety more intensely and experienced them differently from men (Vegt & Kleinberg, 2020).

None of the condition and energy resources analyzed, such as employment stability, remuneration, and mode of work had a moderating effect on the relationship between COVID-19 fear and COVID-19 worries. This may be due to the fact that there have been numerous changes in the labour market in recent years (Sparks et al., 2001). Modifications in how we work based on new technologies and new forms of employment contracts, which had become widespread before the pandemic, mean that workers may have adapted to such changes before the pandemic. In contrast, the lack of moderating effect related to salary may be due to the level of earnings represented by the study group itself. The participants in our study had relatively high wages (61% of them earned more than 4000 PLN per month).<sup>3</sup> These amounts may have provided respondents with a sense of security during the pandemic situation.

#### **Limitations and Directions for Further Research**

As any other study, it has its limitations. The first is the correlational nature of the study. It is possible that life satisfaction is not an effect of experiencing fear and worries, but a cause or mediator, such as in a study by Trzebiński and colleagues (2020), which showed that life satisfaction mediated the relationship between hope and anxiety and stress during the COVID-19 pandemic. One of the limitations of this test may be the sample size. Subsequent surveys might benefit by looking at a larger sample of employees. The predominance of women in the sample may also have been of significance in the case of the investigated variables investigated, such as the level of fear, which is usually more strongly felt in women than in men (Wojciszke, 2002).

Despite its limitations, our study provides knowledge regarding employees' satisfaction during a health crisis. The study shows that worries about the negative consequences of the COVID-19 pandemic decrease employees' satisfaction with life.

 $<sup>^3</sup>$  In Poland the minimum wage for a full-time employment was 2600 PLN at the time (Infor, 2020).

It also demonstrates that a belief in free will, and high self-evaluated work efficiency, constitute a kind of protection against the negative consequences of COVID-19 worries for satisfaction with life only in the case of employees with a low level of COVID-19 worries. At the same time, the study indicates that in health crises such as the COVID-19 pandemic, the employees' fear and worries impede the effect of the proposed types of protection.

### **CRediT Author Statement**

BLANKA B. KONDRATOWICZ (32%): conceptualization, methodology, software, formal analysis, resources, writing (original draft), writing (review and editing).

Anna M. Zawadzka (36%): conceptualization, formal analysis, methodology, supervision, validation, writing (original draft), writing (review and editing).

MAGDALENA IWANOWSKA (32%): conceptualization, methodology, software, formal analysis, resources, writing (original draft), writing (review and editing).

#### REFERENCES

- Baert, S., Lippens, L., Moens, E., Weytjens, J., & Sterkens, P. (2020). The COVID-19 crisis and telework: A research survey on experiences, expectations and hopes. *IZA Discussion Paper*, 13229. http://doi.org/10.2139/ssrn.3596696
- Baumeister, R. F., & Brewer, L. E. (2012). Believing versus disbelieving in free will: Correlates and consequences. *Social and Personality Psychology Compass*, 6(10), 736–745. https://doi.org/10.1111/j.1751-9004.2012.00458.x
- Buss, D. M. (2003). Psychologia ewolucyjna (M. Orski, Trans.). Gdańskie Wydawnictwo Psychologiczne. (Original work published 1998)
- Carey, J. M., & Paulhus, D. L. (2013). Worldview implications of believing in free will and/or determinism: Politics, morality, and punitiveness. *Journal of Personality*, 81(2), 130–141. https://doi.org/10.1111/j.1467-6494.2012.00799.x
- Chatard, A., Hirschberger, G., & Pyszczynski, T. (2020). A word of caution about Many Labs 4: If you fail to follow your preregistered plan, you may fail to find a real effect. PsyArXiv. https://doi.org/10.31234/osf.io/ejubn
- Coronavirus: information and recommendations (2020, June 15). https://www.gov.pl/web/koronawirus Cybulska, A., & Pankowski, K. (2020). Skutki epidemii koronawirusa w życiu zawodowym i budżetach domowych. Komunikat z badań 56 [The effects of a coronavirus outbreak on professional life and household budgets. Research communication 56]. In CBOS Online. https://www.cbos.pl/SPISKOM.POL/2020/K\_056\_20.PDF
- Czapiński, J., & Panek, T. (Eds.). (2009). *Diagnoza społeczna 2009. Warunki i jakość życia Polaków,* 2. [Social diagnosis. Living conditions and quality of life in Poland, 2]. Retrieved March 2, 2023, from http://www.diagnoza.com/pliki/raporty/Diagnoza raport 2009.pdf

- Czerw, A., & Borkowska, A. (2010). Praca zawodowa jako obszar realizowania misji społecznej [Professional work as an area of pursuing a social mission]. *Psychologia Społeczna*, *5*(4), 303–315.
- Czerwiński, S. K., Uzarska, A., & Atroszko, B. (2019). Measurement invariance between student and employee groups of the Polish version of the Mini-IPIP Scale for Big Five personality traits. In *Reviewed Proceedings of the Interdisciplinary Scientific International Conference for PhD students and assistants QUAERE 2019, IX* (pp. 817–825). Magnanimitas.
- De Witte, H. (1999). Job insecurity and psychological well-being: Review of the literature and exploration of some unresolved issues. *European Journal of Work and Organizational Psychology*, 8(2), 155–177. https://doi.org/10.1080/135943299398302
- Dolecińska, J. (2016). Wpływ formy zatrudnienia na lojalność pracowników [The effect of the form of employment on employee loyalty]. *Marketing i Rynek*, *3*, 92–103.
- Ent, M. R., & Baumeister, R. F. (2014). Embodied free will beliefs: Some effects of physical states on metaphysical opinions. *Consciousness and Cognition*, 27, 147–154. https://doi.org/10.1016/j. concog.2014.05.001
- Epstein, J. M., Hatna, E., & Crodelle, J. (2021). Triple contagion: A two-fears epidemic model. *Journal of the Royal Society Interface*, 18(181), 20210186. https://doi.org/10.1098/rsif.2021.0186
- Erez, A., & Judge, T. A. (2001). Relationship of core self-evaluations to goal setting, motivation, and performance. *Journal of Applied Psychology*, 86(6), 1270–1279. https://doi.org/10.1037/0021-9010.86.6.1270
- Feldman, G., Farh, J. L., & Wong, K. F. E. (2018). Agency beliefs over time and across cultures: Free will beliefs predict higher job satisfaction. *Personality and Social Psychology Bulletin*, 44(3), 304–317. https://doi.org/10.1177/0146167217739261
- Fisher, C. D. (2003). Why do lay people believe that satisfaction and performance are correlated? Possible sources of a commonsense theory. *Journal of Organizational Behavior*, 24(6), 753–777. https://doi.org/10.1002/job.219
- Gasiorowska, A., Zaleśkiewicz, T., & Kesebir, P. (2018). Money as an existential anxiety buffer: Exposure to money prevents mortality reminders from leading to increased death thoughts. *Journal of Experimental Social Psychology*, 79, 394–409. https://doi.org/10.1016/j.jesp.2018.09.004
- Gerhold, L. (2020). COVID-19: Risk perception and coping strategies. Results from a survey in Germany. Manuscript submitted for publication. PsyArXiv. https://doi.org/10.31234/osf.io/xmpk4
- GfK. (2020). Corona Mood. Dynamika zachowań konsumenckich w Polsce [Corona Mood: The dynamics of consumer behaviors in Poland]. Retrieved March 2, 2023, from https://www.gfk.com/pl/prasa/polowa-respondentow-51-proc-deklaruje-ze-chodzi-do-pracy-jak-zwykle?hsLang=pl
- Gooding, P. L., Callan, M. J., & Hughes, G. (2018). The association between believing in free will and subjective well-being is confounded by a sense of personal control. *Frontiers in Psychology*, *9*, 623. https://doi.org/10.3389/fpsyg.2018.00623
- Guest, D. (2004). Flexible employment contracts, the psychological contract and employee outcomes: An analysis and review of the evidence. *International Journal of Management Reviews*, 5–6, 1–19. https://doi.org/10.1111/j.1460-8545.2004.00094.x
- Hayes, A. F. (2018). *Introduction to mediation, moderation, and conditional process analysis* (2nd ed.). The Guilford Press.
- Hobfoll, S. E., Halbesleben, J., Neveu, J. P., & Westman, M. (2018). Conservation of resources in the organizational context: The reality of resources and their consequences. *Annual Review of Organizational Psychology and Organizational Behavior*, 5, 103–128. https://doi.org/10.1146/annurev-orgpsych-032117-104640

- Infor.pl. (2020). *Placa minimalna w 2020 r. brutto i netto* [Minimal salary in 2020 gross vs. net]. Retrieved March 2, 2023, from https://www.infor.pl/prawo/zarobki/wysokosc-zarobkow/3573337,Placa-minimalna-w-2020-r-brutto-i-netto.html
- Judge, T. A., Bono, J.E., Erez, A., & Locke, E. (2005). Core self-evaluations and job and life satisfaction: The role of self-concordance and goal attainment. *Journal of Applied Psychology*, 90(2), 257–268. https://doi.org/10.1037/0021-9010.90.2.257
- Judge, T. A. (2009). Core self-evaluations and work success. *Current Directions in Psychological Science*, 18(1), 58–62. https://doi.org/10.1111/j.1467-8721.2009.01606.x
- Kondratowicz-Nowak, B., & Zawadzka, A. (2014). Free will, perception of key job characteristics and well-being. In D. Polkowska (Ed.), *The value of work in contemporary society* (pp. 25–31). Inter-Disciplinary Press.
- Kondratowicz-Nowak, B., Duda, J., Wierzbicki, J., & Zawadzka, A. (2018). The Free Will and Determinism Plus (FAD–Plus) scale: The validity and reliability of the Polish adaptation. *Roczniki Psychologiczne*, *21*, 345–364. https://doi.org/10.1016/j.jrp.2020.104038
- Kondratowicz-Nowak, B., & Zawadzka, A. (2018). Does belief in free will make us feel good and satisfied? *Health Psychology Report*, 6, 109–117. https://doi.org/10.5114/hpr.2018.73053
- Kroencke, L., Geukes, K., Utesch, T., Kuper, N., & Back, M. (2020). Neuroticism and emotional risk during the COVID-19 pandemic. *Journal of Research in Personality*, 89, 104038. https://doi. org/10.1016/j.jrp.2020.104038
- Paulhus, D. L., & Carey, J. M. (2011). The FAD–Plus: Measuring lay beliefs regarding free will and related constructs. *Journal of Personality Assessment*, 93(1), 96–104. https://doi.org/10.1080/0 0223891.2010.528483
- Postmes, T., Haslam, S. A., & Jans, L. (2013). A single-item measure of social identification: Reliability, validity, and utility. *British Journal of Social Psychology*, *52*(4), 597–617. https://doi.org/10.1111/bjso.12006
- Pracuj.pl. (2020). *Praca w dobie koronawirusa. Nowa normalność zawodowa* [Work in the time of coronavirus: New occupational normality]. Retrieved March 2, 2023, from https://prow-ly-uploads.s3.eu-west-1.amazonaws.com/uploads/landing\_page\_image/image/266145/ea2b4d-be108849e69e7b7cf0eb486119.pdf
- Pyszczynski, T., Lockett, M., Greenberg, J., & Solomon, S. (2021). Terror Management Theory and the COVID-19 pandemic. *Journal of Humanistic Psychology*, 61(2), 173–189. https://doi.org/10.1177/0022167820959488
- Serafini, G., Parmigiani, B., Amerio, A., Aguglia, A., Sher, L., & Amore, M. (2020). The psychological impact of COVID-19 on the mental health in the general population. *QJM: monthly journal of the Association of Physicians*, 113(8), 531–537. https://doi.org/10.1093/qjmed/hcaa201
- Solomon, S., Greenberg, J., & Pyszczynski, T. (1991). A Terror Management Theory of social behavior: The psychological functions of self-esteem and cultural worldviews. *Advances in Experimental Social Psychology*, 24, 93–159. https://doi.org/10.1016/S0065-2601(08)60328-7
- Sparks, K., Faragher, B., & Cooper, C. L. (2001). Well-being and occupational health in the 21st century workplace. *Journal of Occupational and Organizational Psychology*, 74(4), 489–509. https://doi.org/10.1348/096317901167497
- Stillman, T. F., Baumeister, R. F., Vohs, K. D., Lambert, N. M., Fincham, F. D., & Brewer, L. E. (2010). Personal philosophy and personnel achievement: Belief in free will predicts better job performance. *Social Psychological and Personality Science*, 1(1), 43–50. https://doi.org/10.1177/1948550609351600

- Stillman, T. F., Baumeister, R. F., & Mele, A. R. (2011). Free will in everyday life: Autobiographical accounts of free and unfree actions. *Philosophical Psychology*, 24(3), 381–394. https://doi.org/10.1080/09515089.2011.556607
- Teigen, K. H. (1994). Yerkes-Dodson: A law for all seasons. *Theory & Psychology*, 4(4), 525–547. https://doi.org/10.1177%2F0959354394044004
- The Marist College Institute for Public Opinion. (2020). NPR/PBS NewsHour/Marist Poll Results. Coronawirus. Retrieved March 2, 2023, from http://maristpoll.marist.edu/npr-pbs-newshour-marist-poll-results-14/#sthash.DV7W3gno.CPknYyPO.dpbs
- Trzebiński, J., Cabański, M., & Czarnecka, J. Z. (2020). Reaction to the COVID-19 pandemic: The influence of meaning in life, life satisfaction, and assumptions on world orderliness and positivity. *Journal of Loss and Trauma*, 25(6–7), 544–557. https://doi.org/10.1080/15325024. 2020.1765098
- Vegt, I. V., & Kleinberg, B. (2020). Women worry about family, men about the economy: Gender differences in emotional responses to COVID-19. ArXiv. https://doi.org/10.48550/arXiv.2004.08202
- World Health Organization. (2020, June 5). Coronavirus disease (COVID-19). Situation Report, 137. https://apps.who.int/iris/handle/10665/332384
- Wojciszke, B. (Ed.). (2002). *Kobiety i mężczyźni: odmienne spojrzenia na różnice* [Women and men: Different perspectives on the differences]. Gdańskie Wydawnictwo Psychologiczne.

## **Appendix**

#### COVID-19-Related Fear and Worries Questionnaire (Original Polish Version)

Item	COVID-19-related fear items
1.	Boję się o własne zdrowie.
2.	Boję się o własne bezpieczeństwo.
3.	Boję się o zdrowie bliskich osób.
	COVID-19-related worries items
1.	Sądzę, że sytuacja materialna moja i mojej rodziny ulegnie znacznemu pogorszeniu.
2.	Sądzę, że nasz kraj spotkają poważne konsekwencje gospodarcze.
3.	Myślę, że w związku z pandemią moje życie zmieni się na gorsze.
4.	W związku z pandemią obawiam się o przyszłość swoją i swoich bliskich.
5.	W związku z pandemią nie mam możliwości realizacji swoich pasji i zainteresowań.