

## Paranoid and Conspiracy Beliefs: The Role of Anxiety and Life Satisfaction



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This study aimed to examine the relationship between paranoid and conspiracy beliefs and how these beliefs further relate to anxiety-trait, anxiety disorders, and satisfaction with life. The research involved 814 participants who were administered the Paranoia Scale, the Slovak Conspiracy Belief Scale, the State-Trait Anxiety Inventory, and the Satisfaction With Life Scale. The results showed that paranoid beliefs were associated with conspiracy beliefs, anxiety-trait, and life satisfaction. All of the variables together accounted for almost 40% of the variance of paranoid beliefs. Although conspiracy beliefs were associated with paranoia, the relationship with life satisfaction and anxiety-trait did not emerge as significant. The results of this study point out the importance of further exploration of paranoid and conspiracy beliefs, especially in times of coronavirus pandemic, when the harmful effects of such beliefs are even more salient.

*Key words:* anxiety, conspiracy beliefs, life satisfaction, paranoid beliefs

### Introduction

Paranoia is generally understood as a style of thinking manifested as exaggerated, self-centered tendencies that arise in everyday behavior (Fenigstein & Vanable, 1992). Such paranoid beliefs are associated with irrational distrust, suspicion, fear that something bad might happen, or with the feeling that other people might want to cause such an event (e.g., Newman Taylor & Stopa, 2013; Freeman et al., 2006). Em-

pirical studies have demonstrated that paranoia exists on a continuum spanning both psychopathology and the general population (Bebbington et al., 2013; Ellett et al., 2003; Freeman et al., 2005; Hajdúk et al., 2018). In general, paranoid thoughts are not a clinical problem, becoming so only when they are excessive, exaggerated, or unfounded, and cause distress (Freeman et al., 2005). These thoughts can take many forms and can vary considerably in intensity, but they have a similar basis – that other people intend to cause one harm (Freeman et al., 2006).

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A conspiracy theory is of similar nature. It is defined as an intended conspiracy of powerful people or organizations secretly working together to achieve a certain, usually a sinister goal (Wood et al., 2012). While conspiracy refers to a true causal chain of events, conspiracy theory refers to accusations of conspiracy, which may or may not be true (Douglas et al., 2019). Freeman and Bentall (2017) present some common characteristics of conspiracy theories: 1) the world or an event is held to be not as it seems; 2) there is believed to be a cover-up by powerful others; 3) the believer's explanation of events is accepted only by a minority; and 4) the explanation is unsupported by evidence. Thus, evidently both types of belief are characterized by suspicion. Therefore, it is reasonable to assume that individuals who believe in conspiracy theories could have a paranoid trait. Darwin et al. (2011) supported this assumption, as their findings suggest that paranoid ideations are strongly associated with belief in conspiracy theories. An association has also been found between conspiracy beliefs and schizotypal personality traits (Barron et al., 2018; Darwin et al., 2011; Swami et al., 2013; Van der Tempel & Alcock, 2015), whereas suspiciousness (Swami et al., 2016), delusional ideation (Dagnall et al., 2015), ideas of reference (Barron et al., 2014), and odd beliefs or magical thinking (Barron et al., 2014; Swami et al., 2016) emerged as predictors of conspiracy beliefs. The research of Barron et al. (2018) also suggests a relationship between conspiracy beliefs and components of schizotypy, specifically ideas of reference and odd beliefs or magical thinking. Another study suggests that belief in conspiracies is related to hostility and a low level of trust (Abalakina-Paap et al., 1999), which can also be described as aspects of paranoia. Freeman and Bentall (2017) mention that conspiracy beliefs are closely related to the spectrum of paranoia, in which one perceives individual

threats from others. Therefore, the authors conclude that unsubstantiated conspiracy and paranoid beliefs are forms of excessive mistrust that can have negative effects on the individual as well as society.

Both conspiracy and paranoid beliefs share a similar cognitive but also emotional basis. The emotion often associated with suspicious thoughts in both constructs is anxiety, which stems from unfounded fears of other people, or from a tendency to suspect and perceive conspiracy where it is not justified. Also, when people are anxious, they often overestimate the probability that something bad can happen to them, and they see danger in situations that are in fact completely safe (Freeman et al., 2006). Paranoid thoughts have repeatedly been found to be associated with anxiety (e.g., Hajdúk & Heretik, 2016; Johns et al., 2004) and social anxiety (e.g., Martin & Penn, 2001; Matos et al., 2013). Research also suggests that state and trait anxiety is positively correlated with conspiracy thinking (Grzesiak-Feldman, 2013).

Finally, people convinced of the truth of conspiratorial and paranoid thoughts can feel that the world is a dangerous and evil place where everyone is trying to hurt them. That is why these beliefs could, to some extent, be related not only to anxiety but also to life satisfaction, which is negatively related to state anxiety (Headey et al., 1993) and trait anxiety (Paolini et al., 2006). In addition, Freeman and Bentall (2017) found in an epidemiologically representative sample that individuals endorsing the conspiracy theories had lower levels of psychological well-being and were more likely to meet the criteria for a psychiatric disorder.

The main goal of this study was to analyze the relationships between paranoid and conspiracy beliefs, and anxiety-trait. Following the theoretical background, it can be assumed that higher levels of paranoid beliefs will be

associated with higher levels of conspiracy beliefs, and higher levels of both paranoid and conspiracy beliefs will be associated with higher levels of anxiety-trait. Another aim of this study was to explore whether anxiety disorders play a role in the levels of paranoid and conspiracy beliefs and also how these beliefs relate to global satisfaction with life.

## Methods

### Procedure

The data collection was conducted between February 16<sup>th</sup> and May 7<sup>th</sup>, 2020, via the internet and it was terminated when the responses stopped accruing. In this study, a mixture of convenience and snowball sampling approach was used. The data were collected through the Google Forms platform. Participants were recruited via social media and asked to take part in the study and share it with their friends. Participation in the study was anonymous and participants provided informed consent electronically.

### Participants

The study involved 814 Slovak-speaking participants (609 women, 205 men), aged 18 – 82 years ( $M = 24.82$ ;  $SD = 8.36$ ). The sample consisted of primary school graduates ( $n = 2$ ; 0.2%), high school students and graduates ( $n = 164$ ; 20.1%), and university students and graduates ( $n = 648$ ; 79.6%). Participants were also asked whether they were currently suffering from a mental disorder and if so, what type of mental disorder. Mental disorder was reported by 175 participants (21.5%). Anxiety disorders ( $n = 137$ ; 78.2%) were the most common, followed by depression ( $n = 79$ ; 45.0%), alcohol and other drug addictions ( $n = 22$ ; 12.5%) and personality disorders ( $n = 8$ ; 4.5%). Some participants report-

ed other disorders ( $n = 15$ ; 8.6%), including obsessive-compulsive disorder (OCD), eating disorders, attention deficit hyperactivity disorder (ADHD), paranoia, bipolar disorder, or Asperger's syndrome. Some participants identified several comorbid diseases at the same time.

### Instruments

*The Paranoia Scale (PS*, Fenigstein & Venable, 1992) is the most widely used dimensional measure of paranoia (Freeman et al., 2005). It is a 20-item scale that measures non-clinical paranoid ideations as a response to everyday events and situations. Each item is rated on a five-point scale (1 – not at all applicable to me, 5 – extremely applicable to me). Scores can range from 20 to 100 with higher scores indicating higher levels of paranoid beliefs. Fenigstein and Venable (1992) report good internal consistency ( $\alpha = .84$ ) and test re-test reliability (.70), indicating good stability over time. This study uses the Slovak version of the scale (Hajdúk & Heretik, 2016), which has acceptable psychometric properties with Cronbach's  $\alpha = .89$  and Revell's  $\theta = .81$ .

*The Slovak Conspiracy Belief Scale (SCBS*, Ballová Mikušková, 2018) was used to measure conspiracy beliefs. The scale contains 25 items, which were created by an analysis of the main Slovak media websites and some alternative websites propagating conspiracy theories and unwarranted statements. Each item is rated on a six-point scale (1 – totally disagree, 6 – totally agree). Given that unwarranted statements in this questionnaire have a similar nature to conspiracy theories, both were included in the study. The total score of conspiracy beliefs and unwarranted statements was computed, where a higher score indicates a higher rate of conspiracy beliefs. Ballová Mikušková (2018) reports high internal consistency (Cronbach's  $\alpha = .89$ ).

*The State-Trait Anxiety Inventory (STAI-T*, Spielberger et al., 1970; Slovak version by Müllner et al., 1980) was used to measure anxiety-trait. The inventory consists of a total of 40 items, of which 20 are intended to measure anxiety-state and another 20 to measure anxiety-trait. For purposes of this study, only the anxiety-trait subscale was used. Each item is rated on a four-point scale (1 – almost never, 4 – almost always). STAI-T scores range from 20 (almost never anxious) to 80 (almost always anxious).

*The Satisfaction With Life Scale (SWLS*, Diener et al., 1985) is a 5-item self-report measure that measures global life satisfaction. Each item is rated on a seven-point scale (1– strongly disagree, 7 – strongly agree), so the possible range of scores on the questionnaire ranges from 5 (low satisfaction) to 35 (high satisfaction). The instrument has acceptable psychometric properties with Cronbach's  $\alpha = .87$  (Diener et al., 1985). The questionnaire was translated into the Slovak language for the purpose of this study.

### Statistical Analysis

First, frequencies and percentages were computed for sociodemographic variables. Furthermore, descriptive statistics for the age (mean, standard deviation) and scores of the PS, the SCBS, the STAI-T, and the SWLS (mean, standard deviation, skewness, kurtosis) were calculated. Cronbach's  $\alpha$  (Cronbach, 1951) was used to evaluate the inter-

nal consistency. Subsequently, Pearson's correlations between the scores of the PS, the SCBS, the STAI-T, and the SWLS were performed. After running correlations, linear regression analyses predicting the PS and the SCBS were performed using the Enter method. Moreover, independent samples Welch's *t*-tests were used to explore differences in the mean level of the PS, the SCBS, the STAI-T, and the SWLS scores between the participants who reported anxiety disorders and those who did not. In addition, a partial correlation analysis controlling for anxiety disorder was performed. The data were analyzed using IBM SPSS (version 23), and JASP (version 0.14.1.0).

### Results

Descriptive statistics and internal consistency estimates for PS, SCBS, STAI-T, and SWLS can be found in Table 1. The Cronbach's coefficient  $\alpha$  was used to evaluate the reliability of the research methods, which showed a good internal consistency for each method.

First, the relationships between paranoia, conspiracy beliefs, anxiety-trait, and life satisfaction were examined using Pearson's correlation (Table 2). The results of the correlation analysis showed significant relationships between paranoia and conspiracy beliefs, anxiety-trait, and life satisfaction ( $p < .001$ ). Relationships between conspiracy beliefs and anxiety-trait ( $p = .166$ ) and life satisfaction ( $p = .771$ ) were not significant.

Table 1 *Descriptive statistics and reliability of examined variables*

	<i>M</i>	<i>SD</i>	99% CI	Skewness	Kurtosis	Cronbach's $\alpha$
PS	47.68	14.50	46.36, 48.99	.21	-.66	.90
SCBS	65.87	20.82	63.98, 67.75	.57	-.21	.91
STAI-T	49.41	13.19	48.21, 50.60	.06	-.86	.94
SWLS	22.79	6.73	22.18, 23.40	-.38	-.50	.86

Table 2 *Bivariate correlations with 99% confidence intervals*

	PS	SCBS	STAI-T
PS			
SCBS	<i>.26 [.18, .34]</i>		
STAI-T	<i>.56 [.49, .62]</i>	.05 [-.04, .14]	
SWLS	<i>-.44 [-.51, -.37]</i>	.01 [-.08, .10]	<i>-.64 [-.69, -.58]</i>

Note. Correlations presented in italics are significant at  $p < .001$ .

Table 3 *Linear regression analysis predicting PS*

	PS				
	<i>b (SE)</i>	99% CI	$\beta$	<i>t</i>	<i>p</i>
Constant	20.229 (3.707)	10.658 – 29.800		5.457	< .001
SCBS	.173 (.019)	.123 – .224	.249	8.903	< .001
STAI-T	.483 (.039)	.381 – .585	.440	12.251	< .001
SWLS	-.354 (.077)	-.553 – -.155	-.164	-4.588	< .001
Data collection (day)	-.169 (.232)	-.769 – .430	-.263	-.730	.466
Data collection (period)	2.245 (2.614)	-4.505 – 8.994	.077	.859	.391
Interaction data collection day*period	.149 (.238)	-.465 – .763	.248	.627	.531

$F(6, 807) = 84.463, p < .001, R^2 = .386, R^2_{Adjusted} = .381$

Note. Data collection (day) = continuous variable (the day from the start of data collection); Data collection (period) = dichotomous variable (0 = before pandemic/in the run-up to the parliamentary elections; 1 = during pandemic).

As the next step, two multiple linear regression models predicting paranoid and conspiracy beliefs were performed. First, linear regression analysis (Table 3) was conducted, with conspiracy beliefs, anxiety-trait, and life satisfaction as predictors, and paranoid beliefs as an outcome variable, since the relationships between these variables and paranoid beliefs emerged as significant in the correlation analysis. In addition, the effects of two data collection variables and their interaction were also controlled. The regression model is consistent with correlation results, as all of the variables – conspiracy beliefs ( $\beta = .249; p < .001$ ), anxiety-trait ( $\beta = .440; p < .001$ ), and life satisfaction ( $\beta = -.164; p < .001$ ) significantly contributed to the prediction of paranoid beliefs. On the other hand, none of

the variables associated with the time of data collection proved to be a significant predictor of paranoia. All of the variables together accounted for 38.6% of the variance. Then a second linear regression model predicting conspiracy beliefs was performed (Table 4). Based on the results of the correlation analysis, only paranoia was included in this model. The life satisfaction and anxiety-trait were not included, as these correlations were not statistically significant. Instead of these predictors, the effects of two data collection variables and their interaction were additionally controlled. The results show that paranoid beliefs ( $\beta = .262; p < .001$ ) and data collection period ( $\beta = -.231; p = .033$ ) were significant predictors of the level of the conspiracy beliefs. In contrast, the day from the start of data collection or the in-

teraction of both variables for data collection were not statistically significant predictors. All of the variables together accounted for 9% of the variance.

Further, Welch's *t*-tests were conducted to explore whether there are differences in measured variables between the participants who reported anxiety disorders and those who did not. Depending on this criterion, participants were divided into two groups. As Table 5 shows, more paranoid beliefs, higher trait-anxiety, and lower life satisfaction were observed in participants who reported anxiety disorders, compared to those who did not.

Based on the differences mentioned above ( $d = .755 - 1.447$ ), a partial correlation anal-

ysis was conducted. The same pattern of correlations remained significant after controlling for the presence of anxiety disorders. Paranoid beliefs significantly correlated with conspiracy beliefs ( $r = .27; p < .001$ ), anxiety-trait ( $r = .51; p < .001$ ), and life satisfaction ( $r = -.40; p < .001$ ). Also, life satisfaction again significantly correlated with anxiety-trait ( $r = -.59; p < .001$ ).

### Discussion

The main aim of this study was to examine the relationship between paranoid and conspiracy beliefs, as well as to determine how these beliefs further relate to anxiety and global sat-

Table 4 Linear regression analysis predicting SCBS

	SCBS				
	<i>b</i> (SE)	99% CI	$\beta$	<i>t</i>	<i>p</i>
Constant	52.218 (2.946)	44.611 – 59.825		17.723	< .001
PS	.376 (.048)	.251 – .501	.262	7.785	< .001
Data collection (day)	-.469 (.405)	-1.514 – .576	-.507	-1.160	.246
Data collection (period)	-9.685 (4.544)	-21.417 – 2.046	-.231	-2.132	.033
Interaction data collection day*period	.513 (.414)	-.557 – 1.583	.594	1.238	.216

$$F(4, 809) = 20.059, p < .001, R^2 = .090, R^2_{Adjusted} = .086$$

Note. Data collection (day) = continuous variable (the day from the start of data collection); Data collection (period) = dichotomous variable (0 = before pandemic/in the run-up to the parliamentary elections; 1 = during pandemic).

Table 5 Independent sample *t*-test for the group with and without anxiety disorders (AD)

	Without AD ( <i>n</i> = 678)		With AD ( <i>n</i> = 136)		Welch's <i>t</i> -test ( <i>df</i> )	Cohen's <i>d</i>	99% CI
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
PS	45.96	14.18	56.24	13.01	<i>-8.276 (204.640)</i>	-.755	-1.015, -.494
SCBS	66.00	21.11	65.22	19.38	.421 (204.582)	.038	-.204, .280
STAI-T	46.77	12.25	62.53	9.34	<i>-16.968 (238.579)</i>	-1.447	-1.742, -1.150
SWLS	23.66	6.46	18.46	6.40	<i>8.645 (194.189)</i>	.810	.545, 1.073

Note. Welch's *t*-test presented in italics are significant at  $p < .001$ .

isfaction with life. Due to the pandemic, the effect of the data collection period, the day of data collection, and their interaction were also controlled for.

First, the relationship between paranoia and conspiracy beliefs was examined as both types of beliefs are characterized by suspicion. Conspiracy beliefs could have a close connection with the spectrum of paranoia, in which one perceives individual threats from others (Freeman & Bentall, 2017). Therefore, it could be assumed that higher levels of paranoid beliefs will be associated with higher endorsement of conspiracy theories. In the present study, this association was indeed found. These results are consistent with previous findings (e.g., Darwin et al., 2011; Freeman & Bentall, 2017). In addition, it was also found that conspiracy beliefs relatively strongly predicted the level of paranoia and vice versa.

For both paranoid and conspiracy beliefs, anxiety could play an important role, which can stem from unfounded fear of other people, or from a tendency to suspect and perceive conspiracy where it is not justified. Research points to a close connection between paranoia and some types of anxiety (e.g., Hajdúk & Heretik, 2016; Johns et al., 2004; Martin & Penn, 2001; Matos et al., 2013). In this study, specifically, anxiety-trait strongly correlated with paranoia and emerged as its strongest predictor. In addition, this research also focused on anxiety disorders, which had a relatively strong effect on the level of paranoid beliefs. On the other hand, after controlling for the presence of anxiety disorders the pattern of correlations remained the same. Although an association between conspiracy beliefs and anxiety-trait was expected, the results suggest that anxiety-trait was not related to conspiracy beliefs. Furthermore, the presence of anxiety disorder did not play an important role in whether or not one believed in conspiracy theories.

In this context, it is also worth noting that participants in this research showed higher average scores in anxiety, compared to other studies that worked with STAI (e.g., Grzeziak-Feldman, 2013; Gudjonsson et al., 2002; Novotný et al., 2006). The authors of the Slovak version of STAI (Müllner et al., 1980) point out that precisely those participants with psychiatric difficulties have significantly higher scores in anxiety ( $M$  is around 50; in current research  $M = 49.41$ ). The higher level of anxiety in participants could then be explained by the fact that participants who stated that they currently suffer from a mental disorder (21.5%) were also included in the study, with up to 78.2% of participants in this group reporting that they suffer from anxiety disorders. In general, anxiety-trait is closely linked to anxiety disorders (Foot & Koszycki, 2004). This finding could also contribute to the higher average anxiety in our research sample. In addition, our research was conducted at the time of the beginning of the COVID-19 pandemic, when the Slovak government ordered strict preventive regulations aimed at preventing further spread of the virus, which could also have affected the level of anxiety among respondents. Furthermore, the results of Ferreira et al. (2021) showed that those individuals quarantined at home reported higher anxiety and lower health-related quality of life.

Finally, this research focused on how global satisfaction with life is related to paranoid and conspiracy beliefs. The results suggest a negative relationship between life satisfaction and paranoid beliefs. In addition, life satisfaction has been shown to be a significant negative predictor of paranoid beliefs. In contrast, the relationship between life satisfaction and conspiracy beliefs was not significant.

It should be kept in mind that data for this study were collected during two problematic periods. More than a half of the data was collected in the run-up to the parliamentary

elections (February 2020), when the situation in the country was tense and some alternative media and websites spread conspiracy and unwarranted statements, which may have resulted in increased level of conspiracy beliefs. For example, this research found relatively frequent agreement with the conspiracy relating to the government: *"Our country is not governed by our government, in reality, it is led by financial groups"* ( $n = 311, 38.3\%$ ). In this regard, Douglas et al. (2019) point out that conspiracy theories arise frequently during political events, which is usually accompanied by low political trust, feelings of powerlessness, uncertainty, and unpredictability. The second half of the data, as mentioned above, was obtained in a period associated with the pandemic situation and the persistence of COVID-19 (March – May, 2020), when a growing number of emerging coronavirus misinformation and conspiracy theories were spreading through the media. For example, in this study, up to 358 (44%) participants agreed with the statement: *"Some viruses and diseases could have been deliberately disseminated into the general population as a biological weapon."*, which could be related to the current ongoing pandemic situation. It is the sudden social changes and events, which are mainly of a negative nature, that cause people uncertainty, fear, and the feeling of lack of control. These aversive feelings that people experience in crisis stimulate motivation to make sense of the situation, by accepting various conspiracy theories (Van Prooijen & Douglas, 2017). Based on these facts, the whole data collection period could be called a period of great social change, or a crisis associated with a spreading pandemic, it could also be associated with a higher level of anxiety (49.41 vs. 40.09, Heretik et al., 2009), paranoia (47.68 vs. 42.7, Fenigstein & Venable, 1992), and lower satisfaction with life (22.79 vs. 23.5, Diener et al., 1985), com-

pared with the scores in the original studies. Finally, neither the data collection period, the day of data collection nor their interaction played a role in predicting paranoid beliefs. In contrast, conspiracy beliefs were negatively predicted by the data collection period. These results may suggest that people might be more likely to believe in conspiracy theories in the run-up to parliamentary elections. In conclusion, conspiracy beliefs, anxiety-trait, and satisfaction with life accounted for almost 40% of the variance of paranoid beliefs. On the other hand, paranoid beliefs and data collection period accounted for less than 10% of variance of conspiracy beliefs.

The topic of conspiracy and paranoid beliefs has been growing in popularity in the last years. Some of the recent findings are suggesting that it deserves even more attention. For example, research of Kowalski et al. (2020) suggests that coronavirus conspiracy and paranoid beliefs are negatively related to adherence to safety guidelines. Higher levels of coronavirus conspiracy thinking were associated with less adherence to all government guidelines and lower willingness to take diagnostic or antibody tests or to be vaccinated. Such ideas were also associated with other general conspiracy beliefs and paranoia (Freeman et al., 2020). Given the stakes, conspiracy beliefs may seem particularly dangerous.

Current research has several limitations. The first one being the data collection method. The data were collected online and a mixture of convenience and snowball sampling approach was used. Therefore the views of those who are not online could not be assessed. Also, it should be noted that another limitation of this research was the fact that only self-assessment methods were used to obtain the data. It is not possible to assess whether the participants who reported a mental disorder were actually diagnosed and also to assess the severity of the reported



disorder. At the same time, even if some of the participants were not properly diagnosed, that does not necessarily mean that the disorder was not present. Also, as mentioned above, the results of this research could be influenced to some extent by the fact that data were collected in two specific periods, before the parliamentary elections and during the pandemic situation.

In conclusion, due to the negative consequences of conspiracy beliefs, it is reasonable to say that they possess a threat. However, one must not forget that, especially during a pandemic, more attention should be directed to the mental health of individuals as well. The negative effects of a pandemic on mental health could, among other things, be reflected in anxiety and global satisfaction with life, which, along with conspiracy beliefs, proved to be significant predictors of paranoia in this study.

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