

Buffering Role of Coping Strategies in the Relationship between Seasonality and Winter Depression in High and Low Altitudes of Pakistan

Iffat Batool¹, Muhammad Naveed Riaz², Humaira Yasmin¹, Muhammad Akram Riaz³,
Naila Batool⁴

Department of Psychology, University of Sargodha¹, Sargodha, University of Lahore², Sargodha Campus, Department of Behavioral Sciences, Karakorum International University³, Gilgit-Baltistan, Department of Social Sciences Karakorum International University⁴, Hunza Campus, Hunza.

Abstract

Background: The traditional research in Pakistan has excessively focused on major depression. However the present study has examined the predictors and coping of seasonal depression in winter. Thus, it is a unique stance to work on winter depression in low and high altitudes of Pakistan.

Objective: The objective was to determine the buffering role of coping strategies between seasonality and winter depression.

Subjects and Methods: The study participants comprised of adolescents and adults ($n = 500$). Seasonal attitude scale, brief cope and personal inventory for seasonal affected disorder and winter depression were major data collection tools. The study was completed in one year.

Results: Moderation analysis confirmed the moderating effect of coping strategies between seasonality and symptoms of winter depression. Findings revealed that the effective strategies of coping were problem-focused and emotion-focused coping which proved as protective factors in the seasonality and winter depression relationship. The dysfunctional avoidance yields negative effects when seasonality triggers winter depression.

Conclusion: The findings share applied insights to use appropriate coping style for the seasonal individuals to deal with the seasonality-induced symptoms of winter depression.

Key words: Seasonality, winter depression, coping styles.

Introduction

Different biological, physiological, cognitive and psychological factors are linked with depression in general¹ but seasonality is the major reason of winter depression, in particular. Seasonality is a set of feelings, behavior, and reactions which some individuals experience in the changing seasons in general and particularly in

winter season.² Seasonal individuals use different strategies to cope with their depressive symptoms. Three coping strategies are usually adopted by depressed patients including problem-focused emotions-focused and dysfunctional avoidance. It is important to investigate when seasonal personality induces winter depressive symptoms and which coping mechanisms can be more effective in buffering the effects of seasonality on winter depression. This explains how human beings survive in changing seasons.

Individual's personality characteristics are considered important in perceiving and responding to the seasonal environmental changes. Even some personalities are considered "more seasonal" whereas others are comparatively "less seasonal". It establishes the fact that seasonality enhances individual's propensity to suffer from seasonal changes. Similarly, individuals have specific cognitive factors which increase the risk for winter depression.³ Environmental psychology explains that "seasonal" individuals are more vulnerable for adverse psychological effects in different seasons in

Corresponding Author:

Muhammad Naveed Riaz

University of Lahore, Sargodha Campus

Sargodha .

Email: m_naveed313@yahoo.com

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Authors Contribution

IB, MNR, HY, MAR & NB did conceptualization of study. IB, MNR, HY, & NB also did the data collection, drafting, revision and writing of manuscript. IB, MNR, MAR & NB performed the literature search. IB, MNR, HY, MAR did the statistical analysis.

general and in winter season in particular.⁴ The degree to which seasonal changes affect energy, appetite, food preference, mood and sleep, or the desire to socialize with other people is labeled as “seasonality”.⁵ Thus on the basis of the existing empirical insights which confirmed that seasonal symptoms are linked with dispositional factors contribute to seasonal vulnerability.⁶ The present study intends to examine the effect of seasonality on the winter depression among the residents of low and high altitudes in Pakistan in winter season.

The rationale behind taking “winter season” and “winter depression” sound theoretical on empirical grounds. The winter season is taken as a prototypical example for defining “seasonal affected disorder (SAD)”. Heighten transitions in individuals’ moods during winter season due to lack of sunlight and seasonal individuals suffer from a distinct mood disorder i.e. winter depression.^{7,8} In a study it was found that personality plays vital contribution in the winter depression as the patients of SAD scored higher on neuroticism as compared to other personality characteristics.⁹ Now the association between dispositional seasonality and winter depression is well-established by the existing scientific literature. Therefore, the investigation of the factors which can serve as buffers of this relationship can be more fruitful. In this regard, the past evidences confirm that when personality-linked seasonality induces winter depression in individuals, coping strategies play an important role to moderate this relationship. The coping strategies are divided into two classifications including functional and dysfunctional coping strategies. Two functional strategies are problem-focused and emotions-focused coping whereas dysfunctional strategy is avoidance.¹⁰

Sigmon et al. believed that problem-focused and emotions-focused coping served as protective factors in the relationship of the trait-linked seasonality and winter depression.¹¹ On the contrary, avoidant coping has no clear relevance with winter depression. In the course of mood disorders, when individuals negatively respond to stress, their symptoms worsen consequently.¹² Just like use of dysfunctional avoidance at times of coping in the seasonality and winter depression relationship, the depressive symptoms are escalated. The local research on the coping strategies on “major depression” only.¹³ Thus, the present study bridged this gap and intended to examine the buffering effect of coping strategies between seasonality and its relationship with “winter depression” instead of major depression which remained a well-research topic of investigation in the last decades.

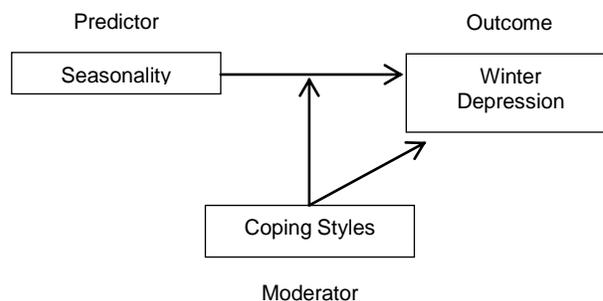


Figure 1: Moderating role of coping styles between seasonality and winter depression.

Subjects and Methods

It was anticipated that seasonality is likely to positively predict winter depression and coping strategies (problem-focused, emotion-focused and avoidant) are likely to moderate the relationship between seasonality and winter depression among adolescents and adults.

It is a descriptive research which is based on cross-sectional survey design. Participants (n = 500) consisted of adolescents (n = 250, 50%) and adults (n = 250, 50%). Data was collected from fulltime university students from two cities i.e. Sargodha (n = 250, 50%) and Hunza (n = 250, 50%) of low and high altitude geographical locations in Pakistan. The altitude is height above sea level. The altitude of Hunza is 2500m and even 6000m in some areas. The altitude of Sargodha is 190m. Therefore these two areas were bifurcated as high and low altitude areas respectively. These altitudes effects the seasons in a way that high altitudes cause long duration winter seasons whereas low altitude residence experience a prevailing long summer season. Purposive sampling technique was applied for data collection. The inclusion criteria were defined in terms of altitude (residents of low and high altitudes only by excluding the medium altitudes) and age (educated adolescents and adults only).

Seasonality Attitude Questionnaire¹⁴ consisted of 25 items. Trait like attitudes, thoughts and behaviors are positively worded in descriptive statements. In this research, 7 point Likert scale was used with low and high scores as well as cut off scores. The minimum and maximum scores ranged from 25 to 175. Reliability of the scale is .98 which shows satisfactory internal consistency. Brief COPE¹⁵ measures including three coping strategies that people use in stressful situations. It has 14 subscales which were combined to form two functional coping styles including 6-items problem-focused coping (planning, seeking of social support

for instrumental reasons and active coping), 10-items emotions-focused coping (religion, acceptance, humor, seeking of social support for emotional reasons and positive reframing) and 12-items dysfunctional style of avoidance (denial, venting, substance use, disengagement, self-blame and self-destruction). Personal Inventory for Depression and SAD¹⁶ consisted of 30 items and 4 sub scales included (SAD, winter depression, major depressive disorder, and seasonal symptoms). A 5 point Likert-scale for SAD, dichotomy for winter depression. The minimum and maximum scores ranged from 0-24 for 6 items SAD, 0-9 for 9 items winter depression. Reliability is reported as high as up to .97 and it is considered a valid scale.

The researcher approached the participants in Sargodha and took help of a key informant to collect data from Hunza. The investigator and the key informant obtained formal written permission from the concerned authorities of the targeted institutions. The participants were given detailed briefing regarding the nature, purpose and importance of the research. Data was collected from individual participants. It was communicated that all the information would only be used for research purpose. Participants were given the right to withdraw from the research at any stage. Written informed consent was taken. Researcher and the key informant effectively responded the queries of participants before, during and after the completion of the questionnaires. After completion of the scales, the researcher and the key informant scanned the scales to ensure that all the items were correctly responded and requested participants to complete the items if left blank, either intentionally or unintentionally. In scale completion, about 40 to 45 minutes were consumed by respondents. Response rate was 82%. In the end, participants were appreciated for participation in the study without any tangible incentive.

Results

All scales used in the study has greater than .70 coefficients which confirmed that scales can be used in the further analysis. Values of skewness and kurtosis are also in the desired range of less than +1 and -1 which confirmed normality of data. Correlations are in desired directions ($p < .001$) (Table-1).

The ΔR^2 value of .03 explaining 3% variance in outcome variable depicted significant change between the Model 1 and Model 2 with significant F-change. Interaction effect of seasonality and problem focused coping on the prediction of winter depression is also significant ($p < .01$). ΔR^2 value of .03 explaining 3% variance in outcome variable depicts significant change between the Model 1 and Model 2 with significant F-change. Interaction effect of seasonality and emotion focused coping on the prediction of winter depression is also significant ($p < .01$). ΔR^2 value of .01 explaining 1% variance in outcome variable depicts on-significant change between the Model 1 and Model 2 with non-significant F-change. Interaction effect of seasonality and dysfunctional avoidance on the prediction of winter depression is non-significant ($p > .05$).

Discussion

The first objective of the present study was to examine the effect of seasonality on winter depression, which was achieved by formulating the first hypothesis (H1) anticipating “seasonality is likely to positively predict winter depression in adolescents and adults” It was supported in the present study. Both empirical literature and theoretical underpinnings illustrate that seasonal individuals are

Table 1: Descriptive statistics, normality statistics and zero-order correlation among variables.

Variables	M	SD	α	Potential Range	Actual Range	Skewness	Kurtosis	1	2	3	4	5
Seasonality	112.09	19.53	.89	25-175	81-144	.85	.64	-	.69***	-.48***	-.41***	.42***
Winter depression	5.30	1.20	.72	0-9	5-8	.37	.21		-	-.56***	-.53***	.54***
Problem-focused coping	13.95	7.73	.90	6-30	18-29	.08	-.88			-	.74***	-.67***
Emotion-focused coping	21.99	12.49	.88	10-50	21-47	.08	-.06				-	-.66***
Dysfunctional avoidance	30.12	15.73	.75	12-60	22-57	-.05	-.16					-

*** $p < .001$

Table 2: Hierarchical regression analysis depicting moderating role of coping between seasonality and winter depression.

Predictors	Outcome: Winter depression		
	Model 1 B	Model 2 B	95%CI LL, UL
Seasonality	.04	.33**	[-.14, -.51]
Problem-focused coping	-.39***	-.74*	[-.02, -1.46]
Seasonality x problem-focused coping		-.1.92**	[-.03, -.01]
R ²	.07	.10	
F	11.42***	11.16***	
ΔR ²		.03	
ΔF		9.94**	
Seasonality	.03	.41***	[-.17, -.64]
Emotion-focused coping	-.48***	-.93*	[-.02, -1.85]
Seasonality x emotion-focused coping		-.02**	[-.04, -.01]
R ²	.06	.09	
F	10.75***	10.57***	
ΔR ²		.03	
ΔF		9.61**	
Seasonality	.68***	.62***	[.45, .81]
Dysfunctional avoidance	.37***	.37***	[.53, .21]
Seasonality x dysfunctional avoidance		.09	[.24, .06]
R ²	.55	.56	
F	76.72***	51.87***	
ΔR ²		.01	
ΔF		1.52	

p* < .05. *p* < .01. ****p* < .001.

at high risk of depression in winter season as compared to rest of all seasons. These insights confirmed that proneness to winter depression in winter season is pre-disposed because the trait-like seasonality is an integral part of the personality of an individual.¹³ Findings proved that individual's personality has "seasonal aspects" and these seasonal traits are manifested in specific seasons, more specifically in winter.¹⁷ Just like global research, the indigenous research has established the empirical lines of factual knowledge that individuals from Pakistan are also affected by the winter season in the form of winter depressive symptoms due to seasonal aspects of their personalities. It depicts the universality of the seasonality phenomenon which is not specific to geographical boundaries and latitudinal differences.

In the empirically established seasonality-winter depression dichotomy, the investigation of protective and risk factors has applied significance. The past literature suggests that in winter season when higher seasonality leads towards winter depression, individuals employ different strategies to cope with winter induced depressive symptoms. They opt strategies¹⁸ and non-seasonal coping strategies.¹⁹ On the same lines of inquiry, the present study examined the buffering effect of coping strategies in the relationship between seasonality and winter depression by formulating three hypotheses (H2, H3, and H4). Second hypothesis "problem-focused coping is likely to

moderate between seasonality and winter depression among adults" was supported in the present study. In problem-focused coping, efforts are made to devise the practical solutions for the problem in hand. Seasonality with problem-focused coping inversely predicted winter depression. Use of problem-focused coping reduces the effects of seasonality on winter depression. Seasonality which was independently escalating winter depression reduced winter depression in interaction with problem-focused coping. Thus along with seasonality, different methods e.g. active coping, planning and seeking of social support for instrumental reasons can be used to recover from winter depressive moods.¹⁰ Problem-focused coping having applied, practical and appropriate strategies is considered a superior technique to cope with psychological problems in general and depression in particular.²⁰ In this regard, for the residents of Pakistan, use of problem-focused coping is a relatively better solution which is more applied and related to the problems-being faced. Thus local residents can overcome their seasonal induced depressive symptoms by using problem focused strategies.

Although the problem-focused suggests a superlative solution, however, the coping capabilities of individuals are not limited to problem focused only. Besides problem-focused, some individuals make use of other practical strategies to adjust with the heightening association in their

seasonal personality predispositions and resultant symptoms of winter depression.¹⁷ Third hypothesis “emotions focused coping is likely to moderate between seasonality and winter depression” was also supported in the present study. Seasonal individuals are mostly emotionally disturbed as sadness is the prevailing symptom of winter depression. Lower mood states and intense feelings of sadness are mostly observed in winter depression.²¹ Instead of focusing on the problem of winter depression and finding its practical solutions, some individuals just consider their emotional states and use emotions-focused strategies. Thus actual problem of winter depression is addressed through emotions-focused coping e.g. acceptance, seeking emotional support, religion, positive reframing and humor). Consequently using this functional coping style,²² the actual problem is resolved. Just thinking about sadness does not induce more sadness instead it provides an awareness regarding that problem (acceptance). Emotions-focused coping also worked in similar way (effective like problem-focused). In interaction with seasonality, emotions-focused coping negatively predicted winter depression. Overall Pakistani culture and contexts are supportive to the strategies used in emotion focused coping. Religiosity, for example, is a suitable and workable solution in Pakistani society. Seeking emotional support is also imbedded in the values of the collectivist culture of Pakistan. Humor is a more exciting solution.

In spite of the availability of workable coping options, not all individuals having seasonal personalities are equally competent in managing winter depression through use of effective coping. Just like use of dysfunctional avoidance, coping is less effective and yields adverse effects on depressive symptoms. Dysfunctional coping found to be positively associated with depression.²³ The way all individuals are not equally competent in employing effective coping strategies, similarly some individuals simply avoid their increased depressive symptoms by using dysfunctional avoidance (substance use, self-distraction, venting, self-blame, behavioral disengagement and denial). Instead of finding practical alternatives to fix, seasonality induced problem of winter depression, some individuals stay apart from such scenarios. The fourth hypothesis “avoidant coping is likely to moderate between seasonality and winter depression” was not supported in the present study. Simply, escape (denial or behavioral disengagement) is not a solution to the problem of seasonality induced winter depression. The methods used in this coping style are dysfunctional, impractical, passive and ineffective.²⁴ Indigenous

research is also evident on the positive association between negative coping style and depression.²⁵ The lesson is learned from the empirical data that residents of Pakistan should not opt avoidant coping which is not effective in reducing the seasonality induced winter depression. Instead they should make use of functional strategies which are proved effective. Moreover, future research can be conducted by using the seasonal depression coping strategies¹⁸ instead of general coping strategies used in the present study.

The scientific study examined the effect of seasonality on winter depression among adults. As hypothesized, trait-like seasonality positively predicted winter depression. The findings confirmed that due to seasonal personality predispositions, individuals face seasonal mood changes in winter season. As hypothesized, findings revealed that only through interactive effect of seasonality with problem-focused and emotions focused coping, winter depression can be reduced. However, dysfunctional avoidance was ineffective in reducing seasonality induced winter depression. Thus the study uncovered the fact that only through directly addressing the problem of winter depression, desired improvements in reducing depression can be obtained. On the other hand, use of inappropriate coping strategies escalated the problem of winter depression. Fixing the problem is a real way out as denial is no option and escape is no solution.

References

1. Sigmon ST, Whitcomb-Smith S, Boulard NE, Pells JJ, Hermann BA, Edenfield TM, et al. Seasonal reactivity: Attentional bias and psycho-physiological arousal in seasonal and non-seasonal depression. *Cognit Ther Res* 2007; 31(5): 619-38.
2. Sigmon ST, Rohan KJ, Boulard NE, Whitcomb SR, Dorhofer DM. Development and validation of the Seasonal Attitudes Questionnaire. Paper presented at the meeting of the Association for the Advancement of Behavior Therapy, New Orleans, LA, 2000.
3. Rohan KJ. Cognitive-behavioral approaches to seasonal depression (R03 MH0659-01A1). Behavioral Science Track Award for Rapid Transition (B/START), National Institute of Mental Health, 2002.
4. Gagnon, AS. Coping and Gender Differences in Seasonality and Seasonal Affective Disorder. Honors College. Paper 50. (Accessed on 12th December 2017) Available from URL:<http://digitalcommons.library.umaine.edu/honors/50>
5. Oren DA, Rosenthal NE. Seasonal affective disorders. In Paykel ES (ed), *Handbook of Affective Disorders*. London (2nd ed.), Churchill Livingstone, 1992; 551-67.

6. Young MA, Hutman P, Enggasser JL, Meesters Y. Assessing seasonal symptomatology: the seasonal assessment form. *J Psychopathol Behav Assess* 2014; 37(1): 112–21.
7. American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.). Arlington: American Psychiatric Publishing, 2013.
8. Wehr TA, Duncan WC, Sher L, Aeschbach D, Schwartz PJ, Turner EH, et al. A circadian signal of change of season in patients with seasonal affective disorder. *Arch Gen Psy* 2001; 58: 1108-14.
9. Enns MW, Cox BJ, Levitt AJ, Levitan RD, Morehouse R, Michalak EE, et al. Personality and seasonal affective disorder: results from the CAN-SAD study. *J Affect Disord* 2006; 93(1-3): 35-42.
10. Su XY, Lau JT, Mak WW, Choi KC, Feng TJ, Chen X, et al. A preliminary validation of the Brief COPE instrument for assessing coping strategies among people living with HIV in China. *Infect Dis Poverty* 2015; 4: 41.
11. Sigmon ST, Cassel AG, Dowson RFS, Schartel JG, Owings LR, Thorpe GL. The role of rumination in predicting seasonality. *J Ration Emot Ther* 2009; 27(3): 176-87.
12. Young MA, Reardon A, Azam O. Rumination and vegetative symptoms: A test of the Dual Vulnerability Model of seasonal depression. *Cognit Ther Res* 2008; 32(4): 567–76.
13. Parshad N, Tufail A. Depression, Anxiety, Coping and Quality of Life among Elderly Living in Old Age Homes and in Family Setup. *Pak J Prof Psychol* 2014; 5(1): 17-26.
14. Carver CS, Scheier MF, Weintraub KJ. Assessing coping strategies: A theoretically based approach. *J Personal Soc Psychol* 1989; 56(2): 267-283.
15. Terman M, White T, Williams JBW. *Personal Inventory for Depression and SAD*. Clinical Tools Packet, Center for Environmental Therapeutics. New York. *Clinical Chronobiology and Biometrics Research groups at Columbia University's Psychiatric*, 2003.
16. Rohan KJ, Sigmon ST, Dorhofer DM. Cognitive-behavioral factors in seasonal affective disorder. *J Consult Clin Psychol* 2003; 71(1), 22-30.
17. Oginska H, Oginska-Bruchal K. Chronotype and Personality Factors Of Predisposition To Seasonal Affective Disorder". *Chronobiology International. J Biol Med Rhy Res* 2014; 31(4): 523-31.
18. Sigmon ST. The development and validation of the SADCOPE: Coping with the changing seasons. Unpublished manuscript, 2005.
19. Carver CS. You want to measure coping but your protocol's too long: Consider the Brief COPE. *Int J Behav Med* 1997; 4:92-100.
20. Thompson RJ, Mata J, Jaeggi SM, Buschkuehl M, Jonides J, Gotlib JH. Maladaptive Coping, Adaptive Coping, and Depressive Symptoms: Variations across Age and Depressive State. *Behav Res Ther* 2010; 48(6): 459-66.
21. Sara I. Seasonal Depression can accompany Summer Sun. *The New York Times*, 2002. (Accessed on 12th December 2017) Available from URL:<https://www.nytimes.com/2002/08/13/health/seasonal-depression-can-accompany-summer-sun.html>
22. Ogden J. *Health Psychology*. (3rd ed.). Buckingham: Open University Press, 2004. (Accessed on 12th December 2017) Available from URL:<file:///C:/Users/asma/Downloads/Health%20Psychology%20by%20Jane%20Ogden.pdf>
23. Ziarko M, Mojs E, Piasecki B, Samborski W. The mediating role of dysfunctional coping in the relationship between beliefs about the disease and the level of depression in patients with rheumatoid arthritis. *Scientific World J* 2014; 5: 1-6.
24. Rohan KJ, Lindsey K, Roeklein KA, Lacy TJ. Cognitive-behavioral therapy, light therapy, and their combination in treating seasonal affective disorder. *J Affect Disord* 2004; 80: 273–83.
25. Perveen S, Kazmi SF, Rehman A. Relationship between negative cognitive style and depression among medical students. *J Ayub Med Coll Abbottabad* 2016; 28(1): 94-8.