THE RELATIONSHIP BETWEEN PSYCHOLOGICAL FLEXIBILITY, RESILIENCE AND COVID-STRESS IN UNIVERSITY STUDENTS OF PAKISTAN

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Abstract

The present study investigated the relationship between of psychological flexibility, resilience and COVID-stress in university students of Pakistan. The study was based on cross-sectional survey research design. Participants were university students (N=303). Three self-report measures including The Psychological Flexibility Scale (Ben-Itzhak et al., 2014), Brief Resilience Scale (Smith et al., 2014) and the COVID Stress Scale (Taylor et al., 2020) were used for data collection. Pearson Product Moment correlation found significant negative correlation between psychological flexibility and COVID-stress. There was also significant negative correlation between resilience and COVID-stress. Multiple Regression analysis was run and showed predictive impact of resilience and psychological flexibility on COVID-stress in university students. The findings empirically established that increasing the ability of psychological flexibility and resilience of individuals can overcome the stress related to COVID-19 pandemic. The study is an important addition in the existing body of knowledge on the role of positive psychological abilities in dealing with stressful events.

Keywords: Psychological flexibility, Resilience, COVID-stress, university students.

1. INTRODUCTION

COVID-stress

In the beginning of 2020, the whole world had faced a great threat of quick spread of a very unique Coronavirus (COVID-19). The Coronavirus (COVID-19) disease was a highly contagious illness caused by a virus named Coronavirus. Millions of people got infected with this infectious disease. Large number of individuals lost their lives due COVID-19. In this horrible situation where the physical health of people was affected their mental health was also affected at large scale. stress related to COVID pandemic had increased among individuals.

COVID pandemic had became an alarming situation because the number of cases were increasing day by day. Governments had implemented strict measures of quarantine, social distancing, lockdowns, and closure of business, it led to the

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negative effects on health and economy for a long period of time. There was no doubt that this was a tough situation because stress causing factors were new, there were no prior warnings or preparations to overcome the harms of this alarming situation, no prior vaccination for this virus was available. It was also uncertain how this situation would affect the future life of individuals and how would people be able to live their life normally. So due to this uncertainty it was difficult to make any plan for the future. There it made this situation more stressful. (Vinker et al., 2020). one research analyzed that approximately 35% out of total 52,730 participants in their research showed psychological problems including high level of stress due to pandemic. (Mazza et al., 2020).

Some researchers also suggested that long term increased in stress among individuals would be major risk factor for overall mental health like it can contribute to high level of anxiety, depression and substance use problems. It can also contribute to the physical problems which occur for long term and effect life of person at high level. So, in such way it would increase the cost of health facilities. (Cooke, J. E et al., 2020).

Psychological Flexibility

Psychological flexibility can be defined as the ability of a person to have connection with present time, being watchful of emotions, feelings and cognitions. it also includes the negative thoughts and emotions and welcoming these thoughts and performs actions that are according to individual values. Simply psychological flexibility means a person accepts his thoughts, his emotions and performs actions for long-term goals rather than for short-term thoughts, feelings and values that may be associated with avoiding negative experiences and tactics to control negative events and thoughts. (Tiziana et al., 2019).

Acceptance and Commitment Therapy

Steven C. Hayes, a professor of Psychology at the University of Nevada, established an Acceptance and Commitment Therapy (ACT) in 1986. Acceptance and Commitment therapy is psychological based intervention that is related to the field of modern Behavioural Psychology. It uses the acceptance and mindfulness procedure and also the behaviour changes and commitment procedure to develop a psychological flexibility. It is an important technique to optimize psychological flexibility to help a person to develop the mindfulness skills that are important to live and perform behaviour according to his personal values. Professionals of ACT help individuals to explore the ways in which their efforts to decrease, maintain and control emotional experiences can be challenging for them. When a person understands his challenges, he becomes able to create a space to perform value-based behaviours and increase his mental and physical wellbeing. (Haris, 2013).

The basic goal of the ACT is to provide help to a person that his psychological pain can be normal and he should live a happier and healthier life by changing his point of view about the pain and sufferings. (Lapilusa, 2018).

Resilience

Resilience can be defined as the ability of a person to adapt positively and balance or reestablish his mental health even in times of adverse situations. Some researchers describe resilience as a secure factor for a person and include basic mechanisms that play an important role in promoting mental health of a person even

if negative life events are present that may increase the chances of developing mental disorders. There are various paths that lead towards resilience. These pathways sometimes include the link between physical, inherited, psychological characteristics and social support of contexts like family, friends, school and large social levels. (Herrman et al., 2011)

Resilience Doughnut Model

Many times, before, a health professional Lyn Worsely created a tool that was a simple and action related instrument that was used to develop resilience and it proved helpful for children, adolescents and adults. This model is known as resilience doughnut. And described in her book titled and is outlined in her book, "*The Resilience Doughnut: The Secret of Strong Kids' '.* (Sue, 2013). The shape of this model is like a doughnut. It has two circles; one is inside and other is outside. Both circles show different characteristics. Inner circle of a model includes the inner features of a person that are related to his personal resilience. Outer circle described seven parts that shows outer environmental factors that can affect the individuals. When this model is used for adults, it shows connection of their newly developed personal identity, social life and belief of their strength with environmental settings. When a high level of trauma is considered then this model describes the impact of trauma on an individual's knowledge of skills and at the same time to develop the helpful ways in their surroundings to reestablish the competence. (Worsley, 2015).

2. REVIEW OF LITERATURE

Some studies showed that during the sudden increase of the viral epidemic almost 10 to 30 % people were stressed about catching that virus. Similarly, with the shutdown of business, schools and other public places negative emotions among people increased. Researches that investigated the psychological effect of SARS epidemic on people that were not affected with virus found that more psychological problem were occurred among young adults. one of those problems included high level of self- blame, and stress (Wang et al., 2020).

Studies investigated effects of psychological flexibility revealed that it maintained the relationship between mental wellbeing and stress. It means that it has helped people to cope with stress after stressful events. Results of various studies showed that the COVI-19 pandemic was unexpected and this negative event increased the general stress among individuals. But that pandemic related stress decreased when two important components of psychological flexibility were added in people's mental health. These components included high openness to experience and high behavioural awareness. These two components decreased the general and pandemic related stress regardless of age and gender of person. (Kroska et al., 2020).

Results of one of the studies that showed the relationship between psychological flexibility and COVI-19 related risk factors found that, preventive measures such as lock down and mental wellbeing of individuals were according with the previous studies that described the similar effect of daily life stressors and major life events on mental wellbeing of individuals (Pakenham et al., 2020).

Dealing with the stresses during epidemic demands from a person to be aware about what was accruing and about the situation that influenced him. (Devi, 2020). researchers found that resilience was a basic factor that impacted the mental functioning of individuals during the adverse situations. It was one of the most important qualities of a person that helped him to face and deal with the COVID-stress. One study found that resilience had an impressive impact on physical and mental recovery of a person during COVID epidemic. To recover from COVID pandemic individuals needed a high level of resilience at personal level and group level. (Chen, 2020).

Rationale

The resolution of this research was to discover how resilience and psychological flexibility was related to COVID-stress. During the time of COVID pandemic many studies were conducted mostly researches focus on negative mental health related outcomes of COVID-19. Some researches focus on children, health workers and older adults. few studies were conducted on western population about the effect of positive psychological factors to reduce the COVID related stressors in university students. in Pakistan no such study was conducted that focus on university level student and discussed positive psychological abilities. Present study was unique study because it focused on positive psychological abilities in the time of very stressful event. psychological flexibility and resilience were the two important psychological factors that could be related to positive mental health outcomes.

objectives

Objectives of study was

• To examine the relationship between psychological flexibility, resilience and COVID-stress among university students

• To examine gender differences in terms of psychological flexibility, resilience and COVID-stress.

• To determine whether psychological flexibility and resilience would be the predictors of COVID-stress

Hypotheses

1.   There would be negative relationship between psychological flexibility and COVID-stress among university students of Pakistan

2. There would be negative relationship between resilience and COVID-stress among university students of Pakistan.

3.   There would be gender difference in terms of psychological flexibility, resilience and COVID-stress.

4.   Psychological flexibility and resilience would predict the COVID-stress.

3. Method

Research design

Present study was cross-sectional study. It was survey research design.

Participants

In present study participants consisted of 303 university students belonging to Pakistan. Among 303 university students 80 were males and 223 were females. Age

range of the sample was 20-35. Data were collected using purposive sampling technique.

Instruments

The Psychological Flexibility Scale

The Psychological Flexibility Scale is a 19 items self-report measure that measure psychological flexibility. It was developed by Ben-Itzhak and his colleagues in 2014. In this present study the English version of the scale was used. Cronbach's alpha for psychological flexibility was $\alpha = .80$. response format was 5-point Likert scale. There were no reverse coded items in this scale. High score on this scale predicts high psychological flexibility and low score predict low psychological flexibility.

Brief Resilience Scale

Brief Resilience Scale is a 6 items self-report measure that measure resilience. It was developed by Smith and his Colleagues in 2008. Age range for the scale was 19-62 years. Scale consisted of three positively worded items and three negatively worded items to minimize response biasness. Internal reliability of scale was $\alpha = .80$ - .90. response format was 5-point Likert scale, High scores indicate high resilience.

COVID Stress Scales

COVID Stress Scales was developed by Taylor and colleagues in 2020. This scale consisted of five subscales including, (1) COVID dangers and contamination fears (12 items). (2) COVID fear about economic consequences (6 items). (3) COVID xenophobia (6 items). (4) COVID compulsive checking and reassurance seeking (6 items) and (5) COVID traumatic symptoms (6 items). It consisted of 58 number of items. Response format was 5-point Likert-type scale that range from 0 (not at all) to 4 (extremely). Internal reliability was $\alpha > .80$. Higher scores indicate high level of stress due to COVID-19 pandemic. The scales were intentionally designed so they could be readily adapted for future pandemics.

Procedure

Permission to conduct the study was taken from Department of Psychology University of Sargodha. Data for the present study was collected from students of different universities of Pakistan. participants were contacted personally for collection of data. Online data collection mode was used in the study. As due to situation of lockdown during pandemic face to face data collection was very difficult so online mode was more feasible for collection of the data for which google form was created to collect data. Then link to fill out the google form was sent to different social media networks. Basic information regarding nature, purpose and objectives of the research were shared with participants. It was made clear that information of participants will remain confidential and will solely be used for research purpose. The queries of the participants about questions were answered. Participants consumed 7-10 minutes in completion of scales.

4. Results

The present study aimed to examine the relationship between psychological flexibility, resilience and COVID-stress among university students. Data analysis was carried out using SPSS- 23. Initially the demographic characteristics were

identified through frequencies and percentages. Descriptive statistics and alpha reliability coefficients were computed. Pearson Product Moment correlation was computed to examine the correlation between variables. Multiple regression analysis was conducted to examine the predictive effect of psychological flexibility and resilience on COVID-stress among university students. The independent sample t-test was applied to compare the means regarding the study variables.

Table 1

Frequency and Percentage of Participants (N=303)

Demographic variables	Frequency (*f*)	Percentage (%)
Gender		
Male	80	26.4
Female	223	73.6
Age		
Below 22	145	47.9
23 and above	158	52.1
Education		
Undergraduates	160	52.8
Graduates	80	26.4
Postgraduates	63	20.8
Marital status		
Married	39	12.9
Unmarried	264	87.1
Your number in siblings		
First child	122	40.3
Middle child	98	32.3
Last child	83	27.4
Only child		
Socioeconomic status		
Lower class	34	11.2
Middle class	255	84.2
Upper class	14	4.6
Are you suffering from COVID-19?		
Yes	25	8.3
No	278	91.7
Do you live with someone who has suffered / suffering from COVID-19?		
Yes	60	19.8
No	243	80.2

Table 1 shows frequency and percentage of all demographics used in the present study.

Table 2
Descriptive Statistics and Alpha Reliabilities for all study variables (N = 303)

Scales	Items	*M*	*SD*	*α*	Range Potential	Actual	Skewness
Psychological flexibility Scale	19	48.30	15.98	.95	1-5	20-94	.786
Brief Resilience Scale	6	18.55	3.31	.73	1-5	6-28	.085
COVID-stress Scale	36	56.55	31.98	.96	1-5	.00-144	.271

The result in Table 2 demonstrates that there are significantly high alpha reliability coefficients for psychological flexibility, brief resilience and COVID-stress. Univariate normality analysis confirmed that all the scores were normally distributed i.e., value of skewness was less than 2.

Table 3
Correlation Matrix for all the Variables Used in the Study (N = 303)

Variables	1	2	3
1(Psychological Flexibility)	-		
2 (Resilience)	.269**	-	
3 (COVID-stress)	-.278**	-.217**	-

Table 3 shows inter-correlations among scales. Pearson Product Moment correlation was performed and results showed that that psychological flexibility, has significant positive correlation with resilience. Additionally, psychological flexibility has significant negative correlation with COVID-stress, meanwhile resilience has significant negative correlation with COVID-stress.

Table 4
Regression Analysis for predicting COVID-stress from Constructs of psychological flexibility and resilience (N= 303)

variable	*B*	*S. E*	β	*P*

Psychological flexibility	.47	.11	.23	.000
Resilience	1.47	.14	.15	.008
R^2	.07			
ΔR^2	.09			

To investigate predictive impact of constructs of psychological flexibility and resilience on COVID-stress, multiple regression analysis was carried out. The findings confirmed that psychological flexibility significantly predicted COVID-stress (B=.47, p=.000, R^2=.07 F (1,301) =25.11). resilience significantly predicted COVID-stress (B=1.47, p=.008, R^2=.07, F(1,301)=16.43). β value indicated 23% relative influence of psychological flexibility on COVID-stress and 15% relative influence of resilience on COVID-stress. Therefore, psychological flexibility and resilience have been identified as significantly predicting COVID-stress among university students.

Table 5

Comparison of Male and Females on Psychological Flexibility, Resilience and COVID-stress (N=303)

	Male (n= 80)		Female (n=223)			95% CI		Cohen's d
Variables	*M*	*SD*	*M*	*SD*	*t (301)*	*LL*	*UL*	
Psychological Flexibility	49.23	16.24	47.96	15.91	.61	-2.83	5.37	0.07
Resilience	18.93	3.46	18.42	3.26	1.19	-.33	1.36	0.16
COVID-stress	60.51	34.90	55.13	30.82	1.29	-2.81	13.57	

Results in Table 5 demonstrate the mean gender differences and effect size on psychological flexibility, resilience and COVID-stress. The mean difference is found to be nonsignificant on all variables. value of *p* was greater than .05 for all study variables

5 Discussion

Present research investigated the relationship between psychological flexibility, resilience and COVID-stress among university students of Pakistan. Results of the study showed that the first hypothesis "psychological flexibility would be negatively related to COVID-stress" was supported in the present study. Findings revealed significant negative relationship between psychological flexibility and COVID-

stress. Results were consisted with existing literature that found that psychological flexibility plays an important and crucial role in decreasing COVID related stress so it serves as important factor in health services. Study conducted on adults (N=1035) in Switzerland found that psychological flexibility was related to daily life stressors, stressful events in life at one side and physical health outcomes, psychological health and mental wellness on other side Results of research on Swedish papulation showed that 45.6 % individuals had high level of stress, depression and stress and low level of psychological flexibility. (McCracken et al., 2021).

The second hypothesis "Resilience would be negatively related to COVID-stress" was supported in present study. Findings of the research confirmed negative relationship between resilience and COVID-stress. These results were in line with past research which found that in situation of COVID-19 epidemic resilience support individual to bear the stress of pandemic in effective way. Available researches described the secured role of resilience in person during harmful events and viral outbreaks showed that increasing the capacity of coping can be helpful for person to handle and manage the stressors in effective way. Optimizing resilience in health care workers during COVID pandemic was seen as helpful to protect their mental health and psychological wellbeing. (Labrague et al., 2020).

Third hypothesis "There would be significant gender differences in psychological flexibility, resilience and COVID-stress". Results shows that gender differences on psychological flexibility resilience and Covid-stress were non-significant. These results were consistent with previous studies that showed individual factor like gender differences during the time of pandemic has no significant relationship with psychological flexibility and COVID-stress (Dubey et al., 2020). Similarly, another research analysed that gender was not found to be significant factor in relationship between resilience and COVID-stress as resilience plays a buffering role against stress and it can be seen in both genders in same manner. (Braziley et al., 2020)

The fourth hypothesis that psychological flexibility and resilience would predict the COVID-stress was supported by the findings of the study. multiple regression analysis showed significant predictive impact of psychological flexibility and resilience on COVID-stress. these findings were consisted with previous studies as one research conducted on army personnel found that psychological flexibility decreased the level of depression and post-traumatic stress among army employs when they come back after the battle (Kroska et al., 2020). another research revealed that resilience decreases the impact of stress related factors on the psychological health of person. A study investigated the relationship between positive emotions, negative emotions and person's psychological health resilience was used as mediator in the study. Results of study showed that resilience decreased the impact of negative emotions and increased the impact of positive emotions on individual's mental wellbeing. In another study of 540 civil servant researchers found that large level of stress related work was influenced by resilience as the resilience decrease the impact of stress on their work quality. (Yıldırım, et al., 2020).

6. Conclusion

Basic purpose of this research was to find out the relationship between psychological flexibility, resilience and COVID-stress in university students of Pakistan. findings revealed significant negative relationship between psychological flexibility and COVID-stress. the relationship between resilience and COVID-stress was also found to be significant negative. resilience had significant positive relationship with psychological flexibility. however present study found no significant gender differences in term of study variables. So, in order to handle stressors related to COVID pandemic people must pay attention to increase psychological flexibility and resilience. Healthcare communities should educate general public to develop psychological flexibility and resilience abilities in this uncertain situation of pandemic.

Limitations and suggestions

First limitation of present study is that it was based on survey method in which cross-sectional design was used to collect information from university students. Survey design has usually low internal validity although it has high external validity. it does not talk about the casual relationship among variables. Future studies should use alternative research designs to assess relationships among variables. Second limitation of present study is that the scales use in study were in English language. It was difficult for Urdu speaking individuals to understand these scales. It would be appropriate in future research to carry out Urdu translation, adaptation and cross-language validation of these scales.

Implications

The present study is applied and up to date research. it has major contribution to the mental health of students who are affected by current COVID-19 pandemic on large scale. Government and health care communities should develop various programs and strategies to increase the positive cognitive abilities including psychological flexibility and resilience to cope with stress related to COVID pandemic among students.

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