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Does Optimism, Resilience, & Positive Affect Buffer the Effects of Perceived Stress on Mental Health?

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The study aims to assess the relationship between optimism, resilience, affect (positive & negative) and perceived stress. It intends to examine the effect of perceived stress on optimism, resilience, affect, and mental health. A sample of 503 participants within the age group of 17-25 years (from North India) were selected for the present study using purposive sampling. The tools used in this study included Life Orientation Test – Revised (LOT-R; Scheier & Carver, 1994), Connor Davidson-Resilience Scale (Connor & Davidson, 2003), Positive & Negative Affect Schedule (PANAS) by Watson, Clark, and Tellegen, General Health Questionnaire-12 by Goldberg, and Perceived Stress Scale by Cohen et al. The findings indicate a significant negative correlation between perceived stress and positive affect, optimism, resilience, and mental health while a positive significant correlation was found between perceived stress and negative affect. Positive affect was found to have a positive significant relationship with optimism and resilience while negative affect exhibited a negative significant correlation with optimism and resilience. Optimism and resilience were also found to be significantly associated with each other. The t-test results showed significant differences between high and low stress group on positive and negative affect. The participants falling in the low stress group demonstrated higher optimism, resilience, and overall better mental health in comparison to the high stress group. The findings of the present study highlight the protective role played by optimism, resilience, and positive affect in mental health of young adults, simultaneously showing the detrimental effects of stress and negative affect during the pandemic. The study provides new insights in psychological research and suggest future directions.

Keyword: Optimism, Resilience, Positive Affect, Perceived Stress, Mental Health

Youth of today undergo immense challenges pertaining to education and work which precipitates into a vulnerability for stress. This study intends to focus on how stress mediates their mental health system. According to the World Health Organization (WHO, 2004), mental health is "a state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community". More than 70 million people have been infected by the COVID-19 pandemic, resulting in more than 1.5 million fatalities and causing severe disruptions in our psychosocial and physical well-being (World Health Organization, 2020). The COVID-19 produced adverse effects on the mental health of the population similar to the psychological disturbances witnessed during the H1N1 pandemic and SARS pandemic (Hawryluck et al., 2004; Sprang & Silman, 2013) in the past, including post-traumatic stress disorder (PTSD). Thus, COVID-19 has degraded the public mental health system (Fiorillo & Gorwood, 2020; Salari et al., 2020; Shi et al., 2020; Van

Agteren et al., 2020) and caused a "mental pandemic" amongst the general population by increasing the incidences of psychological disorders, including depression, generalized anxiety, and sleep disturbances (Rajkumar, 2020; Wang et al., 2020). Specifically, research showed that young adults were the most affected by pandemic as they experienced heightened anxiety and stress caused by the loss of job and internship offers (Aucejo et al., 2020; Husky et al., 2020).

Despite adverse circumstances, some people did cope with the current pandemic in a healthy way and some even came out of it becoming a better version of themselves. The empirical data and prior research during the pandemic reveal instances of post-traumatic growth (Vazquez et al., 2020). Burt and Eubank (2020) identified optimism and resilience as the protective factors during COVID-19 pandemic for Black, Indigenous, and People of Color (BIPOC) students. Resilience refers to the capacity of an individual to adapt to adverse/threatening situations and is usually characterized by good outcomes (Masten, 2001). It encompasses two prerequisites, i.e., exposure to a significant threat which has the potential to produce negative outcomes (for example, living in a physically abusive home, risk of contracting the virus) ; and good outcome/s (for instance, gratitude, active problem-solving, positive family relationships). To promote the development of resilience, positive experiences that induce positive emotions and a sense of belongingness (Khosla, 2014) are extremely important. Optimism is defined as a predisposition to expect favourable future outcomes and make positive evaluations of the circumstances. It is associated with active coping strategies in dealing with stress (Carver & Scheier, 2003). In context of COVID-19, optimism is important because it affects a person's ability to respond to stress (Carver et al., 2010) and helps adapt to traumatic or challenging circumstances (Gómez- Molinero et al., 2018). A mixed method research examined optimism amongst the undergraduate students in Indonesia during the pandemic and found that being surrounded by optimistic people and optimistic thinking helped the respondents to redefine the situation and avoid generalising the consequences of the pandemic (Citraningtyas, 2021). Moreover, optimism and resilience have been found to share a positive relationship with each other during the pandemic among university students (Maheshwari & Jutta, 2020).

Affect refers to a person's immediate, physiological response to a stimulus and it is associated with an underlying sense of arousal. Affect can be positive (like joy, contentment) or negative (anger, disgust) in nature. Positive affect refers to predisposition to experience positive emotions and interact with others in a positive way whereas negative affect involves the experience and expression of negative emotions, like sadness, disgust, fear, and distress. The Broaden-and-Build theory posits that positive emotions have played an evolutionary function by assisting the survival of human species over decades (Fredrickson, 1998, 2013). Positive emotions contribute to resilient coping (Gloria & Steinhardt, 2016) which has implications for the ongoing pandemic of COVID-19. One American study published in the beginning of the COVID-19 pandemic found that the collective experience of positive emotions with others contribute to the mental health of an individual during difficult circumstances (Prinzing et al., 2022). This is known as positivity resonance. Research points to increased reports of negative feelings like anger, fear, frustration, boredom, and

confusion during the COVID-19 pandemic (Brooks et al., 2020). One recent study done on medical students of both genders found mean scores of PA to be below the general population mean and NA above the population mean, showing a situation of greater psychological vulnerability for the development of psychological disorders (de Franco Tobar et al., 2022). Some of the common determinants of positive and negative affect among university students during the pandemic were education, awareness and information about communicable diseases, satisfaction with prevention and control measures, risk of infection, effects of the outbreak on daily life, duration of sleep, and frequency of hand washing in the past two weeks (Wang et al., 2020). Thus, the research shows that university students constituted the section of the population who were highly affected by the pandemic. The youth are in the transition period of physical and mental development, during which their outlook towards life and world is constantly changing and taking shape making them prone to a variety of emotional disturbances (Leavey et al., 2020). Therefore, the present study aims to assess protective and exacerbating factors affecting mental health of young adults during the pandemic. The hypothesis, thus framed for the study are that (i) there will be a significant relationship between optimism, resilience, and affect (positive & negative); (ii) perceived stress will be significantly associated with affect, optimism, and resilience; and (iii) there will be a significant differences in optimism, resilience, positive and negative affect as well as overall mental health between high and low stress group.

Method

Participants

The sample consisted of 503 participants within the age group of 17-25 years, from North India. The participants were college students, pursuing either graduation or post-graduation, in different fields of study (science, humanities, commerce, etc.). Some students were also working part-time. The young adults were selected as the target population for the study because they are the most vulnerable to various kind of stressors like career dilemma and employment opportunities. Purposive sampling technique was employed for collecting data for the present study. A major requirement for selection into the study was that the participant should be well-versed in English language and registered with an educational institution. The participants selected for the present study were not suffering from any serious physical or mental illness.

Measures

Life Orientation Test – Revised (LOT-R). This scale was given by Scheier and Carver in 1994 and is a revised version of the Life Orientation Test given in 1992. The scale consists of 10 items. It is used to differentiate between dispositional optimism and pessimism. Three of the ten items measure optimism, three measure pessimism, and four are filler questions (that are not scored). The test employs a 4-point rating scale, where 0 = strongly disagree, 1 = disagree, 2 = neutral, 3 = agree, and 4 = strongly agree. Some items of the scale are reverse-scored, including items 3, 7, and 9. After reverse scoring, the responses are summed up to obtain a total score ranging from 0 to 24. The scale has good internal consistency (>.78) and its test–retest correlations range from .68 to .79. The LOT-R has demonstrated exceptional ability in predicting several outcome markers associated with adaptive coping.

Connor-Davidson Resilience Scale (CD RISC). The original Connor-Davidson Resilience Scale (Connor & Davidson, 2003)

was developed as a self-report measure of effective coping with stress and was based on Richardson's (2002) conceptualization of resilience as the capacity to successfully deal with adversity. In the present study, we used the 10-item abbreviated version of the CD-RISC because it has better psychometric properties, good internal consistency, and convergent and divergent validity (Goins et al, 2012). The measure uses a 5-point Likert scale, in which 0 = not true at all and 4 = true most of the time. The total score is obtained by summing scores on all the items and can range from 0 to 40.

General Health Questionnaire (GHQ). This questionnaire was developed by Goldberg (1972) as a screening tool to identify individuals suffering from psychiatric disorders. It encompasses four elements of distress, namely depression, anxiety, social impairment, and hypochondria. The original questionnaire has 60 items (GHQ 60). But several shorter versions have emerged from the original questionnaire, like GHQ 30, GHQ 28, GHQ 20, AND GHQ 12. The present study employed GHQ 12 to assess the mental health of participants. The questionnaire consists of six positively worded and six negatively worded sub-items that measure different mood states. The responses are rated on a 4-point Likert scale, ranging from 0 (less than usual) to 3 (much more than usual). The total score ranges from 0 to 36. The questionnaire has good reliability as the split-half reliability and test-retest came out to be .83 and 0.73 respectively with the Cronbach alpha ranging between 0.82 and 0.90. The test has demonstrated content, construct, as well as predictive validity.

Positive & Negative Affect Schedule (PANAS). This measure was developed by Watson, Clark, and Tellegen (1988). It comprises two sub-scales, one measuring positive affect and the other measuring negative affect. Both the scales consists of 10 descriptors each. Participants are asked to respond to the items using 5-point scale ranging from 1 (very slightly or not at all) to 5 (extremely). The test has moderately good reliability and validity (Watson, 1988). Specifically, the Cronbach alpha coefficient was between 0.86 to 0.90 for the Positive Affect scale and it ranged from 0.84 to 0.87 for the Negative Affect scale. Moreover, the test- retest correlations were 0.47 to 0.68 for the PA and 0.39 to 0.71 for the NA, over a period of 8 weeks.

Perceived Stress Scale (PSS). The Perceived Stress Scale (PSS) was developed by Cohen and his colleagues in 1983. It consists of 10 items. Each item is scored on a 5-point Likert scale ranging from never (0) to almost always (4). The scale also consists of some positively worded items, which are reverse-scored. After reverse scoring, all the ratings are summed up to obtain a total score (0-40). The higher the score, the more is perceived stress. The PSS-10 has been shown to have a good internal consistency in both adults and university student populations (Lee, 2012). The test-retest reliability was found to be adequate in adults over a 2-week and 4-week period (Lee, 2012).

The scale has demonstrated good concurrent validity as it was found to be positively correlated with measures of anxiety and depression in adults and university students (Lee, 2012) and in adolescents (Liu et al. 2020; Sood et al. 2013). The PSS has good utility as it can be used to assess whether perceived stress is a potential risk factor in the development of various behavioral disorders.

Results

Relevant data were collected and examined in the light of the formulated hypotheses. Initial analysis of data included mean and standard deviation descriptive for perceived stress, positive & negative affect,

optimism, resilience, and mental health (Table 1).

Table 1. Descriptive statistics (N=503)

	N	Mean	Std. Deviation
Perceived Stress	503	2.21	.69
Positive Affect	503	3.33	.84
Negative Affect	503	2.81	.81
Optimism	503	2.20	.63
Resilience	503	2.64	.70
Mental Health	503	1.41	.33

Table 1 demonstrates the mean and standard deviation scores of the total sample on perceived stress (M = 2.21, SD = .69), positive affect (M = 3.33, SD = .84), negative affect (M= 2.81, SD = .81), optimism (M = 2.20, SD = .63), resilience (M = 2.64, SD = .70), and mental health (M = 1.41, SD = .33).

The results of the correlation coefficient among perceived stress, positive & negative affect, optimism, resilience, and mental health are given in Table 2.

It was found that perceived stress has a negative significant correlation with positive affect ($r = -.460$, $p<0.01$), optimism ($r = -.423$, $p<0.01$), resilience ($r = -.266$, $p<0.01$), and mental health ($r = . -.157$, $p<0.01$). Whereas stress is significantly positively associated with negative affect ($r = .641$, $p<0.01$). Positive affect has a significant positive relationship with optimism ($r = 367$, $p<0.01$) and resilience ($r = .569$, $p<0.01$) while a negative significant relationship with negative affect ($r =-.229$, $p<0.01$).

On the other hand, negative affect exhibits a negative significant correlation with optimism ($r = -.361$, $p<0.01$), resilience ($r = -.128$, $p<0.01$), and mental health ($r = -.102$, $p<0.05$). Optimism is significantly associated with resilience ($r = .266$, $p<0.01$) and mental health ($r = .095$, $p<0.05$).

Table 2 Pearson Correlation Coefficients between perceived stress, positive & negative affect, optimism, resilience, & mental health

	N	PS	PA	NA	Optimism	Resilience	MH
PS	503	1	-.460**	.641**	-.423**	-.266**	-.157**
PA	503	-	1	-.229**	.367**	.569**	.075
NA	503	-	-	1	-.361**	-.128**	-.102*
Optimism	503	-	-	-	1	.266**	.095*
Resilience	503	-	-	-	-	1	.036
MH	503	-	-	-	-	-	1

Note. PS – perceived stress, PA – positive affect, NA – negative affect, MH – mental health

The findings of the independent sample t-test which was conducted by doing a median split of the scores on the measure of perceived stress and dividing the participants into two respective groups (high vs. low stress) are provided in Table 3.

Table 3. Independent sample t test

Stress Level	N	M	SD	df	t	Sig.(2-tailed)
PA						
High stress	267	3.05	.80	501	-8.651**	.000
Low stress	236	3.66	.77			
NA						
High stress	267	3.21	.72	501	13.385**	.000
Low stress	236	2.37	.67			
Optimism						
High stress	267	2.01	.65	501	-7.576**	.000
Low stress	236	2.41	.53			
Resilience						
High stress	267	2.53	.68	501	-3.800**	.000
Low stress	236	2.76	.70			
Mental						
High stress	267	1.38	.31	501	-2.017*	.044
Health						
Low stress	236	1.44	.36			

Note. PA – positive affect, NA – negative affect. **p<0.01=2.334; *p<0.05=1.648

Table 3 shows a significant difference on the measures of positive affect [t (1, 501) = -8.651, p<0.01], negative affect [t (1, 501) = 13.385, p<0.01], optimism [t (1, 501) = -7.576, p<0.01], and resilience [t (1, 501) = -3.800, p<0.01] between the high vs. low stress group. Moreover, the overall mental health of participants with high stress levels differ significantly from those who scored low on perceived stress [t (1, 501 = -2.017, p<0.05].

Discussion

The psychological variables of optimism, resilience, and affect are being studied widely and their role in promoting health of individuals is highlighted across several studies. But how these variables are helping youth in coping with stress during the pandemic is what our study intends to examine. It was found that perceived stress has a negative significant correlation with positive affect, optimism, resilience, and mental health (see Table 2), thus indicating that optimism, resilience as well as experience of positive affect may act as protective factors against stress. Optimism and resilience were indeed identified as the protective factors during COVID-19 pandemic for college students (Burt & Eubank, 2020). Moreover, experiencing positive emotions with others were found to contribute to the mental health of people during COVID-19 pandemic (Prinzing et al., 2022). Positive affect plays a protective role in stress and provides the socio-emotional buffer in risky situations (Southwick & Charney, 2012).

The findings also demonstrate that perceived stress is significantly positively associated with negative affect. This means that stress increases the frequency of negative emotions in an individual or vice versa. A recent study done on medical students during the pandemic found NA scores above the population mean and a greater psychological vulnerability for the development of psychological disorders (de Franco Tobar et al., 2022). Positive affect was found to have a significant positive relationship with optimism and resilience (see Table 2). Positive affect and positive beliefs serve as effective resources in coping with adversity (Aspinwall, 2001). This is consistent with experiments conducted by Isen and colleagues (2000) in which they found that positive emotions broaden people's momentary thought-action repertoires. Positive and negative affect were found to have a negative significant relationship with each other. The undoing hypothesis (Fredrickson & Levenson, 1998) postulates that positive emotions correct or undo the after-effects of negative emotions.

Optimism is significantly associated with resilience and mental health of young adults. Optimism and resilience have been found to share a positive relationship with each other during the pandemic among university students (Maheshwari & Jutta, 2020). Another

study conducted in Varanasi by Pathak and Lata (2018) found a positive relationship between optimism and resilience, and negative relationship between optimism and perceived stress among a sample of 200 young adults. A study by Panchal et al. (2016) revealed that optimism has a significant positive relationship with well-being and resilience.

There are significant differences between high and low stress group on positive and negative affect, wherein the high stress group exhibited more negative affect while those who scored low on perceived stress had higher positive affect (see Table 3). In the COVID-19 pandemic, academic workload, separation from school, and fears of contagion had negative effects on college students' health via perceived stress (Yang et al., 2021). Research has found a significant association between increased stress during the pandemic and poor mental health among adolescents and young adults (Casagrande et al., 2020; Ellis et al., 2020; Findlay & Arim, 2021). Our study found that participants belonging to the low stress group displayed higher optimism, resilience, and overall better mental health in comparison to the high stress group. A prospective study found that several aspects of optimism moderate the relationship between life stress and mental health disorders, including anxiety and depression (Kleiman et al., 2017). In previous studies also, optimists have been found to cope effectively with stress and exhibit better well-being than pessimists (Carver, Scheier, & Segerstrom, 2010; Wrosch & Scheier, 2003). Our findings are consistent with a study done on university students, wherein the researchers found higher levels of resilience in students who reported high psychological well-being (Sagone & De Caroli, 2014).

The findings of the present study have significant implications to practice and policy. First, it can be used to design interventions that facilitate optimism, resilience, and positive affect. In addition to this, workshops designed to reduce stress among youth can be conducted and the benefits of various stress-reduction techniques like yoga and meditation should be propagated as stress was found to increase negative affect while reduce the level of positive affect, optimism, and resilience. Despite the potential contribution that the present study makes to the mental health field, it is fraught with certain limitations. One of the limitations of the present study was an unrepresentative sample which made it difficult to study gender differences in perceived stress, positive & negative affect, and human strengths like optimism, resilience, etc. Since the present study was conducted online via a google form, responses may be biased. Further research could be conducted using qualitative research methods, like in- depth interviews to tap the protective and exacerbating factors of perceived stress during the pandemic among youth.

Conclusion

Optimism, resilience, and affect play an important role in the mental health of young adults. For instance, the study found that positive affect has a positive significant relationship with optimism and resilience while negative affect had a contradictory association. Moreover, optimism and resilience exhibit a significant relationship with each other. The perceived stress reported by participants was found to affect their health by increasing negative affect and decreasing positive affect, optimism, and resilience. Thus, it is important to develop positive mental health, especially in context of the current pandemic, by cultivating optimism and resilience as well as learn various ways to reduce stress by developing healthy coping strategies.

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