

Exploring the role of optimism and subjective well-being in relation to fear of COVID-19

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An open access initiative by Psychreg Ltd
ISSN: 2515-138X



The COVID-19 pandemic has had negative consequences on mental health and well-being, making many people afraid of infection or death, and research has shown how optimism can be an effective coping strategy to such. Optimism can be positively influenced if fear of COVID-19 is addressed adequately, and in turn, positively influences well-being. This study explores the relationships between optimism, subjective well-being, and fear of COVID-19 using multiple regression analysis in a correlational, cross-sectional design. 74 participants took part (71.6% females, $M = 31.9$, $SD = 10.6$). LOT-R, SWLS and FCV-19S scales were used to measure optimism, satisfaction with life and fear, respectively. A significant relationship was found between optimism and fear of COVID-19 indicating a negative correlation. However, no significance was found concerning subjective well-being to either optimism or fear of COVID-19. Findings deepen the understanding of well-being and what this may mean for psychological outcomes after distressing times.

Keywords: coping mechanism; COVID-19; mental health; optimism; social connectedness; well-being

Since the COVID-19 pandemic started, almost seven million people worldwide have died from the disease, with over 767 million confirmed infections, which continues today with over 200,000 recorded deaths from January 2023 alone (World Health Organization, 2023a). During the time of the pandemic, many people were afraid of contracting the disease, transmitting it to loved ones, or that themselves or those around them may die (Dymecka et al., 2023). Understandably, this causes drastic changes to people's lives, particularly critical health concerns to physical and mental health, of which has an impact on academic and social life, and all of which can have long-term consequences (Aristovnik et al., 2020). Furthermore, it was found that this specific circumstance negatively impacted mental health and well-being, as studies from Lathabhavan and Vispute (2022) and Deniz (2021) found fear of COVID-19 and mental well-being correlated negatively. Therefore, this study aims to explore the role of optimism, subjective well-being, and fear of COVID-19 in a bid to add to the necessary and prevalent research surrounding the aftereffects of the pandemic relating to public health.

The World Health Organization (2023b) state that it is still not appropriate for public health and social measures to take a step back as there is still a high risk of further variants emerging due to widespread transmission which may become more extreme. This coupled with the role of health care professionals, who in a recent survey deemed their mental health and well-being to be worse now than it was during the pandemic (Medical Protection Society, 2023), alongside individuals experiencing long COVID symptoms which may last years, are at a higher risk of mental health issues such as depression, stress, and anxiety (Phu et al., 2023). Research has shown how optimism and well-being have a significant relationship and is a positive predictor of such (de Vries et al., 2022). In light of this research, optimism can be positively influenced if fear of COVID-19 is addressed adequately, and in turn, indirectly influences well-being positively (Satici & Okur, 2023).

A large emotional consequence of pandemics, particularly COVID-19 is that of fear (Ahorsu et al., 2020; Folayan et al., 2022). Fear is an emotion which allows people to take safety measures when in adverse situations, enabling survival (Nabi & Myrick, 2019), however if such situations are exacerbated, it may prove problematic (Satici & Okur, 2023) by leading to maladaptive outcomes if the required coping skills to address the situation are not obtained (Myrick, 2015). Physical and mental health problems linked to the COVID-19 pandemic are factors such as stress (Agbaria & Abu-Mokh, 2022), anxiety (Alves et al., 2023) depression (Mat Hassan et al., 2022), reduced well-being (Sfeir et al., 2022), job burnout (Raja et al., 2022), sleep problems (Beck et al., 2021), and eating disorders (Linardon et al., 2022) which particularly effected those fearful of COVID-19, and increased dramatically post-pandemic. Often, psychiatric, and psychological outcomes from pandemics are overlooked and undervalued, thus creating a need for appropriate coping strategies as there tends to be a higher rate of individuals affected from mental health than by the infection itself, the former having a continuous effect (Ornell et al., 2020). With this in mind it therefore highlights the importance for appropriate insights into the psychological consequences of the pandemic (Satici & Okur, 2023).

Fear of COVID-19 is based on physiological, cognitive, and behavioural components such as concern of symptoms, stress leading to guilt, fear and sadness, and avoidance or reassurance in pro-social and pro-environmental behaviours (Arora et al., 2020). Avoidance behaviours may include limiting health-seeking, therefore exacerbating morbidity and mortality rates (Waddimba et al., 2023), which may be increased in those with poor health literacy (Savci & Cil Akinci, 2022). Yet it can be a motivational factor in transforming risk behaviours as some theoretical models, protection motivation theory for example, argue that combining the fear of a disease alongside enhancing avoidance skills, may help to bypass negative health outcomes (Salazar et al., 2013). Behavioural changes may be factors such as hand-washing and social distancing, but also enabling people to increase exercise, eat healthy, and even practice gratitude and self-reflection, all of which are related to positive psychological states such as subjective well-being or life-satisfaction (Guèvremont et al., 2022), proving significant in higher education levels and economic status, the female gender, and having higher health literacy status (Savci & Cil Akinci, 2022).

People's reactions to pandemics may range from blatant denial to intense fear, which can include fear of infection, death, or loved ones getting sick (Taylor, 2019). Fear also comes from personal challenges

people were acquired to adopt, which was particularly prevalent from the onset of the pandemic due to consistent changes of guidelines and restrictions (Wielgopalan et al., 2022). Individuals who regularly followed media coverage pertaining to the pandemic, and those who consumed more alcohol during lockdown were more fearful of contracting COVID-19 (Folayan et al., 2022). Wirawan et al. (2023) found fear was higher in those who were more aware which consequently led to lower subjective well-being; however, this was only when stress was a mediator. There was also lower general well-being associated with a greater fear of COVID-19 and in the female gender (Sfeir et al., 2022), contrasting with research from Ghaderi et al. (2022) who state fear was higher in males, yet concur with the notion that fear was linked to social media usage for reports regarding the pandemic (Ghaderi et al., 2022), thus leading to fear and insecurity due to the possibility of false information (Ornell et al., 2020).

To acknowledge pandemic related fear, a number of psychological vulnerability determinants could be significant. A report from Mind (2021) estimated 80% of around 12,000 people who completed their survey had mental health problems prior to the pandemic, of which almost 68% said got worse since the first lockdown, and half of those said it got much worse. Furthermore, because of the continuous attention on negative emotion, fear of COVID-19 coupled with intolerance of uncertainty, had an adverse effect on people's well-being (Satici et al., 2020; Sfeir et al., 2022).

Coping abilities such as positive orientation (Dymecka et al., 2023), resilience (Guèvremont et al., 2022), social connectedness (Satici & Okur, 2023), emotional intelligence and emotional regulation (Tang & He, 2022), are seen as an effective strategy for mental health and well-being (Alves et al., 2023; Checa-Domene et al., 2022). One possibly relevant individual difference variable is optimism. Optimism can be explained as looking positively towards future expectations and thinking positive thoughts (Carver et al., 2010). This is linked to better well-being and health preservation, even in distressing circumstances (Kleiman et al., 2017), as optimism is linked to increased well-being and health protection (Alves et al., 2023), and subjective well-being and better mental health is associated with greater optimism (Syropoulos et al., 2021). Optimism is a mitigator against negative mood (Carver et al., 2010), is positively related to hope (Sarker et al., 2022), better mental and physical health particularly in older adults, reduced cortisol levels, and is correlated negatively to heart failure, stroke, and mortality (Scheier & Carver, 2018), however it may be worthy to note that some studies suggest being optimistic may be less important than evading pessimism (Barnett & Anderson, 2020).

Moreover, being overly optimistic can lead to feelings of invulnerability, where the risk of negative events happening to themselves becomes less likely to others, and positive events are more likely to happen to themselves than to others (Wielgopalan et al., 2022). Over-optimism may also lead to more risk-taking behaviours and disregard to said risks (Lomas & Ivtzan, 2016). This may be important when it comes to threats such as COVID-19 infection, as preventive behaviours, and the impression of the probability of being infected was negatively associated to optimistic bias (Park et al., 2021), and unrealistic optimism had a positive correlation with negative automatic emotions, and conversely, a negative correlation with positive reflective emotions (Wielgopalan et al., 2022), making over-optimism a plausible long-term determinant of health-avoidance behaviours due to safety neglect (MacLeod, 2017).

Given the unpredictability of pandemics, for example Ebola, Zika virus and HIV, it is suggested that another pandemic is highly likely to happen (Department of Health and Social Care, 2022) and so it is imperative that well-being policies and procedures are not only put in place, but are also effective so individuals are better prepared to cope with the consequences of a pandemic, including fear which is still an area where research is needed to properly investigate the effects of such a crisis (Mat Hassan et al., 2022). Positive change can occur after a negative event which includes enhanced relationships, spirituality, and personal strength, alongside a change of life's priorities and philosophies which are ongoing processes (Lomas & Ivtzan, 2016). Considering origin, valence, affective style, and functionality of emotions, it may be necessary to consider long-term emotional processing which may happen in such a situation as a pandemic, given cognitive processing and personality as factors, particularly individual differences which utilise emotional regulation as a determinant in severe and distressing events such as the COVID-19 pandemic (Wielgopalan et al., 2022).

More recently, researchers have been looking at implications of prospection and how optimism is related to future motivations (Oriol et al., 2020), and how pessimists often think negatively to future events, which is related to stress, anxiety, fear, and low emotional well-being (Piper, 2022). Linking this to the pandemic, studies have shown how optimism negatively predicts fear of COVID-19 (Bakioğlu et al., 2021; Nazari et al., 2021) and positively predicts well-being (Genç & Arslan, 2021; Reizer et al., 2022). Emphasising positive attributes to people's lives such as strengthening happiness in emotional and mental factors, including optimistic emotions, can be an effective coping technique for difficult circumstances such as disease, and may act as a buffer against depression and traumatic experiences (Dymecka et al., 2023).

Little research has examined the role of fear or optimism in relation to the COVID-19 pandemic and its associated outcomes, including subjective well-being (Wirawan et al., 2023), with a need for more cross-sectional studies to be developed (Alves et al., 2023). Dymecka et al. (2023) argued that the effect size of positive orientation was too small and so life satisfaction and optimism should be considered as separate factors. There is also a gap to research sociodemographic group differences as most research in the field has predominantly been students, of which a large percentage are female (Checa-Domene et al., 2022; Alves et al., 2023; Dymecka et al., 2023), alongside a need to collect data on fear of COVID-19 post-pandemic (Satici & Okur, 2023).

It can be argued there lies a considerable association between fear of COVID-19 and subjective well-being given the negative effects the pandemic has had on many people's lives. There is a growing body of research that recognises optimism as an essential coping mechanism in adverse situations, therefore this study will provide new insights into well-being, optimism and COVID-19 fear, by exploring psychological outcomes at a current point of the pandemic timeline. Previous research has only explored fear of COVID-19 with either well-being, or optimism, or by having a mediating variable involved, therefore this will address the research gap identified by Satici and Okur (2023), as no research to date has examined all three variables collectively as a correlation design. As a result, the overarching aim of the current study is to investigate the role of optimism, subjective well-being, and fear of COVID-19 collectively for the first time, strengthening the concept that optimism and well-being can aid psychological pressures from stressful crises, which individuals and policymakers alike can take forward to ensure intervention programmes are at the forefront of protecting psychological well-being.

Fear is an outcome of infectious diseases and is also linked to pessimism which can vary widely and may stop individuals from making rational decisions (Harper et al., 2021). It is also a predictor of subjective well-being which can escalate psychological distress which in turn challenges subjective well-being (Wirawan et al., 2023). Optimism on the other hand, is linked to increased well-being and health protection, and better mental health and well-being is associated with greater optimism (Syropoulos et al., 2021). Where long-term effects are concerned, it may be possible to build upon research pertaining to current mental health outcomes from the COVID-19 pandemic, of which is currently a somewhat neglected area yet still remains pertinent (Dey & Relajo-Howell, 2021; Ornell et al., 2020; Mat Hassan et al., 2022). Therefore, this research aims to combine these factors to explore correlational relationships between optimism, subjective well-being, and fear of COVID-19. It is hypothesised that optimism will negatively predict fear of COVID-19, fear of COVID-19 will correlate negatively with subjective well-being, and optimism will correlate positively with subjective well-being.

METHODS

Design

This study was quantitative and utilised a correlational, cross-sectional design which employed multiple regression analysis to calculate total, direct, and indirect effects, and was generalised to persons over the age of 18. The criterion variable was fear of COVID-19 which was measured against two predictor variables; optimism and subjective well-being, and the relationships therein were explored.

Participants

Sample size was gained by conducting a power analysis using G*Power 3.1 (Faul et al., 2009) with alpha = .05 and power $1 - \beta = .80$, effect size was medium [$d = .15$] with two predictors, estimating a target of 68 participants for a more reliable measure, as ideally the aim would be 80% or more to reduce the probability of rejecting the hypothesis. Population was generalised for any persons over 18 and participants were recruited via non-probability convenience sampling by engaging in advertisements on the SONA System and social media platforms WhatsApp and Facebook. A total of 89 participants were recruited, however 15 were removed due to incompleteness ($N = 74$) and ranged from 18 to 66 years old $M = 31.9$, $SD = 10.6$. This consisted of 53 females accounting for 71.6%, 20 males made up 27%, and 1 non-binary participant. Key demographics indicate participants were predominantly in some form of employment, part/full-time/self-employed workers ($N = 40$) = 54%, and 40.5% students ($N = 30$). Ethnicity comprised of 64.8% white/Caucasian ($N = 48$), Asian/Asian British 18.9% ($N = 14$), Black/African/Caribbean/Black British 10.8% ($N = 8$), mixed/multiple ethnic groups 5.4% ($N = 4$). See Table 1 for an overview. Additional demographics taken included religious affiliation and if participants had dependents. Remuneration was not received for taking part in the survey, course credit was available to participants completing via SONA however no surveys were completed via this platform.

Table 1 to show demographic information (N = 74)

Category	<i>n</i>	%
Gender		
Women	53	71.6
Men	20	27
Non-Binary	1	1.4
Dependents		
Yes	29	39.2
No	44	59.4
Employment		
Unemployed	3	4.1
Student	30	40.5
Part-time	14	18.9
Full-time	24	32.4
Self-employed	2	2.7
Retired	1	1.4
Ethnicity		
White/Caucasian	48	64.8
Asian/Asian British	14	18.9
Black/African/Caribbean/Black British	8	10.8
Mixed/Multiple Ethnic Groups	4	5.4
Religion		
Christian	27	36.5
Muslim	3	4.1
Buddhist	5	6.8
Hindu	2	2.7
Atheist	15	20.3
Agnostic	11	14.9
Other not specified	11	14.9
Have you ever contracted COVID-19?		
Yes	57	77
No	10	13.5
Not sure	7	9.5
If yes, were you hospitalised?		
Yes	2	3.5
No	55	96.5
Has anyone in your household ever contracted COVID-19?		
Yes	61	82.4
No	11	14.9
Not sure	2	2.7
If yes, were they hospitalised?		
Yes	9	14.7
No	52	85.3
Has a close friend or family member ever contacted COVID-19?		
Yes	65	87.9
No	6	8.1
Not sure	3	4
If yes, were they hospitalised?		
Yes	17	26.2
No	48	73.8

Measures

The criterion variable was fear of COVID-19 and was measured on the Fear of COVID-19 Scale (FCV-195, Ahorsu et al., 2020). This is a relatively new scale which was developed to assess psychological and somatic symptoms related to anxiety and fear of coronavirus, however, is deemed reliable with internal consistency ($\alpha = .82$) and test-retest (ICC = .72), demonstrating good reliability (Buneviciene et al., 2022; Sawicki et al., 2022). This consists of seven statements such as “I am most afraid of coronavirus-19” and “It makes me uncomfortable to think about coronavirus-19” and was scored on a five-point Likert scale from 1 = strongly disagree to 5 = strongly agree. Total scores range from 7 to 35 with higher scores indicating higher fear of COVID-19.

Optimism as a predictor variable was measured on the Revised Life Orientation Test (LOT-R, Scheier et al., 1994). Given optimism and pessimism can be conceptualised in many ways, here it is seen as a trait which presents comprehensive positive outcome expectations (Krizan & Windschitl, 2007) and is measured based on the average of the past year, as opposed to ‘currently’, as would state optimism be measured as it can change over time based on additional influences (Millstein et al., 2019). This can measure whether people expect good or bad outcomes in their lives which is important to consider after traumatic events, inferring the notion that attributions produce expectancies (Carver et al., 2010). Optimism was measured using the common Revised Life Orientation (LOT-R, Scheier & Carver, 2015). It consists of 10 statements about positive and negative expectations and was measured on a five-point Likert scale from 1 = strongly disagree to 5 = strongly agree and has demonstrated acceptable internal consistency ($\alpha = .78$) and test-retest reliability correlations (.56 to .79). The LOT-R is usually measured on a seven-point Likert scale, however, to keep simplicity within the study and avoid confusion it was deemed necessary to keep all scales at five points. Three items are reversed scored and four of the ten items are fillers and were not used in scoring. Examples of questions include “In uncertain times, I usually expect the best” and “If something can go wrong for me, it will” (reversed). Total scores range from 6 to 30 with higher scores demonstrating higher optimism.

Subjective well-being as a predictor variable was measured using the Satisfaction With Life Scale (SWLS, Diener et al., 1985). This is a popular validation measure that highlights well-being with regard to satisfaction of life and the reliability between positive and negative affect, and may be employed to evaluate the cognitive extent of subjective well-being and shows reliable psychometric properties ($\alpha = .84$). It consists of five statements with questions such as “the conditions of my life are excellent” and “I am satisfied with my life”. Scoring was revised to adapt to a five-point Likert scale which ranged from 1 = strongly disagree to 5 = strongly agree. Total scores range from 5 to 25 with higher scores reflecting a higher sense of life satisfaction.

Procedure

An advert for the study was distributed to social media platforms WhatsApp and Facebook whereby participants could voluntarily participate by following the link to a Qualtrics survey from a mobile device or computer. Upon opening the link, participants were greeted with the information sheet detailing the studies’ aims and objectives, any possible risks or disadvantage from taking part, details on voluntary information including right to withdraw and confidentiality, alongside relevant contact and support information. If participants chose to continue, they would then click to the next page to carefully read the consent form before the study is accessed. A forced response meant that if any of the consent statements were given a “No” response, the participant would be denied access to the study, if they did give their consent, they would be directed to the questionnaire, with a reminder that closing the web browser would remove them from the study and data would not be collected.

Demographic information was taken; age, gender, whether participants had dependents, employment status, ethnicity, and religion, alongside a few general questions to determine if they or anyone they know had contracted COVID-19. The first psychometric was the Satisfaction With Life Scale (SWLS, Diener et al., 1985), followed by the Revised Life Orientation Test (LOT-R, Scheier et al., 1994), and

finally the Fear of COVID-19 Scale (FCV-195, Ahorsu et al., 2020). Participants answered 27 items in total as described previously. At the end of the questionnaire, participants were directed to a final page which outlined the debrief. If they chose to have their data collected, they would click a “Submit” button to be made aware that by continuing they were granting permission for their data to be used in the study. The study adhered to ethical guidelines as set out by the British Psychological Society (2021), the Data Protection Act 2018, and the associated University.

Analysis

The SWLS, LOT-R and FCV-195 were completed using a five-point Likert scale. However, despite reliability and validity, due to the instability of SWLS, it was appropriate to ask participants to refer to overall satisfaction of the past year. This was to gain a more accurate representation to correspond to the average mood, as what a person may feel in the current moment may be wildly different the following day (Diener et al., 2011). Once completed, results were collated using IBM SPSS 28. Descriptive statistics and bivariate correlations were gathered from a stepwise multiple regression analysis. The correlation coefficient was Pearson’s r to measure the relationships. This would determine if low levels of fear of COVID-19 were associated with optimism and subjective well-being, with optimism and subjective well-being as predictor variables and fear of COVID-19 as the criterion variable. Assumption checks were also made using collinearity diagnostics. After inspection one outlier was removed and 73 participants were included in the final analysis.

Results

Descriptive statistics and bivariate correlations between variables are shown in Table 2. A stepwise multiple regression analysis was conducted to see if optimism is associated with lower levels of fear of COVID-19 and higher levels of subjective well-being, with optimism and subjective well-being as predictor variables and fear of COVID-19 as the criterion variable.

Collinearity diagnostics showed absence of multicollinearity was confirmed with two eigenvectors underlying the data set. Correlations between predictor variables was small ($r = .09$). Values of the VIF were 1.009, and Tolerance was .991, both within the cut offs of below 10 and above 0.2, respectively. The Durbin-Watson statistic was 2.25, therefore meeting the acceptable range of 1.5 to 2.5 and meeting the assumption of independence.

P-P plot and histogram checks suggested normally distributed residuals. Upon inspection of standardised predicted values against standardised and studentised residuals, one participant was removed due to above average scores of Mahalanobis’ distance (20.85) and Leverage being above the average of .04 (.114) and therefore was considered an outlier, $N = 73$.

Only optimism was included in the final model revealing a significant negative relationship to COVID-19. Subjective well-being and fear of COVID-19 were excluded as they did not reveal a significant relationship ($p < .01$). High levels of optimism ($t = 3.09$, $\beta = 0.34$, $p = .003$) positively predicted lower levels of fear of COVID-19. The final model was significant as optimism explained 11.9% of the variance in fear of COVID-19, $F(1,71) = 40.80$, $p = .003$. Coefficients are seen in Table 3.

Table 2
 Bivariate correlations and descriptive statistics for study variables (N = 73)

Variables	Optimism	Subjective well-being	Fear of COVID-19	<i>M</i>	<i>SD</i>
Optimism	1	.095** 95% CI [-.12,.30]	.345* 95% CI [.08,.57]	19.33	2.80
Subjective well-being		1	.011** 95% CI [-.23, -.22]	16.32	5.09
Fear of COVID-19			1	13.18	6.75

* $p > .01$, ** $p < .01$, CI = confidence intervals

Table 3
 Coefficients obtained from stepwise multiple regression analysis of fear of COVID-19 (N = 73)

	<i>B</i>	<i>SE B</i>	β
Constant	-2.89		
Optimism	.83	.26	.34*

$R^2 = .11$, * $p < .01$

DISCUSSION

Fear is a consequence of pandemics, particularly COVID-19, which impacts well-being negatively (Folayan et al., 2022). Optimism is said to be a coping ability of distressing events such as a pandemic and is related to greater mental health and well-being (Syropoulos et al., 2021). Thus, the focus of the current study was to explore the relationship between fear of COVID-19, optimism, and subjective well-being among a generalised population in order to gather a cross-sectional view of the effects of the pandemic pertaining to well-being, and is one of the first studies to combine all three variables in a correlational design.

Based on the findings of this study, optimism negatively predicts fear of COVID-19, with optimism demonstrating a moderate yet significant positive bivariate correlation with fear of COVID-19, partially supporting the hypothesis and indicating that higher rates of optimism correlate with lower levels of fear of COVID-19. As rates of optimism were lower in those with higher scores of fear of COVID-19, this supports previous research in demonstrating a negative correlation between the two variables (Bakioğlu et al., 2021; Nazari et al., 2021). Despite anticipating this was also true of subjective well-being, the results, alongside the relationship to optimism did not show any significant findings which contrasts with past studies (Genç & Arslan, 2021; Reizer et al., 2022), which therefore does not support the hypothesis that fear of COVID-19 correlates negatively with subjective well-being, and optimism correlates positively with subjective well-being.

Comparison of the findings with those of other studies confirms a negative relationship between optimism and fear of COVID-19. The result corroborates the concept from Dymecka et al. (2023) who posit that optimistic emotions can emphasise positive attributes in people's lives which can be effective coping techniques during difficult times, such as the pandemic, and may also counteract negative outcomes such as depression. This is consistent with findings from Alves et al. (2023) and Dymecka et al. (2023) who also support this notion, which was similar to results from Agbaria and Abu Mokh (2022) and Wielgopolan et al. (2022) who found optimism correlated negatively to maladaptive emotion-focused coping. As it would be expected that fear diminishes as the threat does, it would be no surprise to find a reduction in fear of COVID-19 as time goes on (Mertens, 2023), which may be why there are high levels of optimism generally.

Outcomes of the pandemic showed that mental health and well-being were negatively impacted upon and how coping abilities such as optimism, could increase well-being especially following distressing events (Wielgopolan et al., 2022). This was supported by studies that demonstrated fear of COVID-19 correlated negatively with well-being (Lathabhavan & Vispute, 2022), however this was measured using stress as a mediator, which is a common factor as a high majority of research in the area explored negative factors to determine correlations and mediating effects (Genç & Arslan, 2021). Despite a large percentage of participants either contracting COVID-19, or knowing someone who did > 77%, having an optimistic disposition may aid in reducing fears of infection or death (Dymecka et al., 2023).

Contrary to expectations, this study did not find a significant difference between optimism and subjective well-being, nor between fear of COVID-19 and subjective well-being. It is not common for optimism to express disadvantage or fail to express advantage (Carver et al., 2010), however there does still remain a small possibility, as demonstrated in the current study. Given the surprising finding here, it does however prove consistent with Wirawan et al. (2023), who did not find any significant associations between fear of COVID-19 and subjective well-being, as this was only demonstrated when stress was indicated as a mediating factor. It may be worthy to note the majority of research surrounding COVID-19 has paid particular attention to negative outcomes, foregoing the exploration of positive attributes which could be linked to fear of COVID-19 (Fino et al., 2022). Garvin and Putri's (2021) study on the relationship between optimism and subjective well-being in the context of the pandemic found a significant correlation yet the relationship was low. Research from Jach (2023) did not find an association with gender, education level or personal experience in regards to pandemic related fear, however higher fear levels were associated with a scientific worldview but more so with preventive behaviours, similar to findings from Chan et al. (2023) and Wirawan et al. (2023), who found

fear of COVID-19 to be higher in those more aware of the infection and subsequently lowering subjective well-being.

Additionally, in direct contrast to the current study, Satici and Okur (2023) argued that fear of COVID-19 directly affected mental well-being significantly. Although this was not a mediating study, it still pertains to the notion of subjective well-being as a potential a buffer for fear of COVID-19 being an isolated determinant, as prompted by Dymecka et al. (2023), whereby they state satisfaction with life and optimism should be considered separately due to very small effect sizes, consistent with results in this study despite the non-significance. Moreover, as Oriol et al. (2020) found a strong relationship between optimism and life satisfaction, a possible difference may be attributed to the fact that their study consisted solely of student populations. This is also the case in a high majority of research which may not provide the best generalisations especially given attitudinal and personal variables (Hanel & Vione, 2016), however this study consisted of almost 60% non-students which may make generalised findings more feasible, yet controlling for personality traits in future studies would be recommended.

Moreover, Dymecka et al. (2023) found a weak relationship between positive orientation and fear of COVID-19, and Chodkiewicz and Gola (2021) found no relationship at all, which is surprising given positive orientation not only promotes well-being but involves optimistic tendencies and increased life satisfaction. It has been noted among the literature there is a rather significant level of inter-correlation between optimism and life satisfaction (Bailey et al., 2007; Carver et al., 2010; Diener et al., 2011). Furthermore, in their study of relationships between life satisfaction, self-esteem, and optimism, Caprara et al. (2010) found only a slight correlation, which may suggest that the fear of infection is related to ones' coping abilities, as opposed to the positive and negative awareness of the self (Chodkiewicz & Gola, 2021). Optimism is just one variable which may be considered as a determinant linked to positive outcomes, however this cannot be made irrefutable as it is a challenge to distinguish optimism as the main criterion, or if it is a characteristic of other concepts which contribute to a wide range of psychosocial benefits (MacLeod, 2017).

It may be possible to consider positive change that may occur after negative events allowing a form of reflective emotional processing which allows the individual to look back on negative personal and social experiences which is linked to a reduction of negative effect (Gruber et al., 2009). This posttraumatic growth can occur after challenging or stressful life events, and through resilience, enhanced relationships, and personal strength, it is possible for people to appraise such circumstances (Lomas & Ivtzan, 2016). This was seen in a study by Lenzo et al. (2023) who found fearful individuals (those with high fear and low future orientation) showed lower posttraumatic growth, which was in contrast to those who were constructively preoccupied (individuals with high fear and high future orientation) who showed greater posttraumatic growth. Psychological flexibility was also a significant mediator of optimism and resilience in preventing adverse mental health outcomes in potentially traumatic events (Pellerin et al., 2022).

Limitations

A number of limitations must be considered in relation to the results of this study. Firstly, the study design was cross-sectional and therefore restricts causal inferences. Additionally, the relationship was small despite being significant, as optimism explained 11.9% of the variance in fear of COVID-19 and should therefore be interpreted cautiously. This makes for interesting results at a theoretical position suggesting optimism may be accountable in some way for lower rates of COVID-19; however, the variance suggests a range of additional determinants that may contribute to such findings. Future studies may consider longitudinal designs to assess mediators of the association between optimism and fear of COVID-19, for example religiosity or meditation. Furthermore, the sample consisted mainly of females (71.6%), who have been reported as having higher rates of fear of COVID-19 (Sfeir et al., 2022). Convenience sampling may also be criticised here due to the inability of reaching larger sociodemographic differences, therefore population-based sampling may be more beneficial (Dymecka et al., 2023).

It is also worthy to note self-report measurements are often seen as problematic due to possible biases and are restricted to the characteristics they measure, therefore additional methods may be utilised such as the Marlowe-Crowne Social Desirability Scale (MCSDS). The sample also did not screen for any mental health conditions which may have impacted upon scores, such as depression, or positivity bias, which has considerable differences to non-depressed individuals on a range of future outlook measures (Diener et al., 2011). Notwithstanding the interrelatedness with optimism and well-being measures, if controlled, a longitudinal study may contribute to exploring how an individual's well-being evolves over time, particularly after psychologically distressing events, as optimism can be established from such outcomes (MacLeod, 2017).

Implications

This cross-sectional study points to low fear and high optimism, but no relations to subjective well-being which generates numerous questions to consider pertaining to life satisfaction. This should be considered not only on an individual level but also on a global scale as outbreaks such as war, cost-of-living crises, and social unrest create distressing and uncertain times ahead, thus making well-being a prominent consideration (Waters et al., 2022). Considering pandemics are something of a constant likelihood, it is imperative that research and investment in mental health and well-being resources are put into place to properly assist with the psychological consequences of infectious outbreaks (Ornell et al., 2020). As a predictor of subjective well-being, fear may exacerbate psychological distress and in turn can diminish subjective well-being, and so it is important to understand the developing issues surrounding fear, and what coping strategies may be effective in distressing times (Wirawan et al., 2023).

The subjective experiences of individuals, that is fear and well-being, come from their interactions within the community and therefore suggesting behaviours, beliefs, and attitudes should be aided in some way from policymakers and governments in order to enhance subjective well-being in distressing times, such as a pandemic (Wirawan et al., 2023). In the event of future pandemics, the use of intervention programmes may be critical in protecting people's psychological well-being, and will allow for more competence in the midst of a pandemic, which can increase optimism levels and subsequently foster well-being and develop adequate coping strategies in order to overcome fear of COVID-19 (Satici & Okur, 2023).

Despite the continuation of COVID-19 infections, the feeling of threat and intense emotions relating to such have been found to be declining (Szuster et al., 2022), however it is essential that public mental health policies related to pandemic response strategies are implemented before, during, and after such occurrences (Ornell et al., 2020). Mertens (2023) found fear of COVID-19 reduced over time and was on a downward trajectory, however this does not mean to say that respondents who do still have fear are in any way insignificant, as fear can be multifaceted and well-being is not linear, particularly surrounding unexpected and unusual events (Satici & Okur, 2023), and therefore still makes the topic pertinent. As the risk of transmission is still high and the death toll is still ongoing, where public health and social measures are concerned the communities' health and well-being should be the principal concern not just at present but also in the future (World Health Organization, 2023b). Maintaining this holds a societal responsibility as a public health requirement which may in turn, reduce economic burden and psychological consequences of the pandemic (World Economic Forum, 2021).

CONCLUSION

The findings presented highlight the importance of optimism and subjective well-being in the time proceeding the COVID-19 pandemic. Fear can change over time, and so it is important to assess adaptive and long-reactive aspects of fear of COVID-19, as the understanding of which is necessary to inform interventions (Fini et al., 2022). The hypothesis was partially supported, as there was a negative correlation between optimism and fear of COVID-19 which was consistent with the literature (Bakioğlu et al., 2021; Nazari et al., 2021). Despite the surprising result pertaining to subjective well-being, it still remains an important feature in deepening the understanding of well-being and what this may mean for psychological outcomes after distressing times.

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