



RESEARCH PAPER

**Impact of Covid-19 Pandemic and Conspiracy Belief on
Psychological Distress in University Students**

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ABSTRACT

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The present study aimed to investigate how conspiracy beliefs convince people to believe unreal stories leading to psychological distress. An online survey was conducted using a questionnaire. The researchers adopted A generic conspiracist beliefs scale (GCBS) by Brotherton et al. (2013), Depression, Anxiety and Stress Scale - 21 Items (DASS-21) by Lovibond and Lovibond (1995), The Death Anxiety Scale (DAS) by Templer (1970), and self-made questionnaire. Six hundred and sixty-four university students have participated in this study. The participants were selected using a simple random sampling technique. The major findings of this study reveal that participants believe in a different conspiracy rather than scientific reasoning about COVID-19 such as it is laboratory accident (71%), bioweapon (76%), and elites' strategy for business (68%). Participants' level of conspiracy belief $M = (M = 3.892)$ leads to psychological distress among them. It is recommended that sound rationality, flawless communication, and awareness strategies must be implemented to dispel propaganda and conspiracies about COVID-19.

Introduction

Pandemics have strong impact on people whether they are infected or not. It is a substantial, and long-lasting impact (Brooks et al., 2020). COVID-19 is novel coronavirus pneumonia. It is spreading through close contact, touching the contaminating surface, small droplets of an infected person, and touching. Still, there is no antiviral to treat COVID-19. World health organization declared COVID-19 a pandemic in its all regions. This is an emerging family member of coronaviruses. These viruses cause respiratory tract infections to lethal levels such as SARS, MERS, and COVID-19. The ongoing coronavirus (COVID-19) is highly contagious causes

respiratory illness (Arshad Ali et al., 2020; Brooks et al., 2020; Petersen & Meer, 2020). The COVID-19 pandemic started from Wuhan city china and escalated across the world. Most of the countries have measures to eradicate COVID-19 pandemic. Authorities and officials spread awareness regarding precautionary measurements through a clear rationale of “stay home, washing hands, and social distancing” (Wood, 2020). More than 12 million patients have been confirmed globally. From which, one million have recorded but 18% have lost their lives due to severe condition. The number of cases and deaths are increasing day by day. coronavirus COVID-19 infected 216 countries around the world (Coronavirus Disease (COVID-19) – World Health Organization, 2020). In 2020, people around the world have suffered greatly. COVID-19 influenced every sector as economic, social interaction, medical and technical, agriculture, transportation, and education. This pandemic has invaded social, personal, and education practices. It is constantly outpouring through social media, newspapers, news channels, messages, phones, and other communication sources. Bundle of myths, misconceptions, fear, and propaganda have been circulated (Yousaf, 2020). Multiple conspiracies and myths have gone through various media such as COVID-19 is a bioweapon, result of laboratory accidents, began through eating infected animals, or world war III origination.

In Pakistan, several emerging responses against COVID-19 are circulated. Some Pakistani think its plan to stop Muslim practices, others believe in it is about depopulation. People have their own theories about the COVID-19 pandemic. One section says there is no virus disease, doctors are injecting poison for foreign funding, the government is creating a scare, and other section claim its COVID-19 itself a myth, and foreign agenda (Gillani, 2020). The result of multiple misinformation, lack of awareness, and conspiracies is that people do not take COVID-19 pandemic seriously (Yousaf, 2020). Many people including educated are not following standard operating procedures given by the pubic administrations. The population of Pakistan has consisted of youth (about 60%). The government of Pakistan dismissed all the educational to reduce infectious disease. Yet, more than 250 thousand people are infected and death toll exceeded 5000. COVID-19 and conspiracies are inciting confusion and panic among people.

There are few studies that examined the psychological consequences of non-clinical samples as a relationship between perceptions and anxiety (Rubin et al., 2009), factors of psychological distress during quarantine (Li et al., 2019), the impact of pre-empting educational institutes policies during pandemic (Germann et al., 2019), religious rituals causing infectious diseases (McPhetres & Zuckerman, 2018; Pellerin & Edmond, 2013), dealing psychological impact during COVID-19 outbreak (Arshad Ali et al., 2020; Brooks et al., 2020; Hyseni Duraku & Hoxha, 2020; Salman et al., 2020), and attitude towards pandemic (Lu et al., 2020; Roy et al., 2020; Rubin et al., 2009; Van et al., 2010). Few studies explored the phycological effects of misinformation, myths, and conspiracies on people.

Literature Review

Since December 2019, cluster of 40 pneumonia cases was reported in China. Chinese authorities started working on etiological element in corporation with World health organization (Feng et al., 2020; Roy et al., 2020). After investigation this as novel virus named Novel Corona Virus (2019-nCoV). Soon, this infectious disease spread across the world. on 30th January 2020, WHO declared this as pandemic and international emergency was announced (WHO, 2020). This virus belongs to RNA enveloped virus family. This pathogenic is respiratory tract infectious disease. COVID-19 transmitted rapidly to large population (Brooks et al., 2020; Petersen & Meer, 2020). In June 2020, more than 200 countries are found infected cases. Authorities, scientists, and WHO agents have started working on vaccine. Yet, still this contagious disease cannot be cured. During this period most of the countries announced national lockdown, closed all educational institutes, limited global travelling, and quarantined infected people (Ebrahim et al., 2020). This state can be seen in many countries. This pandemic effected all department of state running as economy, agriculture, traveling, medical, education, and social communication. An estimated mortality rate is reported 3 to 4 percent due to COVID-19 (Baud et al., 2020). This new virus has devastating impact on world like a global emergency, anxiety, economic condition, fear, stigma, and multiple theories about how and why this virus exist. This COVID-19 continues to infect people. In this emergency time, several myths, conspiracies, and fake news are spreading. Widespread news channels and social media contribute in certain ways. People are started to believe in conspiracies while government requested people to check authenticity before trust (McCloskey et al., 2020). This gap of communication and information creates confusion, fear, and anxiety among individuals.

The time of global outbreak and pandemic restrict social movement and separate them. Government imposed isolation, quarantine, and lockdown situation to control infectious disease (Brooks et al., 2020). This state of SOPs and restriction gives unpleasant experience to the people. The fear of infectious and lack of social communication developed uncertainty and dramatic influences. Individuals get anger, fear, boredom, panic, and substantial psychological distress. Many countries are reported psychological distress in old and young people. The identification of changing mechanism and interventions for youth can cope this distress. Studies have explored that pandemic state generates greater prevalence of psychological distress symptoms (Hawryluck et al., 2004; Lee et al., 2005; Yoon, Kim, Ko, & Lee, 2016). The most general manifestations are depression, anger, anxiety, stress, emotional disturbance, mood switching, traumatic stress, and insomnia. Some people are cited as misinformation regarding public health preventions. An insufficient and misleading guideline contribute in confusion. Lack of information about rate of risks, SOPs, description of disease led individuals towards psychological disturbance.

In this situation, people have started to believe in misleading news, falsification, and conspiracies. The self-explanation and mistrust invoke conspiracies by some specific groups (religious, political, social media activists). Researches advocate that conspiracist ideation can lead to pathological and psychological

problems (Barron et al., 2014; Brotherton et al., 2013; Freeman & Bentall, 2017). A conspiracy belief is an unnecessary assumption of conspiracy beyond real explanations. Studies suggest that conspiracist belief is associated with low interpersonal trust, unusual thinking, receptivity, and paranoia. In last two decades, researchers and psychologists are drawn operational conspiracy beliefs and theories (Barron et al., 2014; Brotherton et al., 2013; Freeman & Bentall, 2017; Gillani, 2020; Gories & Voracek, 2019; Roy et al., 2020). They examined psychopathological antecedents' dimensions of conspiracy beliefs towards psychological problems (maladaptation, personality traits, depression, anxiety, schizotypy, and trauma) (Gories & Voracek, 2019). Ongoing corona virus crossed the border and infect people around the world. governments in different countries announced lockdown and shut all public gathering down. This situation led to massive public responses towards COVID-19. Media reporting, social media flood, self-made perception, and conspiracies heightened confusion and anxiety.

Material and Method

Research Design

The current study is employed using a quantitative research method. A survey study approach is adopted in this study. An online survey designed using a questionnaire to gather data from participants. The targeted population of this study comprised of all university students in public universities.

The Participants

The respondents in this study are university students. The respondents are associated with public universities in Faisalabad. The researchers selected 664 students associated to BS program (social sciences, & arts, and humanities). A simple random sampling technique in listed form was adopted to select the sample (Fricker, 2008). From which, there are 356 male and 308 female students. The participants are taking online learning classes due to the COVID-19 pandemic situation in Pakistan.

Research Instrument

A questionnaire developed by the researchers is used to collect information regarding coronavirus disease awareness and conspiracies. There were 12 items related to conspiracies about COVID-19 like spread due to eating bats, spread due to haram food, non-Muslims' engineering, laboratory accident, the virus does not exist, conspiracy against Muslim practices, doctors are injecting poison, bioweapon, depopulation agenda, foreign funding drama, microchip vaccination, and elites' strategy for business. The validity of the questionnaire ensured through expert opinion after thorough studies on conspiracies about COVID-19 in Pakistan. The reliability is confirmed at the alpha value of .76.

Generic Conspiracist Beliefs Scale

A generic conspiracist belief scale (GCBS) by Brotherton et al. (2013) was adopted to measure the conspiracy beliefs of participants. The approach of GCBS is broader to underlie this belief. GCBS comprised of 15 items on 5-facet scores. Each item is rated on a five-point Likert scale from strongly disagree (1) to agree(5). This scale has enough psychometric properties of conspiratorial beliefs at a unidimensional level. GCBS is ensured internal consistency at a value of .81.

Depression, Anxiety and Stress Scale - 21 Items

Depression, Anxiety and Stress Scale - 21 Items (DASS-21) is a short form of DASS-42 by Lovibond and Lovibond (1995). DASS-21 comprised on three subscales (depression, anxiety, and stress). Each subscale contains seven dimensional items. A self-reported DASS-21 examines the emotional state of respondents in non-specific condition. All the items were rated on four-point scale from 0 to 3. The cut-off scoring on DASS-21 was calculated for final scores. (Lovibond & Lovibond, 1995).

The Death Anxiety Scale

The Death Anxiety Scale (DAS) by Templer (1970) was used to examine psychometric test of death anxiety. DAS consisted of 15 items using 2-factor model life experience (internal) and psychological (internal) dimensions of death anxiety in specific situation. The original scale intended to be rated on dichotomous scale (T for true, and F for False). In this study, DAS was rated on five-point Likert scale as provided in improved version of DAS (McMordie, 2016). The DAS is found reliable at .76 alpha value of Cronbach with .8 value of r .

Data Analysis

The data were analysed using SPSS 21.0 version. To examine the extent of conspiracy belief and psychological distress a descriptive statistical technique of mean, standard deviation, and the simple percentage was performed. The association between conspiracy and psychological distress was examined through bivariate correlation. The linear regression technique was applied to assess the influence of conspiracy beliefs on psychological distress.

Results and Discussion

Table 1
Participants Believe in Conspiracies about COVID-19

Conspiracies against COVID-19	Believe in conspiracies (in percent)			M	SD
	A great deal	Very little	None		
Spread due to eating bats	45	32	23	3.71	1.23
Spread due to Haram food	34	44	22	2.91	1.98
Non-Muslims' engineering	64	22	14	3.12	2.65
Laboratory accident	71	19	10	3.87	1.34

Virus does not exist	23	31	46	2.34	1.08
Conspiracy against Muslim practices	36	43	21	2.74	0.65
Doctors are injecting poison	36	24	40	2.45	1.34
Bioweapon	76	11	13	4.10	0.34
Depopulation agenda	19	38	43	2.77	0.23
Foreign funding drama	48	25	27	3.67	1.92
Microchip vaccination	7	29	64	2.01	1.09
Elites' strategy for business	68	9	23	3.78	1.56

The participants of present study were undergraduate students. They were asked to rate as per their understandings to COVID-19 theories, causes, and beliefs. Table 1 explains the percentage value of responses towards COVID-19 conspiracies. A higher mean score value (M = 4.10, SD = 0.34) is found on bioweapon conspiracy (76%) Majority of respondents believe that COVID-19 is a bioweapon of China to overtake the world. Whereas, the lowest mean score (M = 2.01, SD = 1.09) and percent (7%) demonstrates that participants do not believe that COVID-19 is used to insert microchip set through vaccination. Moreover, we can say that respondents doubt the reality of COVID-19 and believe in different conspiracies.

Table 2
Mean Scores of Psychological Distress and Conspiracy Belief of Participants

	M	SD
Depression	2.648	.771
Anxiety	3.330	.853
Stress	3.735	.657
Death Anxiety	2.020	.685
Conspiracy Belief	3.892	1.23

A descriptive statistic (mean & standard deviation) is performed to assess the participants' responses to psychological distress and conspiracy beliefs. The mean score of conspiracy belief (M = 3.892, SD = 1.23) reveals that respondents believe in conspiracies. The participants are agreed that they do feel anxiety (M = 3.330, SD = .853), and stress (M = 3,735, SD = 657) more than depression (M = 2.648, SD = .771), and death anxiety (M = 2.020, SD = .685). It has resulted that participants of this study believe in conspiracy and feel anxiety and stress as well.

Table 3
Association between Psychological Distress and Conspiracy Belief

Psychological distress	Conspiracy belief	
	<i>r</i>	<i>p</i>
Depression	.361	.000
Anxiety	.747	.001
Stress	.884	.000
Death Anxiety	.192	.000

p < .005*

To investigate the association between indicators of psychological distress (depression, anxiety, stress, & death anxiety) to conspiracy belief a Pearson correlation was performed. A strong and positive relationship is found between stress and conspiracy belief ($r = .884$), and a moderate relation between anxiety and conspiracy belief ($r = .747$). while, a weak positive association can be seen between depression and conspiracy belief ($r = .361$), and between death anxiety and conspiracy belief ($r = 1.92$). This reveals that anxiety and stress is significantly associated with conspiracy belief.

Table 4
Influence of Conspiracy belief presence on psychological distress (Depression, Anxiety, Stress, & Death anxiety)

		B	Standard Error	<i>p</i>
Conspiracy Belief	Depression	0.34	1.23	0.000
	Anxiety	0.56	3.11	0.001
	Stress	0.76	0.23	0.000
	Death Anxiety	.11	.102	0.002

$p < .000^*$, $p < .05^{**}$

To examine the influence of conspiracy belief on psychological distress a multi-group technique was applied (table 4). The researchers tested the effect of conspiracy beliefs on psychological distress including depression, anxiety, stress, and death anxiety. Regression analysis explains 45.8% of variance of anxiety ($B = .56$, $SE = 3.11$), 42.1 % variance of stress ($B = .76$, $SE = 0.23$), 15.2% variance of depression ($B = .34$, $SE = 1.23$), and 7.1% variance of death anxiety ($B = .11$, $SE = .102$). It can be observed that conspiracy beliefs positively related to anxiety and stress more than depression and death anxiety. The two indicators of psychological distress (anxiety & stress) are significantly affected by participants' tendencies towards conspiracies (COVID-19).

Table 5
Effect of Conspiracy Belief on Psychological Distress

	B	β (Standardized)	Standard Error	F	<i>t</i> *	R^2
constant	14.435	1.98	1.354			
Psychological distress	.505	.778	.012	35.222	.257	0.57

$p < .005^*$

Table 5 exhibits the result of overall linear regression. This statistical technique employed to examine the impact of conspiracy beliefs on psychological distress. It can be understood that psychological distress is predicted by the conspiracy belief with 35.222 value of F (2, 462), and .257 value of t. The R^2 contributed 57% of the variance in predicting psychological distress. this indicates

that participants who believe in conspiracies of COVID-19 are found psychological problems.

Discussion

World health organization declared COVID-19 as a novel disease, many populations are seen in religious practices, traveling, socially engage without SOPs, and doubted on coronavirus pandemic reality. In Pakistan, studies have found that one in three citizens believe conspiracy more than their government. Most of Pakistani agree to one conspiracy related to COVID-19 (Ipsos, Gallup). It is interesting that educated, literate, and intellectual communities believe in conspiracy stuff. (Barron et al., 2014; Brotherton et al., 2013; Freeman & Bentall, 2017; Gillani, 2020; Gories & Voracek, 2019; Roy et al., 2020). Few studies explored psychological state of students during COVID-19 lockdown. Especially in the aspect of conspiracy belief and its impact on psychological distress is limited. Keeping this phenomenon, the present studies were conducted to investigate the association of psychological distress (depression, anxiety, stress, & death anxiety) with conspiracy ideation. We investigated major conspiracies about coronavirus disease that university students believe, the level of conspiracy belief, and its association with psychological distress. It is found that being educated students still believe in different conspiracies of COVID-19 as it is a laboratory accident (71%), bioweapon (76%), and elites' strategy for business (68%) (Table 1). The level of conspiracy belief in participants is higher than average mean value ($M = 3.892$, $SD = 1.23$) in strong association with two indicators of psychological distress, anxiety, and stress (table 3 & 4). It is noticeable that numerous changes affect undergraduate students such as they are frequent social media users, facing lockdown, attending online classes, no social interaction, universities are closed, and in this situation believe in conspiracies contributes in psychological distress among them (Lu et al., 2020; Neira & Barber, 2014; Roy et al., 2020; Rubin et al., 2009; Salman et al., 2020; Siddiqi, 2020; Taylor et al., 2008; UK Research and Innovation, 2020; Van et al., 2010; Yousaf, 2020). In addition, it is found in this study that conspiracy belief predicts psychological distress (cumulative) with 57% of variance in the regression model (Table 5). With the rapid spread of COVID-19 in under developing countries is a big challenge (Gillani, 2020). These countries are dealing with COVID-19 at large cluster transmission and low economic growth like Pakistan (Arshad Ali et al., 2020; Yousaf, 2020). Our study highlights the massive conspiracies about COVID-19 that influence psychological distress. as well as, it provokes people do not take precautionary measures and SOPs seriously.

Conclusions and Recommendations

The current study examined the psychological distress among students during COVID-19 lockdown, and effect of their conspiracy belief on students' wellbeing. The results of this study unfolded that level of anxiety and stress is greater in students more than depression and death anxiety. most of the students believe in at least one conspiracy regarding coronavirus disease. The current study adds knowledge on trendy topic COVID-19 impact on people, in two different ways. One its association with multiple conspiracies that create difficulties to implement

SOPs. Second, this conspiracy ideation increases psychological distress that should cope rationally. The findings support the hypothesis that belief in conspiracy positively related to psychological distress. University students should consider scientific explanation and reasoning more than falsification. A sound rationale, communication, and awareness strategies to dispel propaganda and conspiracies about COVID-19.

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