

Indigenous Mental Health Perspective in cognitive distortions: A Cross-Sectional Study of Coping Strategies, Cognitive Distortions and Depression in University Students

Aiman Batool Jaffri, Syed Abeer Mukhtar & Syed Zaki Husain Rizvi

Abstract

Background: Cognitive distortions is a global public health problem. Proper health care and intervention are an essential need for all human being and access for management is all human's right globally. The purpose of the current study is to contribute as well as spread knowledge to the community understanding of coping strategies, cognitive distortions and depression. Further, this research also examined the association among coping strategies, cognitive distortions and depression in university students.

Methods: A purposive sampling technique and cross-sectional study design were used to carry out current study. Two hundred participants (male, $n = 100$; female, $n = 100$) with age ranged from 18 to 26 ($M = 22.6$, $SD = 1.10$) years were recruited from different public and private university students of Rawalpindi and Islamabad, Pakistan, in 2021. Three instruments were used to measure cognitive distortions, coping strategies, and symptoms of depression in university students.

Results: This present study's results illustrated that cognitive distortion was statistically positively significant associated with denial coping strategy, emotional support coping strategy, behavioral disengagement coping strategy, self-blame coping strategy, and depression in university students. Furthermore, the findings of this study revealed that active-coping coping strategy is playing role of moderator on the relationship between cognitive distortions and depression in university students.

Conclusions: This study recommended that cognitive distortions could be stimulated mental health issues such as depression in university students. Furthermore, the findings of this study demonstrated the need for early detection of cognitive distortion and depression disorder to prevent as well as management the risk of mental health problems including depression in young university students. From the implication point of view, increasing use of active coping strategies and decreasing the use of avoidant or maladaptive coping strategies for managing depression may or may not be useful for individuals experiencing depression.

Keywords: Cognitive distortions, coping strategies, and depression.

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Background

Depression is one of the most common deleterious mental health problem that is related to substantial impairments in cognitive functioning and quality of life in adults (Cotrena et al., 2016; Cuijpers et al., 2019; Hafsa et al., 2021; Kumar & Nayar, 2020; Mukku et al., 2021; Rashid et al., 2021; Roehr, 2013; Roh et al., 2021; Saif et al., 2021; Sarfraz et al., 2021; Shuja et al., 2020; Toqeer et al., 2021; Yakovenko & Hodgins, 2018). A growing body of theoretical and empirical studies recommended that mental health problems especially depression more frequently experience in clinical population as compared to normal population (Mukku et al., 2021; Yakovenko & Hodgins, 2018). Certainly, earlier studies found that those individuals with depression disorder, they were mostly faced cognitive dysfunction (Roh et al., 2021). Regrettably, however, our understanding related to coexisting association between depression and cognitive distortion is minimal for student sample. A study conducted by Yakovenko and Hodgins (2018) led causal inferences that depression exacerbated cognitive functioning in normal sample. However, a few researches have investigated the complex mechanisms and process wherein symptoms of depression lead to higher risk of cognitive distortions (Mukku et al., 2021; Yakovenko & Hodgins, 2018).

Cognitive distortions are characterized the ways of thinking that job to sustain and facilitate earlier held "assumptions and beliefs by generalizing, distorting or deleting external and internal stimuli" (Cole et al., 2020; Dozois, 2010, 2021). These thinking patterns incline to be maladaptive as well as may aggravate severity of psychological disorders as depression, anxiety, and drug addiction (Yüksel & Bahadır-Yilmaz, 2019). Moreover, cognitive these beliefs create and consider an important risk factor for depression disorder (Beck & Bredemeier, 2016). Similarly, these kinds of cognitive beliefs are found in major depression with different co-morbid symptoms. Persons with symptoms of depression revealed deficiencies in examine the probability of future events or tasks as well as remember negative more eagerly as compared to positive events or tasks (Beck & Bredemeier, 2016; Rudasill et al., 2014).

Theoretical framework

The theoretical framework of present research integrates the recent cognitive theoretical models based on depression, which highlight the bi-directional association between cognitive distortions, coping strategies, and depression. These conceptual model assumes that interaction between coping strategies and cognitive distortions develops, sustained, and improve mental health issues particular depression in university students. Beck's cognitive theory explained that cognitive distortion is one most potential factor in development of depression symptoms (Scott et al., 2010). Patients with depression disorder could have fundamental cognitive ways that enhance and sustain risk of depression's relapse (Rude et al., 2010). Therefore, cognitive behavior therapy grounded on Beck's cognitive model may assist to improve and increase social adaptation since it explains the impaired thought that can enhance the risk of depression relapse. There is a lot of study conducted on abovementioned relationship that clearly explain cognitive behavior therapy is most useful clinical intervention to handle cognitive distortions and depression

(Marco et al., 2020; Matsunaga, 2010). However, a few studies have investigated the association among cognitive distortion, coping strategies, and depressive symptoms in university students.

Many earlier researches explained the jeopardy of impaired cognitive functioning in the maintenance and development of depression disorder (Pössel & Black, 2014). A longitudinal study conducted by Pössel and Black (2014), they found that symptoms of depression have been led toward cognitive distortions and memory lose (Pössel & Black, 2014). Moreover, those peoples who had symptoms of depression, these symptoms were found to associate with higher cognitive biases and dysfunctional attitudes (Scher et al., 2009). Whereas, recent studies illustrated that cognitive distortion found to predict depression symptoms in different samples. This present study was also investigated the association among coping strategies, cognitive distortion, and depression in university students.

Additionally, there is a lot of theoretical evidence to recommend that cognitive impairment in depression patients could develop from the similar fundamental neurobiological procedures. Many previous studies have recommended that both environmental and genetic risk factors could drag to functional variations in brain systems which is involved in essential parts of cognition, it enhances vulnerability and lead toward mental health problems in general normal population (Buckholtz & Meyer-Lindenberg, 2012). It may illustrate deficiencies in the cognitive competency to regulate expectations in response to reject evidence, demonstrating in cognitive dysfunctions in normal and clinical population. Whereas, cognitive distortion have been considered as a deleterious and important factor for development of depression (Kambara et al., 2021). For instance, current longitudinal researches have illustrated that individuals who were found cognitive distortions, they have been reported and found at high risk of developing depression (Kürümlüoğlu & Tanrıverdi, 2021).

Everyone often presents university as "the best time of your life," but this vision will fall short when it comes with so many difficult paths. The same ongoing academic situation may have different impact on different individuals. The way of thinking and cognition play a role in perceiving these various situations. These cognitive processes have an impact on the psychological well-being of the students. The lack of emphasis on positive cognition leads to psychological distress and depression (Noor et al., 2016). Cognitive distortions are one of the contributory factors for depression. There are cognitive errors caused by negative biases that have been linked to an increased risk of depression (Dozois, 2021; Rehna et al., 2020; Rizwan et al., 2020). All-or-nothing thought, overgeneralizing, discounting the good, leaping to conclusions, mind reading, fortunetelling, magnifying (catastrophizing) or minimizing, irrational logic, "should-y" thinking, marking (or mislabeling), and personalization are the most popular cognitive distortions.

Depression is a medical condition marked by a lack of interest or pleasure, decreased energy, feelings of guilt or poor self-worth, sleep or appetite disturbances, and insufficient focus. All are symptoms of depression. Literatures have found an association between negative cognition and depression. Literature discussed cognitive distortions as an endogenous variable that contribute to the

development of depression (Shoukat et al., 2015; Sidrah et al., 2015). The distorted thoughts being the strong correlation of depression for boys they found that levels of distorted thought patterns and depressing symptoms enhanced streamline through age 19, whereas among girls around age 16 prevalence rate peaked (Gogheri et al., 2021). According to study conducted by Gogheri et al. (2021), ten percent presenting at basic care facilities was found to have reported suicidal ideation, which is the symptom of depression. They observed that a high degree of negative cognition was an important contributor to the development of major depressive disorder in a study conducted on 1507 adults (Gogheri et al., 2021).

Effective coping is required to deal with stress and avoid depression. Coping is mostly an attitude-based method that includes a variety of mental interventions. "Positive thinking," such as reframing, laughter, or optimism; "social support," such as finding emotional and instrumental support from others; and "turning to religion," such as trusting higher forces to gain relief, are also common coping mechanisms. These active coping strategies give the positive vibe to the brain thus decreasing depression (Mukku et al., 2021). Use of un-healthy ways of coping with stressful situations show a positive association with depression (Mukku et al., 2021).

Several psychological mechanisms such as cognitive distortions and pressure of society influence the occurrence of depression, the early development of cognitive distortions in a child is also likely to contribute to adopt the avoidant coping strategies, as the ability to consider the point of view of another person and the experience of concern can prevent its onset. Actually, literature revealed that not only was there a strong association, but cognitive distortions was still the most significant indicator of depression. Therefore, cognitive distortions for the occurrence of depression and other coping strategies can be taken as an individual personal risk factor. In view of the positive relation between cognitive distortions and depression (Roh et al., 2021), and the negative association of active coping strategies and depression (Yüksel & Bahadır-Yılmaz, 2019), the socio-cognitive mechanism of coping strategies may be considered as a moderator for the prediction of cognitive distortions and depression.

The amount of students seeking help for depression within university education has more than the amount present in lower educational standards. University is the place where the students who are enrolling are at the age of their adolescence in which the chances of getting into the negative bias thoughts are more than any other group of age. Therefore, the study targeted this specific sample of population. Moreover, the purpose of the current research is to find the coping styles as a moderator between cognitive distortions and depression. There are number of coping styles that can be beneficial for the individuals suffering from distorted thoughts and prevent them from going into the episode of depression. Because students who often face cognitive distortions in a negative way are more likely to involve in maladaptive coping styles, since these are more consistent with automatic thinking including subjects of incompetence, hopelessness, un-lovability, and suppositions that they are incompetent, worthless, and un-lovable. Given that these themes are relevant to depression, cognitive distortions may be more related to maladaptive or avoidant type coping styles. Furthermore, the cognitive distortions and

depression are more closely related to emotional stress, these variables were hypothesized to moderate the role of coping strategies between them (Abbas, et al., 2019; Abbas, et al., 2019; Yüksel & Bahadır-Yılmaz, 2019).

In sum, whereas there is plenty of theoretical evidence that cognitive distortion and depression normally co-occur, as well as that cognitive distortion is higher occurred with symptoms of depression, the mechanism of bi-directional association has not been entirely clarified in university students. Moreover, a few evidence recommended that cognitive distortions could better understand a mechanism wherein interaction between symptoms of depression and coping strategies are associated in normal population. This present study directly investigated the assumption that the coping strategies moderates between cognitive distortions and depression in university students. This study also predicted that: (1) higher level of cognitive distortions would predict and associate higher level of depression symptoms (2) active coping and problem focused coping strategies would predict and associated lower level of cognitive distortions or depression symptoms, and (3) coping strategies would moderate on the relationship between cognitive distortions and depression in university students.

Method

Research design

A purposive sampling technique and cross-sectional design were used in present study.

Objectives

1. To examine the association among cognitive distortions, coping strategies and depression in university students.
2. To investigate the moderating role of coping strategies on the relationship between cognitive distortions and depression in university students.

Hypotheses

1. Mother and father permissive and authoritative Cognitive distortions will be positively associated with depression in university students.
2. Depression will be positively related to avoidant, denial, emotional support, self-blame and behavioral disengagement coping strategies in university students.
3. Depression will be negatively associated with active and positive reframing coping strategies in university students.
4. Cognitive distortions will be positively related to avoidant coping strategies in university students.

Participants

A purposive sampling technique and cross-sectional study approach were used to carry out current study. Two hundred participants (male, $n = 100$; female, $n = 100$) with age ranged from 18 to 26 ($M = 22.6$, $SD = 1.10$) years were recruited from different public and private university students of Rawalpindi and Islamabad, Pakistan, in 2021. The following inclusion and exclusion criteria was set to enroll university student for current study: only those volunteer participants were included in present research who had attend regular classes and did not have any mental health issues. Those students who meet the aforementioned criteria as well as they were included in present study. However, those students who did not meet the above-mentioned criteria were excluded

from this study.

Measures

Three standardized instruments, cognitive distortions scale, coping strategies, and beck depression inventory were applied to assess cognitive distortions, depression disorder, and coping strategies in university students.

Cognitive Distortions Scale (CDS). It was developed by Covin et al. (2011). It is based on 20-items. It is self-reported instrument which measures the presence of 10 types of cognitive distortions (mind-reading, catastrophizing, none-all thinking, labeling, emotional reasoning, personalization, mental filtering, overgeneralization, should statements, disqualifying or minimizing the positive). A definition of the distortion is given to the students in which the example of that specific type is exemplified in an achievement and interpersonal context. Participants indicate the frequency with which they engage in the type of thinking on a 7-point Likert-type scale (1 = Never, 7 = All the time) in social and achievement situations. Total scores are acquired by addition of scores. CDS has good psychometric properties in samples (Covin et al., 2011).

Beck depression inventory (BDI). It was developed by Beck et al. (1988). It is a 21-item measure used to determine the intensity of depression. Students are asked to rate every statement on a 0 to 3 scale according to how well it describes how they have felt over the past two weeks. Total scores are gained through summation in which greater depressive symptoms are calculated by having more scores. The BDI have been extensively used in the sample of every age group and have good psychometric properties (Beck et al., 1988).

Brief COPE Inventory. It was developed by Carver (1997). It is the reduced version of the original COPE Inventory and assesses 14 coping types with 28 questions. Every type has 2 questions. The score range is 4- point Likert-type in which responses range from 1 ("I've not done this at all") to 4 ("I've been doing this a lot"). The total score is calculated by summation (Carver, 1997).

Procedure

This study was performed in agreement with the Department of Psychology, Quaid-i-Azam University, and Islamabad, Pakistan. Two hundred university students were recruited from different public and private university students of Rawalpindi and Islamabad, Pakistan. Informed consent for performing this study was obtained from all volunteer participants and higher authorities of universities. Only those volunteer students who shown their willingness for participating in present study. Three standardized instruments, cognitive distortions scale, coping strategies, and beck depression inventory were applied to assess cognitive distortions, depression disorder, and coping strategies in university students. Students were requested to fulfill a set of three standardized instruments with demographic information within time of one hours. Approval

to carry this research was taken from the higher university's authority after clarifying nature of this research and confirming students that participant's data would be kept secret.

Analysis plan

In present study, different statistical analysis was performed to confirm hypotheses and objectives. Firstly, well establish imputation method was applied to deal missing values of the cognitive distortions scale, coping strategies, and beck depression inventory on Spss-22 (Cohen et al., 1969; Field, 2017). Secondly, person product-moment correlation technique was also applied to investigation the association among cognitive distortions, coping strategies and depression in university students (Field, 2017). Finally, a moderation analysis was performed to confirm the moderating role of coping strategies on the relationship between cognitive distortions and depression through Spss-22 (Baron & Kenny, 1986).

Results

In Table 1, this study's findings illustrated that cognitive distortion was statistically positively significant associated with denial coping strategies ($r=.24^{**}$, $p<.01$), emotional support coping strategy ($r=.35^{**}$, $p<.01$) behavioral disengagement coping strategy ($r=.39^{**}$, $p<.01$), self-blame coping strategy ($r=.30^{**}$, $p<.01$) and depression ($r=.42^{**}$, $p<.01$) in university students. Further, the study's results demonstrated that denial coping strategy was statistically positively significant associated with depression ($r=.21^{**}$, $p<.01$). Moreover, this study also revealed that emotional support, self-blame, behavioral disengagement coping strategies were statistically positively significant associated with depression. Moreover, this study's results revealed that positive reframing coping strategy was negatively related with depression ($r=-.20^{**}$, $p<.01$).

In Table 2, the results of study revealed that active coping strategy was playing a significant role of moderator between on the relationship between cognitive distortions and depression in university students. The aforementioned Table demonstrated active coping strategy was statistically negatively significant predicting to depression in university students. Whereas cognitive distortion was positively non-significant predicting to depression in university students. However, the results of this study revealed that interaction between active-coping strategy and cognitive distortion was statistically negatively significant predicting to depression in university students ($\beta=-1.23^{*}$, $\Delta F=.04^{***}$, $\Delta R^2=.05$).

In Table 3, the results of study revealed that denial coping strategy was not playing a significant role of moderator between on the relationship between cognitive distortions and depression in university students. The above mention Table revealed that denial coping strategy was statistically negatively non-significant predicting to depression in university students. Whereas cognitive distortion was positively non-significant predicting to depression in university students. However, the results of this study revealed that interaction between denial coping strategy and cognitive distortion was statistically negatively significant predicting to depression in university students ($\beta=-2.75$, $\Delta F=1.108$, $\Delta R^2=.00$).

Results

Table 1

Mean standard deviation, correlation matrix and alpha coefficient among cognitive distortions, coping strategies, and depression along their subscales in university students (N=200)

Variables	M	SD	α	12	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1. Cognitive distortion	69.99	19.44	.88	-.93**	.93**	.25**	.12	-.04	.24**	.03	.35**	.03	.39**	.12	-.09	.05	.04	.05	.09	.30**	.43**
2. Social Domain	34.37	10.38	.81	-	.73**	.28**	.16*	-.01	.24**	-.05	.32**	.06	.35**	.10	-.02	.14	.02	.12	.09	.29**	.35**
3. Achievement domain	35.62	10.51	.80	-	.19**	.06	-.07	.21**	.12	.32**	-.01	.38**	.12	-.16	-.04	.06	.06	-.02	.08	.26**	.44**
4. Coping strategies	66.68	10.60	.76	-	.45**	.47**	.41**	-.04	.55**	.59**	.29**	.54**	.54**	.47**	.41**	.51**	.54**	.56**	.07		
5. Self distraction	5.12	1.58	.54	-	.17*	.16*	-.17*	.26**	.04	.08	.14	.28**	.22**	.06	.26**	.15*	.28**	.11			
6. Active coping	5.83	1.58	.54	-	.02	-.35**	.07	.38**	-.19*	.12	.52**	.48**	-.02	.33**	.26**	.12	.23**				
7. Denial	3.59	1.50	.51	-	.06	.19**	.18**	.24**	.20**	.08	.05	.16*	-.00	.09	.22**	.21**					
8. Substance use	2.52	1.18	.73	-	.13	-.19**	.36**	.00	-.25**	.29**	.14*	-.18*	-.13	-.11	.12						
9. Emotional support	4.68	1.52	.50	-	.22**	.33**	.31**	.09	.06	.15*	.08	.21**	.44**	.23**							
10. Instrumental support	4.89	1.80	.72	-	.12	-.11	-.11	.12	-.05	.03	.25**	.36**									
11. Behavioral disengagement	4.06	1.54	.51	-	.12	-.11	-.11	.12	-.05	.03	.25**	.36**									
12. Venting	4.50	2.67	.51	-	.14	-.01	.21**	.19**	.17*	.13	.08										
13. Positive reframing	5.50	1.62	.53	-	.40**	.14	.36**	.32**	.12	-.20**											
14. Planning	5.51	1.59	.54	-	.02	.31*	.36**	.18*	-.17*												
15. Humor	4.21	1.80	.65	-	.13*	-.01	.25**	.04													
16. Acceptance	5.58	1.43	.31	-	.35**	.20*	-.11														
17. Religion	5.95	1.61	.59	-	.24**	-.02															
18. Self-blame	4.74	1.44	.54	-	.23**																
19. Depression	13.88	9.57	.88	-																	

Note. * $p < .01$, ** $p < .00$, *** $p < .000$.

Table 2

The moderating role of active-coping coping strategy on the relationship between cognitive distortions and depression in university students (N=200)

DV	IV	B	SE	β	p	ΔR^2	ΔF^2	p
BDI	(Constant)	24.33	84.03		.77	.05	.04	.000
	CD	-.04	1.19	-.08	.97			
	AC	-1.275	.38	-.21	.00			
	CD*AC	-21.00	.02	-.50	.00			

Note. BDI= Back depression inventory; CD = Cognitive distortion scale; AC= Active coping strategy. * $p < .01$, ** $p < .00$, *** $p < .000$.

Table 3

The moderating role of denial of coping strategy on the relationship between cognitive distortions and depression in university students (N=200)

DV	IV	B	SE	β	p	ΔR^2	ΔF^2	p
BDI	(Constant)	92.26	90.12		.30	.00	1.108	.29
	CD	-1.16	1.29	-2.36	.36			
	DCS	.84	.42	.13	.06			
	CD*DCS	-.02	.02	-2.75	.29			

Note. BDI= Back depression inventory; CD = Cognitive distortion scale; DCS = Denial coping strategy. * $p < .01$, ** $p < .00$, *** $p < .000$.

Table 4

The moderating role of emotional support coping strategy on the relationship between cognitive distortions and depression in university students (N=200)

DV	IV	B	SE	β	p	ΔR^2	ΔF^2	p
BDI	(Constant)	57.49	96.73		.	.00	.38	.53
	CD	-.65	1.30	-1.34	.63			
	EMC	.57	.43	.09	.18			
	CD*EMC	-.01	.02	-1.73	.53			

Note. BDI= Back depression inventory; CD = Cognitive distortion scale; EMC= Emotional support coping strategy. * $p < .01$, ** $p < .00$, *** $p < .000$.

Table 5

The moderating role of behavioral disengagement coping strategy on the relationship between cognitive distortions and depression in university students (N=200)

DV	IV	B	SE	β	p	ΔR^2	ΔF^2	p
BDI	(Constant)	6.38	87.15		.94	.00	.01	.91
	CD	.02	1.24	.04	.98			
	BD	1.44	.42	.23	.00			
	CD*BD	-.00	.02	-.28	.91			

Note. BDI= Back depression inventory; CD = Cognitive distortion scale; BD= Behavioral disengagement coping strategy. * $p < .01$, ** $p < .00$, *** $p < .000$.

Table 6

The moderating role of positive reframing coping strategy on the relationship between cognitive distortions and depression in university students (N=200)

DV	IV	B	SE	β	p	ΔR^2	ΔF^2	p
BDI	(Constant)	84.95	86.91		.33	.00	.84	.35
	CD	-.93	1.24	-1.90	.450			
	PFC	-.99	.37	-.16	.00			
	CD*PFC	-.01	.02	-2.31	.35			

Note. BDI= Back depression inventory; CD = Cognitive distortion scale; PFC= Positive reframing coping strategy. * $p < .01$, ** $p < .00$, *** $p < .000$.

Table 7

The moderating role of self-blame coping strategy on the relationship between cognitive distortions and depression in university students (N=200)

DV	IV	B	SE	β	p	ΔR^2	ΔF^2	p
BDI	(Constant)	-13.20	95.89		.89	.00	.01	.91
	CD	-.33	1.36	-.67	.80			
	SB	.79	.44	.11	.07			
	CD*SB	.00	.02	.28	.91			

Note. BDI= Back depression inventory; CD = Cognitive distortion scale; PFC= Self-blame coping strategy. * $p < .01$, ** $p < .00$, *** $p < .000$.

In Table 4, the results of study revealed that emotional support coping strategy was not playing a significant role as a moderator between on the relationship between cognitive distortions and depression in university students. The above-mentioned Table revealed that emotional support coping strategy was statistically negatively non-significant predicting to depression in university students. Whereas cognitive distortion was positively non-significant predicting to depression in university students. However, the results of this study revealed that interaction between emotional support coping strategy and cognitive distortion was statistically positively non-significant predicting to depression in university students ($\beta = -1.34$, $\Delta F = 3.30$, $\Delta R^2 = .00$). Furthermore, the findings illustrated that active coping coping strategy is playing role of moderator on the relationship between cognitive distortions and depression in university students. In simple words, cognitive distortions are negatively associated with higher level of depression because it favors higher level of active coping strategy in university students. This study's results are consistent with previous study findings and it is further supported our study objectives (Cotrena et al., 2016; Cuijpers et al., 2019; Hafsa et al., 2021; Kumar & Nayar, 2020; Mukku et al., 2021; Rashid et al., 2021; Roehr, 2013; Roh et al., 2021; Saif et al., 2021; Sarfraz et al., 2021; Shuja et al., 2020; Toqeer et al., 2021; Yakovenko & Hodgins, 2018).. Earlier studies

In Table 5, the results of study revealed that behavioral disengagement coping strategy was not playing a significant role as a moderator between on the relationship between cognitive distortions and depression in university students. The results of this study also revealed that avoidant coping strategy was statistically positively significant predicting to depression in university students. Whereas cognitive distortion was positively non-significant predicting to depression in university students (Kumar & Nayar, 2020; Mukku et al., 2021). Furthermore, this study's findings further supported that the exercise of evaluating goal and that interaction between behavioral disengagement coping strategy and cognitive distortion was statistically negatively non-significant predicting to depression in university students ($\beta = -.28$, $\Delta F = .01$, $\Delta R^2 = .00$). Moreover, this study also revealed that avoidant coping strategy was statistically positively significant predicting to depression in university students. Furthermore, this study's findings further supported that the exercise of evaluating goal and that interaction between behavioral disengagement coping strategy and cognitive distortion was statistically negatively non-significant predicting to depression in university students. Previous studies revealed that active coping and positive reframing were negatively related to depression.

In Table 6, the findings of present study demonstrated that positive reframing coping strategy was not playing a significant role as a moderator between on the relationship between emotional support, behavioral disengagement, and self-cognitive distortions and depression in university students. The results of present study demonstrated that positive reframing coping strategy was statistically negatively significant predicting to depression in university students. Whereas cognitive distortion was negatively non-significant predicting to depression in university students. However, the results of this study revealed that interaction between positive reframing coping strategy and cognitive distortion was statistically negatively non-significant predicting to depression in university students ($\beta = -2.31$, $\Delta F = .84$, $\Delta R^2 = .00$). Further, a few studies revealed that depression was positively related to avoidant coping styles such as denial, denial, and self-blame (Yüksel & Bahadır-Yilmaz, 2019).

Limitations and Suggestions
Overall, this study has many limitations. Firstly, it was carried out through cross-sectional/correlational design, the causal inferences was not drawn of the experimental association of the cognitive distortions with coping strategies and depression cannot be established. Besides, the study's generalizability is hampered by the sample's composition. Longitudinal studies are required to look at how the relationships between cognitive distortions, coping mechanisms, and depression change over time. The survey and questionnaire method was used for data collection so chances of over-reporting and under-reporting are present. Therefore, future research should be based on other methods of data collection to examine the moderating role of coping strategies between cognitive distortions and depression using behavioral and process measures.

In Table 7, the findings of present study demonstrated that Self-blame coping strategy was not playing a significant role as a moderator between on the relationship between cognitive distortions and depression in university students. The results of present study demonstrated that Self-blame coping strategy was statistically positively non-significant predicting to depression in university students. Whereas cognitive distortion was negatively non-significant predicting to depression in university students ($\beta = -.28$, $\Delta F = .01$, $\Delta R^2 = .00$). However, the results of this study revealed that interaction between self-blame coping strategy and cognitive distortion was statistically negatively non-significant predicting to depression in university students. These results of study are not just useful in development of the intervention of cognitive distortions and depression but it also used to understand the causes and outcomes of depression in university students that might enhances the threat of depression and these causal factor may further trigger mental health issues in university students.

Discussion

The present study investigated the potential moderation pathways among cognitive distortions, coping strategies and depression in university students. Moreover, this study aimed to investigate the association cognitive distortions, coping strategies and depression in university students. The current results demonstrated that cognitive distortion was statistically positively significant associated with denial coping strategies, emotional support coping strategy, behavioral disengagement coping strategy, self-blame coping strategy and depression in university students. These findings are aligned with our study's first and

Implications of study

This study's results is providing new directions for intervention of cognitive distortions and depression in university students. These results of study are not just useful in development of the intervention of cognitive distortions and depression but it also used to understand the causes and outcomes of depression in university students that might enhances the threat of depression and these causal factor may further trigger mental health issues in university students.

Conclusion

Youth with cognitive distortions experienced a significantly greater risk of psychological problems such as depression disorder as compared to young students who had not exposure of cognitive distortions. This study also recommended that cognitive distortions could be stimulated mental health issues such as depression in university students. Furthermore, the findings of this study demonstrated the need for early detection of cognitive distortion and depression disorder to prevent as well as management the risk of mental health problems including depression in young university students.

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Availability of data and materials

The data sets used and analyzed during the current study are available from the corresponding author on reasonable request.

Authors' contributions/Author details

Miss Aiman Batool Jaffri performed the main study under the supervision of Syed Zaki Husain Rizvi. Abeer Muhtar Syed & Syed Zaki Husain Rizvi wrote the article under the guidelines of Nature-Nurture Journal of Psychology.

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Ethics declarations

Ethics approval and consent to participate

This study was approved by the Institutional Review Board (National Institute of Psychology, Quaid-i-Azam University, Islamabad, Pakistan.). A written informed consent was obtained from all participants.

Consent for publication

Not applicable.

Competing interests

The authors declare to have no competing interests.

Additional Information

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