

## Stress and Coping Styles among Patients with Drug-induced Psychosis and with Other Psychotic Disorders

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### Abstract

The present study was conducted to explore the relationships of stress with different coping styles in patients with drug-induced psychosis (PDIP) and the patients with other psychotic disorders (POPD) and to compare the PDIP and POPD with reference to the stress and coping styles. A total of 200 (i.e. 100 PDIP and 100 POPD) male patients (Age  $M = 33.52$ ,  $SD = 1.48$ ) were selected from different government and private hospitals/clinics in Lahore and Faisalabad city using a purposive sampling technique. Cross-sectional research design was used in the current study. The participants were administered Stress Subscale of Depression, Anxiety and Stress Scale (DASS-S) Urdu version and Coping Response Inventory (CRI) Urdu version to measure the level of stress and coping styles in the participants respectively. Findings indicated that stress was significantly associated with different coping strategies used by the patients. Stress was significantly higher in the POPD as compared to the PDIP. Furthermore, PDIP scored significantly higher as compared to the POPD on Approach Coping Styles whereas, POPD scored significantly higher as compared to the PDIP on Avoidant Coping Styles. The findings of the study would be helpful for mental health professionals.

**Keywords:** *stress, coping styles, drug-induced psychosis and other psychotic disorders*

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### Introduction and Literature Review

Being a developing country, Pakistan is facing numerous socio-economic problems like inflation, poverty, increased crime rate, child labor, unemployment and most important among them is drug addiction. There has been an increasing international concern over the number of drug addicts as well as its consequences. Drug addiction causes various physical and psychosocial including; depression, anxiety, interpersonal problems, and stress. Drug induced psychosis has been found as an extreme level consequence of addiction of various drugs like; amphetamines, cocaine, cannabinoids, phencyclidine, anticholinergic compounds, and steroids (Hurlbut, 1991; Sevarino & Shelby., 2015).

Stress is the body's reaction to any change requiring a physical, mental or emotional response or adjustment. Since, it can come from outer world (any situation) or from the inner world (any thought), that makes one feel angry, frustrated, anxious, or nervous (Morrow, 2011). Therefore, stress is considered as an internal distortion (Hinkle, 1974) and bodily processes created by certain circumstances (Selye, 1976), higher level of stress has been found to be positively associated with mainly psychosis (Kimhy et al., 2003). Moreover, there is extensive

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epidemiological evidence that psychosocial stress is involved in the development of psychosis.

Studies from the British National Psychiatric Morbidity Survey revealed that hostile and life-changing situations were associated with psychotic symptoms both cross-sectionally and longitudinally (Johns et al., 2004; Van Winkel et al., 2008). Furthermore, a lifetime experience of disturbing life events was associated with an increased level of psychotic symptoms (Mason et al., 2004; Miller et al., 2001; Wiles et al., 2006). Some demographic and environmental factors are also considered to be responsible for the development of psychosis, for instance, childhood trauma, urbanized brought-up, and social stress (Janssen et al., 2003; Scholten et al., 2003; Read et al., 2005; Shevlin et al., 2008; Van Os, 2004; Veling et al., 2007). These findings indicate that the relationship between psychosis and stress may result from an underlying vulnerability and/or from an increased emotional reaction to stress (Myin-Germeys et al., 2005). Therefore, such a stress reactivity pathway has been assumed as an underlying factor of the positive psychotic symptoms (McDonald & Murray, 2000; Myin-Germeys et al., 2002).

On the other hand, in the last few decades, a considerable number of empirical studies have proposed childhood trauma as a risk factor for psychosis. Furthermore, patients with psychosis having a history of childhood trauma found inclined to have a variety of additional complications, substance abuse, including post-traumatic stress disorder, and higher levels of anxiety and depression (Schäfer & Fisher, 2022; Stramecki et al., 2019).

It has been assumed since long that psychological stress is one's relationship with the environment one appraises as significant for his or her well-being and utilizes coping resources (Lazarus & Folkman, 1984). In this regard, Schimelpfening (2011) characterizes coping styles as an individual's cognitive, emotional, or behavioral strategies used in response to life problems and stressful or traumatic situations. Lazarus and Folkman (1984) suggested two types of coping responses in stressful situations: (a) emotion focused and (b) problem focused. In a sample of patients with cancer, it was found that the patients using avoidance strategies (i.e., who were in denial), deteriorated more quickly than those who faced their problems. The same pattern exists in other psycho-social domains (Jordan et al., 1994).

Deriving data from three studies, Ben-Zur (2009) concluded that problem-focused coping was positively associated with positive affect (mood) while negatively associated with negative affect. On the other hand, avoidance-coping displayed the opposite pattern of relationships with positive and negative affect. Likewise, Park and Jang (2010) there is significant positive relationship of stress with depression and a negative association with problem-focused coping. Emotion-focused coping appeared to have a significant positive association with depression whereas, problem-focused coping had a negative association with depression. As far as gender is concerned, the men score significantly lower than the women on the emotional and avoidance coping styles and higher on rational and detachment coping styles as well as men used to have more emotional inhibition than the women (Matud, 2004).

Drug dependence is characterized by biological and/or psychological over-dependence on drugs resulting in a compulsive or pathological drug use. Such a pathological drug use especially of cannabis and amphetamines can cause drug-induced psychosis that may last for short or even for long periods. Patients with psychosis often behave inappropriately due to loss of contact with reality as well as inability to think rationally resultantly making them incapable of normal social functioning (Kimhy et al., 2003). Therefore, experience of stress is also found associated with psychosis. In this regard, Myin-Germeys et al. (2001) have found that a subjective stress was positively correlated with negative affect while negatively associated with positive affect in the patients with psychosis. Moreover, patients with psychosis used to react with more strong emotions to the subjective appraisals of the perceived stress in daily life than

the normal participants. Subsequently, Lazarus & Folkman (1984) conducted a study on 40 patients with psychosis evaluating their lifetime trauma history and state of confusion manifested in their behavior. Trauma over the lifespan was found to be associated with a more surprising intensity of the issue. On the other hand, Binswanger's existential analysis declares psychopathology as a specific way of life. Thus, Denyskova (2014) considers madness as an "escape". According to him, stressful situations may cause a person "to get escape into madness".

Additionally, Phillips et al. (2009) maintained that psychological models of schizophrenia as well as other psychotic disorders advocate that poor coping responses to the life stressors and symptoms of ailment have a central position in the development and maintenance of the disorder and influence the recovery as well. It was concluded that most of the patients with psychosis used to implement at least one approach to cope with the symptoms, and life events whereas, others implement more than one strategy. It was further revealed that there is no single coping strategy effective universally due to situational and/or other factors influencing both the choice of coping strategy and its efficacy.

Antipsychotics are considered to be the first line of treatment for patients with schizophrenia. However, lower rates of adherence to prescribed medicines resulting in substantially higher rates of relapse highlight the importance of understanding the characteristics that might be associated with medication adherence. In this regard, coping styles might be one of the factors as people usually utilize a variety of coping strategies to manage difficult life events and mental illnesses (Cooke, 2007). In this regard, it has been found that denial-coping styles are inversely associated with medication adherence (Aldebot & De Mamani, 2009). The use of drugs has also been found as an inappropriate coping mechanism on the part of drug users. Thus, analyzing the data from five studies, Thornton et al. (2012) found that cannabis was mostly used for pleasure-seeking whereas alcohol and tobacco were mainly used to cope with stress. Moreover, individuals with psychotic disorders appeared more likely to use tobacco for coping than individuals with neurosis. In contrast, individuals with neurosis were more likely to use alcohol for social reasons. It was therefore concluded that interventions might be emphasized by including some alternative coping strategies to alcohol and/or tobacco use as well as by addressing the social reasons appropriately.

Ritsner et al. (2003) found that life quality of the patients was positively correlated with avoidance-oriented coping whereas slightly negatively associated with emotion-oriented coping styles. Moreover, the emotion-oriented coping styles mediated the association between the severity of depression symptoms whereas avoidance-oriented coping styles appeared to mediate between paranoid symptoms and life quality. It was also found that the ability to cope with the symptoms and associated distress considerably contributed to quality of life appraisal in schizophrenia indicating that different coping strategies can lessen the negative influence of certain symptoms and associated distress on the subjective quality of life in the patients with psychosis. Parallel to this, Horan and Blanchard (2003) found that among psychotic patients, maladaptive coping strategies accounted for 25% of the variance in negative mood even after controlling the baseline mood, neurocognitive functioning, and clinical symptoms. Results of the study further suggested that maladaptive coping was associated with individual differences with respect to the emotional responses to psycho-social stressors in psychosis. Almost same findings were there in a recent study conducted by Stramecki et al. (2019) who found that psychotic patients were more likely to prefer maladaptive coping over active coping mechanisms. Furthermore, the use of maladaptive coping mechanisms was associated with greater impairment of constructional abilities as well as language skills in the participants.

Although stressful life events are likely to trigger neurotic as well as psychotic symptom yet it is argued that effective coping strategies may serve as protective factors. Additionally, coping behavior of a psychotic patient may be influenced by his/her level of neurocognitive functioning and self-efficacy (Lysaker et al. (2005). In this respect, it has been found that approach-oriented coping strategies, such as “thinking of alternate ways to deal with the problems” and “to make an action plan and following it,” are used significantly more frequently by the normal individuals than by the individuals with psychosis.

Among individuals with psychosis, greater use of problem-focused coping mechanisms is associated with higher level of self-efficacy Since the association between insight and healthier or poorer psychosocial functioning of patients with psychosis has been controversial since long. Therefore, explored the relationship of hope with insight possibly affecting psychosocial functioning at the levels of active versus avoidant coping styles and found significant association between hope and insight. Furthermore, patients with high hope and high insight displayed the most adaptive coping preferences, while those with high insight but lower hope depicted the least (Ventura et al., 2004).

### **Rationale of the Study**

Pakistan is a developing country and is facing many challenges like poverty, inflation, increased crime rate, unemployment, child labor and most important among them is drug addiction. It has been observed that a number of people who face these stressors in their life, feel difficulty in managing their emotions and use different modes to escape from stressors, most of them start using drugs as an escape from the stress. Moreover, it also evident that drug dependence/addiction may cause numerous physical, psycho-social, emotional, and behavioral problems including psychosis as an extreme outcome of the drug dependence. Since patients with psychosis often behave inappropriately due to loss of contact with reality as well as inability to think rationally resultantly making them unable to cope with the stress appropriately. Hence, the basic purpose of this study was to explore the coping styles and stress level among the patients with drug induced psychosis and the patients with other psychotic disorders.

### **Objectives of the Study**

1. To find out the relationship between stress and coping styles in patients with drug-induced psychosis and patients with other psychotic disorders.
2. To compare the level of stress experienced and a group of coping styles used by the patients with drug-induced psychosis and the patients with other psychotic disorders.

### **Hypotheses of the Study**

1. There would be a significant positive correlation between stress and the use of coping strategies in patients with drug-induced psychosis and patients with other psychotic disorders.
2. Patients with other psychotic disorders would have higher level of stress as compared to patients with drug-induced psychosis.
3. Patients with drug-induced psychosis would score higher as compared to patients with other psychotic disorders on approach coping styles.
4. Patients with other psychotic disorders would score higher as compared to patients with drug-induced psychosis on avoidant coping styles.

## Method

### Research design

Cross-sectional research design was used in the present study.

### Participants

In the current study 200 diagnosed patients with psychosis (i.e., 100 patients with drug-induced psychosis and 100 with other psychotic disorders) with the age range of 20-45 years ( $M = 33.52$ ,  $SD = 1.48$ ) were selected from different public and private sector hospitals/clinics in Lahore and Faisalabad cities. Since the participants were already diagnosed and were under treatment of psychiatrists (from February – August, 2020) therefore, no assessment was conducted with reference to the diagnosis of psychosis. Patients with other psychiatric disorders and patients with psychosis under treatment in hospitals/clinics other than the selected institutions were excluded from the current study.

### Sampling Strategy

Purposive sampling technique was used in the current study for data collection.

### Instruments

***Depression Anxiety and Stress Scale (DASS)***. Depression Anxiety and Stress Scale (DASS) was originally developed by Lovibond and Lovibond (1995). In the present study Urdu translated version of DASS (i.e., only stress scale items) by Habib (2009) was used.

***The Coping Response Inventory (CRI)***. Coping Response Inventory (CRI) by Moos (2002) is a brief self-report inventory to identify cognitive and behavioral responses the individual used to cope with a recent problem or stressful situation. The inventory has two main scales; Approach Coping Styles (including Logical Analysis, Positive Reappraisal, Seeking Guidance and Support, and Problem Solving), and Avoidance Coping Styles (including Cognitive Avoidance, Acceptance or Resignation, Seeking Alternative Rewards, and Emotional Discharge). The Cronbach alpha coefficients of all these subscales ranged from .61 to .74 indicating a high internal consistency of the measure. In the current study translated Urdu version of coping response inventory was used (Mahmood & Sheraz, 2012)

### Procedure

After getting the requisite institutional permissions, the participants of the study were selected using the strategy as discussed earlier in detail. The participants and their care-takers were informed about the purpose and utility of this study and the informed consent was taken from the participants as well as from their care-takers. Brief instructions about the questionnaires were given to the participants. It was assured to them that all the information will be kept confidential and would be utilized only for research purpose. The participants completed the questionnaires in presence of the researcher. Researcher himself filled the questionnaires of illiterate participants and tried to facilitate the all respondents in possible ways keeping in view the severity of their mental illness. The queries of the participants as well as their care-takers were entertained during and after the assessment. After data collection, Pearson's product moment correlation and *t*-test were carried out using Statistical Package for Social Sciences (SPSS) for data analysis.

### Ethical Consideration

All the ethical considerations as suggested by American Psychological Association (APA) were kept under consideration. In this regard, written informed consent was taken from the patients as well as their care-takers (keeping in view that patients were not totally in reality

due to psychosis), confidentiality was maintained, right of privacy on the part of the participants was observed, they were given right to withdraw at any stage in case of any perceived inconvenience, and safety/security of the participants from any harm was ensured.

## Results

**Table 1**

*Percentages and Frequencies of Demographic Characteristics of the Participants (N=200)*

Demographic Variables	Frequency	Percentage
<b>Disorder</b>		
PDIP	100	50
POPD	100	50
<b>Age</b>		
20 to 25 Years	30	15
26 to 30 Years	46	23
31 to 35 Years	50	25
36 to 40 Years	42	21
41 to 45 Years	32	16
<b>Birth Order</b>		
1 <sup>st</sup> Born	64	32
Middle Born	67	33.5
Last Born	69	34.5
Only Child	0	0
<b>Education</b>		
16 Years or Above	09	4.5
14 Years	60	30
12 Years	68	34
10 Years or Below	63	31.5
<b>Family System</b>		
Joint	133	66.5
Nuclear	67	33.5
<b>Marital Status</b>		
Married	92	46
Unmarried	104	52
Widow or divorced	04	02
<b>Residence</b>		
Urban	91	45.5
Rural	109	54.5
<b>Socio-economic Status</b>		
Upper Class	60	30
Middle Class	73	36.5
Lower Class	67	33.5

*Note.* PDIP = patients with drug induced psychosis; POPD = patients with other psychotic disorders.

The table 1 shows demographic description of 200 participants. Overall, the sample consisted of 50% patients with drug induced psychosis and 50% patients with other psychotic disorders. Percentages and frequencies of the demographic variables are displayed with subcategories in the table. For continuous demographic variable (i.e., age), descriptive analysis was carried out. The data indicated that the mean age of the participants was 33.52 with the standard deviation of 1.48.

**Table 2***Reliability Coefficients of the Measures (N = 200)*

Measure	No. of Items	$\alpha$
<b>DASS</b>		
Stress Scale	14	.64
<b>CRI</b>		
Approach Coping Scales	24	.65
Avoidant Coping Scales	24	.61
CRI_Total	48	.77

Note. DASS = Depression, Stress, Anxiety Scale; CRI = Coping Response Inventory.

The table 2 depicts high internal consistency of the measures used in the current study.

**Table 3***Summary of Intercorrelations, Means, and Standard Deviations of Scores on DASS (Stress Scale) and Coping Response Inventory (N=200)*

Factors	1	2	3	4	M	SD
1. DASS_S	-	.27**	.28**	.28**	23.04	4.58
2. CRI_1	-	-	.65***	.84***	38.44	8.14
3. CRI_2	-	-	-	.82***	37.82	8.01
4. CRI_T	-	-	-	-	75.31	14.46

Note. DASS\_S = Depression, Stress, Anxiety Scale (Subscale Stress); CRI\_1 = Coping Response Inventory 1<sup>st</sup> Subscale (i.e., Approach Coping Styles); CRI\_2 = Coping Response Inventory 2<sup>nd</sup> Subscale (i.e., Avoidant Coping Styles); CRI\_T = Coping Response Inventory (Total of both subscales). \*\*  $p < .01$ ; \*\*\*  $p < .001$ .

The data in table 3 depicted that there existed significant positive correlation between stress and coping strategies used by the participants.

**Table 4***Means, Standard Deviations, and t-values of Patients with Drug Induced Psychosis and Patients with Other Psychotic Disorders on Stress Scale and Coping Response Inventory (N = 200)*

Factors	PDIP	POPD	t (198)	95% CI		Cohen's d
	(n = 100)	(n = 100)		LL	UL	
	M(SD)	M(SD)				
DASS_S	20.88(3.70)	24.19(5.33)	3.27**	.97	1.59	0.72
CRI_1	38.89(9.43)	36.09(6.61)	2.58*	-1.37	3.17	0.34
CRI_2	37.73(6.02)	40.92(9.63)	3.16**	-2.05	-2.43	0.40
CRI_T	75.32(17.19)	75.29(11.17)	0.02	-4.01	4.07	0.01

Note. PDIP = patients with drug induced psychosis; POPD = patients with other psychotic disorders; DASS\_S = Depression, Stress, Anxiety Scale (Subscale Stress); CRI\_1 = Coping Response Inventory 1<sup>st</sup> Subscale (i.e., Approach Coping Styles); CRI\_2 = Coping Response Inventory 2<sup>nd</sup> Subscale (i.e., Avoidant Coping Styles); CRI\_T = Coping Response Inventory (Total of both subscales). \*\*  $p < .01$ ; \*\*\*  $p < .001$ .

The data given in table 4 revealed that stress was significantly higher in the POPD as compared to the PDIP. Furthermore, PDIP scored significantly higher as compared to the POPD on Approach Coping Styles whereas, POPD scored significantly higher as compared to the PDIP on Avoidant Coping Styles.

## Discussion

Pakistan is facing numerous socio-economic problems like inflation, poverty, increased crime rate, child labor, unemployment and most important among them is drug addiction. There has been an increasing international concern over the number of drug addicts as well as its consequences. Drug addiction causes various physical and psychosocial including; depression, anxiety, interpersonal problems, and stress. Drug induced psychosis has been found as an extreme level consequence of addiction of various drugs (Hurlbut, 1991). On the other hand, since stress is considered as an internal distortion (Hinkle, 1974) and bodily processes created by certain circumstances (Selye, 1976) therefore, a higher level of stress has also been found to be positively associated with psychosis (Kimhy et al., 2003). Moreover, there is substantial epidemiological evidence that psychosocial stress is involved in the development of psychosis (Johns et al., 2004; Van Winkel et al., 2008). It has also been assumed since long that psychological stress is one's relationship with the environment one appraises as significant for his or her well-being and utilizes coping resources (Lazarus & Folkman, 1984). In this regard, Schimelpfening (2011) characterizes coping styles as an individual's cognitive, emotional, or behavioral strategies used in response to life problems and stressful or traumatic situations.

Keeping the aforementioned facts in view, the present study was conducted to explore the relationships of stress with different coping styles in patients with drug-induced psychosis (PDIP) and the patients with other psychotic disorders (POPD) and to compare the PDIP and POPD with reference to the stress and coping styles. First objective of the current study was to find out the relationship between stress and coping styles in patients with drug-induced psychosis and patients with other psychotic disorders. Since the existing literature has revealed that higher level of stress has been found to be positively associated with psychosis (Kimhy et al., 2003). There is also substantial epidemiological evidence that psychosocial stress is involved in the development of psychosis as the hostile and life-changing situations have been found associated with psychotic symptoms both cross-sectionally and longitudinally (Johns et al., 2004; Van Winkel et al., 2008).

Furthermore, a lifetime experience of disturbing life events was associated with an increased level of psychotic symptoms (Mason et al., 2004; Miller et al., 2001; Wiles et al., 2006). It has been assumed since long that psychological stress is one's relationship with the environment one appraises as significant for his or her well-being and utilizes coping resources (Lazarus & Folkman, 1984). Like-wise, Park and Jang (2010) found significant associations and differences among depression, stress, and coping styles. It was therefore hypothesized that there would be a significant positive correlation between stress and the use of coping strategies in patients with PDIP and POPD. Results of the current study (as shown in Table 3) revealed that there existed a significant positive correlation between stress and coping strategies used by the participants. This finding appears to be in-line with the existing literature (e.g., Lazarus & Folkman, 1984; Park & Jang 2010; Phillips et al., 2009).

Second objective of this study was to compare the level of stress experienced and a group of coping styles used by the patients with drug-induced psychosis and the patients with other psychotic disorders. Since stress is the body's reaction to any change requiring a physical, mental or emotional response or adjustment and it can come from outer world (any situation) or from the inner world (any thought), that makes one feel angry, frustrated, anxious, or nervous (Morrow, 2011). Thus, it has been assumed since long that psychological stress is one's relationship with the environment one appraises as significant for his or her well-being and utilizes coping resources (Lazarus & Folkman, 1984). Additionally, Phillips et al. (2009) maintained that psychological models of schizophrenia as well as other psychotic disorders advocate that poor coping responses to the life stressors and symptoms of ailment have a central



position in the development and maintenance of the disorder and influence the recovery as well. Therefore, three hypotheses were made in the current study; (a) patients with other psychotic disorders would have higher level of stress as compared to patients with drug-induced psychosis, (b) patients with drug-induced psychosis would score higher as compared to patients with other psychotic disorders on approach coping styles and (c) patients with other psychotic disorders would score higher as compared to patients with drug-induced psychosis on avoidant coping styles. All the three hypotheses were supported by the findings (as shown in table 4) which revealed that stress was significantly higher in the POPD as compared to the PDIP. Furthermore, PDIP scored significantly higher compared to the POPD on Approach Coping Styles whereas POPD scored significantly higher than the PDIP on Avoidant Coping Styles.

Since stress is considered as an internal distortion (Hinkle, 1974) and deriving data from three studies, Ben-Zur (2009) concluded that problem-focused coping was positively associated with positive affect while negatively associated with negative affect. On the other hand, avoidance-coping displayed the opposite pattern of relationships with positive and negative affect. This might be the underlying reason of higher level of stress in POPD as compared to the PDIP because POPD also scored higher than PDIP on avoidant coping styles in the current study.

These findings are also replicating the existing literature as Ritsner *et al.* (2003) found that stress of patients with psychosis was positively correlated with avoidance-oriented coping whereas slightly negatively associated with emotion-oriented coping styles. Horan and Blanchard (2003) have also found that among psychotic patients, maladaptive coping strategies accounted for 25% of the variance in negative mood even after controlling the baseline mood, neurocognitive functioning, and clinical symptoms. Moreover, Park and Jang (2010) suggested that stress had a significant negative association with problem-focused coping. Almost same findings were there in a recent study conducted by Stramecki *et al.* (2019) who found that psychotic patients were more likely to prefer maladaptive coping over active coping mechanisms.

On the other hand, as patients with psychosis often behave inappropriately due to loss of contact with reality as well as inability to think rationally resultantly making them incapable of normal social functioning (Kimhy *et al.*, 2003) therefore, psychotic patients with high insight display the most adaptive coping preferences (Lysaker *et al.*, 2005). Thus, on the basis of findings of the current study, it can also be assumed that PDIP might have better insight as they scored higher than POPD on approach coping styles. However, this assertion needs to be explored thoroughly in future studies.

### **Conclusion**

The findings of the current study revealed that there is a positive and significant association between stress and the use of different coping strategies by both patients with drug-induced psychosis (PDIP) and patients with other psychotic disorders (POPD). Therefore, mental health professionals need to emphasize the effective therapeutic modalities inculcating appropriate use of coping mechanisms in the patients. In this regard, special attention should be given to patients with other psychotic disorders as they have been found to be using avoidant coping mechanisms more frequently as compared to the approach coping mechanisms.

### **Limitations and Suggestions**

In the current study, data were collected from the patients with psychosis (*i.e.*, drug-induced psychosis and other psychotic disorders) only. In future research, it is suggested to include the normal population as well to compare both psychotic and normal samples with

reference to the study variables. The current research was conducted in only two cities of Punjab, Pakistan and in few intuitions selected as per the convenience of the researchers. It is therefore suggested that future researchers must include more institutions/cities as well as randomization of the sampling for more generalizability of the findings. Some of the intervening variables e.g., personality, temperament, and effect of medication were not controlled in the current study. Future studies should be conducted after controlling the possible intervening variables for better and clearer understanding of the facts derived. Further, this study was conducted on male patients only which is another limitation to address the gender wise differences in psychosis. It can be further extended on female cohorts as well.

### Implications of the Study

Findings of the current study are helpful to understand the response of patients with psychosis (i.e., drug-induced psychosis and other psychotic disorders) to stress and different coping styles (approach/avoidance coping styles) used by them. Based on these findings, mental health professionals may choose the appropriate interventions for the patients suffering from aforesaid problems to change their life style and/or coping styles and ultimately to make them adjustable individuals (as much as possible) in the society.

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### References

- Aldebot, S., & De Mamani, A. G. W. (2009). Denial and acceptance coping styles and medication adherence in schizophrenia. *The Journal of Nervous and Mental Disease*, 197(8), 580-584.
- Ben-Zur, H. (2009). Coping styles and affect. *International Journal of Stress Management*, 16(2), 87-101.
- Cooke, L. (2007). The importance of exposure for healthy eating in childhood: A review. *Journal of Human Nutrition and Dietetics*, 20(4), 294-301.
- Denyskova, E. (2014). Madness as an escape: Existential analysis. *Journal of the Society for Existential Analysis*, 25(1), 87-101.
- Habib, M. (2009). *Gender difference in depression, anxiety and stress among survivors of Lahore suicide bombings* (Unpublished bachelors' dissertation). University of the Punjab, Pakistan.
- Hinkle, L. E., (1974). The concept of 'stress' in the biological and social sciences. *International Journal of Psychiatry in Medicine*, 5, 335-357.
- Horan, W. P., & Blanchard, J. J. (2003). *Journal of Psychiatry and Bio-behavioral Sciences*, University of California, Los Angeles, CA 90024-6968, USA doi./10.1016/S0920-9964(02)00227-X
- Hurlbut, K. M., (1991). Drug-induced psychoses. *Journal of Emergency Medicine*, 9(1), 31-52.

- Janssen, I., Hanssen, M., Bak, M. L. F. J., Bijl, R. V., De Graaf, R., Vollebergh, W., & Van Os, J. (2003). Discrimination and delusional ideation. *The British Journal of Psychiatry*, *182*(1), 71-76.
- Johns, L. C., Cannon, M., Singleton, N., Murray, R. M., Farrell, M., Brugha, T., & Meltzer, H. (2004). Prevalence and correlates of self-reported psychotic symptoms in the British population. *The British Journal of Psychiatry*, *185*(4), 298-305.
- Jordan, J. A., Compas, B. E., & Howell, D. C. (1994). Predictors of cancer progression in young adult men and women: Avoidance, intrusive thoughts, and psychological symptoms. *Health Psychology*, *13*, 539-547
- Kimhy, D., Delespaul, P., & Ahn, H., (2003). Psychosis. *Schizophrenia Bulletin*, *36*(6), 11-31.
- Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. New York: Springer.
- Lovibond, S. H. & Lovibond, P. F. (1995). *Manual for the depression anxiety stress scales*. (2<sup>nd</sup> ed.) Sydney: Psychology Foundation.
- Lysaker, P. H., Campbell, K., & Johannsen, J. K. (2005). Hope, awareness of illness and coping in schizophrenia spectrum disorders: Evidence of an interaction. *Journal of Nervous & Mental Disease*, *193*, 287-292.
- Mahmood, K. B., & Sheraz, K. (2012). *A comparative study of coping styles among the parents of mentally handicap children* (Unpublished bachelors' dissertation). Government College University, Pakistan.
- Mason, O., Startup, M., Halpin, S., Schall, U., Conrad, A., & Carr, V. (2004). Risk factors for transition to first episode psychosis among individuals with 'at-risk mental states'. *Schizophrenia Research*, *71*(2), 227-237.
- Matud, M. P., (2004). Gender differences in stress and coping styles. *Facultad de Psicología, Universidad de La Laguna, Campus de Guajara*, *37*(7), 1401-1415
- McDonald, C., & Murray, R. M. (2000). Early and late environmental risk factors for schizophrenia. *Brain Research Reviews*, *31*(3), 130-137.
- Miller, P., Lawrie, S. M., Hodges, A., Clafferty, R., Cosway, R., & Johnstone, E. C. (2001). Genetic liability, illicit drug use, life stress and psychotic symptoms: preliminary findings from the Edinburgh study of people at high risk for schizophrenia. *Social Psychiatry and Psychiatric Epidemiology*, *36*(7), 338-342.
- Moos, R. (2002). *Coping responses inventory: CRI-adult form manual*. Odessa, FL: Psychological Assessment Resources
- Morrow, R. N., (2011). *Health disease and condition*. FL: Medical Review Board.
- Myin-Germeys, I., van Os, J., Schwartz, J. E., Stone, A. A., & Delespaul, P. A. (2001). Emotional reactivity to daily life stress in psychosis. *Archives of General Psychiatry*, *58*(12), 1137-1144.
- Myin-Germeys, I., Delespaul, P. H., & Van Os, J. (2005). Behavioural sensitization to daily life stress in psychosis. *Psychological Medicine*, *35*(5), 733-741.
- Park, H. J., & Jang, I. S. (2010). Stress, depression, coping styles and satisfaction of clinical practice in nursing students. *The Journal of Korean Academic Society of Nursing Education*, *16*(1), 14-23.

- Phillips, L. J., Francey, S. M., Edwards, J., & McMurray, N. (2009). Strategies used by psychotic individuals to cope with life stress and symptoms of illness: A systematic review. *Anxiety, Stress, & Coping*, 22(4), 371-410.
- Read, J., van Os, J., Morrison, A. P., & Ross, C. A. (2005). Childhood trauma, psychosis and schizophrenia: A literature review with theoretical and clinical implications. *Acta Psychiatrica Scandinavica*, 112(5), 330-350.
- Ritsner, M., Ben-Avi, I., Ponizovsky, A., Timinsky, I., Bistrov, E., & Modai, I. (2003). Quality of life and coping with schizophrenia symptoms. *Quality of Life Research*, 12(1), 1-9.
- Schäfer, I., & Fisher, H. L. (2022). Childhood trauma and psychosis-what is the evidence? *Dialogues in Clinical Neuroscience* 13(3), 360-365.
- Schimelpfening, N. (2011). *Health's disease and condition*. FL: Medical Review Board.
- Scholten, D. J., Malla, A. K., Norman, R. M., McLean, T. S., McIntosh, E. M., McDonald, C. L., ... & Speechley, K. N. (2003). Removing barriers to treatment of first-episode psychotic disorders. *The Canadian Journal of Psychiatry*, 48(8), 561-565.
- Selye, H. (1976). *The stress of life*. New York: McGraw-Hill.
- Shevlin, M., Houston, J. E., Dorahy, M. J., & Adamson, G. (2008). Cumulative traumas and psychosis: An analysis of the national comorbidity survey and the British Psychiatric Morbidity Survey. *Schizophrenia Bulletin*, 34(1), 193-199.
- Stramecki, F., Kotowicz, K., Piotrowski, P., Beszlej, J. A., Rymaszewska, J., Samochowicz, J., & Misiak, B. (2019). Coping styles and symptomatic manifestation of first-episode psychosis: Focus on cognitive performance. *Psychiatry Research*, 272, 246-251.
- Sevarino, K. A., & Shelby, B. C. (2015). Stimulant Use Disorders. *Psychiatry*, 1, 1561-1614.
- Thornton, L. K., Baker, A. L., Lewin, T. J., Kay-Lambkin, F. J., Kavanagh, D., Richmond, R., & Johnson, M. P. (2012). Reasons for substance use among people with mental disorders. *Addictive Behaviors*, 37(4), 427-434.
- Van Os, J. I. M. (2004). Does the urban environment cause psychosis? *The British Journal of Psychiatry*, 184(4), 287-288.
- Van Winkel, R., Stefanis, N. C., & Myin-Germeys, I. (2008). Psychosocial stress and psychosis: A review of the neurobiological mechanisms and the evidence for gene-stress interaction. *Schizophrenia Bulletin*, 34(6), 1095-1105.
- Veling, W., Selten, J. P., Susser, E., Laan, W., Mackenbach, J. P., & Hoek, H. W. (2007). Discrimination and the incidence of psychotic disorders among ethnic minorities in the Netherlands. *International Journal of Epidemiology*, 36(4), 761-768.
- Ventura, J., Nuechterlein, K.H., Subotnik, K.L., Green, M.F., & Gitlin, M. J. (2004). Self-efficacy and neuro-cognition may be related to coping responses in recent-onset schizophrenia. *Schizophrenia Research*, 69, 343-352.
- Wiles, N. J., Zammit, S., Bebbington, P., Singleton, N., Meltzer, H., & Lewis, G. (2006). Self-reported psychotic symptoms in the general population: Results from the longitudinal study of the British National Psychiatric Morbidity Survey. *The British Journal of Psychiatry*, 188(6), 519-526.