

Regional and Marital Duration Differences in Maladaptive Thought Patterns, Emotional Reactivity, and Sleep Quality in Patients with DepressionVaria Aziz¹, Anum Rabbani^{2*}**Abstract**

The present study was conducted to investigate differences in maladaptive thought patterns, emotional reactivity, and sleep quality in terms of region (Rawalakot vs. Lahore) and duration of marriage among patients diagnosed with depression. A total of 212 young adults clinically diagnosed with depression participated in this study. Participants were selected through purposive sampling, and data were collected from psychiatric outpatient departments of the government hospitals and private clinics using a demographic information questionnaire alongside standardized scales, including the Cognitive Fusion Questionnaire, the Perth Emotional Reactivity Scale, and the Insomnia Severity Index. Statistical analyses included independent samples *t*-tests and one-way analysis of variance, and the results indicated significant differences in maladaptive thought patterns, emotional reactivity, and sleep quality based on regional background, with rural participants exhibiting higher maladaptive thought patterns and emotional reactivity, while urban participants reported poorer sleep quality. Marital duration also influenced sleep quality, with individuals married for five or more years reporting higher insomnia scores. These findings highlight the interrelated functioning of cognitive, emotional, and sleep processes in depression and emphasize the need for integrated treatment approaches targeting these areas. Furthermore, the study underscores the importance of culturally and regionally sensitive mental health interventions that account for demographic and marital factors to improve overall mental health and sleep outcomes. The current study can provide guidance for clinicians and researchers in designing effective assessment and intervention strategies for individuals with depression in Pakistan.

Keywords: Depression, Emotional Reactivity, Maladaptive Thought Patterns, Sleep Quality

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¹MPhil Scholar, Riphah Institute of Clinical & Professional Psychology, Riphah International University, Lahore, Pakistan.

^{2*}Assistant Professor, Riphah Institute of Clinical & Professional Psychology, Riphah International University, Lahore, Pakistan.

***Corresponding Author Email:**

anumrabbani22@gmail.com

Introduction

Depression is the most common and disabling psychiatric disorder that can influence emotional, cognitive, and physical functioning in so many ways for such a wide cross-section of populations. It

changes the view of the individual about himself and his environment, with added strength to hopelessness and reduced capacity for function during daily activities (Smith et al., 2022). Cognitive models of depression suggest that faulty thinking patterns, such as rumination and negative self-assessment, in addition to catastrophizing judgments of feelings, continue to reinforce symptoms of depression. Such maladaptive cognitions develop negative cycles that are self-perpetuating; they dwell on an emotion, making it more intense and increasing the probability of relapse (Wang et al., 2021). Maladaptive thought patterns comprise typical and fixed cognitive responses that skew the interpretation of internal and external events (Bathina et al., 2021).

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In depression, such distortions become automatic and unconscious, by which an individual always perceives a greater degree of threat against very minimal resources for coping. Thoughts will have a bad and negative effect on emotion, feeling, or mood, and will also result in difficulty in regulating affect. Some research studies have indicated that depressed individuals face difficulty in disengaging from negative information (Huang et al., 2023). Emotional reactivity, strength, and length of emotional responses to stimuli have a very critical place in the development and sustenance of depression. Heightened emotional reactivity weighs in sensitivity to negative experiences, poor control over emotions, and increased vulnerability to develop pathology out of stress (Kahle et al., 2021). Neuroimaging findings demonstrate hyperactivation of emotion-processing brain regions in which the amygdala is a part, hence contributing to exaggerated negative effect (Klug et al., 2024). If not properly controlled, such emotional responses lead to increased and sustained symptoms of depression.

Sleep problems are another main part of depression. Most people in the clinical sample reported having insomnia, fragmented sleep, and changes in their sleep architecture when they were just equally depressed, which made their daytime functioning and emotional stability even worse (Liu et al., 2022). Regional context can influence depression-related outcomes because of differences in social support, sensitivity to stress, stigma, and accessibility to mental health services. Rural areas mostly complain about emotional vulnerability precipitated by economic adversity and inadequate availability of treatments, while in urban populations, increased sleep problems due to sensitivity to stress precipitated by their lifestyle (Sajjad et al., 2024).

Cultural expectations regarding marriage can precipitate psychological stress, as well. There is a strong and positive linkage of marital dissatisfaction, conflict, and

prolonged relational strain with insomnia and heightened emotional reactivity (Yuan et al., 2022). The theoretical background of this study is based on Beck's Cognitive theory. In his Cognitive theory, Beck postulated that it is maladaptive cognitions that precipitate heightened emotions and disruption in the functioning related to achieving sleep. This study broadens the perspective of the Cognitive-Emotional Model of Insomnia, emphasizing cognitive arousal and emotional dysregulation as pathways to sustain disturbances in sleep (Harvey, 2002). By viewing regional and marital differences within clinically depressed Pakistani adults, new insight is added about how demographic and cultural factors relate to cognition, emotion, and sleep within this theoretical framework. There is an urgent need for understanding contextual variables in the process of depression due to the paucity of studies comparing regions within Pakistan. This study is designed to fill that gap by exploring how maladaptive thought patterns, emotional reactivity, and sleep quality differ across regional backgrounds and marital duration among depressed patients.

Rationale of the Study

Western studies have investigated the interrelationship of maladaptive thought patterns, emotional reactivity, and sleep disturbances in the etiology of depression. In Pakistan, these variables have been studied separately. Some studies have focused on maladaptive thinking patterns (Naz & Ahmad, 2022) while others have discussed problems related to sleep (Rauf et al., 2023). Very few indigenous studies tested all these three variables together in one analytical framework among clinically diagnosed depressive patients-this reflects a major gap in literature. Further, most of the indigenous studies used student samples or the general population, but not clinically diagnosed individuals with depression. Clinically diagnosed patients present higher degrees of maladaptive thinking patterns, emotional reactivity, and sleep problems;

therefore, an investigation of their co-occurrence is imperative for treatment to be disposed of effectively. In theoretical terms, the cognitive-behavioral framework posits that it is through maladaptive thought patterning that emotions become dysregulated and consequently exacerbates sleep problem severity in depression.

Another important gap was that indigenous research had focused on student samples or the general population rather than clinically diagnosed individuals with depression. Clinically diagnosed patients experience more severe levels of maladaptive thinking patterns, emotional reactivity, and sleep problems, making the study of their co-occurrence essential for effective treatment planning. From a theoretical perspective the cognitive behavioral framework suggests that maladaptive thought patterns contribute to emotional dysregulation, which can further exacerbate sleep problems in depression.

Overall, the present study aimed to fill both theoretical and contextual gaps through the empirical investigation of this triadic relationship within a Pakistani clinical population. Differences based on marital duration and regional background have also been taken into consideration to offer some perspectives with cultural nuances. The results were then anticipated to guide mental health practitioners in their efforts directed toward the development of culturally sensitive and disorder-specific intervention strategies targeting depressive symptomatology and its associated difficulties.

Objectives

- To investigate the regional differences (Rawalakot vs. Lahore) in thought patterns, emotional reactivity, and sleep quality among patients with depression.
- To examine whether there is a significant difference in thought patterns, emotional reactivity, and sleep quality among patients with depression based on the duration of marriage.

Hypotheses

- H1: There is likely to be a significant difference between patients from Rawalakot and Lahore in terms of thought patterns, emotional reactivity, and sleep quality.
- H2: There is likely to be a significant difference in thought patterns, emotional reactivity, and sleep quality among patients with depression based on the duration of marriage.

Method

Research Design

This study was conducted using an independent group design to investigate the differences in maladaptive thought patterns, emotional reactivity, and sleep quality among patients with depression.

Sample Size

Sample size was calculated using G power (3.1) with an anticipated medium effect size ($d=.50$). Power of .80, and alpha level of .05. The analysis suggested a minimum required sample of 212 participants. Participants aged between 25-44 years from Rawalakot (Azad Kashmir) and Lahore (Punjab) were selected for this study.

Sampling Technique

A non-probability purposive sampling technique was used for targeting individuals with depression.

Inclusion and Exclusion Criteria

The study's inclusion criteria involved young adults between the ages of 25-44 years with the presence of major depressive disorder. The participants were required to experience sleep-related problems, such as delayed onset of sleep or frequent awakenings, and both men and women were included in this research. The exclusion criteria included active treatment for a psychiatric comorbidity, not limited to schizophrenia, bipolar disorder, and chronic physical illness that might independently affect sleep, such as chronic pain. The participants who used medications that mostly interfere with sleep patterns were also excluded from this study.

Instruments

Informed Consent

Participants were invited to participate on a voluntary basis. Clear instructions regarding the purpose of the research, and their formal consent was obtained before participation.

Demographic Information Sheet

This sheet was used for collecting basic information from the participants so that data could be sorted and analyzed based on certain demographic factors including gender, age, place of residence, siblings, marital status, duration of marriage, education level and family system.

Cognitive Fusion Questionnaire (CFQ)

The cognitive fusion questionnaire (CFQ), developed by Gillanders et al. (2014), is a seven-item self-report scale measuring how much people become engulfed in their thoughts. Each response is rated on a 7-point Likert scale ranging from 1 (never true) to 7 (always true) according to the frequency and intensity of cognitive fusion experiences. The CFQ had demonstrated high internal consistency in previous research, with Cronbach's alpha values typically exceeding .90, and strong construct validity. In the current study, the CFQ was used to assess thought patterns in individuals with depression. The internal reliability for the current sample was found to be $\alpha = .70$, indicating acceptable reliability.

Perth Emotional Reactivity Scale (PERS-S)

The Perth Emotional Reactivity Scale – Short Form (PERS-S), developed by Becerra et al. (2019). The PERS-S contained 18 self-reported items. It assessed emotional reactivity as a personality trait—the easy experience of feelings when expressed in a degree and duration concurrent with euphoria—including positive and negative emotional reactivity and subscale measures of negative activation, negative intensity, and negative duration, positive activation, positive intensity, and positive duration. Respondent selects from 1 (very unlike me)

to 5 (very much like me), that takes care for difference of emotional experience. The PERS-S was demonstrated to have high internal consistency in previous research, often with Cronbach's alpha above .97. This instrument was used in this study on patients who are depressed to measure their emotional reactivity. The internal reliability for this sample was determined to be $\alpha = .85$, showing excellent reliability.

Insomnia Severity Index (ISI)

The Insomnia Severity Index (ISI), developed by Bastien et al. (2001), was a 7-item self-reported measure used to assess the nature, severity, and impact of insomnia. Each item was rated on a 5-point Likert scale ranging from 0 (no problem) to 4 (very severe problem), with total scores indicating the overall level of insomnia. The scale had shown strong internal consistency in previous research, with Cronbach's alpha typically ranging from 0.85 to 0.91 across clinical and general populations. In the present study, ISI was used to assess sleep quality in patients diagnosed with depression. The internal reliability on current sample was $\alpha = .86$, indicating strong consistency.

Ethical Considerations

This study received formal approval from the institutional review board of the Riphah Institute of Clinical & Professional Psychology at Riphah International University, Lahore. The current study adheres to the American Psychological Association ethical rules for data collection. All participants provided informed consent, which clearly explained the purpose of the study and their voluntary involvement. Their personal information and responses were kept strictly confidential to protect their identities. Care was taken to ensure that no psychological harm or distress was caused during the study, and participants were informed of their right to withdraw at any stage without facing any negative consequences. Participation was entirely voluntary, with assurance that refusal to participate would not result in any penalty. In addition, permission was obtained from

the authors of the scales employed in the study to ensure their ethical usage.

Procedure for Data Collection

All standardized scales that were used in this study. Permission was taken from the respective authors of scales. Data were collected from individuals diagnosed with depression, both males and females, who were visiting outpatient psychiatry clinics or hospitals located in Rawalakot and Lahore. These individuals were invited to participate in the research after explaining to them the purpose of the study. Informed consent was obtained before data collection. Clear instructions on the completion of the scales were provided verbally. Participants were assured of the confidentiality and anonymity of their responses. Data were collected over a period of three months. Upon obtaining their consent, the researchers distributed questionnaires to them for completion. The

average time required to complete the questionnaires was approximately 12-15 minutes. Total of 250 questionnaires were distributed, out of which 212 were retained for final analysis; 38 were discarded due to incomplete or missing response. A pilot study was conducted on small sample to ensure clarity and feasibility of the research instruments. The scoring of the scales was carried out under the scoring criteria provided by the scale authors.

Statistical Analyses

Group differences based on residence and marital duration were investigated by using SPSS IBM Version 26. An independent samples t-test was used to compare urban and rural patients with thought patterns, emotional reactivity, and sleep quality. One-way analysis of variance was employed to examine whether patients differed significantly on the main variables based on the duration of marriage.

Results

Table 1

Demographic Variables and Frequency Distribution (N=212)

Demographic Variables	n	%	Demographic Variables	n	%
Age			Monthly Income		
25-34	104	49.1	Less than 50,000	51	24.1
35-44	108	50.9	More than 50,000	100	47.2
Gender			More than 100,000	61	28.8
Male	72	34.0	Medication		
Female	140	66.0	Yes	212	100.0
Marital Status			Residence		
Single	147	69.3	Urban	99	46.7
Married	60	28.3	Rural	113	53.3
Separated	5	2.4	Duration of Depression		
Duration of Marriage			1 year	100	47.2
1 year to 2 years	21	32.3	2 years	62	29.2
3 years to 4 years	21	32.3	3 or more years	50	23.6
5 years onward	23	35.4	Treatment Duration		
Spouse Alive			6 months	82	38.7
Yes	61	93.8	1 year or more	107	50.5
No	2	3.1	3 or more years	23	10.8
Family System			Family History of Mental Illness		
Joint	99	46.7	Yes	52	24.5
Nuclear	113	53.3	No	160	75.5
Qualification			Any Other Medical Condition		
Matric	13	6.1	No	212	100.0

Intermediate	75	35.4
Graduation	82	38.7
Postgraduation	42	19.8

Note. *M*=mean, *SD*=standard deviation; Percentages for duration of marriage and spouse alive are calculated based on married participants only (*n*=65).

Table 1 indicated that the majority were women. In terms of age, most participants were between 35–44 years. Concerning marital status, most of the participants were single. Among those who were married, 35.4% had been married for 5 years or more than this. The majority of the married participants reported that their spouse was alive. Looking at the family system, majority lived in nuclear families. In terms of monthly income, most of the participants

reported that they are earning more than 50,000 PKR. Regarding residence, slightly more participants belonged to rural areas as compared to urban areas. As for the duration of depression, majority had been experiencing symptoms for 1 year. As far as the treatment duration is concerned, half of the participants had been receiving treatment for 1 year or more. Furthermore, majority did not report a family history of mental illness.

Table 2

Independent Sample t-test between Urban and Rural Residents (N=212)

Variables	Urban (<i>n</i> =99)		Rural (<i>n</i> =113)		<i>t</i>	<i>p</i>	95% CI		Cohen's <i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			LL	UL	
MTP	34.4	11.1	40.5	4.6	-5.3	.001	-8.4	-3.9	0.7
PERSS	49.2	10.6	59.6	9.8	-7.4	.001	-13.2	-7.7	1.0
SQ	15.4	5.0	13.7	5.8	2.2	.019	0.3	3.3	0.3

Note. *M* = Mean, *SD* = Standard Deviation, *CI* = Confidence Interval, *LL* = Lower Limit, *UL* = Upper Limit

The results showed that there was a significant difference in thought patterns between urban and rural participants. Rural individuals (*M* = 40.5, *SD* =4.6) scored significantly higher than urban individuals (*M*=34.4, *SD*=11.1), $t = -5.3, p < .001$, with a large effect size ($d = 0.7$), indicating a meaningful practical difference. Similarly, a significant difference was found in emotional reactivity, with rural participants

(*M* = 59.6) scoring higher than urban participants (*M* = 49.20), $t (210) = -7.4, p < .001$. The effect size was large ($d = 1.0$), suggesting a strong practical difference. A significant difference was also observed in sleep quality, with urban participants (*M* = 15.4) scoring higher, indicating more sleep problems than rural participants (*M* = 13.7), $t (210) = 2.2$. The effect size was small ($d = 0.3$), but still statistically significant.

Table 3*One-way Analysis of Variance for Duration Comparison (N=212)*

Variables	1–2 Years		3–4 Years		5+ Years		F	η^2
	M	SD	M	SD	M	SD		
Thought Patterns	39.4,	7.2	36.9,	9.5	41.2,	4.8	1.8	.43
Emotional Reactivity	53.2,	7.44	58.9,	11.9	52.9,	7.8	2.8	.35
Sleep Quality	15.1,	4.97	12.7,	5.3	17.2,	4.3	4.6	.13

Note. *M* = Mean, *SD* = Standard Deviation, η^2 = partial eta squared

The results revealed that there was no significant difference across marital duration groups in terms of thought patterns, $F(2,62) = 1.8, p = .16$. Similarly, emotional reactivity did not differ significantly based on duration of marriage, $F(2,62) = 2.8, p = .06$. However, a significant difference was found in sleep quality, $F(2,62) = 4.6, p = .01$. Patients who had been married for 5 years or more

reported significantly higher insomnia scores ($M = 17.2, SD = 4.3$) as compared to those married for 3 years or more ($M = 12.7, SD = 5.3$) and 1 year or more ($M = 15.1, SD = 4.97$). These findings partially supported the hypothesis, indicating that sleep quality differs significantly by marital duration, whereas thought patterns and emotional reactivity do not.

Discussion

It was examined that there was a significant difference between patients of Rawalakot and Lahore concerning the maladaptive thought patterns, emotional reactivity, and sleep quality. The independent sample t-test revealed that cognitive fusion and emotional reactivity showed significant differences between the two groups. Patients from Rawalakot scored higher on both cognitive fusion and emotional reactivity, indicating more maladaptive thought processes and emotional instability. However, patients from Lahore reported significantly more sleep disturbances. These findings can be explained in the light of social and health-related factors. Like Rawalakot and other small places, the rural areas may not have enough access to health education and health-related issues, which may increase the rate of distress and cognitive-emotional dysfunction in these areas. On the contrary, it was possible that in big cities like Lahore, the health access may be good, but the people may face some lifestyle-related stressors such as pollution, work overload, social competition, and so on, which may

disturb their sleep. Recent studies have found similar regional variations. In the rural area, there is more cognitive and affective morbidity that probably represents treatment gap morbidity as well as other unmet needs for mental-health interventions (Dayani et al., 2024). Other reviews support findings in the literature that urban living can be associated with worse sleep because of environmental and lifestyle stressors on average. This includes chronic noise exposure-at-night light pollution, and pressures related to work (Mucci et al., 2020). Sleep disturbance precipitates depressive symptomatology since it interacts positively bidirectionally with emotional reactivity to amplify the symptoms even further.

Sheoran et al. (2022) reported that higher emotional reactivity has a very strong positive relation with depressive symptoms and increased cognitive vulnerability. A study by Chen et al. (2023) also noted that cognitive fusion and psychological inflexibility better augment depression and emotional disturbance, hence supporting current results of higher maladaptive cognition of depressed individuals.

However, sleep quality can be badly affected by noise, pollution, and work pressure in the city; therefore, Lahore patients have more significant problems related to sleep. Rural people always carry a higher burden of depression because the services are minimal, and awareness is so poor; this can explain greater dysfunction in cognition and emotion among Rawalakot participants (Saha et al., 2024).

Culturally, rural areas such as Rawalakot may lack sufficient access to psychological education and treatment. Hence, stronger maladaptive thought patterns prevail. Urban residents like Lahore have better access to care; however, the lifestyle stressors do not allow them to have a sound sleep.

There was a difference in sleep quality among patients with depression based on their duration of marriage. Results revealed that the patients who had been married for five years or more reported substantially worse sleep quality than those who had been married for shorter periods of time. This is in line with the recent evidence-based results of the fact that marital stress and low relationship satisfaction are significant predictors of poor sleep quality and psychological distress (Asad, 2021). In another study, it was found that dyadic adjustment problems in Pakistani married couples were more negatively associated with symptoms of depression and sleep disturbance (Khan et al., 2022).

Other international studies also came up with supporting facts, Kim et al. (2021) brought out facts where married women related more problems between work-family conflicts and depressive symptoms to poor quality of sleep. High emotional reactivity within intimate relationships lowers marital quality on the one hand and creates a disturbance in sleep as well as emotional dysregulation on the other (Yuan et al. (2022).

In the cultural context of Pakistan, the social and familial burdens that accumulate with the length of marital life could explain the increased burden in our study.

Especially within collectivist societies, higher marital duration correlates with a steeper incline in parenting responsibility, financial difficulties, and other extended family-related stressors. As a result, people can experience more emotional burdening and face difficulties in relaxation and, subsequently, in sleep quality. Moreover, gender-specific role allocations in the traditional communal marital organization suggest limited emotions expression. In general, such marital dynamic can be particularly emotionally burdening for a woman, contributing to increased marital distress, depressive symptoms, and poor sleep.

These results suggest that relational context plays a crucial role in sleep outcomes for individuals with depression and should be integrated into the assessment and treatment planning.

Limitations & Suggestions

Data was collected from only two cities, Rawalakot and Lahore, so probably this cannot be generalized to other places. The duration of the marriage was only based on self-report and did not assess variables of marital satisfaction or any relational issues that might interfere with sleep; all the data were collected via questionnaires, which can at times elicit biased responses. There were also no biological tests used, which limits these results medically. Long-term or experimental studies are recommended to validate the interplay of these variables across time. The study should involve participants from additional cities and provinces to generalize better for the country. Objective sleep assessments, such as using a machine to measure sleep or conducting laboratory tests, can provide more precise information. Future studies should also assess marriage quality and relationship stress because they might influence sleep. Researchers should compare responses between rural and urban patients to treatment. Mental health awareness programs should be designed based on culture; they need to be designed in areas where service is limited.

Implications

This study highlights maladaptive thought patterns and emotional reactivity as critical psychological processes influencing sleep quality in depression and suggests clinical practices that restructure thoughts and enhance emotional regulation to improve sustainable sleep outcomes. The findings can guide therapists to move beyond solely medication-based treatment toward integrative approaches that promote long-term psychological well-being. Additionally, clinicians should consider the role of marital duration when assessing sleep problems, as prolonged marriages may be associated with increased relational stress and insomnia in depressive patients. Interventions addressing interpersonal strain and conflict management may therefore be beneficial for individuals married for longer periods. Future research can refine the mental health model by incorporating additional psychosocial and biological factors. Policymakers should ensure equitable regional access to culturally informed mental health services across both urban and rural settings in Pakistan. Furthermore, gaps in different areas investigated suggest that help should go to the rural spots with a push on mental health care, warning, quick checks, and choices for no-drug fixes.

Conclusion

This study contributes to the growing understanding of how regional background and marital duration differentially influence maladaptive thought patterns, emotional reactivity, and sleep quality among patients diagnosed with depression in Pakistan. Patients from rural setups demonstrated higher cognitive fusion and emotional reactivity. Urban participants reported poor quality of sleep. It indicated different sociocultural stressors. Quality of sleep was low among those marital participants of five years or more, indicating prolonged relational stress as a clinically significant factor. Hence, results advocate regionally equitable, relationship-sensitive, and cognitively-focused mental health

interventions contextualized to the realities of Pakistani clinical populations.

Ethics Statement

The study was approved by the Riphah Institute of Clinical and Professional Psychology (RICPP) and conducted in accordance with the APA and the Declaration of Helsinki guidelines. Informed consent was obtained from all participants.

Contribution of Authors

Varia Aziz: Conceptualization, Investigation, Methodology, Data Curation, Formal Analysis, Writing – Original Draft,

Anum Rabbani: Methodology, Writing - Reviewing & Editing, Supervision

Conflict of Interest

There is no conflict of interest declared by the authors.

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Data Availability Statement

The datasets of the current study are not available publicly due to ethical reasons but are available from the corresponding author [A.R.] upon the reasonable request.

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