Original Article

Longitudinal study on Seasonal Affective Disorder: Seasonality and seasonal psychiatric symptoms across seasons in Pakistan

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Objective: To examine the seasonal affective disorders (SAD), seasonality and seasonal symptoms across seasons in Pakistan.

Methodology: Early adults participated in this longitudinal study. Two standardized questionnaires including Seasonality Attitude Questionnaire and Depression Anxiety Stress Scale were used for data collection.

Results: There was high level of seasonality in summer as compared to remaining three seasons. High level of anxiety and depression were seen in summer. High level of stress in autumn was observed.

Conclusion: Seasonal Affective Disorder, seasonality and seasonal psychiatric symptoms affect across four seasons in Pakistan. (Rawal Med J 202;45:327-330).

Keywords: Seasonal Affective Disorder, seasonality, seasonal psychiatric symptoms, depression, anxiety, stress.

INTRODUCTION

Seasonal Affective Disorder (SAD) is also known as winter depression, winter blues, summer depression and seasonal depression. Winter depression is a subtype of major depressive disorder in which depression is experienced with seasonal patterns along with regular depressive episodes and suffers may exhibit any of the associated symptoms, such as feelings of hopelessness and worthlessness.[1] Patterns of seasonal variation among peoples' moods and behaviors is seasonality.[2] Seasonality results in patterns of eating and degree to which seasonal changes affect food preference, energy, appetite, sleep and mood, or the desire to socialize with others.[3]

Psychiatric symptoms of SAD are not limited to a single season. In winter season, SAD takes the form of depression that has a repeated seasonal pattern. In order to be identified with winter depression a person must meet the criteria of major depression in winter season for at least two years. While SAD is common during the short, cold days of winter, perhaps one in ten SAD sufferers experience depression during the summer month.[4] Both in summer SAD and winter SAD, people can experience the full range of symptoms of anxiety, depressed moods, hopelessness, feelings of worthlessness and negativism.[5]

Several people experience a severe mood change when the seasons change.[6] Their sleep is increased, energy level gets low and they feel depressed. This study focused on adults to investigate the relationship of and differences in seasonality and seasonal psychiatric symptoms in four seasons of Pakistan including summer, winter, spring and autumn.

METHODOLOGY

In this longitudinal study, 120 subjects consisting 60 (50%) men and 60 (50%) women were included using purposive sampling technique. It was carried out from August 1, 2017 to September 10, 2018. Institutional approval for the study was taken and all subjects signed an Informed consent. A total of 120 adults were enrolled and data were taken in every season (winter, autumn, spring and summer).

Two self-reporting questionnaires were used; Seasonality Attitude Questionnaire consisting of 25 items measured seasonality and Depression Anxiety Stress Scale (DASS) consisting of 21 items measured depression, anxiety and stress. These scales are reliable and valid instruments to measure seasonality, depression, anxiety and stress, respectively.

Demographic information was recorded. The researcher remained physically present and vigilant during the completion of questionnaires. After the completion, the researcher scanned the questionn-

aires to see if any question was left unanswered. The response rate was 100%. About 10 to 15 minutes were consumed in the completion of the scales.

RESULTS

Table 1 shows reliability coefficients for all variables, which are greater than 0.70 showing satisfactory internal consistency. The values of skewness and kurtosis for all scales are less than +1 and -1 which indicates that data is normally distributed. Table 2 shows Pearson correlation among study variables. The result indicated that seasonality has significant positive correlation with depression, anxiety and stress across seasons (winter, autumn, spring and summer).

Table 1. Psychometric properties of study variables.

	Summer						Winter						Spring						Autumn					
Variables	*M*	*SD*	α	Potential	Actual	Skewness	Kurtosis	*M*	*SD*	α	Actual	Skewness	Kurtosis	*M*	*SD*	α	Actual	Skewness	Kurtosis	*M*	*SD*	α	Actual	Skewness	Kurtosis
Seasonality	45.45	14.55	.88	0-100	0-95	-.12	1.04	39.94	13.86	.85	0-69	-.07	-.33	41.47	14.50	.85	0-69	-.47	-.41	40.67	14.73	.87	0-67	-.31	-.53
Depression	6.71	3.45	.81	0-21	0-16	.40	.79	4.15	5.76	.66	0-15	.37	-.17	3.73	3.31	.76	0-15	1.35	1.85	6.65	4.05	.72	0-17	.33	-.64
Anxiety	7.11	3.23	.76	0-21	0-16	.29	.10	5.76	2.92	.54	0-11	.16	-.98	5.76	2.93	.57	0-11	.16	-.98	6.30	3.13	.60	0-13	.21	-.89
Stress	7.63	2.81	.73	0-21	0-15	.13	.26	7.18	3.20	.56	0-18	.14	.33	10.81	4.66	.79	0-21	-.10	-.72	8.81	3.66	.72	0-18	.35	-.08

Table 2. Pearson Correlation among study variables.

	Summer				Winter				Spring				Autumn			
Variable	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Seasonality	-	.40***	.46***	.41***	-	.43***	.18*	.31**	-	.11	.21*	.84***	-	.46***	.43***	.22*
Depression		-	.77***	.71***		-	.54***	.50***		-	.31**	.05		-	.66***	.59***
Anxiety			-	.69***			-	.33**			-	.23*			-	.50***
Stress				-				-				-				-

skewness and kurtosis for all scales are less than +1 and -1 which indicates that data is normally distributed. Table 2 shows Pearson correlation among study variables. The result indicated that seasonality has significant positive correlation with depression, anxiety and stress across seasons (winter, autumn, spring and summer).

Table 3. Study Variables across Seasons

	Summer		Winter		Autumn		Spring	
Variables	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Seasonality	45.45	14.55	39.94	13.86	40.76	14.73	41.47	14.50
Depression	6.71	3.45	4.15	5.76	6.65	4.05	3.73	3.31
Anxiety	7.11	3.23	5.76	2.92	6.30	3.13	5.76	2.93
Stress	7.63	2.81	7.18	3.20	8.81	3.66	10.81	4.66

Table 4. Repeated Measures ANOVA on Study Variables across Sessions.

Variable	Source	*SS*	*df*	*MS*	*F*	*P*	Partial η^2
Seasonality	Greenhouse-Geisser	2177.24	2.32	938.59	4.85	.000	.04
	Error	53374.40	276.04	193.35			
Depression	Greenhouse-Geisser	696.54	2.84	245.03	21.85	.000	.15
	Error	3793.06	338.27	11.21			
Anxiety	Greenhouse-Geisser	692.57	2.75	251.43	31.64	.000	.21
	Error	2605.07	327.79	7.95			
Stress	Greenhouse-Geisser	1248.36	2.81	2161.03	42.55	.000	.26
	Error	271.32	333.81	6.66			

Table 3 shows mean and standard deviation of participants on seasonality, depression, anxiety and stress. Results indicated that high scores of participants on seasonality in summer as compared to other seasons, winter autumn and spring. High score of participant on depression and anxiety in summer and high score of participants on stress in spring as compared to other seasons, summer winter and autumn. Table 4 results of repeated measures ANOVA. Findings shows significant mean differences across seasons on seasonality, depression, anxiety and stress.

DISCUSSION

Existing research on seasonal psychiatric symptoms in Pakistan used cross-sectional data[7] and no study was conducted to explore the seasonality and SAD (seasonal depression, anxiety and stress) across seasons (winter, autumn, spring, and summer) using

a longitudinal comparisons. It was anticipated that seasonality is likely to be positively correlated with anxiety in summer. The results indicated significant positive relationship between seasonality and anxiety in summer season. These results are in line with the previous research, which concluded that SAD occurs most frequently in winter although it can also occur in summer.[8] The results indicated significant positive correlation between seasonality and depression in winter season, as reported in a previous study.[9]

The present study was conducted on the adults residing in low altitude areas and they suffer more in summer season due to hot weather as compared to other seasons. Because on low altitudes, summer is prolonged and duration of other seasons are very short. Summer is hottest season of the year as temperature reaches at its highest point and hot winds run all through the day which make all around environment dry and rough. The people who live in the rural areas suffer the dryness, lack of water, and high heat. The present study revealed that most of the psychological problems and psychiatric symptoms (i.e. anxiety, depression and stress) developed in summer. There was significant positive correlation between seasonality and stress in autumn season. A study also reported that seasonality effect is peak in spring as well as in autumn.[10]

The hypothesis of the study was participants will exhibit higher scores on depression in winter season as compared to other seasons (spring, autumn and summer). The result indicated higher scores on depression in summer season as compared to other seasons. However, the previous researches also showed similar results. Previous studies explained that both in summer and winter, people can experience the full range of symptoms of major depressive disorder, depressed mood, hopelessness, feelings of worthlessness and nihilism.[11]

Our study showed higher scores on anxiety in summer season as compared to other seasons. In a previous study, symptoms of anxiety frequently occured during summer in the form of SAD, which appear in the form of poor appetite, weight loss, insomnia, agitation, restlessness, and anxiety.[6] We found higher scores on stress in autumn season as compared to the other seasons. A previous study also had similar findings that seasonality effect is peak in spring as well as autumn.[12]

Our patients exhibited low scores on depression, anxiety and stress in spring season as compared to other seasons. SAD is a subtype of mood disorders characterized by recurrent episode of major depression occurring with a seasonal pattern beginning during the fall and winter and autumn remission in the spring and summer.[13] The results indicated that psychiatric symptoms also occur in this season but the symptoms are low as compared to other seasons.

This study will help clinical psychologists working with people who have highly seasonal effects. The study may provide the information about seasonal changes in seasonal psychiatric symptoms. It may be helpful for making strategies before the season and providing the information about the specific symptoms of the specific season. The study provided empirical information on seasonal psychiatric symptoms across-seasons in low altitude areas of Pakistan. The information can be used for improving the mental health of adults in different seasons.

Limitations of study were that it was conducted on the adults residing in low altitudes of Pakistan. The same research can be replicated on the residents of high altitude of Pakistan. Future research can be conducted to examine the role of seasonal coping strategies in the relationship between seasonality and seasonal psychiatric symptoms.

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Conflict of Interest: None declared
Rec. Date: Mar 9, 2019 Revision Rec. Date: Mar 5, 2020 Accept Date: Mar 30, 2020

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