



## MINDFULNESS AND SLEEP QUALITY OF DUAL DIAGNOSIS PATIENTS : A CORRELATIONAL STUDY

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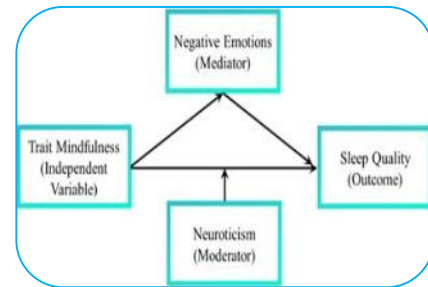
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### ABSTRACT

**Background:** The behavioural science has enormously enriched to understand the mental disorders in the last few years. According to World Health Organization (2009) report there are about 54 million people who are suffering from the severe mental disorders worldwide. A psychiatric disorder is defined as a syndrome in which there is a significant impairment in an individual's cognition, emotion regulation ability as well as behavioural activities which reflects in psychological and behavioural functioning. **Purpose:** The present study has been taken up to find out the relationship of sleep quality and dispositional mindfulness amongst patients with dual diagnosis. **Methods:** A descriptive correlational study design was taken up for the present study, in which 150 male patients with dual diagnosis were selected and interviewed individually after ethical procedures, using Personal information schedule and Pittsburg sleep quality index, and Five Facet Mindfulness Questionnaire. **Results:** A total 150 patients were taken in this study. The majority (55%) were between the ages of 20 and 30, married (62%). Descriptive statistics and Pearson Correlation Coefficient were used to see the relationship among variables. The study showed a negative significant correlation of sleep quality and mindfulness at 0.01 level among patients with dual diagnosis. It also suggests a vicious cycle of sleep quality and mindfulness in such patients. **Conclusion:** It was concluded that the sleep quality are negatively correlated with mindfulness. The current findings may help health professionals in providing better management to patients with dual diagnosis.



**KEYWORDS:** sleep quality, dual diagnosis, mental health, mindfulness.

### INTRODUCTION

The behavioural science has enormously enriched to understand the mental disorders in the last few years. According to World Health Organization (2009) report there are about 54 million people who are suffering from the severe mental disorders worldwide. It is difficult to diagnose the mental disorder until symptoms have progressed to a specific level. It is observed that many mental disorders are developing substance use disorder simultaneously or successively making the disorder more complicated and intricate. Co morbidity of any mental illness with substance abuse is called dual diagnosis. The words "dual diagnosis or mentally ill substance abuser" are generally used to define substance use disorder which is co morbid with any psychiatric illness. There is a significant interplay

between consumption of alcohol and sleep deprivation. Alcohol consumption has been shown associated with poor quality of sleep which can increase the vulnerability to consumption of alcohol (Kenney, LaBrie, Hummer & Pham, 2012). majority of psychiatric patients had insomnia and poor sleep quality and are having some or the other sleep disorders” Mondal, Bajaj, Goyal & Mukherjee (2018). Research shows that patients with dual diagnosis encountered significant sleep disturbances, with low sleep quality. Males reported more sleep disturbances as compared to female patient. Luca & Peris (2020).

### AIM AND OBJECTIVE:

- 1) To study sleep quality and mindfulness among patients with dual diagnosis.
- 2) To study the relationship of sleep quality with mindfulness among patients with dual diagnosis.

### MATERIAL AND METHODS

#### Study design, sample and setting:

This study used a descriptive correlational design to collect the data from individuals with dual diagnosis. A sample of 150 stable patients with ‘dual diagnosis’ as diagnosed by the psychiatrist and the diagnostic criteria of the ICD-10, who were under treatment or medication and came for follow up, were selected purposively and contacted at private hospital/clinic at their convenience. The patients fulfilling the selection criteria were taken. Prior to collecting data, the participants were told about the study and provided with a written informed consent.

#### Selection criteria:

##### Following criteria was followed for recruitment of the sample:

- Both inpatient and outpatient
- The age between 20-50 years
- Duration of illness > 2 years
- Could read and understand English/ Hindi

#### Exclusion criteria:

- Any other physical and neurological co morbid illness
- Acutely ill
- Unwilling or uncooperative

#### Measurements

*Personal Information Schedule:* A specially designed schedule for collecting information about socio-demographic variables as well illness related data.

**Pittsburg Sleep Quality Index** by Buysse, Reynolds, Monk, Berman & Kupfer (1989) is a self-administered measure eliciting sleep quality with 18 items divided into 7 subscales i.e., “subjective sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disturbance, medication use for sleep, daytime sleep”. The minimum score is 0 and maximum score is 21. The total scores provide the global sleep quality. Higher scores are representative of poor sleep quality. The Cronbach alpha was found to be 0.83. The total score had moderately high correlation with “Centre for Epidemiologic Studies- Depression Scale” ( $r=0.58$ ). The internal consistency was computed to be from 0.70 to 0.83.

**Five Facet Mindfulness Questionnaire** by Baer, Smith, Hopkins, Krietemeyer & Toney (2006) with 39-items has been designed to assess five components of mindfulness like “observing, describing, acting with awareness, non- judging of inner experience and non- reactivity to inner experience”. It contains 5- point scale varying from “never or very rarely true to very often or always true”. The total scores provide the overall mindfulness. Higher scores reflect higher levels of mindfulness (Appendix-F).

### Data collection procedure:

The participants were selected after being evaluated in accordance with the inclusion and exclusion criteria, and explaining the purpose of the study. Written informed consent was taken from them as well as about their willingness or unwillingness in the study and they were given the option to withdraw their consent at any stage without affecting their treatment. Each subject's personal information was collected during a face-to-face interview. PSQI and FFMQ were administered and data was organized by reshaping the obtained raw scores as per manuals and for further analysis.

### Ethical consideration

The present study received ethical approval from the institutional ethics committee of the department.

### Data analysis

The data were entered in Microsoft Excel 2007 and SPSS 20.0 (IBM SPSS Statistics, New York, US) was used to manage and analyzing the data. Quantitative data were reported using mean and standard deviation, mean percentage etc. correlation between study variables were analyzed using Pearson Correlation Coefficient. All analyses used an alpha level of 0.5 for statistical significance.

### Results & Discussion

The study intended to examine the sleep quality and mindfulness and to correlate between these two variables of patients with dual diagnosis who visited the psychiatric facility for follow up.

### Sample Characteristics:

#### Sample Table 1

*Distribution based on the socio-demographic characteristics (n=150)*

	Variable	Frequency (%)
<b>Age (in years)</b>	20-30	82 (55)
	30-40	60 (40)
	40-50	8 (5)
<b>Domicile</b>	Rural	106 (70.67)
	Urban	44 (29.33)
<b>Family type</b>	Nuclear	121 (80.67)
	Joint	29 (19)
<b>Marital status</b>	Single	47 (31.33)
	Married	93 (62)
	Divorced	10 (6.67)
<b>Education</b>	Up to Secondary	44 (29.33)
	Higher Secondary	31 (20.67)
	Degree/PG	72 (48)
	Above PG	3 (2)
<b>Occupational status</b>	Govt. employed	40 (26.67)
	Private employed	44 (29.33)
	Self employed	37 (24.67)
	Unemployed	29 (19.33)
<b>Annual income (₹)</b>	Up to 50,000	13 (8.67)
	50,001 – 1,50,000	51 (34)
	1,50,001 – 2,50,000	36 (24)
	2,50,001 – 5,00,000	15 (10)
	Above 5,00,000	35 (23.33)

Most of the participants in their age of 20-30s (55%), belonging to rural background (70.67%) and hailed from a nuclear family (80.67). More than half (62%) are married and nearly half completed degree course (48%), followed by secondary (29.33%) and higher secondary (20.67%). 29% of participants work in private sectors and 26.67% works in govt. sector. 19% were unemployed during the data collection period. 36% having annual income of 1.5 Lakh.

**Table 2.**  
*Descriptive statistics Mean and SD of Sleep Quality and Mindfulness (n=150)*

Variables		Mean ± SD	
Sleep Quality	Subjective sleep quality	2.69	.463
	Sleep latency	2.14	.631
	Sleep duration	2.08	.732
	Habitual sleep efficiency	1.98	.862
	Sleep disturbance	2.33	.387
	Medication use for sleep	1.97	.831
	Daytime dysfunction due to sleepiness	2.37	.701
	<b>Over all Sleep quality</b>	15.58	4.61
Mindfulness	Observing	14.47	2.37
	Describing	17.03	3.78
	Acting with awareness	16.13	3.78
	Non- judging of inner experience	15.33	5.08
	Non- reactivity to inner experience	12.79	2.53
	<b>Total mindfulness score</b>	75.98	14.87

**Table 3**  
*Inter-correlation matrix for scores of sleep quality and mindfulness (N= 150)*

Variables→Mindfulness ↓Sleep Quality	Observe	Describe	Acting with awareness	Non- judging with inner experiences	Non- reactivity to inner experience	Mindfulness
Subjective sleep quality	-.199*	.011	-.261**	-.203*	-.017	-.221**
Sleep latency	-.163*	-.153*	-.063	-.192*	-.023	-.184*
Sleep duration	-.176*	-.047	-.128	-.167*	-.083	-.161*
Habitual sleep efficiency	-.007	-.237**	-.027	-.162*	-.145	-.220**
Sleep disturbance	-.275**	-.027	-.191*	-.057	-.111	-.109
Medication use for sleep	-.124	-.273**	-.094	-.168*	-.026	-.220**
Daytime dysfunction due to sleepiness	-.187*	-.110	-.183*	-.041	-.022	-.056
<b>Sleep quality</b>	-.218*	-.178*	-.089	-.182*	-.081	-.200*

\*Significant at 0.05 level \*\*Significant at 0.01 level

Table 3. depicts the correlation values amongst the mindfulness and its dimensions with the seven subscales of sleep quality. The obtained coefficient of correlation values of "subjective sleep quality with observe, with acting with awareness, with non-judging with inner experience and with total mindfulness" were found to be significant ( $r = -.199$ ;  $p \leq 0.05$ ); ( $r = -.261$ ;  $p \leq 0.01$ ); ( $r = -.203$ ;  $p \leq 0.01$ ) and ( $r = -.221$ ;  $p \leq 0.01$ ) respectively. The negative direction of relationship indicated that the patients who tend to have more personal poor quality of sleep, are less likely to indulge in mindfulness activities. The patients who manifested more deficits in sleep quality, their ability to concentrate on

present situations declines. They showed less observation power suggesting that observing a situation becomes worse when these patients showed more difficulties in their subjective sleep. Further, when they face more difficulty in sleep, they tended to have less knowledge about the situation and surroundings. They also showed lack of clarification and revelation with regard to their internal prospects whenever they manifested more difficulty in getting proper sleep. Similarly, their indulgence in mindfulness state decreases when they displayed more sleep problems.

The significant negative correlations have been noticed between “sleep latency and observing items ( $r = -.163$ ;  $p \leq 0.05$ ); describing items ( $r = -.153$ ;  $p \leq 0.05$ ); non-judging with inner experience ( $r = -.192$ ;  $p \leq 0.05$ ) and total mindfulness” ( $r = -.184$ ;  $p \leq 0.05$ ). The significant negative correlation indicated that patients who had more difficulties in getting sleep or cannot get sleep easily they had low level of observation skills of mindfulness. It revealed that abeyance in sleep can elevate the thought contemplation which incommodes the observed mindfulness. Mindfulness training can be beneficial in sound sleep (Rusch et al. 2019).

The next dimension of sleep quality i.e., duration of sleep was found to be negatively significant with “observe ( $r = -.176$ ;  $p \leq 0.05$ ), with non-judging with inner experience ( $r = -.167$ ;  $p \leq 0.05$ ) and with total mindfulness” ( $r = -.161$ ;  $p \leq 0.05$ ) indicating that the patients who experienced more difficulties in getting more hours of sleep they tended to be low in focusing and comprehending their situations and they tended to be less involved in any mindfulness activity. Sleep duration and medication with sleep indicated that short duration of sleep and sleep with medication is one of the main causes of low level of observe mindfulness. The correlation with other dimensions of mindfulness were found to be non-significant. But the negative direction suggests that the patients are less likely to involve in describing the items and surroundings.

On “habitual sleep efficiency” the correlation was found significant for “describe ( $r = -.237$ ;  $p \leq 0.01$ ); for non-judging with inner experiences ( $r = -.162$ ;  $p \leq 0.05$ ) and for total mindfulness” ( $r = -.220$ ;  $p \leq 0.01$ ). The correlation values for rest of the sub-dimensions were not found to be significant. Significant negative correlation of “habitual sleep efficiency with describe item” explained that daily routine sleep efficiency leads to low level of mindfulness ability to describe the thing consciously. Those who had lack of sleep routinely and did not have sleep as per their need; they have less concentration to describe the surrounding environment. They also showed lack of clarification and revelation with regard to their internal prospects whenever they manifested more difficulty in getting sufficient sleep. Similarly, their indulgence in mindfulness state decreases when they displayed more sleep inefficiency. This finding concurs with preexisting study which suggested that methodical and structured mindfulness practice showed its effectivity in improving sleep quality among general population or vice versa (Winbush, Gross & Kreitzer, 2007). A study done by Xiao, Mou & Zhou (2019) on females with midlife crisis found that practising mindfulness can productively lessen anxiety and depression and can elevate sleep quality among them. However, the correlation with other dimensions of mindfulness were found to be non-significant. But the negative direction suggests that the patients with more sleep inefficiency are less likely to involve in mindful practices.

Results also show that “use of medication for sleep” is negatively correlated with mindfulness dimension of “describe ( $r = -.273$ ;  $p \leq 0.01$ ) non-judging of inner experience ( $r = -.168$ ;  $p \leq 0.05$ ) and total mindfulness” ( $r = -.220$ ;  $p \leq 0.01$ ) which indicated that the patients who took more medicines for sleep or could not sleep well without medicine, their ability to describe the thing consciously declines. Further, they tend to have less mindfully judge their own cognitive experiences and their overall ability to indulge in mindfulness state also deteriorates. Research suggests that mindfulness training can cultivate the sleep quality and seems to reduce sleep difficulties and disturbances especially in older people and people with complaints of insomnia. Moreover, these effects and recoveries in the long run can be compared with the outcomes observed after taking pills for sleep.

The correlations for “daytime dysfunction due to sleepiness were found to be negatively significant with observing items ( $r = -.187$ ;  $p \leq 0.05$ ) and with acting with awareness” ( $r = -.183$ ;  $p \leq 0.05$ ) and were not found significant with other sub-dimensions of mindfulness. The patients who faced more of difficulties in their functioning because of over sleepiness during the day, their ability to focus

on things, their capacity to be aware of surroundings and their ability to concentrate and be in mindfulness state reduces. In the end, the total sleep quality was found to be negatively related to “observing items ( $r = -.218$ ;  $p \leq 0.05$ ); describing items ( $r = -.178$ ;  $p \leq 0.05$ ); non-judging with inner experiences ( $r = -.182$ ;  $p \leq 0.05$ ) and to total mindfulness” ( $r = -.200$ ;  $p \leq 0.05$ ). The negative correlations indicated that the patients who manifested poor sleep quality more, their ability to attend or concentrate on things or situations diminishes. Further they tend to have less mindfully judge their own cognitive experiences and their overall ability to indulge in mindfulness state also deteriorates. However, some of the contradictory studies revealed that mindfulness meditation elevates the sleep quality and physical health (Murphy, Mermelstein, Edwards & Gidycz, 2012; Talley & Shelley-Tremblay (2020). A study by Greeson et al. (2018) concluded that heightened mindfulness was linked with lowered sleep difficulties and improved stress related symptoms. Study done by Kalmbach, Roth, Cheng, Ong, Rosenbaum, & Drake (2020) on 65 pregnant women indicated that contemplation of thought in bed during night was correlated significantly with sleep disturbances and difficulties as well as depression but practising mindfulness can be beneficial in protecting from stress-related problems. Black, O'Reilly, Olmstead, Breen & Irwin (2015) concluded that mindfulness training seems to be beneficial among older people for sleep problems and enhances their quality of life. Thus, mindfulness training serves as a protective factor especially among those who have sleep disturbances and difficulties and rejuvenates the activities during the daytime. Similarly, a study by Chen, Chang, Hsieh, Huang, Chuang, Wang (2020) revealed that mindfulness training can improve the mental health as well as sleep quality. Mindfulness based stress reduction therapy played an important role in a good sleep quality. Thus, the third hypothesis which stated that “high levels of poor sleep quality would lead to low levels of mindfulness among patients with dual diagnosis” was found to be verified.

The significant relationships were made liable for additional high-order statistical analysis which was discussed in the next section i.e.,

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