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RESEARCH ARTICLE

Trait Anxiety and Fictional Exposure: How Movie Preferences Shape Psychological Resilience and Pandemic Preparedness

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Abstract

People differ in their ability to cope with stressful situations. The pandemic outbreak put the world under a lot of stress and challenges in the form of its prevention and its repercussions. People with different levels of trait anxiety cope differently with stressful situations. This study examines the association of trait anxiety with pandemic psychological resilience and pandemic preparedness. People around the world enjoy engaging with fictional experiences. One reason why people enjoy such experiences is that they provide people with simulations of real events that can act as a source of information. The current study investigated the relationship between movie genres and psychological resilience and preparedness towards the pandemic. We conducted an online study with 120 participants, mean age (SD) =18.36 (.73) years. The data was collected through convenience and snowball sampling methods. The participants filled out demographic questionnaires, State-Trait Anxiety questionnaire, Emotion Regulation Questionnaire, movie genre preference questionnaire, pandemic psychological resilience scale, and pandemic preparedness scale. The results indicated a negative interaction between trait anxiety and cognitive reappraisal, a positive interaction between trait anxiety and positive resilience, and a positive interaction between trait anxiety and psychological distress towards the pandemic. Our results showed that certain movie genre preferences are significantly correlated with positive resilience and psychological distress towards the pandemic.

Keywords: Pandemic: Resilience; Preparedness; Trait anxiety; Movies

INTRODUCTION

The pandemic outbreak appeared in December 2019 and set off a cycle of major stressors to people due to its unexpected outbreak and spread, and the preventive measures taken to control the spread. The worldwide lockdowns and isolation accompanying the pandemic were a source of distress as they corresponded with major changes in the lives of the people (Usher et al., 2020). With the imposition of lockdowns, work from home, social distancing, and the fear of oneself and family members getting infected, this has added to the unusually stressful experience. The COVID-19 pandemic was accompanied by major lifestyle changes that challenged people cognitively, physically, and mentally, and affected the well-being of people in a severely negative manner (Zhang et al., 2021).

The students suffered the most in coping with the online learning that kept them away from schools and colleges and friends, leading to a negative impact on their psychological health (Cao et al., 2020). As a result, it had been a difficult time for young adults to cope with the consequences and repercussions of the pandemic. Uncertainty about future events and constant fear of contamination, and unfortunate experiences like isolation and quarantine, became a source of anxiety for people. Anxiety is either characterized as state or trait anxiety. State anxiety is an emotional response to an immediate threat, whereas trait anxiety is defined as a dispositional quality of experiencing greater anxiety in response to a threat (McCleskey & Gruda, 2021). According to the transactional model of stress and coping (Lazarus & Folkman, 1984), stress is not only an outcome of external events but also the interaction between an individual and their surroundings. Lazarus (1966) focused on cognitive processes that are involved in coping with adverse situations. The central component of the theory is the process of appraisal, i.e., the evaluation of a situation. Primary appraisal is the evaluation of the situation/ event, and secondary appraisal is the evaluation of one's own ability to deal with the situation. Anxious individuals are prone to exhibiting bias to threat in processes like attention, cognitive appraisal, and learning (Britton et al.,

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2011). High trait anxiety has been associated with vulnerability to stress and more reactive stress responses (Weger & Sandi, 2018). Individuals with anxiety tend to have an overly negative appraisal/ evaluation of a situation (Espejo et al., 2012). Lower external and internal perceived control over a situation has also been associated with anxiety (Wadsworth & Hayes-Skelton, 2020).

Research on COVID-19 has, for the most part, focused on state anxiety given the stressful and fearful conditions surrounding the pandemic. The current study was interested in trait anxiety and its correlation with psychological resilience towards the pandemic. The goal was to explore the nature of the relationship between trait anxiety and resilience towards the pandemic. People with high anxiety are more intolerant of uncertainty. Uncertainty can make preparing for future events difficult (Grupe & Nitschke, 2013), given the uncertainty that characterized the pandemic. Another point of investigation of this study was to inspect the relationship between trait anxiety and pandemic preparedness.

People all around the world enjoy indulging in various fictional experiences, whether these fictional experiences are reading a novel, watching films, or TV shows. People enthusiastically seek out such experiences, which prompts an interesting question: Do such fictional experiences offer something more than just entertainment? Fictional work acts as a simulation of the real world (Scrivner et al., 2021). Audience goes through thoughts and emotions represented in such fictional experiences and offers information about the world that can be utilized to make predictions about the world (Mar & Oatley, 2008). Early on in the pandemic, a movie called *Contagion* was highly streamed as it was relevant to the situation and provided a realistic experience of what a pandemic looks like and obtain information about it vicariously (Scrivner et al., 2021). According to the adaptive simulation perspective, fictional experiences provide us with simulations that permit us to mentally predict events that could occur sometime ahead in the future. These fictional experiences offer a way to explore a phenomenon, get information about it, and anticipate what it would look like if it occurred in a real-world situation and how to prepare for it. (Morin et al., 2019). Fiction particularly provides simulations of two types: simulation of social life and threat simulations. Simulations of threats claim that fictional narratives prepare us for dangers by simulating those threats. Empirical studies have shown that people intentionally expose themselves to fearful situations or frightening fictional experiences to gather information and learn how to prepare for such a situation (Clasen, 2017). Results of a recent work by Scrivner et al. (2021) found that watching movies related to the pandemic was related to preparedness towards COVID-19. Considering particularly horror entertainment, engaging with horror entertainment or fiction allows people to experience fear and negative emotions in a secure environment, which might help people to enhance and master their emotion regulation (Kerr et al., 2019). Research has found that emotion regulation is linked with increased psychological resilience (Mestre et al., 2017). The main aim of the study was to examine and extend the work conducted by Scrivner et al. (2021) in the Indian context with adolescence. Scrivner et al. (2021) did not explore how trait anxiety influences psychological distress and positive resilience towards the pandemic, and pandemic preparedness. In comparison to Scrivner et al. (2021), we expanded the number of movie genres and explored the association of 13 movie genres with positive resilience and psychological distress towards the pandemic and preparedness towards the pandemic. The current study is an exploratory study; however, based on the previous literature, we had certain specific hypotheses. We hypothesized that trait anxiety would negatively impact positive resilience to the pandemic (H1), trait anxiety would positively impact psychological distress (H2), and horror movie genre would show a negative association with psychological distress (H3).

MATERIALS AND METHODS

Participants

This study was conducted in an online mode via Microsoft Teams. This study was conducted in two phases: Screening and the Main study. In the screening phase, 162 B.Tech. students (M= 138; F= 33) from the Indian Institute of Technology Roorkee filled out the STAI questionnaires. Later, out of 162 participants who initially filled out the STAI questionnaire, only 120 (M_{age} =18.36 years, SD=.73) students followed up by filling out the rest of the questionnaires from the main study. The sample consisted of 99 males and 20 females; one participant had not specified their gender; therefore, they were not categorized as either male or female. Since the study was conducted during the COVID-19 pandemic outbreak (2nd wave), and people were still under lockdown in India. Therefore, the data was collected through convenience and snowball sampling methods.

Measures

Demographic Form

It consisted of questions related to gender, age, income, whether the participants had any psychiatric or neuropsychiatric illness, and whether they had contracted COVID-19.

State-Trait Anxiety Inventory (STAI)

STAI (Spielberger et al., 1983) is commonly used to evaluate trait and state anxiety. We used the STAI-Y form to measure the trait anxiety of the participants. It consists of 20 items, and all items are rated on a 4-point scale. All participants were asked to complete the STAI-Y questionnaire and based on the scores on the STAI-Y questionnaire, participants were grouped into the Low anxiety group (20-37), Mild anxiety group (38-44), and High anxiety group (45-80) (Kayikcioglu et al., 2017). The reliability of STAI-trait was found to be good (α=.875).

Emotion Regulation Questionnaire (ERQ)

The Emotion Regulation Questionnaire (Gross & John, 2003) was used to evaluate the frequent use of Cognitive reappraisal and Expressive suppression. The questionnaire has ten items and is a 7-point Likert scale. The reliability of the ERQ scale was found to be acceptable (α=.621).

Movie Genre questions

The participants were asked to report how much they agreed with certain statements regarding movie genre preference (on a 7-point Likert scale, strongly disagree to strongly agree). Participants were asked to report whether they would consider themselves a fan of a certain movie genre. They were assessed on 13 major types of movie genres, the list was taken from the Internet Movie Database (IMDb) website, which included horror, drama, adventure, superhero, comedy, romance, sci-fi, crime, mystery, animation, thriller, action, and fantasy.

Pandemic Psychological Resilience Scale

To evaluate the resilience of participants, particularly to the pandemic, we used the Pandemic Psychological Resilience Scale (PPRS) designed by Scrivner et al. (2021) which consists of two subscales: Psychological Distress (PD) and Positive Resilience (PR). The scale consists of 12 items, and participants recorded their responses on a 7-point Likert scale (strongly disagree to strongly agree). The reliability of the psychological distress sub-scale was found to be good (α=.85) and acceptable for the positive resilience sub-scale (α=.68).

Pandemic Preparedness Scale (PPS)

The Pandemic Preparedness Scale (Scrivner et al., 2021) was used to assess preparedness towards the pandemic. The scale consisted of 5 items, and participants rated their response on a 7-point Likert scale (strongly disagree to strongly agree). The reliability of the pandemic preparedness scale was found to be acceptable (α=.68).

We followed the APA (American Psychological Association) guidelines and took ethical approval for the study from the human ethics committee of the Indian Institute of Technology Roorkee, approval number: IITR/IIC/22/13. All participants gave their written consent

Data Analysis

For analysis, we used Statistical Product and Service Solution (SPSS) software Version 27. Descriptive statistics like mean, standard deviation, and inferential statistics like Spearman's Rank correlation test, quantile regression, and Kruskal-Wallis and Mann-Whitney tests were used to analyse the data.

RESULTS OF STUDY

Descriptive Statistics and Correlation Analysis

We performed a one-sample Kolmogorov-Smirnov test to determine the normality of the sample data. The trait anxiety, cognitive reappraisal, movie genre, and psychological distress subscale score data were not normally distributed ($p < 0.05$), while the positive resilience subscale and pandemic preparedness score were normally distributed ($p > 0.05$). We conducted a Spearman correlation test to investigate the correlation between the variables.

Table 1 Correlation table for the total sample

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Trait Anxiety													
2. Cognitive Reappraisal	-.237**												
3. Positive Resilience	-.265**	.466**											
4. Psychological Distress	.306**		-.275**										
5. Expressive Suppression			.234*										
6. Pandemic Preparedness				-.357**									
7. Drama			.258**										
8. Comedy			.191*										
9. Mystery			.260**										
10. Adventure			.271**										
11. Fantasy			.238**										
12. Romance				.212*									
13. Horror						.206*							

**. Correlation is significant at the 0.01 level (2-tailed). *. Correlation is significant at the 0.05 level (2-tailed).

Table 2 Correlation table of the male subsample

Variables	1	2	3	4	5	6	7	8	9
1. Trait Anxiety									
2. Cognitive Reappraisal	-.283**								
3. Positive Resilience	-.333**	.466**							
4. Psychological Distress	.378**		-.333**						
5. Expressive Suppression			.212*						
6. Pandemic Preparedness				-.342**					
7. Drama			.219*						
8. Comedy			.241*						
9. Thriller						-.248*			
10. Superhero						-.217*			

Spearman correlation analysis revealed a negative correlation between trait anxiety and habitual use of cognitive reappraisal, r (118) = -.237, p = .01 and positive resilience r (118) = -.265, p = .01. Trait anxiety was also positively correlated to psychological distress r (118) = .306, p = .01. Positive resilience was found to be positively correlated to both, cognitive reappraisal, r (118) = .466, p = .01 and expressive suppression, r (118) =.234, p = .05. Positive resilience was also positively correlated to the following movie genres: Drama, r (118) = .258, p= .01, Comedy, r (118) = .191, p=.05, Mystery, r (118) = .260, p= .01, Adventure, r (118) = .271, p= .01, and Fantasy, r (118) =

.238, p= .01. Positive resilience was negatively correlated to psychological distress, r (118) =-.275, p=.01. Psychological distress was positively correlated with Romance movie genre, r (118) = .212, p= .01 and negatively correlated to pandemic preparedness, r (118) =-.357, p = .01. Pandemic preparedness was positively correlated with horror movie genre, r (118) =.206, p = .05.

We conducted a correlational analysis separately for males and females. For the female population, we didn't find any significant correlations among the variables. For the male sample, we conducted a one-sample Kolmogorov-Smirnov test to determine the normality of the sample data. The movie genre score data were not normally distributed ($p < 0.05$), while the Trait Anxiety, Positive Resilience, and Psychological Distress subscales scores and Pandemic Preparedness score were normally distributed ($p \geq 0.05$). We conducted a Spearman correlation test to explore the correlations among the variables.

Spearman correlation analysis revealed a negative correlation between trait anxiety and habitual use of cognitive reappraisal, r (99) = -.283, p = .01 and positive resilience r (99) = -.333, p = .01. Trait anxiety was also positively correlated to psychological distress r (99) = .378, p = .01. Positive resilience was found to be positively correlated to both, cognitive reappraisal, r (99) = .466, p = .01 and expressive suppression, r (99) =.212, p = .05. Positive resilience was also positively correlated to the following movie genres: Drama, r (99) = .219, p= .05 and Comedy, r (99) = .241, p= .05. Positive resilience was negatively correlated with psychological distress, r (99) =-.333, p=.01. Psychological distress was negatively correlated with pandemic preparedness, r (99) =-.342, p = .01. Pandemic preparedness was negatively correlated with thriller, r (99) = -.248, p = .05 and superhero movie genre, r (99) = -.217, p = .05.

Predictive Regression Analysis

We conducted a quantile regression at the low (.25), median (.5), and higher (.75) quantiles to test whether trait anxiety predicted cognitive reappraisal scores. We found a significant association at the lower quantile (.25); trait anxiety significantly predicted the habitual use of cognitive reappraisal. The model showed a small but meaningful fit (Pseudo R^2 = .034). Results indicated that trait anxiety significantly predicted cognitive reappraisal scores, B = –0.17, SE = 0.07, t (118) = –2.36, p = .020, 95% CI [–0.31, –0.03].

Table 3 Quantile Regression Analyses Predicting Cognitive Reappraisal, Psychological Distress, and Positive Resilience towards the pandemic from Trait Anxiety

Dependent Variable	Quantile	B	SE	t	df	p	95% CI	Pseudo R^2
ERQ-CR	.25	-0.17	0.07	-2.36	118	.020	[-0.31, -0.03]	.034
	.50	-0.07	0.07	-1.01	118	.317	[-0.21, 0.07]	.016
	.75	-0.14	0.08	-1.79	118	.077	[-0.30, 0.02]	.032
PPRS-PD	.25	0.04	0.03	1.36	118	.178	[-0.02, 0.09]	.028
	.50	0.04	0.02	2.55	118	.012	[0.01, 0.08]	.036
	.75	0.09	0.02	5.63	118	< .001	[0.06, 0.12]	.121
PPRS-PR	.25	-0.02	0.01	-2.03	118	.044	[-0.04, 0.00]	.034
	.50	-0.03	0.01	-2.68	118	.008	[-0.05, -0.01]	.041
	.75	-0.02	0.01	-2.02	118	.046	[-0.05, 0.00]	.042

Table 4. Quantile Regression

Dependent Variable	Quantile	B	SE	t	df	p	95% CI	Pseudo R^2
ERQ-CR	.25	-0.20	0.08	-2.36	97	.020	[-0.37, -0.03]	.036
	.50	-0.08	0.08	-.97	97	.336	[-0.24, 0.08]	.016
	.75	-0.20	0.08	-2.54	97	.013	[-0.36, -0.04]	.057
PPRS-PD	.25	0.05	0.03	1.59	97	.116	[-0.01, 0.10]	.032
	.50	0.07	0.02	4.01	97	<.001	[0.03, 0.10]	.063
	.75	0.09	0.02	5.21	97	< .001	[0.05, 0.12]	.179
PPRS-PR	.25	-0.02	0.01	-2.25	97	.027	[-0.04, 0.00]	.054
	.50	-0.03	0.01	-2.77	97	.007	[-0.05, -0.01]	.052
	.75	-0.03	0.01	-2.75	97	.007	[-0.05, - 0.01]	.077

Further, a quantile regression was performed to examine whether trait anxiety predicted psychological distress to the pandemic. The model indicated a modest fit at the median (Pseudo R^2 = .036) and higher quantile (Pseudo R^2 = .121) for psychological distress. Results revealed that trait anxiety significantly predicted psychological distress at median, B = 0.04, SE = 0.02, t (118) = 2.55, p = .012, 95% CI [0.01, 0.08], and higher quantile, B = .092, SE = 0.02, t (118) = 5.63, p < .001, 95% CI [.06, .12].

Additionally, a quantile regression was performed to examine whether trait anxiety predicted positive resilience to the pandemic. The model indicated a modest fit at lower (Pseudo R^2= .034), median (Pseudo R^2 = .041), and higher quantile (Pseudo R^2= .042) for positive resilience. Results revealed that trait anxiety significantly predicted positive resilience at lower B = –.02, SE = .01, t (118) = –2.034, p = .044, 95% CI [-.038, -.001], median B = –0.03, SE = 0.01, t (118) = –2.68, p = .008, 95% CI [–0.05, –0.01] and higher

quantile B = –.02, SE = .011, t (118) = –2.01, p = .046, 95% CI [–0.046, .000].

For the male sample, we ran a quantile regression at the lower (.25), median (.5), and higher (.75) quantiles to test whether trait anxiety predicted cognitive reappraisal scores. At the 25th and 75th quantile, trait anxiety significantly predicted cognitive reappraisal scores, B = –0.20, t (97) = –2.36, p = .020, Pseudo R^2 = .036 and B = –0.20, t (97) = –2.54, p = .013, Pseudo R^2 = .057 respectively.

Further, a quantile regression was conducted to examine whether trait anxiety score predicts psychological distress scores. The model indicated a modest fit (Pseudo R^2 = .063; *Pseudo* R^2 = .179) at median and higher quantiles, respectively. Results revealed that trait anxiety significantly predicted psychological distress at median, B = 0.07, SE = 0.02, t (97) = 4.01, p < .001, 95% CI [0.03, 0.10] and higher quantile B = 0.09, SE =.02, t (97) = 5.21, p < .001, 95% CI [.05, .12].

Additionally, a quantile regression was performed to examine whether trait anxiety positively predicts resilience to the pandemic. The model indicated a modest fit at lower (Pseudo R^2= .054), median (Pseudo R^2 = .052), and higher quantile (Pseudo R^2= .077) for positive resilience. Results revealed that trait anxiety significantly predicted positive resilience at lower B = –.02, SE = .01, t (118) = –2.25, p = .027, 95% CI [-.042, -.00], median B = –0.03, SE = 0.01, t (118) = –2.77, p = .007, 95% CI [–0.05, –0.01] and higher quantile B = –.03, SE = .01, t (118) = –2.75, p = .007, 95% CI [–0.05,-.01]. Quantile Regression Analyses Predicting Cognitive Reappraisal, Psychological Distress, and Positive Resilience towards the pandemic from Trait Anxiety for the male subsample.

Figure I Scatter Plot of Cognitive Reappraisal by Trait Anxiety. (**a**) Total Sample, (**b**) Males

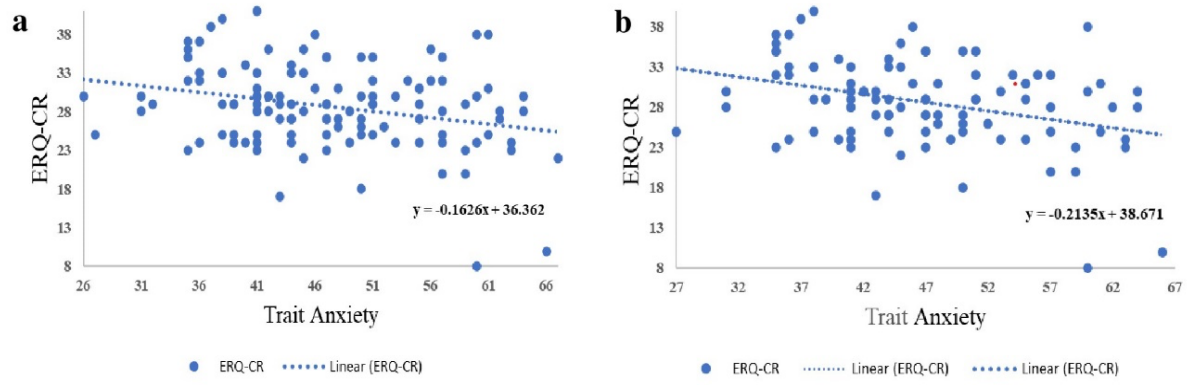
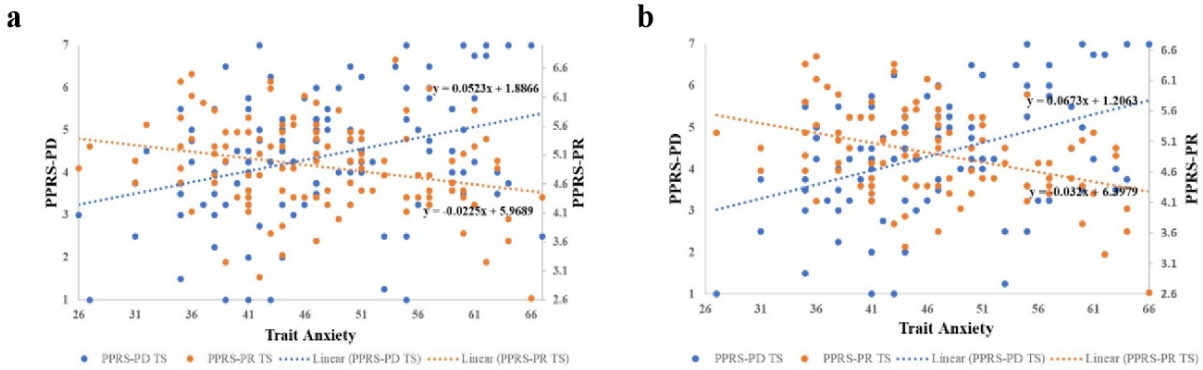


Figure 2 Scatter Plot of Psychological Distress and Positive Resilience by Trait Anxiety. (**a**) Total Sample, (**b**) Males



Group Differences Based on Anxiety Levels

To explore the difference between different levels of anxiety and psychological distress and positive resilience towards the pandemic, we performed a Kruskal–Wallis H test. The results indicated significant differences across low, moderate, and high anxiety categories for both PPRS-PD TS, H (2) = 9.29, p = .010, and PPRS-PR TS, H (2) = 7.01, p = .030. Follow-up pairwise comparisons using Mann–Whitney U tests revealed that PPRS-PD TS scores were

significantly higher in the high trait anxiety category compared to the low trait anxiety category, whereas differences between low and moderate anxiety categories, and between moderate and high trait anxiety categories, were not statistically significant. For PPRS-PR TS, the low trait anxiety category scored significantly higher than both the moderate and high trait anxiety categories, while the difference between the moderate and high trait anxiety categories was not significant.

Table 5. Kruskal-Wallis test for the total sample

Variable	Anxiety Group	N	Mean Rank	H	df	p
PPRS-PD	Low	16	41.75	9.29	2	.010
	Moderate	38	54.53			
	High	66	68.48			
PPRS-PR	Low	16	81.63	7.01	2	.030
	Moderate	38	59.12			
	High	66	56.17			

Table 6. Mann-Whitney test table for the total sample

Variable	Comparison	Mean Rank	U	Z	p
PPRS-PD	Low vs Moderate	23.63 / 29.13	242	-1.178	.239
	Low vs High	26.63 / 45.11	290	-2.791	.005
	Moderate vs High	44.89 / 56.88	965	-1.956	.050
PPRS-PR	Low vs Moderate	34.84 / 24.41	186.5	-2.230	.026
	Low vs High	55.28 / 38.16	307.5	-2.585	.010
	Moderate vs High	54.21 / 51.52	1189	-.440	.660

Table 7 Kruskal-Wallis test for the male subsample

Variable	Category	N	Mean Rank	H	df	p
PPRS–PD	Low	14	34.57	11.18	2	.004
	Moderate	32	42.39			
	High	53	58.67			
PPRS–PR	Low	14	68.25	7.48	2	.024
	Moderate	32	50.73			
	High	53	44.74			

Table 8. Mann-Whitney test table for the male subsample

Variable	Comparison	Mean Rank	U	Z	p
PPRS–PD TS	Low vs Moderate	20.93 / 24.63	188.00	-0.86	.389
	Low vs High	21.14 / 37.40	191.00	-2.78	.005
	Moderate vs High	34.27 / 48.27	568.50	-2.54	.011
PPRS–PR TS	Low vs Moderate	29.43 / 20.91	141.00	-1.99	.047
	Low vs High	46.32 / 30.75	198.50	-2.67	.008
	Moderate vs High	46.33 / 40.99	741.50	-0.97	.333

In male participants, a Kruskal–Wallis H test indicated significant differences across trait anxiety categories for both PPRS-PD TS, H (2) = 9.29, p = .010, and PPRS-PR TS, H (2) = 7.01, p = .030. Follow-up pairwise comparisons using Mann–Whitney U tests revealed that for PPRS-PD TS, the high anxiety category scored significantly higher than both the low anxiety category (U = 191.00, p = .005) and the moderate anxiety category (U = 568.50, p = .011), while the difference between low and moderate anxiety categories was not significant. For PPRS-PR TS, the low anxiety category scored significantly higher than the high anxiety category (U = 198.50, p = .008), whereas differences between the low and moderate anxiety categories, and between the moderate and high anxiety categories, were not significant (p > .05).

DISCUSSION

Research has shown that people with high trait anxiety show difficulties in emotion regulation and processing of emotional information, which can result in ineffective use of emotion regulation strategies (Cho et al., 2019). Our correlational results confirmed this through an inverse relation between trait anxiety and habitual cognitive reappraisal. From our correlational results, we found that positive resilience towards the pandemic was related to both emotion regulation strategies: cognitive reappraisal and expressive suppression. Effective use of emotion regulation has been shown to increase resilience, and one's ability to regulate their own emotions is related to resilience to stressful life events (Artuch-Garde et al., 2017). This explains the negative correlation between trait

anxiety and positive resilience and a positive association between trait anxiety and psychological distress to the pandemic. Previous literature has shown a similar trend. Setiawati et al. (2021) studied healthcare workers and showed a similar relationship between trait anxiety and resilience. Another study (McCleskey & Gruda, 2021) found a similar association between trait anxiety and trait resilience. The relationship between trait anxiety and resilience has been explored before; in the current study, the goal was to explore the relationship between trait anxiety and resilience towards the pandemic using the Pandemic Psychological Resilience Scale, which includes items that are specific to resilient behaviour towards the pandemic.

From our results, we found a positive association between horror movie preference and pandemic preparedness. One reason for this correlation may be that horror movies provide a safe exposure to threatening situations, which induces negative emotions in a controlled environment, which can help build emotion regulation skills (Scrivner & Christensen, 2021). Further, it might help in dealing with negative experiences that might occur during unexpected events, like a pandemic. This finding suggests horror movies may help to plan and practice coping skills that can be employed in actual survival situations. Although our results show a positive association between horror movie genre and preparedness, watching such movies may indeed result in enhanced anxiety and psychological distress in certain individuals, as such individuals might perceive it as overwhelming. Therefore, it is possible that certain psychological traits might be responsible for these individual differences. Personality traits like openness to experience, sensation seeking, and morbid curiosity might influence this relation. High sensation-seeking individuals would watch horror movies to satisfy their need for higher arousal and therefore would seek out such experiences. The morbidly curious individuals actively seek such experiences to learn about threatening and dangerous events (Scrivner et al., 2021). For males, we found that there is a negative correlation between thriller and superhero movie genres and pandemic preparedness. Thriller movies generate feelings of suspense and excitement, which may not provide a way for improvement of emotion regulation skills, as in the horror movie genre. Similarly, superhero movies also do not generate feelings of horror; thus, it is not positively related to pandemic preparedness.

From our results, we found that being a fan of certain movie genres, like drama, comedy, fantasy, mystery, and adventure, was positively correlated with positive resilience towards the pandemic. And for the male sample, positive resilience was correlated with only drama and comedy genres of movies. These results can be understood through Bandura's Vicarious learning theory (Bandura, 1977), according to which individuals can acquire and imitate adaptive behaviour by observing such behaviours in others. Previous literature has shown that movies can impact a person's way of dealing with negative experiences; they can provide a learning experience on how to handle a critical life event. Since they portray narratives and characters that successfully overcome an adversity, people can vicariously learn or model such behaviour (Bandura, 2001). For example, drama movies mostly revolve around strong protagonists who undergo struggles and overcome adversities. These protagonists might act as models for people to adopt effective coping strategies. In contrast, comedy movies provide narratives that encourage the incorporation of humour as an adaptive coping strategy in dealing with stressful situations (Samson & Gross, 2012). Fantasy and adventure movies provide viewers with narratives that promote creativity and help them to visualize their problems afresh and find solutions (Madhushani, 2025). Studies have shown that repeated exposure to content with resilient themes can result in people acquiring such virtues (Busselle & van den Bulck, 2020). This result opens a new way of thinking about movies or other fictional works. Encouraging the idea that movies can have the potential to be used for more than just entertainment, but also as an intervention to help people successfully cope with adversities. Fictional work might act as a protective factor for people when faced with negative life events. Although our design does not eliminate the possibility of other variables influencing the correlations between the variables. The current study used a correlational research method, so it could not explore the exact causal relationship between certain movie genres and positive resilience

The quantile regression analyses provided a more nuanced understanding of how trait anxiety relates to cognitive reappraisal, positive resilience, and psychological distress during the pandemic. Interestingly, the association between trait anxiety and the habitual use of cognitive reappraisal emerged only at the lower quantile; this implies that trait anxiety negatively influences individuals who employ cognitive reappraisal strategies less frequently to regulate their emotions. Higher trait anxiety has been associated with less effective use of emotion regulation strategies (Cho et al., 2019). Our results imply that higher anxiety influences emotion regulation in individuals who use cognitive reappraisal less frequently.

Further, trait anxiety and psychological distress showed a positive association (Jean Francois et al., 2023) at both median and higher quantiles. This suggests that trait anxiety more strongly influenced psychological distress due to the pandemic in individuals with moderate to high distress. Additionally, the negative association between trait anxiety and positive resilience was evident across all quantiles (AlQarni et al., 2023), with slightly stronger effects at the median and higher quantiles. This suggests that higher trait anxiety negatively impacts positive resilience, even in individuals with higher positive resilience towards the pandemic. The male subsample showed a similar trend in associations. Overall, the results show that trait anxiety exhibits a stronger negative influence on individuals with low cognitive reappraisal frequency and higher psychological distress to the pandemic. The effect size of these associations ranged from small to moderate; however, these associations are theoretically and practically meaningful as they indicate the effect of trait anxiety on emotional regulation and resilience towards the pandemic. The low effect size indicates that cognitive reappraisal, psychological distress, and positive resilience might be better explained by variables other than trait anxiety that have not been considered here. Therefore, trait anxiety can be thought of as one such variable that can affect people's cognitive reappraisal use and psychological distress, and positive resilience towards the pandemic.

From our Kruskal-Wallis test and Mann-Whitney test results, we found that different trait anxiety groups differed on psychological resilience towards the pandemic, as indicated by the results; people with high trait anxiety experienced more psychological distress and less positive resilience as compared to people with low trait anxiety. People with high trait anxiety might have encountered more difficulties adjusting to life during the pandemic (Scrivner et al., 2021). Kruskal-Wallis test and Mann-Whitney results for male participants showed a similar

result; males with high trait anxiety showed more psychological distress and less positive resilience towards the pandemic than males with low trait anxiety. This further strengthens the positive association between trait anxiety and positive resilience and the negative association between trait anxiety and psychological distress.

Our study serves as an important bridge between clinical psychology and media studies. Our findings contribute to understanding how trait anxiety influences resilience to the COVID-19 pandemic. From a media studies standpoint, our results highlight how engagement with specific movie genres, like horror, could impact preparedness towards a pandemic, and genres like drama, comedy, fantasy, mystery, and adventure could influence resilience. Our study offers a novel approach to media consumption, suggesting a potential contribution of movies to emotional resilience and adaptive coping. This interdisciplinary perspective highlights the potential of media as tools for promoting psychological well-being.

In the current study, we also tried to explore the sex difference in movie genre preference, pandemic psychological resilience, and pandemic preparedness, but nothing meaningful was found in the results. This does not suggest a lack of meaningful association, but this might be a result of the smaller number of female participants (n=20) in our study. Our study shows a positive link between trait anxiety and positive resilience to the pandemic and a negative association with psychological distress, and a positive association between horror movie preference and pandemic preparedness; however, it is a correlational design. Further research is needed to explore the correlations further and determine the exact causality. It is unclear how being a horror movie fan would increase preparedness towards the pandemic. Watching horror movies could result in increased anxiety and psychological distress for some individuals. Future research should explore how certain movie genres benefit psychological resilience and preparedness.

Our study has certain shortcomings that limit its external validity and generalizability. First, the current study was conducted in an online mode and used a correlational design; therefore, the current study design limits it from deriving any causal inferences. Second, the sample size for our study was small (n=120) and homogeneous, consisting of only B-tech students of the institute, which limits the generalizability of the results of the study. Further, since the sample population included B-tech students from a single institute, it lowers the external validity of the findings. Third, the number of female participants was very low (n=20); therefore, no meaningful analysis could be employed, and the results of the study could not be extended to the female subsample. Lastly, the data for this study were collected during the third wave of the pandemic, which might have affected the results obtained, as the restrictions had been reduced, and people had adapted to the situation.

CONCLUSIONS AND RECOMMENDATIONS

The pandemic outbreak had a significant impact on people across the world; our study shows that some people were better at dealing with the pandemic. Low trait anxiety was related to positive resilience, and conversely, high trait anxiety was related to high psychological distress. Fictional experience like horror movie preference was related to better preparedness towards the pandemic, and watching movie genres like Drama, Mystery, Adventure, and Fantasy was related to positive resilience. This supports the idea that fictional experiences can offer ways to prepare for a specific event and also broadly help with enhancing skills related to emotion regulation. Future studies can try to study the same variables with a larger sample size and a more representative sample.

It would be interesting to explore the capacity of fictional experiences to improve emotion regulation skills as interventions for anxiety and related disorders. It would also be exciting to explore fictional simulations in other platforms as well, like Virtual Reality and Video Games, which are different from movies in that they offer more active engagement. Given the interactive nature of VR and video games, they might offer stronger avenues to train preparedness in comparison to passive media such as movies. Further research could also explore sex differences in resilience and preparedness towards a pandemic, as research has shown that women show more physiological responses to threat.

DECLARATION

Ethics approval and consent to participate

The project was approved by the Institute Human Research Ethics Committee, Indian Institute of Technology Roorkee (IITR/IIC/22/13) and participants provided written consent to fill out the questionnaires.

Consent for publication

All the authors give consent for publication.

Availability of data and materials

The data will be made available on request from the corresponding author.

Conflicts of Interest Statement

The authors declare that they have no conflict of interest.

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Artificial Intelligence-Assisted Technology

We declare that no Artificial Intelligence-Assisted Technology was used in the preparation of this manuscript.

Authors' contributions.

Kaneez Fatima Dar: Conceptualization; Methodology; Formal analysis and investigation; Writing-original draft preparation, Writing-review and editing.

Manish Kumar Asthana: Conceptualization; Methodology; Writing-review and editing; Funding acquisition; Resources; Supervision.

ABOUT THE AUTHORS

Dr. Manish Kumar Asthana obtained his doctoral degree in 2013 at the University of Wuerzburg, Germany. He is an associate professor at the Department of Humanities & Social Sciences, IIT-Roorkee. He has conducted research mainly on associative fear learning and its modulation. The development and introduction of novel methods such as behavioural, transcranial direct current stimulation, and genetic is a particular focus of his work.

Other exciting research fields are investigations of early biomarkers for anxiety and related disorders, e.g., startle, skin conductance response (SCR), heart-rate variability, blood pressure, etc., for assessing early detection of anxiety or related disorders.

Kaneez Fatima Dar is a doctoral student at the Indian Institute of Technology Roorkee. Her PhD research focuses on higher cognitive processes involved in emotion regulation, particularly the role of cognitive reappraisal and inhibitory control in enhancing the extinction of conditioned fear responses. She employs a range of physiological, cognitive, and affective measures in her investigations.

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ADDITIONAL INFORMATION

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