



# Article Does Positive Thinking Help during Difficult Pandemic Times? The Role of Positive Orientation in the Relationship between Fear of COVID-19 and Perceived Stress

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Abstract: The COVID-19 pandemic has become a huge challenge for the modern world. How people perceive themselves and their coping abilities is important for their mental health and well-being. One of the traits that may be important in effectively coping with difficulties is positive orientation: a stable cognitive disposition that is the opposite of depression and is associated with a positive perception of oneself, one's life, events, and the future. This study aimed to verify the role of positive orientation in the relationship between fear of COVID-19 and perceived stress. A sample of 907 Polish people took part in this study. FOC-6, P Scale, and PSS-10 questionnaires were used in the presented cross-sectional study. The analysis showed that women scored higher in fear of COVID-19 and perceived stress scores than men (Cohen's d indicated a moderate effect). There was no significant difference in the levels of positive orientation. P Scale results were significantly related to fear of COVID-19 (small effect) only for the whole studied sample, and not for women and men considered separately. Fear of COVID-19 was positively related to the perceived stress score (moderate effect). Positive orientation was negatively related to the PSS-10 scores (also moderate effect) for all tested groups. Fear of COVID-19 and positive orientation were significant predictors of perceived stress scores. The mediation effect of positive orientation was statistically significant, but the effect size was marginally small. Positive orientation is an important predictor of perceived stress, which could be related to the COVID-19 pandemic. People with a positive orientation better cope with the challenges of the pandemic and are optimistic about the future. Working on positive orientation can improve well-being and reduce tension, which is extremely important in difficult pandemic times.

Keywords: fear of COVID-19; perceived stress; positive orientation; global pandemic; mediation analysis

# 1. Introduction

The COVID-19 pandemic has become a huge challenge for the modern world. Since its announcement, over 600 million people have been infected, and 6.5 million have died [1]. During the COVID-19 pandemic, people were afraid of infection, complications, and own death. They were also afraid that someone close to them would get sick or die. People were afraid of contact with others who could transmit the virus. The fear was also aroused by quarantine, the need for isolation, hospitalization, and the lack of access to healthcare facilities [2,3]. In addition to the risk of being infected, the pandemic has caused many social, family, and work limitations. As a result, it has become a significant cause of stress and mental health problems [4]. Stress during a pandemic is probably associated with both the fear of getting infected and its consequences, as well as the feeling of helplessness, frustration, loneliness, many changes in professional and social functioning, and the financial crisis [5,6].

Many studies focused on the strengths of the individuals and their personal resources, which allowed them to effectively deal with the challenges posed by the pandemic. How people perceive themselves and their coping abilities is important for their mental health and well-being [7–9]. One of the traits that may be important in effective coping with difficulties is



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**Copyright:** © 2023 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (https:// creativecommons.org/licenses/by/ 4.0/). a positive orientation. This basic personality trait reflects a general tendency to perceive life experiences with a positive attitude [10,11]. According to the theory of positivity (POS), positive orientation is a stable global cognitive disposition to optimistic thinking, a positive assessment of life satisfaction and self-esteem, affecting people's feelings, cognition, and actions [10–12]. POS decreases the risk of depression and is associated with a positive perception of oneself, one's life, events, and the future [12]. Capara et al. [10–12] showed that a positive cognitive triad promotes well-being and flourishing, allowing for effective coping with negative life events, diseases, or traumatic situations, and may protect against negative psychological consequences of life events [13–16]. People with high POS compensate for negative affect by fostering positive affectivity. They tend to evaluate external reality positively and overestimate their performance and attributes, coping with difficulties better than those with low POS [14].

Previous research demonstrated that people experiencing depression and anxiety reported low levels of subjective well-being, and the relationship between mental health and well-being is reciprocal [17]. Recent research showed a negative relationship of life satisfaction (one of the POS components) with fear of COVID-19 (or anxiety) and perceived stress [7,8,18–20]. Fear of COVID-19 is also positively related to stress [2,4,6,21,22]. Seligman [23] showed evidence that optimism modulates perceived stress, as well as depression, emotion, and mood, and can protect from physical illness (including cardiovascular diseases, hypertension, high cholesterol) and unhealthy lifestyle consequences (obesity, smoking, and excessive alcohol use). Similarly, the review study by Scheier and Carver [24] demonstrated that optimism is negatively correlated with various physical health outcomes, including mortality, heart failure, and stroke. From the biological point of view, optimists have better immune systems. They tend to cope with stress better than pessimists, generating less stress hormone (cortisol), fibrinogen, and high heart rate variability [23,25]. The study evidenced that a positive future orientation is a mediator between traumatic experiences and mental health [26].

The current study will examine the associations between fear of COVID-19, perceived stress, and POS. Endler [27] proposed the multidimensional interaction model (MIM), which can explain the interaction mechanism between fear of COVID-19, POS, and perceived stress. When a person with a certain personality characteristic (e.g., anxiety trait, dispositional optimism) perceives a stressful situation (e.g., COVID-19 pandemic) as a threat or danger, this can lead to an increase in arousal (e.g., heightened fear of COVID-19), which in turn can lead to biochemical and physiological changes and the perception of stress. All associations between personal characteristics (e.g., vulnerability to fear or POS disposition), situational factors (e.g., fear or pleasure), change in arousal (increasing or decreasing), and responses to changes in arousal (e.g., perceived stress) are bidirectional and interact with each other. Due to the MIM, it is expected that personal traits (such as POS) can mediate the relationship between fear of COVID-19 and perceived stress.

Sirgy [17] distinguished several theories that can explain the mediating role of POS on mental and physical health, including stress and fear response to the challenging environment. The affective disposition theory [28] argues that affective states (e.g., positive emotions such as hope, happiness, love, optimism, or negative emotions such as fear, guilt, jealousy, anger, or sadness) influence well-being alongside situational factors. Furthermore, the instrumental and temperament theories suggested that extraversion and neuroticism predispose people to certain cognitive and behavioral reactions to various situations. For example, extrovert individuals are more prone to positive stimuli and positive affect, while neurotics are more sensitive to punishment, negative emotions, and mood. Happiness is also genetically determined. According to the top-down theory [29], happy people tend to overestimate themselves, which biases their perception of outcomes in specific domains (including perceived stress). In contrast, unhappy people are likelier to provide further weight to their worst domain (so they can experience greater stress response).

The other possible explanation of mediating role of POS in the relationship between fear of the COVID-19 pandemic and perceived stress is Lazarus's transactional stress model [30,31]. Stress is the result of an interaction between a person and the environment. The arousal and stress response depends on specific features of the environment (more or less stable, predictable, threatening) as well as on characteristics of a person (self-efficacy, self-esteem, individual dispositions, and coping abilities). Primary appraisal refers to the subjective experience of the event as stressful in terms of irrelevant stressors, i.e., positive or dangerous (challenge or threat). Secondary appraisal refers to an assessment of a person's ability to cope. Coping with stress results from the transaction between environmental demands and current personal or social resources (sufficient or insufficient). Fear of COVID-19 can be considered a type of primary appraisal in this study. High anxiety levels are experienced in highly anxious individuals (a biologically determined trait, related to introversion and neuroticism). This study's secondary appraisal can be understood as a reference to stable POS that defines past and future actions in different situations. The secondary appraisal (positive *versus* negative orientation) can lead to changes in stress response (decrease or increase, respectively to POS levels). As such, it is expected that POS will serve as a mediator in the relationship between fear of COVID-19 and perceived stress.

Consistent with the appraisal theory, happy people tend to appraise their life events more positively than unhappy persons. Moreover, even if the situation is objectively "neutral", happy individuals perceive it more positively. Therefore, they can experience lower levels of perceived stress [17]. The attribution theory of happiness [32] suggests that well-being is related to the optimistic attribution style (success is considered as a result of internal, stable factors, including personality traits, self-efficacy, and self-esteem). Conversely, people feel more unhappy when they use pessimistic attribution (internal, stable) to explain their failures. If people think they have little control over good events that happen to them, they may experience a lower level of subjective well-being than when they feel responsible for those events.

Based on previous research [2,4,6–8,17–26], we assumed that both fear of COVID-19 and positive orientation would significantly predict the perceived stress experienced during a global pandemic. However, the mediating effect of positive orientation on the relationship between fear of COVID-19 and perceived stress will be examined in this study for the first time (Figure 1), consistent with MIM [27] and transactional model of stress [30,31], as well as the positive orientation theories [17,28,29,32].



**Figure 1.** The hypothesized model of the mediating effect of positive orientation on the relationship between fear of COVID-19 and perceived stress.

#### 2. Materials and Methods

## 2.1. Participants

Of the 907 Polish people who participated in this study, 385 men and 522 women. The mean age of the study population was 39.28 years old. Detailed sociodemographic data of the studied sample are presented in Table 1.

Variable	Category	<i>M</i> ( <i>SD</i> ) or <i>n</i> (%)	
	Overall	39.28 (15.30)	
Age	Women	38.59 (15.22)	
	Men	40.21 (15.38)	
	Women	522 (57.55)	
Gender	Men	385 (42.45)	
	Elementary School	28 (3.09)	
	Vocational	65 (7.17)	
Education	High School	347 (38.26)	
	University	467 (51.49)	
	Village	220 (24.26)	
Place of Residence	Town	410 (45.20)	
	City	277 (30.54)	
Drafanianal Astinita	Unemployed	268 (29.55)	
Professional Activity	Employed	639 (70.45)	

**Table 1.** Characteristics of the studied sample (N = 907).

### 2.2. Procedure

The presented study took place between March and May 2020. Due to the global pandemic, the study participants were recruited via the internet. Elderly people who were digitally excluded could complete the survey by phone (n = 11). Only people above 18 years of age took part in this study. All respondents were informed about the anonymity of the study and gave their informed consent to participate in it. The presented project received the positive recommendation of the Bioethics Committee of the University of Opole (KEBN 15/2021).

#### 2.3. Measures

The Fear of COVID-19 Scale (FOC-6) has been used in the presented study [2]. It consists of 6 items on a 5-point scale (1 = "definitely disagree"; 5 = "completely agree"). Higher FOC-6 scores indicate higher fear of COVID-19. In the presented study, FOC-6 obtained good reliability (Cronbach's alpha = 0.83; McDonald's total omega = 0.84).

The Perceived Stress Scale (PSS-10) measure has also been selected for this study [33,34]. It consists of 10 items on a 5-point scale (0 = "never" and 4 = "very often"). Higher PSS-10 scores indicate higher perceived stress. In the presented study, PSS-10 obtained good reliability (Cronbach's alpha = 0.85; McDonald's total omega = 0.86).

The levels of the participants' positive orientation were measured with a P Scale [35,36]. It consists of 8 items on a 5-point scale (1 = "I strongly disagree" and 5 = "I strongly agree"). The higher the P Scale score, the higher the level of positive orientation. In the presented study, the P Scale obtained good reliability (Cronbach's alpha = 0.87; McDonald's total omega = 0.87).

#### 2.4. Statistical Analysis

Several statistical analyses were performed to verify hypotheses. Descriptive statistics were performed to check the parametric properties of the data (*M*, *SD*, *Mdn*, skewness, and kurtosis). Moreover, homogeneity of variance was under control to examine the gender differences in fear of COVID-19, positive orientation, and perceived stress, using the independent samples *t*-test. The Cohen's *d* was considered to check the effect size for this analysis. Correlation and multiple linear regression analyses were performed to examine the associations between fear of COVID-19, positive orientation, and perceived stress. Next, the mediation analysis was performed using Model 4 mediation of PROCESS 4.1 [37]. The bootstrap technique was implemented with a 5000 resampling [38] to increase the stability and accuracy of models.

## 3. Results

### 3.1. Group Homogeneity Analysis

First, it was decided to check whether the tested sample of study participants was a homogeneous group. The *t*-test analysis showed that women scored higher in fear of COVID-19 and perceived stress scores than men (Cohen's *d* indicated a moderate effect). There was no significant difference in the levels of positive orientation. More detailed data are shown in Table 2. Based on the provided results, we have decided to calculate the correlation analysis with gender as a grouping variable.

**Table 2.** Results of the *t*-test analysis (N = 907).

Variable	Women		Μ	Men		11	95% CI		
	M	SD	M	SD	- t (905)	P	LL	UL	d
Fear of COVID-19	22.65	5.45	19.73	5.94	7.69	< 0.001	2.179	3.673	0.51
Positive orientation	29.40	5.75	29.80	5.82	-1.04	0.301	-1.165	0.360	0.07
Perceived stress	21.89	5.71	18.77	5.60	8.22	< 0.001	2.380	3.873	0.55

Note: M = mean, SD = standard deviation, CI = confidence interval, LL = lower level, UL = upper level, d = Cohen's d effect size.

## 3.2. Correlation, and Mediation Analysis

Pearson's *r* correlation indicated that positive orientation was significantly related to fear of COVID-19 only for the whole studied sample, but the size of the effect was small. On the other hand, fear of COVID-19 was positively related to the perceived stress score (moderate effect). Moreover, positive orientation was negatively related to the PSS-10 scores (also moderate effect) for all tested groups. For more detailed results, see Table 3.

Sample	Variable	M	SD	1.	2.
Total	1. Fear of COVID-19	21.41	5.84		
	2. Positive orientation	29.57	5.78	-0.08 *	
	3. Perceived stress	20.57	5.87	0.34 ***	-0.44 ***
Women	1. Fear of COVID-19	22.65	5.45		
	2. Positive orientation	29.40	5.75	-0.07	
	3. Perceived stress	21.89	5.71	0.31 ***	-0.45 ***
Men	1. Fear of COVID-19	19.73	5.94		
	2. Positive orientation	29.80	5.82	-0.08	
	3. Perceived stress	18.77	5.60	0.28 ***	-0.44 ***

**Table 3.** Results of the Pearson's *r* correlation analysis (N = 907).

Note: \* *p* < 0.05; \*\*\* *p* < 0.001.

According to the hypothesis, we examined the mediating role of positive orientation on the relationship between fear of COVID-19 and perceived stress. Fear of COVID-19 and positive orientation were significant predictors of perceived stress scores. The mediating effect was statistically significant, but the effect size was marginally small. For more detailed results, see Table 4.

**Table 4.** Results of the mediation analysis for perceived stress (N = 907).

Mediation								
	Path		Symbol	Beta	SE	p	LLCI	ULCI
X M	$\rightarrow$ $\rightarrow$	M Y	a b	-0.08 -0.41	0.03 0.03	0.015 <0.001	-0.144 -0.477	-0.015 -0.365
X (M) Indirect Effect	$\rightarrow$	Ŷ	c' a*b	0.31	0.02	<0.001	0.254	0.365

Note. X = Fear of COVID-19, M = Positive orientation, Y = Perceived stress, LLCI = lower-level confidence interval, ULCI = upper-level confidence interval.

## 4. Discussion

This study analyzed the relationship between fear of COVID-19, positive orientation, and perceived stress. It is one of the first studies to analyze positive orientation in the context of the relationship between fear of COVID-19 and perceived stress. In our study, the average positive orientation score was similar to the average results of Polish standardization tests in adults [36]. This means that the respondents remained positive and optimistic despite the pandemic and probably felt satisfied with their life. There were no differences in the level of positive orientation due to the sex of the respondents. In contrast, women have been shown to experience greater fear of COVID-19 and greater stress during a pandemic than men. Previous studies have already described higher scores for women on the PSS-10 scale [39,40]. This finding may be related to gender differences in coping with stress. Women have a greater tendency to worry and a higher level of anxiety. Numerous studies [41] have shown that women report greater intensity of fear and anxiety symptoms than men. Kendler et al. [42] showed that women are more sensitive to stressful life events. A study by Dalgard et al. [43] explains that women are more prone to problems in the social network because they are characterized by a more affiliated style of functioning and greater involvement in the household and family matters. During the first waves of the pandemic, social contact was significantly reduced.

Consistent with the hypothesis and previous research [2,4,6–8,17–26], this study found fear of COVID-19 and positive orientation as predictors of perceived stress. Many researchers point out that stress levels during a pandemic were higher than usual [2,4,6]. At the beginning of the pandemic, people were probably afraid of COVID-19 due to the fear of infection, complications, hospitalization, quarantine, isolation, or possibly of their own or loved ones [2]. On the other hand, our study showed that positive orientation was an important predictor of stress. Still, it did not play a significant role in the relationship between fear of COVID-19 and stress. The importance of positive orientation as a significant predictor of perceived stress was also confirmed in other studies [44]. Research shows that an optimistic attitude to life and high self-esteem are important predictors of stress [45]. People who are satisfied with their lives and themselves have great faith in the future and experience less stress, despite difficulties. For those people, the tension associated with a difficult situation turns into stress less frequently. It is related to an optimistic view of reality and the awareness that many difficulties can be dealt with. Research shows that positive orientation plays an important role in selecting strategies for coping with difficult situations. People with a high positive orientation are more likely to use problem-focused coping. These strategies, stimulating positive emotions, are essential for adapting to unfavorable circumstances [46]. It is also indicated that positive orientation is relatively constant. It was shown that the level of positive orientation did not change significantly over four years. This indicates that people's judgments about themselves, the world, and their future are relatively constant and impact an individual's well-being and mental functioning [47,48]. People who perceived their life and future positively before the pandemic probably remained optimistic during the pandemic, which means they felt much less stressed.

The study showed that there was a statistically significant but marginally weak relationship between fear of COVID-19 and positive orientation. Only a few studies have examined the association between positive orientation and fear of COVID-19. Another Polish study found no relationship between these two variables [49]. Concerning the COVID-19 pandemic, there are considerations of both fear and anxiety. Fear is an adaptive mechanism for animals and humans, fundamental to survival.

Finally, we confirmed the mediating role of POS on the relationship between fear of COVID-19 and perceived stress. It can be explained using stress and well-being theories. Consistent with MIM [27], there is an interaction between environmental factors (such as the COVID-19 pandemic), personality traits (individual differences in fear and stress response, dispositional optimism), perception of the current situation understood as a threat or danger, and changes in arousal, leading to the perception of stress. Consistent

with MIM [27], disposition to POS can play mediating role in the association between fear of COVID-19 and perceived stress. Consistent with affective disposition theory [28], people with predispositions to a high reaction of fear to various situations, including the COVID-19 pandemic, may also tend to increase the stress response and decrease POS. The tendency of negative emotions to dominate is genetically determined and related to other personality traits, such as extraversion and neuroticism [50]. Unfortunately, we did not control for personality traits in the present study. In future studies, extraversion and neuroticism could be included in the mediation model together with POS. On the other hand, happy perceive all situations in a better light, so they experience fewer levels of fear and stress, consistent with the top-down theory [29].

Taking into account the Lazarus's transactional stress model [30,31], the mediating role of POS can be explained as a secondary appraisal in the perceived stress-environment (COVID-19 pandemic) transaction. After a fear response to COVID-19 (as a primary appraisal), a person refers to his or her resources to cope with the problem in a second step. The second appraisal includes personal disposition to POS, which is based on past experiences and predicts future behavior. Therefore, fear of COVID-19 can be considered a type of primary appraisal in this study. As appraisal theory shows, happy people appraise all life events more positively than unhappy people [17], so they experience less fear and stress. According to the attribution theory of happiness [32], those who use the optimistic attribution style experience positive emotions more frequently than negative. In contrast, those who use pessimistic attribution may see the situations in the worst light and experience high fear and stress levels.

Positive orientation is a cognitive variable underlying self-esteem, optimism, and life satisfaction. It is associated with adaptive functioning and positive self-assessment. It is also associated with well-being, happiness, and positive emotionality [35,36,48]. It can be assumed that the relationship between fear of COVID-19 and stress will also be mediated by other variables (e.g., personal resources), such as the sense of coherence, mental hardness and resilience, and self-efficacy. Resilience resources can directly be related to coping with difficult situations. On the other hand, positive orientation is more related to assessing oneself, one's life, and the future. The weak relationship between fear of COVID-19 and a positive orientation may suggest that fear of being infected will be more related to the ability to cope rather than to a positive or negative attitude towards oneself and one's own life. However, it is also worth emphasizing that the stress itself during the COVID-19 pandemic is associated not only with the possibility of being infected but also with significant changes in social life, isolation, economic problems, and changes in lifestyle and work. A person with a high level of positive orientation may cope better with the challenges of the pandemic because of their optimism and positive expectations about the future.

The presented study is not free of limitations. A longitudinal study would be necessary to verify whether the suggested direction of the influence is accurate. Additionally, the presented sample is a result of a convenient sampling method. Such a sample sometimes lacks the power to identify sociodemographic group differences [8]. The proposed mediation model and potential group differences should thus be confirmed by a second study using population-based sampling. Moreover, the demographic variables, such as education and place of residence, could be examined as potential confounders. Although the mediating effect was statistically significant, the effect size of the mediation analysis was very small, which decreased the theoretical and empirical contribution of this study. It is possible that the latent composite score of positive orientation is inappropriate for the mediating role. Therefore, life satisfaction, dispositional optimism, and self-esteem should be considered as separate constructs in the future. Moreover, the other variables (e.g., extraversion and neuroticism as a personality trait, self-efficacy, sense of coherence, grit, hope, or other resilience dimensions) could be considered as potential mediators in future studies.

## 5. Conclusions

Positive orientation is an important predictor of perceived stress, which could be related to the COVID-19 pandemic. People with a positive orientation better cope with the challenges of the pandemic and are optimistic about the future. However, it is not related to the level of fear of COVID-19. Positive orientation as a significant predictor of perceived stress may be included when planning therapeutic interventions for people experiencing particularly severe difficulties during and after a pandemic. Zuffianò et al. [51] and Park et al. [44] suggest that working on positive orientation can improve well-being and reduce tension, which is extremely important in difficult pandemic times.

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