# Sleep Hygiene, Dysfunctional Beliefs and their Relevance to Sleep Quality among Psychiatric Patients

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**Abstract**

**Background**: Poor sleep quality in psychiatric patients is often associated with maladaptive sleep-related beliefs and insufficient sleep hygiene. **Aim:** This research was designed to assess sleep hygiene, dysfunctional beliefs and their relevance to sleep quality among psychiatric patients. **Design:** The study utilized a descriptive correlational design. **Setting**: The study took place in the inpatient unit of Minia Hospital for Mental Health and Addiction Treatment. **Subjects**: A purposive sample of two hundred eleven psychiatric patients were included in the study. **Tools**: Interview questionnaire sheet, the sleep hygiene index, the dysfunctional beliefs and attitudes about sleep-16, and the sleep quality scale have been utilized. **Results**: Over half of the studied patients demonstrated inadequate sleep hygiene. Furthermore, 71.1% of them experienced poor sleep quality, whereas 28.9% reported good sleep quality. In addition, 66.8% held false beliefs and attitudes about sleep, while 32.2% had accurate beliefs and attitudes. **Conclusion:** The dysfunctional beliefs and attitudes about sleep are significantly positively correlated with both sleep hygiene and sleep quality scores. Also, a strong positive correlation was found between sleep hygiene and sleep quality. **Recommendations**: Psychoeducation about sleep is recommended to dispel sleep-related misconceptions and false beliefs that support unhelpful cognitions and gaps in knowledge.

**Keywords**: Dysfunctional Beliefs, Sleep Hygiene, Sleep Quality, Psychiatric Patients.

## Introduction:

Sleep quality is described as a multifaceted construct that includes sleep efficiency, perceived sleep satisfaction, time needed to fall sleep, total sleep duration, regularity of sleep routines, presence of significant sleep disturbances, daytime functioning, and the use of opioids or sedative medications **(Örsal et al., 2019)**.

High-quality sleep is essential for individuals to comprehend, evaluate, and retain substantial amounts of information across various life situations. Inadequate sleep duration and poor sleep quality can adversely affect concentration, resulting in tardiness and difficulties in problem-solving skills **(Dule et al., 2020).**

Mental health problems such as major depressive disorder, bipolar disorder, and anxiety have a negative effect on the quality of sleep. Moreover, patients with insomnia are at a higher risk of experiencing a recurrence of these psychiatric conditions **(Hacimusalar et al., 2022)**.

Psychiatric patients who suffer from poor sleep quality frequently encounter a range of emotional, behavioral, sexual, financial, academic, and social difficulties. These issues are influenced by both physiological changes and social circumstances. Adjusting to new lifestyles and limitations can disrupt patients' sleep patterns, leading to a deterioration in sleep quality. **(Othman & Salem, 2025)**.

The concept of "sleep hygiene" encompasses various non-drug strategies designed to promote sleep quality. These techniques include behavioral suggestions that assist people in establishing healthy sleep habits, such as continuing regular exercise, eating a balanced diet, and maximizing the comfort of bedding, controlling light exposure, reducing noise, and creating a calming bedtime ritual **(Thibault et al. ,2024)**.

Poor sleep hygiene practices consist of habits that trigger wakefulness or disturb the normal rhythm of the sleep-wake cycle. These habits often involve irregular sleeping times and frequent intake of stimulants, particularly before going to bed **(Sandoval-Rincón et al., 2022)**.

Psychological disorders, including anxiety, bipolar disorder, and others, may contribute to a higher probability of inadequate sleep hygiene practices **(Muthuraman et al., 2024)**. The study by **Varadharasu & Das (2024)** demonstrated that inadequate sleep hygiene significantly affects both the quality and duration of sleep.

Sleep-related dysfunctional beliefs are excessive, maladaptive, and negative thoughts. These beliefs frequently center on anxiety and helplessness related to sleep, inability to achieve sleep expectations, and preoccupation with impairment during the day. The most important concept in this context is that sleep is erratic and uncontrolled **(Casagrande et al., 2022)**.

A study by **Faccini et al. (2023)** identified several factors that influence sleep quality, highlighting the key role of cognitive processes in both the development and persistence of insomnia. Specifically, irrational beliefs about sleep are widely recognized as important contributing factors.

People with psychological disorders often experience poor sleep quality due to dysfunctional beliefs, safety behaviors, and intrusive thoughts before bedtime. These maladaptive beliefs contribute to increased anxiety about achieving adequate sleep and amplify concerns about the short-term impacts of the sleep problems on the physical health and daily performance **(Zhang et al., 2024; Cha etal.,2024)**

**Significance of the study**

The sleep disturbances are well known across the individuals who have psychiatric disorders and can contribute to the intensification and persistence of their symptoms. Research has shown that poor sleep quality in these populations is linked to adverse mental and physical health outcomes **(Spencer et al., 2023)**.

Patients adjusting to a new lifestyle and set of regulations may experience changes in their sleep patterns and a decline in sleep quality **(Costa et al. 2018)**. A study performed by **Sandoval-Rincón et al. (2022)** indicates that patients hospitalized in psychiatric services report poor sleep quality compared to those in other medical services.

In clinical settings, sleep disturbances are frequently misinterpreted for symptoms of psychiatric disorders, leading to inadequate or inappropriate treatment **(Peerbhay et al., 2025)**. Numerous studies have consistently demonstrated a connection between poor sleep hygiene and the deterioration of sleep quality. Moreover, dysfunctional beliefs about sleep have been shown to significantly influence the quality of sleep **(Faaland et al., 2023; Harlies& Friedlander, 2023)**

Despite this, much of the research on sleep quality in psychiatric populations has treated sleep hygiene and dysfunctional beliefs as separate factors, leading to an incomplete understanding of their interaction. To address this limitation, the current study aims to examine both sleep hygiene, and the dysfunctional sleep beliefs simultaneously and evaluate their relationship to quality of sleep-in individuals with mental health conditions.

**Subjects and Method:**

**Aim:**

The existing study aimed to assess sleep hygiene, dysfunctional beliefs and their relevance to sleep quality among psychiatric patients.

**Research question:**

- What are the levels of sleep hygiene, dysfunctional beliefs, and quality of sleep among psychiatric patients?
- Is there a relationship between sleep hygiene, dysfunctional beliefs and quality of sleep among psychiatric patients?

**Operational Definitions of Study Variables:**

**- Sleep hygiene** refers to a set of behavioral and environmental habits that support healthy and restorative sleep. It is commonly assessed using the Sleep Hygiene Index (SHI) created by **Mastin et al. (2006)**.

**- Dysfunctional Beliefs about Sleep (DBAS)** covers beliefs concerning the impact of insomnia, feelings of helplessness in managing sleep, unrealistic expectations regarding sleep duration

or quality, and misunderstandings about strategies that promote sleep. These beliefs are measured using the DBAS-16 developed by **Morin et al., (2007)**.

**- Sleep quality** encompasses a person's overall perception of their sleep, including how quickly they fall asleep, how uninterrupted their sleep is, the total duration of sleep, and how refreshed they feel upon awakening. It is typically assessed using the Sleep Quality Scale (SQS), developed by **Yi et al. (2006)**.

**Research Design:**

To accomplish the study aim, a descriptive and correlational research design was employed.

**Study Setting:**

The study took place in the inpatient unit of "Minia Hospital for Mental Health and Addiction Treatment," situated in New Minia City and operating under the Ministry of Health. This two-story hospital contains the pharmacy, outpatient clinics, and the inpatient unit of females on the ground floor, whereas the second floor contains the nursing staff office, male inpatient units, addiction treatment center, and administrative offices. It has 53 beds available for patients of both genders and provides services to the entire Minia Governorate and its districts.

**Sample**:

A purposive sample of two hundred eleven (211) psychiatric patients participated in the study. This sample was calculated by the following formula which guided by data obtained from previous studies **(Costa et al., 2018)**, taking into account a statistical power of 80% and a significance level of 5%:

$$n = \frac{N \times p\,(1-p)}{(N-1)x\left(\frac{d^2}{z^2}\right)+p(1-p)}$$

where, n=sample size; N, studied total population; P= prevalence or proportion of the event of interest for the study; d = the error percentage; $Z_{\alpha/2}$ =1.96 (for 5% level of significance). Therefore,

$$n = \frac{557 \times 0.673\,(1-0.673)}{(557-1)x\left(\frac{0.05^2}{1.96^2}\right)+0.673(1-0.673)} = 210.7$$

**Inclusion Criteria:**

- The patient age 18 years or older.
- The patient was in a relatively stable mental state at the time of data collection (not experiencing acute psychiatric symptoms).
- The patient was cognitively capable of understanding and completing the study tools.

**Exclusion Criteria:**

- The patient diagnosed with chronic physical illnesses known to affect sleep (e.g., sleep apnea, neurological disorders).
- The patient face difficulties in both verbal and non-verbal communication.
- Comorbidities of personality disorders, organic brain diseases, substance use and addiction disorders.

**Tools of the study:**

**Tool I: Interview Questionnaire Sheet:**

The researcher reviewed the pertinent literature before creating this sheet. The following sections are included in it:

A. Socio-Demographic Characteristics: this section collects information on the patients' sociodemographic profile, including gender, age, education, marital status, occupation, place of residence, and living conditions.

B. Clinical data: this part provides a brief summary of the patients' psychiatric history, covering diagnosis, duration of illness, number of hospitalizations, length of hospital stay, and types of admissions.

**Tool (II): The Sleep Hygiene Index (SHI)**

Th International Classification of Sleep Disorders (ICSD) created the SHI, which is a self-reported tool of 13 items, to evaluate sleep hygiene practice in day-to-day living **(Mastin et al., 2006)**. Participants were asked if they practiced any particular sleep hygiene practices, such as napping period "two or more hours" during the day, go to bed at different times every night, exercising until they perspired an hour before bed, experiencing stress when attempting to fall asleep, etc.

A five-point Likert scale, with 1 representing never and 5 representing always, is used to rate each item on the SHI. Poorer sleep hygiene was indicated by a higher overall score, which ranged from 13 to 65. The Sleep Hygiene Index (SHI) is divided into three categories: good sleep hygiene is indicated by a score of less than 26, normal sleep hygiene is suggested by a score between 27 and 34, and poor sleep hygiene is indicated by a score greater than 35.

**Tool (III): The Dysfunctional Beliefs and Attitudes about Sleep-16 (DBAS-16)**

**Morin et al. (2007)** developed the 16-item Dysfunctional Beliefs and Attitudes about Sleep (DBAS-16) questionnaire as a self-report tool. It is a shortened version of the original 30-item DBAS, created by **Morin in 1993**, designed to assess a range of maladaptive beliefs and attitudes an individual may hold about sleep. DBAS-16 involves four subscales: Medication (three items: 6, 13, 15), Consequences (five items: 5, 7, 9, 12, 16), Worry/Hopelessness (six items: 3, 4, 8, 10, 11, 14), and Sleep Expectations (two items: 1, 2). Each item is rated on a Likert scale from 0 = strongly disagree to 10 = strongly agree, where higher scores reflect greater severity of dysfunctional beliefs and attitudes about sleep.

The overall score is obtained by summing all item scores and then dividing by 16. A cutoff score above 3.8 has been suggested to indicate the presence of unhelpful beliefs associated with clinically significant insomnia. Specifically, a total score of 4 or higher reflects false beliefs about sleep, while a score below 4 indicates accurate or adaptive sleep-related beliefs **(Benouajjit et al., 2024).**

**Tool (V): The Sleep Quality Scale (SQS)**

The SQS is a self-report instrument developed by **Yi et al. (2006)** to comprehensively assess the sleep quality of adults. It consists of 28 items that measure six factors of sleep quality: the daytime dysfunction (12 items: 12, 14, 15, 17, 21, 22, 23, 24, 25, 26, 27, 28), The restoration after sleep (4 items: 2, 8, 16, 18), the difficulty in falling asleep (4 items: 1, 6, 9, 11), the difficulty in getting up (3 items: 5, 7, 10),the satisfaction with sleep (3 items: 13, 20, 27), and difficulty in maintaining sleep (2 items: 3, 4).

Respondents rate the frequency of specific sleep behaviors on a four-point Likert-type scale (0 = "never/rarely," 1 = "sometimes," 2 = "often," and 3 = "almost always"). Items from factors 2 and 5 (sleep satisfaction and post-sleep restoration) have the scores reversed.

The higher scores indicate more serious sleep issues. Total scores can vary from 0 to 84. Good sleep quality is indicated by scores between 0 and 50 (less than 60%), whereas poor sleep quality is indicated by scores between 51 and 84 (60% or higher) **(Chiu & Hsu, 2016, Mollayeva et al., 2015).**

**Validity and reliability of the study instruments:**

A group of five specialists experienced in psychiatric and mental health nursing as well as psychiatric medicine evaluated the translated Arabic versions of the study tools to measure their applicability, clarity, and feasibility. The necessary modifications were done to improve the tools in accordance with the experts' suggestions.

The Cronbach's alpha coefficient was then used to assess the instruments' reliability and ensure internal consistency, which indicated high reliability with scores of 0.903 for the Sleep Hygiene Index, 0.899 for the Dysfunctional Beliefs and Attitudes about Sleep-16, and 0.896 for the Sleep Quality Scale.

**Pilot Study:**

A preliminary assessment was conducted on 21 patients (10%) to evaluate all tools for clarity, objectivity, feasibility, and applicability. The assessment also sought to estimate the amount of time needed for data gathering and to identify any potential challenges related to administering the tools. Following the preliminary study, necessary changes were introduced, and the data from this early stage were omitted from the final analysis.

**Procedure:**

- The development of the study design and data collection tools was informed by an in-depth review of local and international literature, both current and historical, focused on sleep hygiene, dysfunctional beliefs, and their association with sleep quality in psychiatric populations. This review included academic books, peer-reviewed journals, periodicals, and credible online sources to ensure the use of well-informed and effective instruments for data collection.

- To obtain approval for the study, the Ethical Committee and the Dean of the Faculty of Nursing at Minia University submitted an official letter to the Executive Manager of the “Mental Health and Addiction Treatment Hospital” in Minia Governorate. The letter detailed the study’s aims and provided photocopies of the data collection tools to ensure

informed consent and encourage active collaboration during the data collection phase.

- In order to ensure precision, the selected research tools were initially translated into Arabic and subsequently back-translated which validated by five experts in psychiatric& mental health nursing, as well as psychiatric medicine.

- After introducing themselves, the researchers met with the patients, sought their cooperation, and underlined that all information gathered would be kept completely private. They were then asked for their oral consent prior to the study being carried out.

- Patients who consented to join the study were interviewed one-on-one by the researchers. Every participant was contacted directly. The researchers read and clarified the questionnaires items, recorded the participants' responses, and addressed any uncertainties to ensure their understanding. Data collection took place from 10:00 a.m. to 2:00 p.m. twice a week on Saturdays and Thursdays.

- The data were gathered during the period from January 2025 to the mid of April 2025. Completing the questionnaire took approximately 20 to 25 minutes, depending on each participant's individual needs.

**Ethical consideration:**

Common ethical standards for scientific research were upheld throughout the study. Formal approval (No: REC202515) was granted by the Research Ethics Committee of the Faculty of Nursing at Minia University, Egypt.

The objectives and importance of the study were clearly communicated to each participant prior to their involvement. Subsequently, informed oral consent was secured from the participants, and written consent was obtained from the patient rights committee at the hospital.

The patients were assured for the voluntary participation in the study and for the right to withdraw at any time without any explanation. To ensure confidentiality and anonymity, all data were appropriately coded.

**Statistical analysis:**

Version 25.0 of SPSS for Windows was used for all statistical analyses (SPSS, Chicago, IL). Continuous data, which were normally distributed, are presented as means ± standard deviations (SD). Categorical data are presented as frequencies and percentages. Using categorical data, the Chi-square test (or Fisher's exact test, if appropriate) was used to compare variables. The associations between two continuous variables were evaluated using the correlation coefficient. The study's questionnaires' internal consistency, or reliability, was computed. A p-value of less than 0.05 was set as the statistical significance threshold.

**Limitations of the study:**

The researcher encountered several interruptions from other patients while interviewing the study sample, primarily due to the lack of a designated quiet space.

Furthermore, some patients declined to take part in the study because they were disinterested after having taken part in numerous previous studies without receiving any direct benefits. A purposive sampling method was employed in this study, which limits the generalizability of the results.

**Results:**

**Table 1** indicates that 43.6% of patients are between the ages of 28 - 38 years, with a mean age of 34.9 ± 5.6 years. Among these patients 79.1% are males, while 44.1% are illiterate, and 55.9% are unemployed. Furthermore, 36.5% are single, 66.4% reside in rural areas, and 81% live with their families.

**Table 2** reveals that 66.4% of the patients had schizophrenia, and 37.0% of them had been suffering from the condition for more than three years. Regarding hospital admissions 43.1% had been admitted once, 83.4% stayed in the hospital for a duration of one to less than two months, and 89.1% experienced involuntary admission 1 to less than 2 months, and 89.1% experienced involuntary admission.

**Figure (1)** indicates that 62.1% of the studied patients exhibit poor sleep hygiene, while 21.3% demonstrate normal sleep hygiene, and 16.6% have good sleep hygiene, resulting in a total mean score of Sleep Hygiene Index is 38.2 ± 7.2.

**Figure (2)** presents that 71.1% of the studied patients experience poor sleep quality, whereas 28.9% report good sleep quality.

**Table 3** shows the mean scores of sleep quality domains among the studied patients.

Daytime dysfunction recorded the highest mean score (18.9 ± 6.8). The mean scores for other domains were as follows: 7.7 ± 2.5 for restoration after sleep, 6.8 ± 2.4 for difficulty in falling asleep, 4.8 ± 2.1 for difficulty in getting up, 5.9 ± 2.2 for satisfaction with sleep, and 3.2 ± 1.6 for difficulty in maintaining sleep. The overall mean score for total sleep quality was 47.4 ± 9.4.

As illustrated in **Figure 3**, 66.8% of the studied patients reported holding false beliefs and attitudes about sleep, whereas 32.2% reported having accurate beliefs and attitudes regarding sleep.

**Table 4** demonstrates that 57.3% of the patients hold false beliefs about the consequences of inadequate sleep. Additionally, 64.9% report feelings of worry and helplessness related to their sleep. Furthermore, 69.2% have unrealistic expectations regarding sleep, and 52.6% maintain incorrect beliefs about the use of sleep medications. The average score on the DBAS-16 scale was 68.5 ± 18.0.

**Table 5** depicts a significant relation between sleep hygiene index levels and patient's diagnosis, with a p-value of 0.019.

**Table 6** displays that clinical variables such as diagnosis, duration of illness, and number of hospital admission among the patients under study have a significant relationship with sleep quality levels with P-values of 0.031, 0.049, and 0.017, respectively.

A significant relationship between the numbers of hospital admissions among the patients under study and DBAS-16 is demonstrated in **Table 7**, with a p-value of 0.045.

**Table 8** presents a significant positive correlation between dysfunctional beliefs about sleep and

both sleep quality and sleep hygiene scores, with correlation coefficients of r = 0.176 (P = .011) and r = 0.153 (P = .029), respectively. Furthermore, sleep quality and sleep hygiene are also significantly positively correlated, with a correlation coefficient of r = 0.56 (P < 0.001).

**Table 1: Distribution of the studied patients based on their socio-demographic characteristics (No. = 211)**

| Socio-demographic characteristics | N | % |
|---|---|---|
| **Age (Years)** | | |
| 18 – 27 | 53 | 25.1 |
| 28 – 38 | 92 | 43.6 |
| > 38 | 66 | 31.3 |
| **Mean ±SD** | **34.9 ±5.6** | |
| **Gender** | | |
| Male | 167 | 79.1 |
| Female | 44 | 20.9 |
| **Occupational status** | | |
| Employed | 93 | 44.1 |
| Unemployed | 118 | 55.9 |
| **Educational level** | | |
| Illiterate | 93 | 44.1 |
| Primary education | 76 | 36.0 |
| Secondary education | 30 | 14.2 |
| University or Higher | 12 | 5.7 |
| **Marital status** | | |
| Single | 77 | 36.5 |
| Married | 63 | 29.9 |
| Divorced | 52 | 24.6 |
| Widow | 19 | 9.0 |
| **Place of residence** | | |
| Rural | 140 | 66.4 |
| Urban | 71 | 33.6 |
| **Living condition** | | |
| With family | 171 | 81.0 |
| Alone | 40 | 19.0 |

**Table 2: Distribution of the studied patients according to their clinical data (No. = 211)**

| Clinical data | N | % |
|---|---|---|
| **Diagnosis** | | |
| Schizophrenia | 140 | 66.4 |
| Bipolar disorder | 43 | 20.4 |
| Depression | 8 | 3.8 |
| Mania | 20 | 9.5 |
| **Duration of illness (Years)** | | |
| < 1 | 71 | 33.6 |
| 1 – < 2 | 33 | 15.6 |
| 2 – < 3 | 29 | 13.7 |
| > 3 | 78 | 37.0 |
| **Number of hospital admission** | | |
| Once | 91 | 43.1 |
| Two times | 40 | 19.0 |
| Three times | 46 | 21.8 |
| More than 3 times | 34 | 16.1 |
| **Length of stay in the hospital (Months)** | | |
| 1 – < 2 | 176 | 83.4 |
| 2 – 3 | 33 | 15.6 |
| > 3 | 2 | 0.9 |
| **Types of admission** | | |
| Voluntary | 23 | 10.9 |
| Involuntary | 188 | 89.1 |

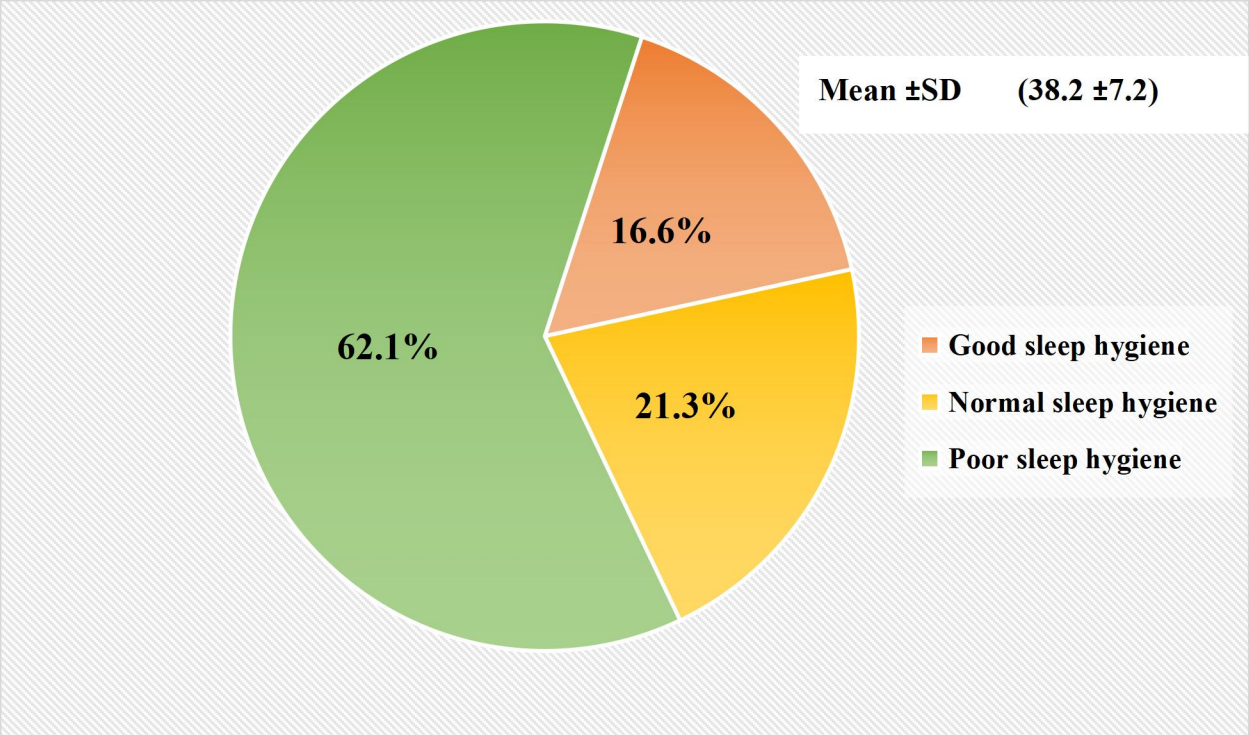


**Figure 1: Distribution of sleep hygiene levels among the studied patients (No. = 211)**

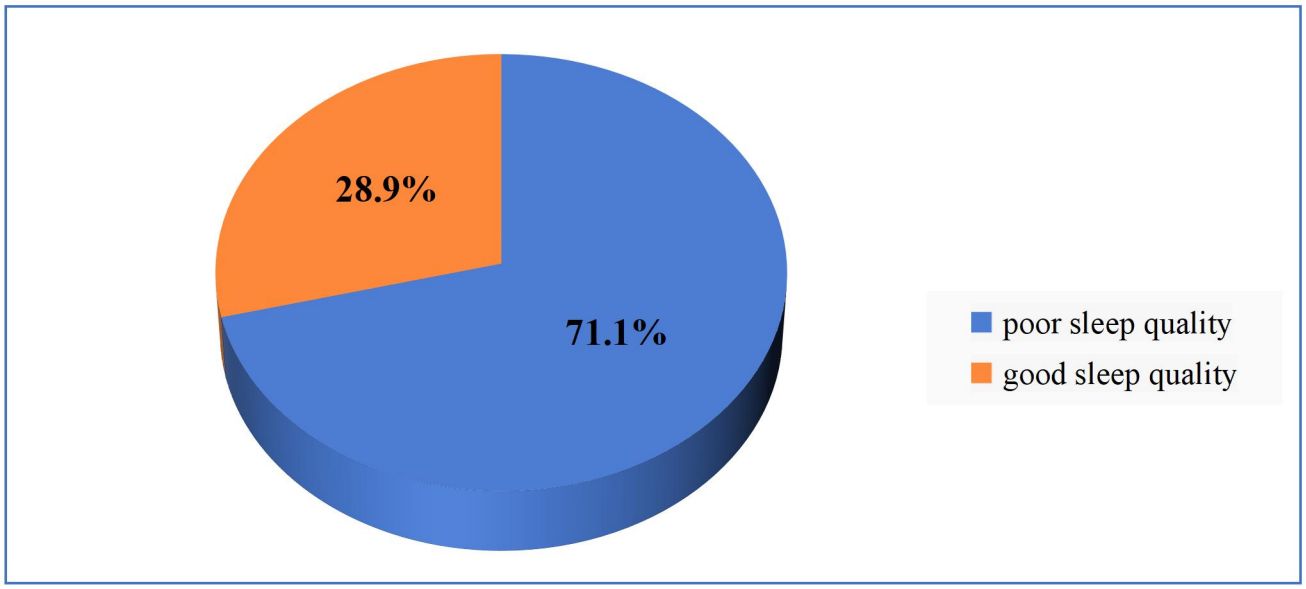


**Figure 2: Distribution of sleep quality levels among the studied Patients (No. = 211)**

**Table 3: Distribution frequencies and mean scores of the sleep quality scale and its subdomains among the patients studied (No. = 211)**

| Domains of the SQS | Less acute sleep problems | | More acute sleep problems | | Mean ±SD |
|---|---|---|---|---|---|
| | N | % | N | % | |
| Daytime dysfunction | 67 | 31.8 | 144 | 68.2 | 18.9 ±6.8 |
| Restoration after Sleep | 60 | 28.4 | 151 | 71.6 | 7.7 ±2.5 |
| Difficulty in falling sleep | 51 | 24.2 | 160 | 75.8 | 6.8 ±2.4 |
| Difficulty in getting up | 69 | 32.7 | 142 | 67.3 | 4.8 ±2.1 |
| Satisfaction with sleep | 55 | 26.1 | 156 | 73.9 | 5.9 ±2.2 |
| Difficulty in maintaining sleep | 82 | 38.9 | 129 | 61.1 | 3.2 ±1.6 |
| Sleep quality levels | 61 | 28.9 | 150 | 71.1 | 47.4 ±9.4 |

**Figure 3: Distribution of dysfunctional beliefs and attitudes about sleep levels among the studied patients (No. = 211)**

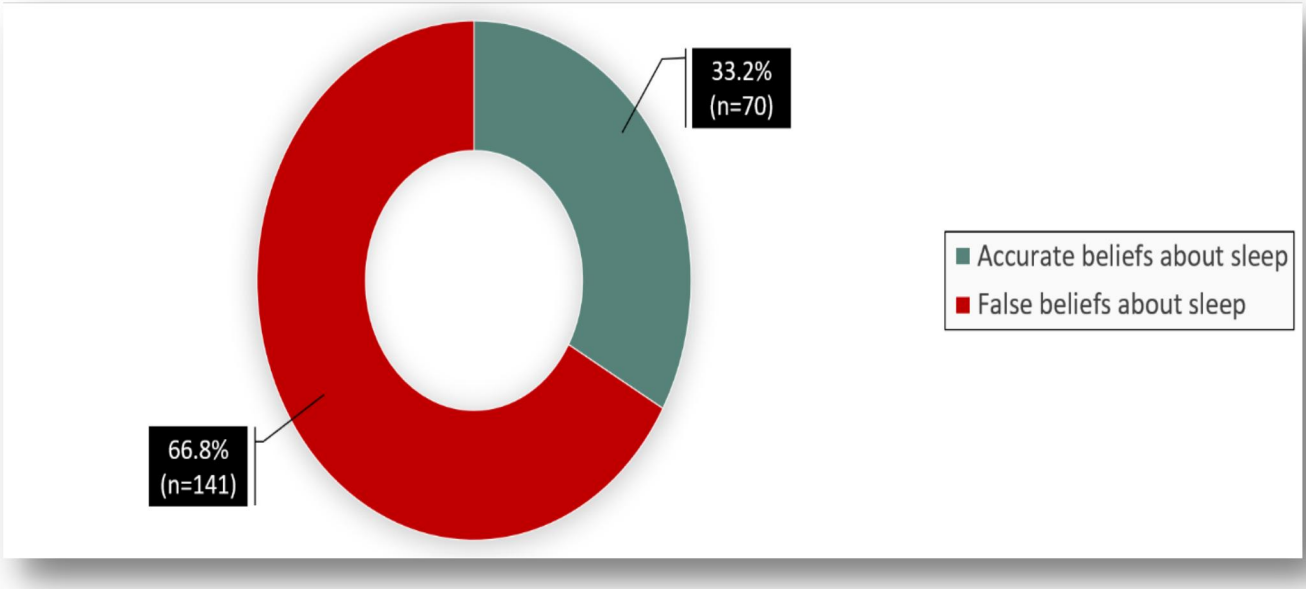


**Table 4: Distribution frequencies and mean scores of the DBAS-16 and its domains among the studied patients (No. = 211)**

| Domains of DBAS-16 | Accurate beliefs about sleep | | False beliefs about sleep | | Mean ±SD |
|---|---|---|---|---|---|
| | N | % | N | % | |
| Consequences | 90 | 42.7 | 121 | 57.3 | 21.5 ±5.3 |
| Worry / helplessness | 74 | 35.1 | 137 | 64.9 | 26.7 ±9.4 |
| Sleep expectation | 65 | 30.8 | 146 | 69.2 | 11.9 ±3.8 |
| Medication | 100 | 47.4 | 111 | 52.6 | 8.4 ±4.0 |
| Dysfunctional beliefs and attitudes | 70 | 33.2 | 141 | 66.8 | 68.5 ±18.0 |

**Table 5: Relation between clinical data and the Sleep hygiene index levels among the studied patients (No. = 211)**

| Clinical data | SHI level | | | | | | Chi – square / Fisher's exact test | |
|---|---|---|---|---|---|---|---|---|
| | Good sleep hygiene | | Normal sleep hygiene | | Poor sleep hygiene | | | |
| | N | % | N | % | N | % | $X^2$ | P |
| **Diagnosis** | | | | | | | | |
| Schizophrenia | 19 | 54.3 | 35 | 77.8 | 86 | 65.6 | 15.167 | **0.019*** |
| Bipolar disorder | 8 | 22.9 | 4 | 8.9 | 31 | 23.7 | | |
| Depression | 0 | 0.0 | 2 | 4.4 | 6 | 4.6 | | |
| Mania | 8 | 22.9 | 4 | 8.9 | 8 | 6.1 | | |
| **Duration of illness (Years)** | | | | | | | | |
| < 1 | 13 | 37.1 | 12 | 26.7 | 46 | 35.1 | 3.520 | 0.741 |
| 1 – < 2 | 6 | 17.1 | 8 | 17.8 | 19 | 14.5 | | |
| 2 – < 3 | 2 | 5.7 | 8 | 17.8 | 19 | 14.5 | | |
| > 3 | 14 | 40.0 | 17 | 37.8 | 47 | 35.9 | | |
| **Number of hospital admission** | | | | | | | | |
| Once | 20 | 57.1 | 19 | 42.2 | 52 | 39.7 | 4.016 | 0.674 |
| Two times | 6 | 17.1 | 8 | 17.8 | 26 | 19.8 | | |
| Three times | 6 | 17.1 | 10 | 22.2 | 30 | 22.9 | | |
| More than 3 times | 3 | 8.6 | 8 | 17.8 | 23 | 17.6 | | |
| **Length of stay (Months)** | | | | | | | | |
| 1 – < 2 | 33 | 94.3 | 37 | 82.2 | 106 | 80.9 | 4.558 | 0.336 |
| 2 – 3 | 2 | 5.7 | 7 | 15.6 | 24 | 18.3 | | |
| > 3 | 0 | 0.0 | 1 | 2.2 | 1 | 0.8 | | |
| **Types of admission** | | | | | | | | |
| Voluntary | 2 | 5.7 | 7 | 15.6 | 14 | 10.7 | 1.979 | 0.372 |
| Involuntary | 33 | 94.3 | 38 | 84.4 | 117 | 89.3 | | |

**Table 6: Relation between clinical data and the sleep quality level among the studied patients (No. = 211)**

| Clinical data | Sleep Quality level | | | | Chi – Square / Fisher's Exact Test | |
|---|---|---|---|---|---|---|
| | Less acute sleep problems | | More acute sleep problems | | | |
| | N | % | N | % | $X^2$ | P |
| **Diagnosis** | | | | | | |
| Schizophrenia | 36 | 59.0 | 104 | 69.3 | 8.843 | **0.031*** |
| Bipolar disorder | 19 | 31.1 | 24 | 16.0 | | |
| Depression | 0 | 0.0 | 8 | 5.3 | | |
| Mania | 6 | 9.8 | 14 | 9.3 | | |
| **Duration of illness (Years)** | | | | | | |
| < 1 | 15 | 24.6 | 56 | 37.3 | 7.849 | **0.049*** |
| 1 – < 2 | 11 | 18.0 | 22 | 14.7 | | |
| 2 – < 3 | 14 | 23.0 | 15 | 10.0 | | |
| > 3 | 21 | 34.4 | 57 | 38.0 | | |
| **Number of hospital admission** | | | | | | |
| Once | 18 | 29.5 | 73 | 48.7 | 10.152 | **0.017*** |
| Two times | 10 | 16.4 | 30 | 20.0 | | |
| Three times | 18 | 29.5 | 28 | 18.7 | | |
| More than 3 times | 15 | 24.6 | 19 | 12.7 | | |
| **Length of stay (Months)** | | | | | | |
| 1 – < 2 | 52 | 85.2 | 124 | 82.7 | 0.891 | 0.641 |
| 2 – 3 | 9 | 14.8 | 24 | 16.0 | | |
| > 3 | 0 | 0.0 | 2 | 1.3 | | |
| **Types of admission** | | | | | | |
| Voluntary | 10 | 16.4 | 13 | 8.7 | 2.666 | 0.103 |
| Involuntary | 51 | 83.6 | 137 | 91.3 | | |

**Table 7: Relation between clinical data and the dysfunctional beliefs and attitudes about sleep among studied patients (No. = 211)**

| Clinical data | DBAS | | | | Chi – square / Fisher's exact test | |
|---|---|---|---|---|---|---|
| | Accurate beliefs about sleep | | False beliefs about sleep | | | |
| | N | % | N | % | $X^2$ | P |
| **Diagnosis** | | | | | | |
| Schizophrenia | 49 | 61.3 | 91 | 69.5 | 7.203 | 0.066 |
| Bipolar disorder | 23 | 28.7 | 20 | 15.3 | | |
| Depression | 1 | 1.3 | 7 | 5.3 | | |
| Mania | 7 | 8.8 | 13 | 9.9 | | |
| **Duration of illness (Years)** | | | | | | |
| < 1 | 21 | 26.3 | 50 | 38.2 | 3.342 | 0.342 |
| 1 – < 2 | 13 | 16.3 | 20 | 15.3 | | |
| 2 – < 3 | 12 | 15.0 | 17 | 13.0 | | |
| > 3 | 34 | 42.5 | 44 | 33.6 | | |
| **Number of hospital admission** | | | | | | |
| Once | 33 | 41.3 | 58 | 44.3 | 8.073 | **0.045*** |
| Two times | 22 | 27.5 | 18 | 13.7 | | |
| Three times | 17 | 21.3 | 29 | 22.1 | | |
| More than 3 times | 8 | 10.0 | 26 | 19.8 | | |
| **Length of stay (Months)** | | | | | | |
| 1 – < 2 | 67 | 83.8 | 109 | 83.2 | 1.254 | 0.534 |
| 2 – 3 | 13 | 16.3 | 20 | 15.3 | | |
| > 3 | 0 | 0.0 | 2 | 1.5 | | |
| **Types of admission** | | | | | | |
| Voluntary | 13 | 16.3 | 10 | 7.6 | 3.797 | 0.051 |
| Involuntary | 67 | 83.8 | 121 | 92.4 | | |

**Table 8: Correlation between dysfunctional beliefs and attitudes about sleep, sleep quality scale and sleep hygiene index among the studied patients (No. = 211)**

| | DBAS | | Sleep Quality Scale | | Sleep Hygiene Index | |
|---|---|---|---|---|---|---|
| | r | P | r | P | r | p |
| **DBAS** | | | | | | |
| **Sleep Quality Scale** | 0.176 | **0.011**** | | | | |
| **Sleep Hygiene Index** | 0.153 | **0.029*** | 0.560 | **<0.001**** | | |

**Discussion:**

Poor sleep hygiene and dysfunctional beliefs about sleep are both prevalent among psychiatric patients and are closely linked to reduced sleep quality and worsened mental health outcomes **(Shi et al., 2022)**. Therefore, the purpose of this study was to assess sleep hygiene, dysfunctional beliefs, and their relevance to sleep quality among psychiatric patients.

The existing findings showed that over fifty percent of the patients demonstrated poor sleep hygiene, with a relatively high total mean score on the Sleep Hygiene Index. These results may indicate that the psychiatric patients in the

study exhibited behaviors that interfere with healthy sleep practices. The elevated mean score on the Sleep Hygiene Index reflects the presence of poor sleep-related habits, such as inconsistent sleep-wake times, late caffeine consumption, or an unsuitable sleep environment.

This result is consistent with **Alanazi et al. (2023)**, who found that 55.5% of the participants reported poor sleep hygiene practices, and that there were significant associations between poor sleep hygiene and the prevalence of mental health conditions. Moreover, the proportion of respondents who experienced daily sleep problems was significantly higher in the poor sleep hygiene group (14.1%) compared to those with good practices (7%).

The study results found that fewer than three-quarters of the patients experienced poor sleep quality, while less than one-third reported good sleep quality. A possible explanation for this result is that psychiatric illness significantly affects sleep quality by disrupting sleep stages, prolonging total sleep time, and reducing Rabid Eye Movement latency. Additionally, hospitalized psychiatric patients often experience fragmented sleep due to the severity of their condition and the hospital environmental factors.

This outcome is aligned with those of **Hartescu et al. (2022)** and **Mijnster et al. (2022),** who found that the incidence of poor sleep quality among patients hospitalized in psychiatric wards ranged from 49.1% to 93.2%, based on patient self-evaluations. Similarly, **Miller et al. (2019)** discovered that over 40% of secure mental inpatients had poor sleep quality during hospitalization, with nearly half matching the criteria for insomnia.

Regarding the dysfunctional beliefs and attitudes about sleep, the current study found that approximately two-thirds of the patients held false beliefs about sleep, while slightly fewer than one-third had accurate beliefs. This could be related to the fact that, the dysfunctional beliefs about sleep may worsen mental health and contribute to sleep disturbances by increasing perceived stress. For example, the beliefs frequently include expectations that are not realistic about sleep. These attitudes can cause stress-inducing sentiments of powerlessness or hopelessness, which are frequently related with depression and other psychiatric problems.

This finding aligns with **Peng et al. (2023)**, who identified a high prevalence of dysfunctional beliefs about sleep among psychiatric patients diagnosed with anxiety, depression, and bipolar disorder. Their study suggested that modifying these beliefs may lead to improvements in sleep quality within these groups.

In the same vein, this result was disputed by **Thakral et al. (2020)**, who found that less than half of the participants exhibited different degrees of dysfunctional sleep beliefs. Patients with dysfunctional beliefs about sleep had considerably greater rates of sleeplessness, anxiety, and depression than those with appropriate beliefs about sleep.

The present study findings revealed that a significant association between Sleep Hygiene Index (SHI) scores and patients' clinical diagnosis. This result indicates a significant association between poor sleep hygiene and the severity of psychiatric disorders. Inadequate sleep-related behaviors may aggravate mental health conditions. Whereas adopting proper sleep hygiene practices can contribute to a noticeable reduction in psychiatric symptoms.

This finding is in line with the study by **Joopaka et al. (2025)**, a large cross-sectional study involving 500 psychiatric patients. The study reported that poor sleep hygiene was prevalent across diagnosis, with 80% of patients with depression, 70% with anxiety and bipolar disorder experiencing sleep disturbances. Additionally, teaching patients about good sleep hygiene habits result in lessen the severity of depression and anxiety, with p-values significantly lower than 0.05.

The study findings highlighted a significant relationship between sleep quality levels and various clinical data, including diagnosis, duration of illness, and the number of hospital admissions. This association can be explained by the complex interplay between mental health disorders and sleep regulation. Moreover, longer illness duration and frequent hospital admissions often reflect more severe or chronic psychiatric conditions, which are typically linked to greater sleep disturbances and poorer sleep quality.

These findings align with those of **Özkan et al. (2015)**, who noted a statistically significant relationship between sleep quality and diagnosis, illness duration, medication use, age, and sex.

The current findings also revealed a significant association between a dysfunctional beliefs and attitudes about sleep with the number of hospital admissions. This relationship may result from several interrelated factors, including the impact of psychiatric conditions on patients' cognition and behavior, limited knowledge about sleep, common misconceptions, and the unfamiliar hospital environment. Together, these factors can heighten concerns about sleep and reinforce sleep dysfunctional beliefs.

The existing finding is consistent with previous research by **Chang et al. (2020)**, who found that various sociodemographic and clinical factors such as ethnicity, education, intake of sleep drugs, and frequency of hospitalization were all associated with DBAS. However, the study reported no significant relationship between DBAS and either the duration of illness or specific diagnosis.

The correlation results of the present study revealed a significant positive correlation between DBAS-16 scores and sleep quality scores. This relationship can be explained by the fact that unrealistic or negative beliefs about sleep lead to worry and helplessness regarding sleep. Additionally, false beliefs about sleep increase maladaptive sleep-related behaviors, which interfere with the ability to fall asleep and maintain adequate restful sleep, thereby lowering sleep quality.

This result doesn't align with the findings of **Jin et al. (2018)**, who discovered that the sleep quality total score was negatively correlated with the DBAS-16 total score, Also **Humphries et al. (2022),** who reported that no significant relationship was found between DBAS and sleep quality among the studied sample.

However, previous research has generally supported this association. For example, **Yazdi et al., 2020**, who demonstrated that there was a significant relationship between sleep quality total scores and the DBAS scores.

Additionally, a significant positive correlation was observed between DBAS-16 scores and sleep hygiene scores. This result may relate to, the dysfunctional beliefs about sleep may increase cognitive arousal and worry at bedtime, perpetuating insomnia and disrupting healthy sleep behaviors, thereby impairing sleep hygiene.

This result aligns with research by **Humphries et al. (2022)**, which demonstrated that dysfunctional sleep beliefs are associated with maladaptive sleep hygiene behaviors. Individuals with elevated DBAS scores are more likely to engage in poor sleep practices,

**Conclusions**

The existing study concluded that more than half of the studied patients exhibited poor sleep hygiene, and less than three-quarters experienced poor sleep quality, while approximately two-thirds held false beliefs about sleep. A positive and significant correlation exists between dysfunctional beliefs about sleep and the scores for both sleep quality and sleep hygiene. Additionally, a correlation that is significant and positive was observed between sleep quality and sleep hygiene.

**Recommendations:**

- Future studies with a larger and more diversified sample size, as this may yield stronger and more consistent results.
- Psychiatric patients should have sleep hygiene measures incorporated into their routine nursing management plan.
- Psychoeducation about sleep is recommended to dispel sleep-related misconceptions and false beliefs that support unhelpful cognitions and gaps in knowledge.
- Psychoeducational programs should be developed to educate patients about normal sleep patterns and the importance of sleep hygiene practices for improving sleep quality.

**Acknowledgement**

The researchers would like to sincerely appreciate and thank all the study patients for their participation in the study.

**Conflict of Interests**

The authors stated that there are no any conflicts of interest in this work

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