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PERCEIVED FEAR OF COVID, CONTAMINATION SENSITIVITY, COPING STYLES AND PSYCHOLOGICAL DISTRESS AMONG UNIVERSITY STUDENTS

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Abstract

This study aims to assess the relationship between perceived fear of Covid, Contamination Sensitivity, Coping Styles and Psychological Distress among university students. It further intended to explore the predictors of psychological distress and investigate gender difference among the study variables in a study population. A Purposive sampling was used for data collection and a sample of (N=330) university students (155 males, 175 females, Mage=21.12, SD=2.12) participated from different colleges and universities of Lahore. The measures used in this study include Fear of Covid Scale, Contamination Sensitivity Scale, Brief-Cope Questionnaire, and Kessler Psychological Distress Scale(K10). The analysis included Pearson Product Moment Correlation, Hierarchical Linear Regression and PROCESS. The results revealed that there is significant relationship of Perceived Fear of Covid, Contamination Sensitivity, Coping Styles, and Psychological Distress. Further, Fear of Covid, Contamination Sensitivity, Coping

Styles are significant predictors of Psychological Distress. Though, Moderation analysis was non-significant but Denial coping styles showed significant interaction effect on the relationship of Fear of Covid and Psychological Distress. Further *t*-test showed that among male and females and female scored higher psychological distress and fear of Covid than males.

Keywords: Perceived Fear of Covid, Contamination Sensitivity, Coping Styles, Psychological Distress

Introduction

Young adulthood is a very crucial time period in which the person goes through many physical and psychological changes. In this specific time period person is full of energy, enthusiasm and zest, he holds an important part in the development of his country through education, occupation and his vision (McLeod, 2013). In this stage an individual goes through numerous transitions from forming his identity, making his career, forming love relationship and plans for the future. In Pakistan since the spread of corona virus that time it is causing a lot of emotional, economic, social and psychological problems (WHO, 2020) for this age group. Previous studies have shown how pandemic affected the psychological health of people, anxiety, fear and uncertainty of the situation is very overwhelming for the people and they feel strong emotions (Escobar et al., 2020). There was a constant fear of being diagnosed with this virus and its spread to other family members. People limited their social gathering and chose to stay in quarantine in order to save themselves and people around them. Since the time of outbreak there has been a large number of hygiene related media reported, T.V. commercials, blogs, Vlogs, and information about the virus all over the internet. Students already going through a daily schedule but because of the pandemic everything takes a step back and it has been very depressing for this specific age and has impacted the young psychologically and physically (Salman et al., 2020).

Fear of Corona Virus (COVID-19)

Fear is defined as the emotional response which has all the physical, behavioral, cognitive components. It varies in degree from person to person and has marked effects on our actions, memory, perceptions and thoughts (Izard, 1991). It is a fear of being catching corona virus, it is the thoughts and the avoiding behavior of the person in order to safe him/herself from getting diagnosed with Corona virus (Arslan et al., 2020). The fear pandemic has caused the person to avoid physical contact, be free and nothing t be worried about. Media has played a very prominent role in this pandemic period by promoting the health care rituals, hand washing, staying home, limiting social gathering and keeping a distance of 6 feet from another person. The person generally recovers within few weeks and when this virus enters into body the first symptom usually is difficulty breathing. Its symptoms differ from person to person makes it hard to detect and find its cure.

According to the behavioral theory of classical conditioning by Pavlov, in which the conditioned stimulus produces conditioned response. As people are already aware of the large ratio of deaths worldwide they got conditioned to the fearful responses of Covid-19 (Voltmeter et al., 2021). A neutral but complex stimulus can make a prominent impact on individual to evoke his fear reaction (Rachman, 1960). However, if the fear is of high intensity when conditioned with the

situation and repeated many times it produces fear of neurotic nature and persists over time. As per James-Lange theory, emotional response (fear) is activated when the human feels threat to their survival. The emotional experiences are based on physiological reactions which cause fear and anxiety as adaptive responses to an event perceived as threat. Due to physiological reactions human store the information of that specific event and start to experience same emotions when come in contact with the stimulus (Taylor and Cranton, 2012). Therefore, Safety behaviors are activated by health anxiety, essential for minimizing the risk of diseases (avoiding contamination, excessive washing, cleaning, and use of medical aids) decreasing distress and fear responses. Jungmann and Witthöft (2020) found in a study that people who do excessive internet research about Covid-19 have more anxiety and fear of coronavirus than others who search less about Covid. This is consistent with the theory as they become more conscious about threat of virus spread of diseases, pathogens, contamination and disgust sensitivity which is disabling.

Contamination sensitivity

It is basically an intense preoccupation with disease, dirt, germs, mud and the person feels that the world is a nasty place where everything is disgusting, decaying and dying (Aqeel et al., 2020). It is the most powerful and complex human behavior and manifested in forms of mental contamination, conventional contamination, sexual contamination and contamination aversion (Jungmann & Witthöft (2020) The theory of contamination states that there is a complex 'behavioral immune system' that helps in avoiding harmful effects of contamination on humans. It involves individual differences which are based on the personality traits like disgust proneness which activate facilitating immune system and help in avoidance of harmful pathogens by presenting risk for contamination and un-clean places. This personality trait is correlated with corona virus fear, anxiety disorders, and contamination symptoms which activate safety behaviors that motivate the person find ways to deal with the stressful situation (Cox et al., 2020).

Coping styles

Coping styles on other hand are the psychological ways of dealing with stress. Through emotional, behavior, cognitive, humor, denial, relaxation, problem solving coping (Cam et el., 2021). Meyer 2001 divided coping strategies into two main categories known as adaptive coping styles and maladaptive coping styles. According Lazarus and Folkman (1984) adaptive coping reduces the stress and enhance psychological well-being and maladaptive does work in opposite direction in increasing mental stress. As per the recent studies Covid-19 has significant influence on the psychological health of the people. People in this time of crisis are coping with the psychological strength, resources and social help they have (Yildirim et al., 2020). Fear of Covid has already awaken their sense of worry for spread of disease, contamination, hand washing and they are looking for safety behaviors to deal with the current situation, adopting coping styles (negative, positive) to lessen the psychological stress and restore balance in their lives again (Ferreira et al., 2020).

Psychological distress

It is a state of emotional suffering that one feels unsettling and frustrating in some intense harmful situations (Lahey, 2009). The risk factors of it is inadequate internal and external resources, struggles of everyday life, high demands and poor support system contributes to psychological distress. According to the psychodynamic theory, an individual has innate processes and defense mechanism in his unconscious mind which he learns over the time while dealing with stressful situations. These are the defense mechanism that helps in forming the normal and abnormal behavior later in life. Our early childhood experiences help in forming our personality which suggests what ways we use to cope with current stressors in life either positive or negative. When we face uncertain situations it produces stress and the individual unknowingly relates it to the past experiences and use the same defense mechanism he learnt in his childhood. With the passage of time that defense mechanism seems to be inappropriate and dysfunctional. This ultimately makes the person psychologically distress (Fairbrother, et al., 2005). Cognitive model emphasizes the role of individuals own abnormal interpretation of the events, they hold negative views about themselves, others, and the world (Weinrach, 1988). They have negatively biased thinking patterns which is the core sources of psychological distress. According to cognitive theorists they tend to exaggerate the negative outcome of a situation and think of themselves as insufficient, worthless and incapable. Due to holding negative schemas about events they face more emotional problems, disrupted behaviors; evidence suggested that these people have more negative strong emotions and maladaptive ways to deal with difficult situations (Barlow et al., 1999).

There are a number of international researches done on the impact of Covid on the clinical population of OCD. According to Jeong et al., 2020 reported that pandemic made people more vulnerable to psychological distress, mental health problems associated with infecting others or getting infected by them. A study done by Salman on Pakistani university students and the results indicated that different type of issues emerged as the psychological impacts of Corona virus including the anxiety, depression and distress and also their coping strategies were assessed. In addition, the fear of Covid has spread like a wild fire around the globe and people are intentionally or unintentionally falling prey to the psychological effects of the virus. Constant fear of being contaminated with germs, cleaning the surfaces and keeping the hygiene has become the common talk of everyday living. As Corona virus has been declared as the pandemic by the World Health Organization (WHO, 2020) since then there was a chaos among the public, people were confused and in a constant effort to protect themselves and their loved one. similarly, in Pakistan, there are alarming rates of psychological disorder and the fear of COVID 19 just added the fuel to fire. Every age group is suffering from the virus but the students are adversely affected by the fear of contamination and having psychological distress. There is increasing number of cases reported in clinical setting of adolescents having washing and cleaning rituals. Contamination with germs, washing hands repeatedly, cleaning surfaces, avoiding public places is threatening because the human mind is constantly busy in getting rid of germs which is somehow is leading towards the OCD of contamination linked with fear of pandemic. This study will highlight the relationship between fear of Covid 19, contamination society and their coping styles. The findings of the study will be helpful in devising intervention for the indigenous population.

Objectives

- To find the relationship between Perceived Fear of COVID, Contamination Sensitivity, Psychological Distress and Coping Styles among University Students.
- To find the predictors of Psychological Distress among university students.
- To find the moderating effect of Contamination Sensitivity and Coping Styles on Psychological Distress.

Hypotheses

- There will be a significant relationship between Perceived Fear of Covid, Contamination Sensitivity, Coping Styles and Psychological Distress among University Students.
- Perceived Fear of Covid, Contamination Sensitivity, Coping Styles is likely to Predict Psychological Distress among University Students.
- There Contamination Sensitivity and Coping Styles is likely to have a moderating effect on Psychological Distress and fear of Covid.

The literature review and theoretical background proposed the following model for the moderation analysis is as follows

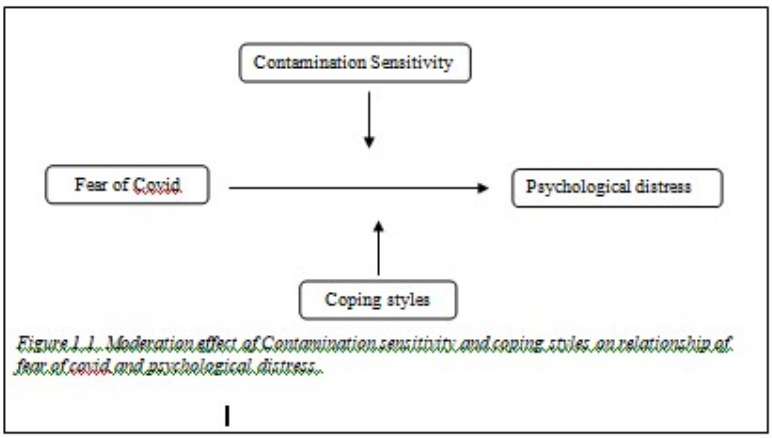

Figure 1.1. Moderation effect of Contamination sensitivity and coping styles on relationship of fear of covid and psychological distress.

Method

Research design

A Correlation research design was employed to assess the relationship between Perceived Fear of Covid, Contamination Sensitivity Coping Styles and Psychological Distress among University Students.

Participants

A sample of currently enrolled University students both male and female (N= 330) with the age range of 18-25years (Mage=21.12, SD=2.12) were recruited from Higher Education Commission recognized different private and government colleges and universities of Lahore through convenient sampling. Only those university students who are within the age range of 18-25 years, currently studying in in a college or university were included. Furthermore, participants who have been diagnosed with COVID-19, having a family member or relative with diagnosed COVID-19 or heard about COVID-19 were also included in that study. Participants who have

germs contamination, dirt contamination like bathing, cleaning, handshaking, hand washing compulsion and fear of catching germs from others (measured through demographics) were also included. In addition, university students diagnosed with any psychological disorder and physical disability and having any kind of obsessions like door checking, hoarding obsessions, or anger obsessions are excluded from this study.

Measures

The demographic form was employed to assess participant's demographic characteristics such as age, gender, family system, education, occupation etc. Furthermore, Fear of Covid (Ahorsu et al., 2020) was used to assess the level of fear and the responses towards COVID-19. through 7 items on a 5 point Likert-type scale. The Contamination sensitivity scale (Radomsky ET AL., 2014) assessed fear of contamination by 24 items**.** The Brief COPE Questionnaire (Caver, 1997) measured coping styles adopted by different students in stressful situations. It has 28 items with 4 levels of response ranging from 1 (I haven't been doing this at all) to 4 (I've been doing this a lot). There are the 14 subscales (self-distraction, active coping, denial, substance use, use of emotional support, use of instrumental support, behavioral disengagement, Venting, positive reframing, planning, humor, acceptance, religion and self-blame) with two items each measured on 4 possible answers. In addition, Kessler Psychological Distress scale (Kessler, 2003) was employed to assess psychological distress. All scales were used in English language.

Procedure

Initially, institutional approval was sought to conduct study. Then permission was obtained from all the authors of the scales. A formal Permission was also taken from the authorities of the colleges and universities to refer those students who were willing to take part in the research. Initially, pilot study was conducted on N=20 participants (10 males, 10 females) to assess understandability, language comprehension, feasibility, and time duration for the completion of the scale. The feedback was incorporated in the main study. For the main study, a sample of N=300 were approached but the data of (N=277) participants met the inclusion criteria of the study. It took almost 15-20 minutes to fill the questionnaires. Further, due to COIVD-19 lockdown, online questionnaire was also created on Google forms which were forwarded to students through online communication like WhatsApp groups and Facebook. It took almost 2 months to collect data from different colleges and universities from Lahore College for Women University (N=75), Kinnaird College for Women, Lahore (N=60), Government College and University (N=102) and St. John Girl's college (N=40). All the participants were thanked for their input and in case of any psychological distress they were referred to prearrange counseling services. All ethical considerations were also ensured including willingness to participate, their right to withdraw from research. The participants were also briefed about the confidentiality too.

A Pearson Product Moment correlation was run to assess the relationship between variables and demographics. Further, Hierarchical Multiple Linear Regression was employed to assess the predictors of psychological distress. The Moderation analysis was conducted in order to find out interaction effects of Contamination sensitivity, coping styles on psychological distress.

Results

A Pearson Product Moment correlation was run to assess the relationship between variables and demographics. Further, Hierarchical Multiple Linear Regression was employed to assess the predictors of psychological distress. The Moderation analysis was conducted in order to find out interaction effects of Contamination sensitivity, coping styles on psychological distress. The descriptive statistics were employed to compute the frequencies and percentages for demographic variables.

Table 1

Demographic Characteristics of Sample (N=227)

Variables	*f (%)*	M (SD)
Age		21.12 (2.12)
18	20(6.1%)	
19	75(22.7%)	
20	62(18.8%)	
21	48(14.5%)	
22	38(11.5%)	
23	21(6.4%)	
24	32(9.7%)	
25	34(10. 3%)	
Gender		
Male	155 (47.0%)	
Female	175 (53.0%)	
Education		1.87(.71)
Post Graduate	65(19.7%)	
Bachelors	158(47.9%)	
Intermediate	107(32.4%)	
University		.58(.49)
Private	13 8(41.8%)	
Government	192(58.2%)	
Occupation		2.59(.76)
Full time	56(17.0%)	
Part time	22 (6.7%)	
Unemployed	252 (76.4%)	

Family system		1.48(.50)
Joint	160 (48.0%)	
Nuclear	170 (51.5%)	

Note: Males = 155; Females = 175; N=330; M=mean; SD=standard deviation; f=frequency; Males=0, Females=1

The table 1 shows demographic characteristic of the sample, the age Mean=21.12 and SD= 2.12. Most of the participants are 19 years old 22.7%, living in nuclear families 51.5% and 53% were females. About 47.9% participants were completing bachelor's degree from Government University 58.2% and are unemployed 76.4% Mean= 2.59, SD=.76.

Table 2

Psychometric properties of major study variables in the sample (N=330)

Variables	K	M	SD	A	Range Potential	Skewness	Kurtosis
1-FOC	7	23.79	4. 59	.71	7-35	-.58	1.92
2-C.S	24	71. 96	10.89	.69	0-96	-.31	-.25
3a-A.C	2	5.48	1.55	.64	2-8	-.31	-.76
b-Pl	2	5.20	1.63	.58	2-8	-.13	-.85
c-P.R	2	5.09	1.79	.77	2-8	-.14	-1. 30
d-Acc	2	5.15	1.95	.86	2-8	.12	-1.09
e-Hu	2	5.10	1.69	.71	2-8	-.13	-1.09
f-Re	2	5.26	1.93	.86	2-8	-.17	-1.02
g-E.S	2	5.28	2.04	.91	2-8	-.17	-1.21
h-I.S	2	5.19	1.72	.72	2-8	-.14	-1.08
i-S.D	2	5.49	1.49	.57	2-8	-.30	-.47
j-De	2	5.10	1.92	.77	2-8	-.01	-1.19
k-Ve	2	5.06	1.71	.71	2-8	-.11	-1.09
l-S.U	2	5.12	2.04	.91	2-8	-.07	-1.22
m-B.D	2	5.27	1.73	.73	2-8	-.24	-1.04
n-S.B	2	5. 36	1.90	.84	2-8	-.18	-1.03
TotalBC	28	73.08	7.01	.48	2-8	.00	-.44
4. P.D	10	33.02	6.25	.63	10-50	-.46	.41

Note. k = No of items, α = cronbach's alpha, *M*=Mean, *SD*=Standard Deviation*; Foc=Fear of COVID: CS=Contamination Sensitivity; A.C= Active coping, PL=Planning, P.R=Positive Reframing, Acc=acceptance, Hu=Humor, Re=Religion, E.S=Emotional Support, I.S=Instrumental Support, S.D=Self Distraction, De=Denial, Ven=Venting, S.U=Substance Use, B.D=Behavioral Disengagement, S.B=Self-Blame; P.D=Psychological Distress.*

The above mentioned demographic table 2 is about the psychometric properties of the study variables. All scales showed that skewness value is within range. The fear of COVID scale and contamination sensitivity scale showed good reliability. However, the reliability score for the subscales of brief-COPE showed good to fair reliability. In addition, the reliability for Psychological distress scale showed moderate reliability score.

Table 3

Pearson Product Moment Correlation showing relationship among study variables Perceived Fear of Covid, Contamination Sensitivity, Coping Styles and Psychological Distress (N=330)

	Variables	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*	*14*	*15*	*16*	*17*	*18*
1	**Gender**	--	*.11**	.00	15***	-.10	-.00	-.02	.03	-.09	-.00	.04	.05	-.03	.03	.01	-.03	-.06	.18***
2	**FOC**		--	.00	.00	.00	.02	.03	-.01	.03	-.16***	-.00	-.03	-.08	-.05	-.03	-.00	-.00	.13**
3	**C.S.S**			---	-.01	-.07	-.08	-.03	-.07	.02	-.04	-.08	.02	.07	-.09	.00	.02	-.11*	.11**
4	**A.C**				----	*-.13**	*.04*	*.00*	*-.00*	*-.07*	*.05*	*.02*	*-.08*	*.09*	*.01*	*.03*	*.07*	*.05*	*-.01*
5	**b-Pl**					----	*-.02*	*-.12**	*-.02*	*.00*	.04	*.04*	*.04*	*-.10*	*.10**	*.02*	*-.00*	*-.03*	*-.07*

6	**c-P.R**						----	.00	.04	.02	.04	.02	-.06	-.05	-.05	.05	-.02	.14*	-.05
7	**d-Acc**							---	-.14**	.07	-.04	-.01	.02	.02	.02	-.06	-.08	.14**	-.02
8	**e-Hu**								---	.00	-.02	-.05	.01	.01	.01	-.05	.03	.00	.04
9	**f-Re**									---	-.01	.05	-.06	-.14*	-.12*	-.11*	.06	.03	-.05
10	**g-E.S**										---	-.03	-.06	-.01	.14*	-.08	.00	.04	-.01
11	**h-I.S**											---	.18	.09	.02	-.00	-.07	.03	-.03
12	**i-S.D**												-----	.03	-.03	.03	-.03	.08	.08
13	**j-De**													----	-.05	-.06	-.01	-.03	.01
14	**k-Ven**														----	.08	-.02	.02	-.03
15	**l-S.U**															---	.01	.00	-.05
16	**m-B.D**																---	-.02	.16***
17	**n-S.B**																	---	.14***
18	**P.D.S**																		-----
	Mean	.53	23.79	71.96	5.48	5.19	5.10	5.17	5.08	5.25	5.28	5.17	5.48	5.06	5.04	5.12	5.28	5.36	33.02

S.D	.50	4.59	10.89	1.55	1.60	1.79	1.96	1.71	1.91	2.05	1.72	1.46	1.92	1.71	2.06	1.71	1.90	*6.25*

Note. M=mean, SD=standard deviation: *Foc=Fear of COVID: CSS=Contamination Sensitivity Scale; A.C= Active coping, PL=Planning, P.R=Positive Reframing, Acc=acceptance, Hu=Humor, Re=Religion, E.S=Emotional Support, I.S=Instrumental Support, S.D=Self Distraction, De=Denial, Ven=Venting, S.U=Substance Use, B.D=Behavioral Disengagement, S.B=Self-Blame; P.D.S=Psychological Distress Scale.*

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

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

p* < .05.*p* < .01.****p* < .001

In table 3, Pearson product moment correlation was run in order to find the relationship between major study variables. The results showed that Fear of Covid had positive significant correlation with Psychological Distress (.13**) indicating that the increase in fear of corona virus will increase in Psychological Distress. The Contamination sensitivity showed negative significant relationship with Brief-cope (-.12*). Furthermore, Contamination Sensitivity had positive significant correlation with Psychological Distress (.11*) showing contamination sensitivity would be high so will be the psychological distress. In addition, the Coping styles showed negative highly significant correlation with Psychological Distress (-.14**). Additionally, Fear of Covid had negative significant correlation with Emotional support manifesting that more emotional support available leads to less fear from corona virus (-.16***). The Contamination Sensitivity showed negative correlation with subscale self-blame (-.11*). And Psychological Distress had positive significant correlation with behavioral disengagement (.14***) and self-blame (.16***) indicating that the use of behavioral disengagement and self-blame as coping styles higher would have high psychological distress.

Table 4.

Hierarchical Linear Regression Analysis with major study variables showing the predictors of Psychological Distress among University Students (N=330).

Variables	***B***	***95%CI for B***		***SE B***	***β***	***R^2***	***ΔR^2***
		LL	***UL***				
Step 1						.03**	.03**
Constant	31.80	30.83	32.78	.49			
Gender	2.29	.95	3.62	.67	.18**		
Step 2						.05***	.01*
Constant	28.23	24.71	31.75	1.78			

Gender	2.12	.78	3.46	.68	.17**		
FOC	.15	.00	.29	.07	.11*		
Step 3						.06***	.01*
Constant	23.60	18.03	29.17	2.83			
Gender	2.11	.78	3.44	.67	.16**		
FOC	.15	.00	.29	.07	.11*		
CS	0.6	.00	.12	.03	.11*		
Step 4						.12**	.06
Constant	31.65	21.98	41. 32	4.91			
Gender	1.82	.46	3.18	.69	.14**		
FOC	.17	.02	. 32	.07	.12*		
CS	.05	-.01	.11	.03	.08*		
A.C	-.07	-.51	. 36	.22	-.01		
PL	-.23	-.65	.18	.21	-.06		
P.R	-.17	-.55	.19	.19	-.05		
d-Acc	-.18	-.52	.16	.17	-.05		
e-Hu	.03	-.35	.42	.19	.01		
f-Re	-.02	-.37	. 33	.17	-.00		
g-E.S	.14	-.18	.47	.16	.04		
h-I.S	-.12	-.51	.26	.19	-.03		
i-S.D	. 37	-.08	.82	.23	.08		
j-De	.04	-.30	. 39	.17	.01		
k-Ven	.05	-.45	. 34	.20	.01		
l-S.U	.14	-.46	.17	.16	.04		
m-B.D	.59	-.98	-.20	.19	.16**		
n-S.B	.40	-.75	-.04	.18	.12*		

Note. LL=Lowerlimit: UL=Upperlimit: *β=Beta: Foc=Fear of COVID: CS=Contamination Sensitivity; B.C=total brief cope; A.C= Active coping, PL=Planning, P.R=Positive Reframing, Acc=acceptance, Hu=Humor, Re=Religion, E.S=Emotional Support, I.S=Instrumental Support, S.D=Self Distraction, De=Denial, Ven=Venting, S.U=Substance Use, B.D=Behavioral Disengagement, S.B=Self-Blame; P.D=Psychological Distress.*

p<.05, p**<.01, p***<.001*

A hierarchical linear regression was employed to identify the predictors of psychological distress among university students. All the four models of regression Gender, Fear of COVID, Contamination Sensitivity, subscales of brief cope as Coping Styles showed highly significant results, which means that these models are significant predictors of psychological distress. Gender, fear of Covid, contamination sensitivity and subscales of coping, self-distraction, denial, behavioral disengagement, and self-blame are positive significant predictors of psychological distress. Having Fear of Covid, contamination sensitivity and using negative coping style such as self-distraction, denial, behavioral disengagement, and self-blame results in increased psychological distress.

Table 5.

Moderating role of contamination sensitivity and coping styles for perceived fear of Covid for predicting psychological distress (N=330)

Variables	**Psychological Distress**				**95% CI**	
	B	*SE*	R^2	F	LL	UL
Constant	28. 37	2.42	.04	5.25	23.60	33.14
Foc	.14	.10			.05	. 34
Gender	1.82	3.5			5.2	8.9
Interaction	.01	.14			.27	. 30
Constant	19.99	11.59	.03	3.47	2.81	42.80
Foc	. 34	.47			-.58	1.28
CS	.12	.15			-.18	.42
Interaction	-.00	.00			-.01	.01
Constant	47.20	18.82	.03	4.21	10.16	84.23
Foc	-.21	.77			-1.73	1. 30
CS	-.24	.25			-.74	.25
Interaction	.00	.01			-.01	.02
Constant	35.05	6.77	.02	2.28	21.73	48. 37
Foc	-.06	.27			-.60	.47
Activecoping	-1.16	. 1.20			3.52	1.19
Interaction	.04	.04			-.05	.14
Constant	37. 32	5.89	.02	3.03	25.73	48.91
Foc	-.12	.24			-.60	. 35

Planning	-1.71	1.11			-3.91	.48
Interaction	.06	.04			-.02	.15
Constant	24.12	5.62	.02	3.08	13.06	35.18
Foc	.43	1.03			-.02	.88
Positivereframing	.87	. 04			-1.16	2.92
Interaction	-.04	.04			-.13	.03
Constant	23. 37	.00	.02	2.79	12.40	34. 33
Foc	.44	.05			-.00	.89
Acceptance	.98	.2			-.96	2.94
Interaction	-.04	.04			-.12	.03
Constant	30.56	5.58	.01	1.99	19.56	41.55
Foc	.10	.22			-.33	.55
humor	-.37	1.06			-2.47	1.73
Interaction	.01	.04			-.07	.10
Constant	32.23	4.96	.02	2.29	22.47	41.99
Foc	.04	.20			-.34	.46
Religion	-.71	.94			-2.56	1.13
Interaction	.02	.03			-.05	.10
Constant	31.12	5.06	.02	2.22	21.16	41.07
Foc	.58	.20			-.34	.46
Emotional sup	-.46	.84			-2.13	1.20
Interaction	.02	.03			-.04	.09
Constant	30.84	5.58	.01	2.09	19.85	41.82
Foc	.11	.23			-.33	.56
I.S	-.43	1.08			-2.56	1.70
Interaction	.01	.04			-.07	1.70
Constant	31.93	8.06	.02	3.01	16.07	47.80
Foc	-.03	. 32			-.68	.60
SEd	-.58	1. 39			-.3. 33	2.16
Interaction	.04	.05			-.07	.15
Constant	17.81*	5. 30	.03	3.57*	7. 37	28.2

Foc	.61	.21			.18	1.04
Den	2.10	.96			.20	4.00
Interaction	-.08	.03			-.16	-.00
Constant	29.21	6. 30	.01	2.01	16.81	41.61
Foc	.17	.25			-.32	.67
Ven	-.08	1.16			-2. 37	2.19
Interaction	.00	.04			-.09	.09
Constant	36.85	4.48	.03	3. 37	28.03	45.66
Foc	-.12	.18			-.49	.23
Sub	-1.53	.77			-3.06	-.00
Interaction	.05	.03			-.00	.12
Constant	33.46	6.15	.04	4.98	21. 36	45.56
Foc	.11	.25			-.38	.61
Bed	-.88	1.07			-2.98	1.22
Interaction	.01	.04			-.07	.09
Constant	27.07	5.80	.03	4.51	15.65	38.50
Foc	. 35	.23			-.11	.82
SEb	.28	1.00			-1.68	2.25
Interaction	-.03	.04			-.11	.04

Note: B=unstandardized regression coefficient, CI=confidence interval, LL=Lower Limit, UL=Upper: Foc=Fear of COVID: CS=Contamination Sensitivity; A.C= Active coping, PL=Planning, P.R=Positive Reframing, Acc=acceptance, Hu=Humor, Re=Religion, E.S=Emotional Support, I.S=Instrumental Support, S.D=Self Distraction, De=Denial, Ven=Venting, S.U=Substance Use, B.D=Behavioral Disengagement, S.B=Self-Blame limit. p*<0.05, p***<0.001

The results revealed that there was no significant interaction effect among contamination sensitivity, sub scales of coping styles on psychological distress which means no moderation was found. The Denial is the significant moderator on the relationship of fear of Covid and psychological distress. The following model showed the moderating effects of study variable.

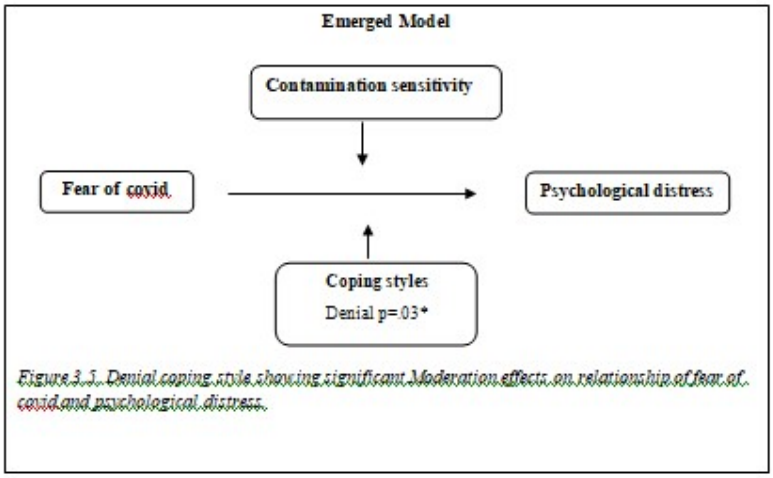

Figure 3.1. Denial coping style showing significant Moderation effects on relationship of fear of covid and psychological distress.

Discussion

The presented study examined the relationship between perceived Fear of COVID, contamination sensitivity, coping strategies, and psychological distress among university students. A total of N=330 participants of age range 18-25 years (Mage 21.12, SD=2.12) were selected for this study.

The results from correlation table showed that perceived fear of Covid has moderate significant positive correlation with psychological distress. The results are consistent with previous literature that fear of Covid-19 has increased psychological distress especially in young population. Liang et al., (2020) conducted a study on the effects of Covid-19 on mental health of youth and they found out that due to spread of Covid-19, youth is more prone to negative effects on the psychological health; they are having more psychological problems and needs effective interventions. Similar results have been found by Sabin et al., (2020), who found that the spread of fear of Covid-19 is causing psychological distress among adult population. Reizer et al. (2020) found a positive relationship between fear of Covid-19 and psychological distress. These findings seem to indicate that the more personal relevance of the threat for oneself and loved ones, and less risk control would be related to more corona-virus fear and psychological distress (Asmundson and Taylor, 2020). Furthermore, Contamination sensitivity showed highly positive correlation with psychological distress. These results seem to indicate that the Contamination sensitivity in response to avoiding virus makes people paranoid and conscious about cleaning and washing rituals that people became obsessed to keep themselves and their loved ones safe. They are in constant struggle to sanitize, avoid physical contact, and stay in isolation which resulted in huge life style changes. Ahorsu et al. (2020) found out in a study done on Iranian students that main life style changes in order to avoid infections like washing hands, and avoidance of touching face and nose have significant impact on causing psychological distress and later on to developing mental disorders. Dennis (2021) reported that during the pandemic individuals have tendency to overestimate the fear and negative consequences when they touch something that could be contaminated and they experience elevated anxiety/fear related to catching diseases. On the other hand, coping styles shows negative highly significant correlation with psychological distress.

Although brief-cope questionnaire has 14 subscales and two of them shows positive significant results with psychological distress 'behavior disengagement and self-blame'. These two are included into maladaptive coping styles; the excess of both these coping styles will lead to more psychological distress. Al-Rabiaah et al. (2020) conducted a study on polish university students and found out those students using negative coping styles like self-blame experience more psychological issues than those who use positive and adaptive coping styles. In addition, Fear of Covid also shows negative significant correlation with emotional support coping style which indicates that higher emotional support available lesser the person will be afraid from the pandemic. These result indicated that support, care and concern from family members, and close relatives plays an important role in controlling stress and fearful responses. These proved to be protective factors during the pandemic and individuals who do not find support and care from home are using negative coping to deal with situation. However, Covid-19 impacted the students by increasing psychological distress, isolation, quarantine which adds on to fear and leads towards emotional disturbance but when they receive social/emotional support they feel strong and less vulnerable

Contamination sensitivity shows negative significant correlation with self-blame which indicates more contamination sensitivity lower will be the self-blame. The results are consistent with a study done by Rosa-Al 2021 that the individual have repeated negative thoughts of being contaminated so they perform neutralizing actions to eliminate the fear. Furthermore, individual's obsessional automatic thoughts revolve around his ability to avoid the upcoming harm by performing the action and when he fails to do so it leads to self-condemnation. It could also be the reason that participants use negative coping to lower the tension associated with contamination. Therefore, it has negative significant relationship with total brief-cope questionnaire.

The results of Regression showed highly significant results with psychological distress. The 4 models emerged and all four models were significant predictors of psychological distress. The Gender was the significant predictor of psychological distress among university students. Salman et al., (2020) found that gender is a significant predictor of psychological distress and female students scored higher on psychological distress scale. A Study done by Al-Rabiaah et al. in 2020 on the Middle East Respiratory Syndrome-Corona Virus (MERS-CoV) associated stress among medical students at a university teaching hospital in Saudi Arabia. Females showed more anxiety and changes in personal hygiene, fear of transmitting infection to a friend or family than male population.

Fear of Covid was positive significant predictor of psychological distress. Many studies have supported that fear of Covid-19 is making people distressed in all aspects of life. Since the time it has been declared as pandemic by World Health Organization, people are experiencing a lot of mental health, health, economic issues (Escobar, 2020). It concludes that pandemic has resulted into emotional/psychological distress, negative mental health and negative impacts on students, teachers and general public. Fear of Covid-19 has increased depression, anxiety among student population all around the world. It has negative and undesirable effects on psychological health and mental functioning which has the possibility of becoming a mental disorder sooner or later (Arslan, 2020).

Contamination sensitivity was also a significant positive predictor of psychological distress. It is supported by researcher Voltmer et al. (2020) reported that predictors for washing hands are related to the fear of infection of pandemic, threat to one's health. A study done in Alberta Canada on Covid-19 pandemic and mental health concluded that 60% of study sample had obsessions which are linked with germs, viruses, or dirt and fifty-three of these show compulsions to wash hand repeatedly in some way due to which people are facing physical and psychological distress. Among coping styles self-blame and behavior disengagement are significant positive predictors of psychological distress (Abba-Aji et al., 2020). The use of maladaptive coping can be very dangerous as reported by Nabi et al., 2021 that poorer coping strategies are linked with riskier behaviors, and suicidal ideation. More the use of these coping styles more the students will experience psychological distress. They keep them satisfied after following the threat avoidance ritual but in the long time it can cause a lot damage to one's mental health.

The results of Moderation Analysis showed that contamination sensitivity and coping styles are not significant which indicates that there is no moderating effect on the relationship of fear of Covid and psychological distress. However, with the subscales of brief cope scale Denial was showing significant interaction effect on the relation with psychological distress. Denial is categorizing as maladaptive coping style (Meyers, 2001) which shows that there is moderating effect on psychological distress, using a maladaptive coping styles does causes psychological distress as indicated by the results. The number of reasons due to which results are non-significant could be individual's willpower, resilience, strong social support, emotional support by family or friend, strong religious beliefs, education level, strong immune system, adherence to SOPs, positive coping by the person, his belief system. This makes it clear that contamination sensitivity and coping styles does not affect general psychological health of student's number of other factors could be the reason leading to psychological distress.

Conclusion

Presented study emerged as an important contribution to literature on under study variables in student population to provide awareness of the relationship of perceived fear of Covid, contamination sensitivity, coping styles and psychological distress. Limited literature is available on the topic of fear of Covid among student population especially within indigenous context of Pakistan. Thus, present study bridges the gap in knowledge and opens gateways to further understanding in the developing areas of education psychology. It sheds light on importance of establishing new intervention programs for helping the students to overcome mental stress in this uncertain time of pandemic. One of the limitations of this study is Government imposed lockdowns which caused difficulty in data collection due to closing of educational institutes.

Implications

The current study can be used by the psychologists in developing a program that foster awareness about the factors that are related and predicting psychological distress. In educational institutes the authorities should take steps to improve physical health and counseling services to ensure student's sound mental health. Teachers can talk to their students and provide help if they found changes in student's behavior. Parents can have open communication, addressing the needs

of their children, providing emotional/ psychological support to the child. Form activities that can engage their children into productive work and lessen the burden they are feeling of pandemic. In this uncertain times family support is very essential.

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