

An Intervention Program for Improving Sleep Quality among Patients with Schizophrenia

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ABSTRACT

Sleep disorders are frequent symptoms described in psychiatric patients with schizophrenia. The **aim** of this study was to evaluate the effect of intervention program for improving sleep quality among patients with schizophrenia. The **study** was at the inpatient department of EL-Abassia Governmental Hospital for Psychiatric Mental Health in Cairo affiliated to Ministry of Health conducted on 40 patients with schizophrenia. **Data were collected** using:1) interviewing questionnaire to assess a-Socio- demographic characteristics (age, gender, marital status, , address, educational level, work, occupation position, monthly income -Medical history (physical illness, duration of psychiatric illness, number of hospital admissions, beginning of the disease and type of treatment. 2)Pittsburgh Sleep Quality Index.3) Sleep Hygiene Practices Scale. 4) Insomnia Severity Scale. The **result** showed that there is a highly statistically significant improvement in Levels of Dimensions Reflecting Pittsburgh Sleep Quality Index in the post intervention. In addition, there is a highly statistically significant improvement in Levels of sleep hygiene practices in the post intervention. More over there is a highly statistically significant improvement in Items Reflecting “Insomnia Severity Index. Finally study reveals that, there is a highly statistically significant Positive Correlation between Global PSQI Percent Score, Sleep Hygiene Percent Score and Insomnia Severity Index Percent Score ($P<0.01$).In **conclusion**, that the implementation of the intervention program had a positive effect on sleep quality among patient with schizophrenia. It was **recommended** that the study highlighted to incorporating the concepts of sleep quality into the nursing curricula at all levels of nursing education with emphasis on practice of sleep hygiene. Further studies are proposed to assess the long-term effects of the present study program and similar ones.

Key words: Sleep Quality-Sleep Hygiene- Patient with Schizophrenia.

INTRODUCTION

The Many people view sleep as merely a “down time” when their brain shuts off and their body rests. In a rush to meet work, family, or household responsibilities, people cut back on their sleep, thinking it won't be a problem, because all of these other activities

seem much more important. But research reveals that a number of vital tasks carried out during sleep help to maintain good health and enable people to function at their best (Mindell et al., 1999).

A good quality of sleep is essential to enable any persons to comprehend, analyze, and absorb enormous amounts of information

during the situation in the life. Inadequate duration as well as poor quality of sleep have negatively affects on their concentration, leading to tardiness or inhabation in problem solving skills (**Dement & Mitler .,2007**).

A common myth is that people can learn to get by on little sleep (Such as less than 6 hours a night) with no adverse consequences. Adults need at least 7–8 hours of sleep each night to be well rested. Also more than one-third of adults report daytime sleepiness so severe that it interferes with work and social functioning at least a few days each month (**Ohida et al.,2009**) **Ohida K.H., Pituch K.J., Panahi P. and Chervin R.D. (2009)**.

While people sleep, brain is hard at work forming the pathways necessary for learning and creating memories and new insights. Without enough sleep, one can't focus and pay attention or respond quickly. A lack of sleep may even cause mood problems. In addition, growing evidence shows that a chronic lack of sleep increases the risk for developing obesity, diabetes, cardiovascular disease, and infections (**Young et al.,2005**). **Young T., Ryu, M.; Paulta M.,and Dempsey J. (2005)**.

About 30 % of the total population in Egypt suffers from sleep disturbances as 1 of every 3 people has sleep disorder (**European Sleep Research Society, 2010**).

Schizophrenia are major frequent psychiatric disorders and make up a substantial share in the global burden of disease A reliable diagnosis is crucial in providing efficient treatment strategies for patients (**Rochfort, 2012**).

Schizophrenia affects in Egypt, more than 700, 000 schizophrenic patients and 85% need to admission to hospital (**Lozaa, 2011**).

Schizophrenia affects around 0.3–0.7% of people at some point in their life, or

24 million people worldwide as of 2011. It occurs 1.4 times more frequently in males than females and typically appears earlier in men - the peak ages of onset are 20–28 years for males and 26–32 years for females, onset is much rarer as is onset in middle- or old - age (**WHO, 2011**).

Improving sleep quality of schizophrenic patients, prevent relapse of schizophrenia in 15% through improving their psychiatric symptoms and ability of patient to share in activity therapy (**Gillich, & Pollmacher, 2011**).

Sleep is essential to human life. On average, we spend a third of our life asleep. Sleep regenerates our brains and bodies, and without it we cannot function effectively. During sleep the body undergoes several physiological and psychological processes; processing information, learning and consolidating memories. Not getting enough sleep leads to the build-up of a sleep debt, only repayable through sleeping. Sleep is the golden chain that ties health and our bodies together (**Thomas ,2010**)

Sleep hours tend to be less regular. Sleep may occur at any time of the day or night rather than for 7-8 hours overnight like most people. Sleep hours may be too few or too many. Sometimes this can be due to the drugs used to treat the psychosis. It can also be due to the lack of a regular daytime routine. Such a routine helps our bodies know when to sleep and when to wake up (**Cheng & Dizon (2012)**).

A change in sleep patterns can be the first sign of the start of psychosis. Or it can mean that psy-chosis is coming back again after a period of being well. In other words, it can be a warning sign **Admi, Knauth, and Brown (2012)**.

SIGNIFICANCE OF THE STUDY:

Schizophrenia affects more than 700,000 persons in Egypt and about 85% of them need to be admitted to psychiatric hospital (Ilozaa, 2011).

Clinicians have long recognized that schizophrenia and disturbed sleep go hand-in-hand. About 80 % of the schizophrenic patients have sleep problems as insomnia, sleepiness during the day, fatigue and nightmares but these problems have usually been dismissed as a medication side effect or as the result of social isolation and unemployment in people with the disorder in activity therapy (Hughes & Stone, 2010).

Improving sleep quality of schizophrenic patients, prevent relapse of schizophrenia in 15% through improving their psychiatric symptoms and ability of patient to share in activity therapy (Gillich, & Pollmacher, 2011).

AIM OF THE STUDY

This study aimed to evaluate the effect of intervention program for improving sleep quality among patients with schizophrenia.

MATERIAL AND METHODS

Research design:

The design of this study was of a quasi experimental type to achieve the aim of this study.

Setting of the study:

The study was conducted at the inpatient department of El-Abassia Governmental Hospital for Psychiatric Mental Health in Cairo affiliated to Ministry of Health.

Subjects:

The subjects were 40 patients with schizophrenia who represent 10% of the total

schizophrenic patients (400 cases) with sleep problems of previous year ;2012-2013 based on medical records the hospital and who were meet the inclusion criteria.

Tools of Data Collection:

The data were collected by:

Part I: Interview questionnaire sheet:

This sheet is designed by the researcher after reviewing related literature. It includes the parts as the following:

A: Socio-demographic:

Assess socio-demographic characteristics of the studied patients such as age, gender, residence, level of education, occupation, and monthly income.

B: Medical history: -

This part included a brief knowledge about the nature of schizophrenia as; physical illness, duration of psychiatric illness, number of hospital admissions, beginning of the disease, beginning of treatment and type of treatment.....etc.

Part II: Pittsburgh Sleep Quality Index (PSQI): (Appendix I I):

Pittsburgh Sleep Quality Index (PSQI) is a standardized; assessment instrument developed by Daniel & Buysse, (2003). The PSQI assess sleep habits during the past month only. The PSQI forms a comprehensive but relatively brief assessment package consisting of 10 questions organized into 1 scale.

Scoring system:

Scoring for each statement was as follow:-

Scoring the PSQI in order of the PSQI items has been modified from the original order, in order to fit the first 9 items which are the only items that contribute to the total score on first and second page. Item 10,

which is the third page of the scale, does not contribute to the PSQI score (Appendix II).

In scoring the PSQI, seven component scores are derived, each scored 0 (no difficulty) to 3 (severe difficulty). The component scores are summed to produce a global score (range 0 to 21).

Operation scoring for dimensions of PSQI

0→4→8→12→16→21		
Excellent sleep Quality	0 → 4	0%-19%
Very good sleep Quality	5 → 8	20-39%
Good sleep Quality	9 → 12	40-59%
Fair sleep Quality	13 → 16	60-79%
Bad sleep Quality	17 → 21	80-100%

Part III: Sleep Hygiene Practices Scale (SHPS): (Appendix III):

Sleep Hygiene Practices Scale (SHPS) is a standardized; assessment instrument developed by Morin, (1995), The SHPS assess sleep hygiene and describe environment of sleep. The SHPS forms, a comprehensive but relatively brief assessment package consisting of 30 questions organized into 1 scale.

Scoring system:

Scoring for each statement was as follow:-

In scoring the SHPS, six component scores are derived, and each scored with (6) indicating never and (1) indicating always.

Higher scores indicate excellent sleep hygiene

Operation scoring for sleep hygiene practice scale

Response to	1-30	Component score
	0→30→60→90→120→150→180	
Excellent sleep hygiene		150 ≤ → 180

Very good sleep hygiene	120 ≤ → 149
Good sleep hygiene	90 ≤ → 119
Fair sleep hygiene	60 ≤ → 89
bad sleep hygiene	30 ≤ → 59
Very bad sleep hygiene	30

Part IV: Insomnia Severity Scale (ISS): (Appendix I V):

Insomnia Severity Scale (ISS) is a standardized assessment instrument developed by Morin, (1995); The ISS assess the severity of insomnia. The ISS forms a comprehensive but relatively brief assessment package consisting of 10 questions organized into 1 scale.

Scoring system:

The following are descriptions of time of sleep and waking period of patient, developed by Daniel (2000). Which was translated by more psychiatric professors in an Arabic language and the researcher not make any modifications on the language. Scoring of the ISS is four component scores are derived, and each scored with 3 > 0 indicating no insomnia and 30 > 22 indicating sever insomnia.

Component 1: Subjective of insomnia degrees—question 1-10

Response	to	1-30
Component score		
No insomnia		0 < 3
Mild insomnia		3 < 11
Moderate insomnia		11 < 22
sever insomnia		22 < 30

RESULTS:

Table (1A) shows that more than half of the studied patients with Schizophrenia (52.5%) were between (26-35) years, about (32.5%) were between (36-45) years while (15.0%) were ≤ 25 Y, In addition to that; (50.0%) were males and (50.0%) were females, (42.5%) were married, (42.5%) were divorced, while (10.0%) were single and (5.0%) were widowed, The majority (62.5%) were rural while 37.5% were urban;

Moreover; there is a highly statistically significant difference between the studied patients as regard their ages and their marital status ($P < 0.01$).

Table (1B) shows that about (37.5%) of the studied patients with schizophrenia were house wives, (25.0%) were working as a clerk, (17.5%) were technicians, (12.5%) were manual worker, (7.5%) were not employed with no job; In addition to that (62.5%) of the patients had insufficient income, while (15.0%) of the patients had sufficient income, Moreover; (22.5%) of the patients were highly educated, (22.5%) were average education, (30.0%) had primary education, (15.0%) primary education, (10.0%) can read and write; In addition to that there is a statistically significant difference between the studied patients as regard their Job ($P < 0.05$).

Table (2) shows that more than half (55.5%) of the patients had physical illness, (45.0%) were having disease onset more than 5 years ago, (40.0%) had disease onset 5 years ago while (15.0%) had disease onset 3 years ago; In addition to that (45.0%) were having treatment onset more than 5 years ago, (40.0%) had treatment onset 5 years ago while (15.0%) had treatment onset 3 years ago; As regard the type of therapy the studied patients receive; More than one third of the patients (37.5%) received (Medicine + Electrotherapy), About one quarter (25.0%) receive more than one type of therapy, (22.5%) receive Medicines only, (15.0%) receive (Medicine + Electrotherapy+ Psychotherapy), (45.0%) had more than 3 hospital admissions, (20.0%) had 3 admissions, (17.5%) had 2 admissions, while (17.5%) had one admission; In addition to that there is a statistically significant difference between the studied Schizophrenia patients as regard Disease onset, Treatment

Onset and Frequency of hospital admissions ($P < 0.05$).

Table (3): shows that there is a highly Statistically significant improvement in the “Subjective Sleep Quality” dimension in the studied patients with schizophrenia in the post intervention Phase when Compared with pre intervention phase ($P < 0.01$)

Table (4):and figure(1) shows that there is a highly Statistically significant improvement in all dimensions reflecting “The Pittsburgh Sleep Quality Index” which are: “Subjective Sleep Quality, Sleep Latency, Sleep Duration, Sleep Efficiency, Sleep Disturbance, Use of Sleep Medication & Day time Dysfunction”; In addition to that there is a highly Statistically significant improvement in Total PSQI score in the studied patients with schizophrenia in the post intervention Phase when Compared with pre intervention phase ($P < 0.01$); Moreover the dimensions “Sleep Efficiency” & “Subjective Sleep Quality” show the Highest Mean Score Improvement (0.00 + 0.0) & (18.3 + 16.7) respectively; while the dimensions “Sleep Duration” & “Sleep Latency” (35.8 + 8.8) & (33.3 + 0.00) respectively.

Table (5) shows that there is a highly statistically significant improvement in Levels of Sleep Efficiency in the post intervention Phase when Compared with pre intervention phase in the studied patients with schizophrenia ($P < 0.01$).

Table (6):and figure(2) shows that there is a highly statistically significant Positive Correlation between Global PSQI Percent Score, Sleep Hygiene Percent Score and Insomnia Severity Index Percent Score ($P < 0.01$).

Table (1A): Socio-demographic characteristics of patients with schizophrenia (n=40).

Items	No.	%	x2	P-value
Age (Years)				
≤ 25 Y	6	15.0	8.450	0.015*
26-35 Y	21	52.5		
36-45 Y	13	32.5		
Sex				
Female	20	50.0	0.000	1.000
Male	20	50.0		
Marital Status				
Single	4	10.0	19.800	0.000*
Married	17	42.5		
Divorced	17	42.5		
Widowed	2	5.0		
Residence				
Urban	15	37.5	2.500	0.114
Rural	25	62.5		

(*) Statistically Significant at $P < 0.05$ (**) Highly Significant at $P < 0.01$

Table (1B): Socio-demographic characteristics of patients with schizophrenia as regarded job, education, and monthly income (n=40)

Items	No.	%	x2	P-value
Job				
Clerk	10	25.0	11.000	0.027*
Technician	7	17.5		
Housewife	15	37.5		
Manual Worker	5	12.5		
No Job	3	7.5		
Monthly Income				
Sufficient	15	37.5	2.500	0.114
Insufficient	25	62.5		
Education				
Read and Write	4	10.0	4.750	0.314
Primary Education	12	30.0		
Preparatory	6	15.0		
Average Education	9	22.5		
Higher Education	9	22.5		

(*) Statistically Significant at $P < 0.05$

Table (2): Medical History of patients with schizophrenia (n=40)

Items	No.	%	x2	P-value
Physical Illness				
No	18	45.0	0.400	0.527
Yes	22	55.5		
Disease Onset				
3 Years	6	15.0	6.200	0.045*
5 Years	16	40.0		
> 5 Years	18	45.0		
Treatment Onset				
3 Years	6	15.0	6.200	0.045*
5 Years	16	40.0		
> 5 Years	18	45.0		
Type of Therapy				
Medicines Only	9	22.5	4.200	0.241
More than One Type	10	25.0		
Medicine + Electro	15	37.5		
Medicine + Electro + Psychotherapy	6	15.0		
Frequency of Hospital Admissions				
1-	7	17.5	8.600	0.035*
2-	7	17.5		
3-	8	20.0		
>3	18	45.0		

(*) Statistically Significant at P<0.05

Table (3): Comparison between the studied patients with schizophrenia as regard “Subjective Sleep Quality” in the pre and post intervention

Subjective Sleep Quality	Intervention		Total	x2	p-value
	Pre-intervention	Post-intervention			
During the past month, how would you rate your sleep quality overall? “Q9”					
Very Good	No.	0	18	61.143	0.000**
	%	.0%	45.0%		
Fairly Good	No.	6	22		
	%	15.0%	55.0%		
Fairly Bad	No.	15	0		
	%	37.5%	.0%		
Very Bad	No.	19	0		
	%	47.5%	.0%		
Total	No.	40	40		
	%	100.0%	100.0%		
Total Mean % Score	Mean ± Sd	Mean ± Sd		Paired t-test	P-value
		77.5 ± 24.3	18.3 ± 16.7	15.308	0.000**

(**) Highly Statistically Significant at P<0.01

Table (4): Comparison between the Pittsburgh Sleep Quality Index Dimensions in the pre and post intervention in the studied patients with schizophrenia

Pittsburgh Sleep Quality Index Dimensions	Pre-intervention (n=40)	Post-intervention (n=40)	Paired t-test	P-value
Subjective Sleep Quality	Mean ± Sd	Mean ± Sd	Paired t-test	P-value
	77.5 ± 24.3	18.3 ± 16.7	15.308	0.000**
Sleep Latency	Mean ± Sd	Mean ± Sd	Paired t-test	P-value
	91.6 ± 14.6	33.3 ± 0.00	25.239	0.000**
Sleep Duration	Mean ± Sd	Mean ± Sd	Paired t-test	P-value
	70.8 ± 26.3	35.8 ± 8.8	7.851	0.000**
Sleep Efficiency	Mean ± Sd	Mean ± Sd	Paired t-test	P-value
	37.5 ± 49.0	0.00 ± 0.0	4.837	0.000**
Sleep Disturbance	Mean ± Sd	Mean ± Sd	Paired t-test	P-value
	48.3 ± 16.7	26.6 ± 13.5	7.706	0.000**
Use of Sleep Medication	Mean ± Sd	Mean ± Sd	Paired t-test	P-value
	90.8 ± 15.0	20.8 ± 20.9	7.551	0.000**
Day time Dysfunction	Mean ± Sd	Mean ± Sd	Paired t-test	P-value
	73.3 ± 15.4	21.6 ± 16.1	17.074	0.000**
Total PSQI	Mean ± Sd	Mean ± Sd	Paired t-test	P-value
	70.0 ± 17.0	22.3 ± 6.2	19.272	0.000**

(**) Highly Statistically Significant at P<0 .01

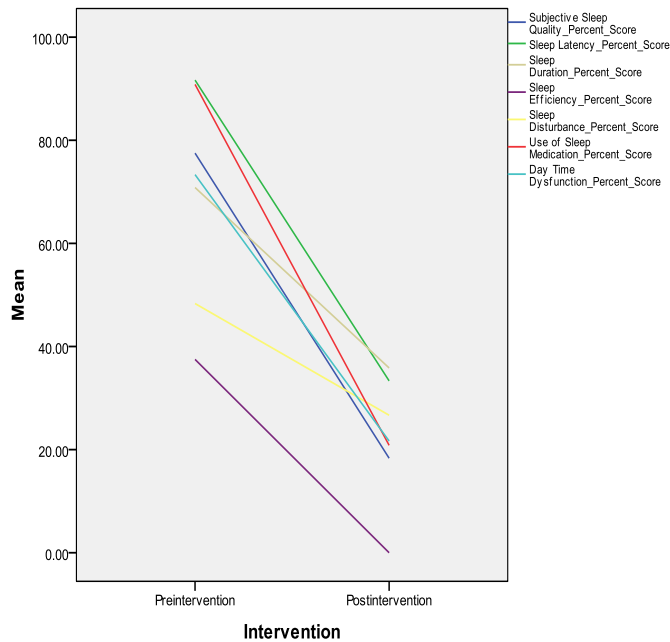


Figure (1): Comparison between the Pittsburgh Sleep Quality Index Dimensions in the pre and post intervention in the studied patients with schizophrenia

Table (5): Comparison between the Levels of Sleep Efficiency in the pre and post intervention in the studied patients with schizophrenia

Sleep Efficiency		Intervention		Total	x2	p-value
		Pre-intervention	Post-intervention			
Excellent	No.	25	40	65	18.462	0.000**
	%	62.5%	100.0%	81.3%		
Very Good	No.	0	0	0		
	%	.0%	.0%	.0%		
Good	No.	0	0	0		
	%	.0%	.0%	.0%		
Fair	No.	0	0	0		
	%	.0%	.0%	.0%		
Bad	No.	15	0	15		
	%	37.5%	.0%	18.8%		
Total	No.	40	40	80		
	%	100.0%	100.0%	100.0%		

(**) Highly Statistically Significant at P<0.01

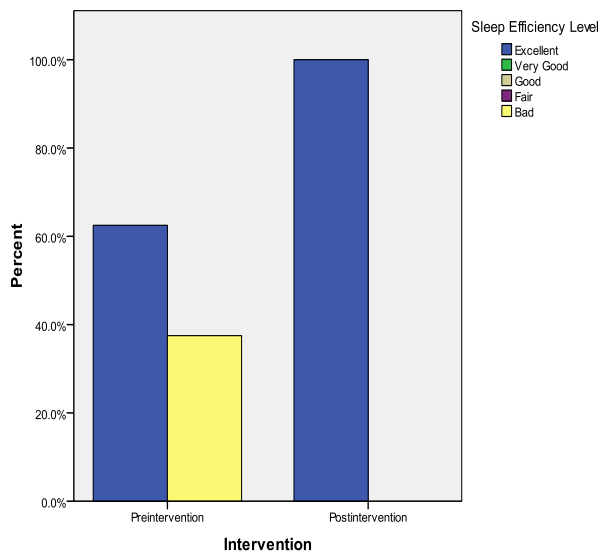


Figure (5): Comparison between the Levels of Sleep Efficiency in the pre and post intervention in the studied patients with schizophrenia

Table (6): Correlation between Global PSQI Percent Score, Sleep Hygiene Percent Score & Insomnia Severity Index Percent Score

Variables		Global PSQI Percent Score	Sleep Hygiene Percent Score	Insomnia Severity Index Percent Score
Global PSQI Percent Score	Pearson Correlation	1	.860**	.901**
	Sig. (2-tailed)		.000	.000
	N	80	80	80
Sleep Hygiene Percent Score	Pearson Correlation	.860**	1	.801**
	Sig. (2-tailed)	.000		.000
	N	80	80	80
Insomnia Severity Index Percent Score	Pearson Correlation	.901**	.801**	1
	Sig. (2-tailed)	.000	.000	
	N	80	80	80

** Correlation is significant at the 0.01 level (2-tailed).
 * Correlation is significant at the 0.05 level (2-tailed).

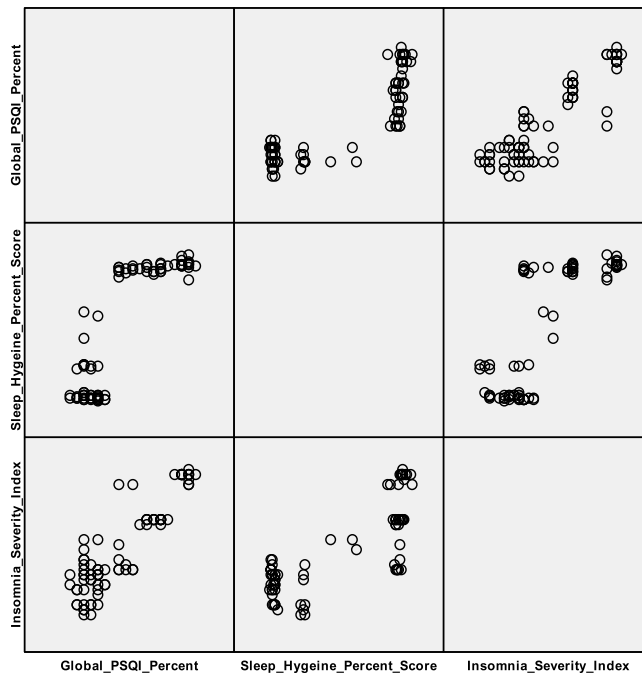


Figure (6): Correlation between Global PSQI Percent Score, Sleep Hygiene Percent Score & Insomnia Severity Index Percent Score

II- Operational Design:

The operational design consists of, the preparatory phase, implementation phase, evaluation phase, limitations of the study,

and ethical considerations. This study was conducted from Jun 2014 to December 2014, at the inpatient department of El-Abassia Governmental Hospital for

Psychiatric Mental Health in Cairo affiliated to Ministry of Health in Cairo, Egypt.

1- Preparatory Phase:

This phase deals with the preparation of the study design, data collection tools were based on reviewing current and past local and international related literatures about sleep quality among patients with schizophrenia. This review was carried out through using available books, articles, periodicals journals, and internet search to be acquainted with the current relevant tool that were performed for data collection .

This phase was based on the following steps:-

A- Administrative design:

An official letter requesting permission to conduct the study, it was submitted from the chairperson and the council members of Psychiatric/ Mental Health Nursing department, ethical committee, and official letters from the Dean of the Faculty of Nursing, Ain Shams University to the manager of the El- Abbasia Hospital for Psychiatric Mental Health and to all persons in charge. This letter was including the aim of the study and a photocopy from the data collection tools in order to get the permission and help for collecting the data.

B-Developing study tools:

The tools are standardized, which was translated by more psychiatric professors in an Arabic language and the researcher did not make any modifications on language.

In this phase, an extensive review of the current and previous related literature, local and international about the various aspects of the topics, the researcher did use books, articles, periodicals and other available resources through the internet.

⇒ Preparation of assessment tools develops the content of interview sessions, and evaluation of the tools to identify the effects of intervention program for improving sleep quality among patients with schizophrenia.

⇒ The researcher using tools of data collection under supervision of the research supervisors during the period from Jun 2014 to December 2014 for two days Saturdays & Thursdays weekly.

The aims of pilot study were to:-

- Identify any unexpected obstacles and problems.
- Test the observation sheet and its applicability.
- Ensure the clarity of the assessment sheet.
- Estimate the time needed to fill in the sheet.
- Evaluate the simplicity, practicability, legibility, understandability, feasibility, validity and reliability of the tools.
- Find the interferences with data collection that might face the researcher.

C-Pilot study

A pilot study was performed after an official permission was granted from the Dean of Faculty of Nursing, Ain Shams University to the manager of El-Abbassia Hospital. The pilot study included 6 patients, 3 males and 3 females using the questionnaire at 21/6/2014 then, the same 6 patients were reassessed again after 7 days for follow up at 28/6/ 2014 and the results were the same each time.

The pilot study is excluded from the actual study sample to test and evaluate the clarity, feasibility and applicability of research tools, and in order to estimate the time needed to fill in the study tools.

According to the pilot study results, the necessary modifications were done, as the font and format of tables that were reprinted in clear forms.

2- Implementation Phase:

A- Field work:

The researcher reviewed the current and past, local and international literature about the various aspects of the topics, the researcher did use books, articles, periodicals and other available resources through the internet to be acquainted with in depth information about the study. In order to design the study tools, which are stander, which was translated by more psychiatric professors in an Arabic language and the researcher did not make any modifications on the language. The actual fieldwork for the process of the data collection has consumed six months and started from 21/6/2014 to 28/6/2014 for pilot study, 19/7/2014 to 23/8/2014 for pre test, 30/8/2014 to 29/11/2014 for implementing the program, and 4/12/2014 to 25/12/2014 for post test, these occurred through the following steps:-

First Step:

Before starting the data collection, the researcher obtained an informed consent to conduct the study from the directors of El-Abbassia Governmental Hospital for Mental Health to facilitate data collection. Once permission was granted to proceed in the study, the researcher met with the manager of the inpatient department after introducing herself and the objectives of the study , the nature and purpose of the study was explained to gain cooperation then, the manager referred the researcher to:-

1. Hospital administration to gain official written permission after an official letter was issued from the Dean of Faculty of Nursing, Ain Shams University.
2. The head nurse and nursing staff in the inpatient departments to gain their oral consent and cooperation.
3. The researcher met with patients after introducing herself, explained the nature and purpose of the study to seek participants' cooperation, emphasizing that all collected information will strictly confidential then, oral approval consent was obtained from them before the intervention methods was applied.

The subjects were informed about their right to participate or not in the study. The subjects were also assured about anonymity, and that data will only be used for the purpose of the study.

Second Step:

The researcher interviewed the patients who agreed to participate in the study individually. The researcher contacted each patient. At the same time, the purpose and nature of the study were explained. The questionnaires were read, explained and choices were recorded by the researcher, to clarify the statements. Data were collected 2 days/ week (Saturday & Thursdays) during the period from (10.00 am to 2.00 pm) for about six month's period from Jun 2014 to December 2014. The time of answering questions took about 60 minutes for all pre tests questionnaires.

Third step:

The researcher started the intervention program sessions, these sessions included theoretical part as (overview about sleep and relation between sleep and schizophrenia.....etc) and practical part as (relaxation techniques, and meditation techniques.....etc). Patients with

schizophrenia are interviewed and assessed two times before intervention program sessions, to obtain baseline data and after implementing sessions to assess the effectiveness of sessions on the patients.

First, the researcher stayed with the patients with schizophrenia to establish trust relationship and gain his/her cooperation and then the researcher divided the study subjects to 5 small groups, each one consisted of 8 subjects to implementing the theoretical and practical sessions of the intervention program.

The researcher used different teaching methods and media such as; lecture, and open group discussions. In addition, the researcher also used the role play, demonstration, real life situations, re-demonstration, colored posters and printed handouts.

The researcher frequently repeated the program sessions, each session started by a summary about that was given through the previous session & objectives of the new session, taking into consideration using clear voice and language during the session.

The researcher, after collecting the answered sheets from the patient in the inpatient department, moved, to another patient to repeat the same previous steps, until completion of the process of data collection and beginning to implement the intervention program.

This phase began by data collection, and then the implementation of the intervention program among patients with schizophrenia for improving sleep quality who met previously mentioned inclusion criteria. The researcher reviewed the current, past, local and international literature in the various aspects related to the field of study to be acquainted with in depth information about improving sleep quality for patients, in order to design the program. The intervention program of this study was developed by the

researcher; it was implemented in the form of sessions. The subjects were divided into 5 groups; each group included 8 subjects (patients with schizophrenia who met the inclusion criteria).

Data collection of this study was carried out in Jun 2014 to December 2014 for two days (Saturdays & Thursdays) weekly, Followed by the implementation of the program in the period of six months in inpatient departments; at ElAbbassia hospital for Psychiatric Mental Health.

The researcher met 61 patients with schizophrenia, who have met inclusion criteria, but 15 of them refused to participate in the study, 6 of them excluded from the study who took part in the pilot study, while the other 40 patients, agreed to participate in the study sample.

Subjects involved in the study were interviewed and assessed two times before and after program, before the program to obtain baseline data and after implementing the program to evaluate the effectiveness of implementing the program on patients with schizophrenia.

The researcher distributed the printed handouts to the patients and the program was implemented in the form of sessions. The time allocated for achieving the program objectives was about 18 hours which are divided into 24 sessions covered in (7) hours for theoretical contents as introductory and acquaintance sessions and (11) hours for practical contents as sleep hygiene and sleep restriction therapy.....etc , each session took about 45 minutes for theoretical and 60 minutes for practical session.

III. Administrative Design:-

The researcher in order to obtain an approval to conduct the research study received official permissions from the following authorities:

The chairperson and the council members of Psychiatric/ Mental Health Nursing department, ethical committee, and the Dean of the Faculty of Nursing-Ain Shams University. This letter will include the aim of the study and a photocopy from the data collection tools in order to get the permission and help for collection of data.

- Faculty of Nursing, Ain Shams University

The faculty of Nursing Ain Shams University, Dean and members of ethical committee issued letter to responsible authorities at El-Abbassia Governmental Hospital for Mental Health to get permission to carry out the study.

- El-Abbassia governmental hospital for mental health

Responsible authorities (Director& Head nurse) at Mental Health Hospital affiliated to Ministry of Health gave approval to conduct the research study in the inpatient department.

Ethical considerations:

After securing official requirement for carry out this study, the patients with schizophrenia were informed about choosing to participate or not and about their right to withdraw at any time without giving a reason. Data were anonymous, and only used for the purpose of the study. The researcher explained the aim and nature of this study to the patients with reassurance about confidentiality about information given and that it will be used for scientific research only.

Limitations of the Study:

- Some patients with schizophrenia refused to participate in the study because they feel boredom from sharing in many researches before, without any benefits.

- Change in the time of implementation of the intervention program for improving sleep quality among patients with schizophrenia because the program takes a long time in developing.

Statistical Design:

The statistical analysis of data was done by using Computer Software for Excel program and the Statistical Package for Social Science (SPSS) program, version 12.0.1. First parts of data were descriptive data, which were revised, coded, tabulated and statistically analyzed using the proportion and percentage, the arithmetic mean(X), standard deviation (SD) and (T test) for quantitative data.

The Second part of statistical analysis, these qualitative data are presented as numbers and percentage chi-square (X) 2test and P-value are used to test the associated between variables. The validity and reliability test was confirmed by using the Cronbach Alpha Coefficient test.

Degrees of significance of results were:

- p-value > 0.05 Not significant (NS)
- p-value ≤ 0.05 Significant (S)
- P-value ≤ 0.001 Highly Significant (HS)

DISCUSSION

Sleep is essential to life and well-being. It is distinguished from wakefulness by perceptual disengagement and unresponsiveness to the environment (Carskadon & Dement, 2013). During sleep; people usually are quiet and recumbent, with close eyes and decrease responses to environmental stimuli.

Sleep is a basic human need that is fundamental to human survival. Although an individual's sleep pattern typically changes as he or she progresses through the life span, adequate amounts of restorative sleep are

necessary during each phase of human development to maintain the best level of physical and psychological function (Thorpy, 2014).

Sleep is a complex process that is crucial to good mental and physical health. It is important to recognize the link between sleep and mental health; people who visit sleep disorder clinics complaining of insomnia may have underlying mental health problems. In such cases, the mental health problem needs to be treated alongside the insomnia. Sleeping poorly increases the risk of poor mental health as mentioned by Benson&Zarcone(2013)

This study was aiming at evaluating the effect of intervention program for improving sleep quality among patients with schizophrenia.

This aim was achieved through:

*Assessing quality of sleep for patients with schizophrenia.

*Assessing sleep hygiene practices for patients with schizophrenia.

*Assessing insomnia severity for patients with schizophrenia.

*Develop intervention program for improving sleep quality among patients with schizophrenia according to their actual needs assessed.

*Implement and evaluate the effect of the intervention program.

Concerning the socio demographic characteristic of patient with schizophrenia, the present study findings show that. more than one half of the studied patients with Schizophrenia were between 26-35 years, about one third were between 36-45 years while less than three fifth were ≤ 25 Y, In addition to that; one half were males and one half were females, less than one half were

married, more than one third were divorced, while six fifth were single and eight fifth were widowed. As regards their residence, the majority of them are living in rural while one third living in urban; shows that about one third of the studied patients with schizophrenia were house wives, about one quarter were working; In addition to that . more than two third of the patients had insufficient income, while eight fifth of the patients had sufficient income, Moreover; less than one quarter of the patients were highly educated, less than one quarter were average education, less than one third had primary education, while eight fifth primary education, and one tenth can read and write.

These finding may be due to that most of patient with schizophrenia of the present study are in midlife, insufficient income due to low education and symptoms of disease, these lead to patients not working, Majority of the current study sample were not married female (single), this may be due to that signs and symptoms of disease lead to disturbance of personality and unsuccessful marriage life.

These findings of the present study are in agreement with those stated by Ballard (2013), who carried out a study on the assessment of sleep among patient with schizophrenia and indicated that, the female patients were equal males, patients not married (single) and divorced were more than married, and patients with primary education level more than patients who highly educated, average education, and not read or write, and patients had insufficient income more than patients had sufficient income

Concerning the medical history of patient with schizophrenia , the present study findings show that more than half of the patients had physical illness, less than one half were having disease onset more than 5 years ago, more than one third had disease onset 5 years ago while three fifth had disease onset 3 years ago; In addition to that less than one half were having treatment

onset more than 5 years ago, less than one half were had treatment onset 5 years ago while three fifth had treatment onset 3 years ago; As regard the type of therapy the studied patients receive; More than one third of the patients received (Medicine + Electrotherapy), About one quarter receive more than one type of therapy, less than one quarter receive Medicines only, while three fifth receive (Medicine + Electrotherapy+ Psychotherapy), less than one half had more than 3 hospital admissions, less than one quarter had 3 admissions, two fifth had 2 admissions, while two fifth had one admission.

Concerning the (PSQI) of patient with schizophrenia, the present study findings show that there is a highly Statistically significant improvement in the “subjective sleep quality” dimension in the studied patients with schizophrenia in the post intervention Phase when Compared with pre intervention phase ($P<0.01$) with a mean of 18.3 + 16.7.

These finding may be due to that all of patient with schizophrenia of the present study are in patient and the policy, roles of the hospital with nursing instruction induce application of intervention program as remember the patient of time of sleep.

These findings of the present study were same line with **Thorpy (2014)**, who carried out a study on the managing the patient of sleep disorder among patient with schizophrenia and indicated that, highly improvement in the “subjective sleep quality after improvement of sleep hygiene.

Concerning the (PSQI) of patient with schizophrenia, the present study findings show that there is a highly Statistically significant improvement in the items reflecting “sleep latency” dimension which are: “# hours in bed before falling asleep” & “how often did the patient had trouble sleeping because he cannot get to sleep within 30 minutes” in the studied patients

with schizophrenia in the post intervention Phase when Compared with pre intervention phase ($P<0.01$).

These finding may be due to that all of patient with schizophrenia of the present study are able to make sleep restriction therapy after application of sleep restriction therapy during intervention program.

This results of the present study were congruent with **Kaplan and Sadock (2014)**, who carried out a study on the synopsis of psychiatry, behavioral sciences, among patient with schizophrenia and indicated that, less statistically significant improvement in the “sleep latency” post intervention from once time but patient need more than four session to become able to sleep restriction .

The finding of the present study reveals that, there is a highly statistically significant positive correlation between global PSQI percent score, sleep hygiene percent score and insomnia severity index percent score ($P<0.01$).

These finding may be due to improve sleep quality is by improving sleep hygiene leads to improved positively to some of the most sleep disorders as insomnia, so they complete primary goal of which is to reach the healthy sleep, so that the aim of intervention program is improve sleep quality for patient with schizophrenia through teach the patient how to apply sleep hygiene.

These findings of the present study are in agreement with those stated by **Ballard (2013)**, who carried out a study on the assessment of sleep among patient with schizophrenia and indicated that, highly statistically significant positive correlation between global PSQI percent score, and insomnia severity index percent score ($P<0.01$).

These findings of the present study were same line with **Thorpy (2014)**, who carried out a study on the managing the

patient of sleep disorder among patient with schizophrenia and indicated that, positive correlation between global PSQI percent score, and sleep hygiene percent score.

CONCLUSION

In the light of the present study findings, it can be concluded that:

- This study has contributed to the knowledge based on intervention program for improving sleep quality among patient with schizophrenia. Sleep problem it is a major problem that affects on the physical, economical, and psychosocial condition of the patient with schizophrenia.
- These findings may have important aspect in the patient life. If poor sleep quality is indeed a critical factor in quality of life in patient with schizophrenia, so will need to focus on sleep quality and aggressively treat sleep problems. Specific treatments could include training in sleep hygiene with a focus on regular waking and sleep times, correct naps time, morning bright light, sleep restriction. Improved sleep may lead to improved ability to progress, and increased energy.
- There is a highly statistically significant improvement in levels of dimensions reflecting pittsburgh sleep quality index in the post intervention phase when compared with pre intervention phase in the studied patients with schizophrenia
- There is a statistically significant relationship between levels of pittsburgh sleep quality index in the studied patients with schizophrenia and their age and gender
- There is a highly statistically significant improvement in levels of sleep hygiene

practices in the post intervention phase when compared with pre intervention phase in the studied patients with schizophrenia

- There is statistically in significant relationship between levels of sleep hygiene practices in the studied patients with schizophrenia and their age and gender.
- There is a highly statistically significant improvement in items reflecting “insomnia severity index in the post intervention phase when compared with pre intervention phase in the studied patients with schizophrenia.
- There is statistically in significant relationship between “insomnia severity index in the studied patients with schizophrenia and their age, gender, marital status, residence, job, monthly income and education in the post intervention phase.
- Although there is a highly statistically significant positive correlation between global PSQI percent score, sleep hygiene percent score and insomnia severity index percent score.

RECOMMENDATIONS

- 1) Incorporating the concepts of sleep quality into the nursing curricula at all levels of nursing education with emphasis on practice of sleep hygiene.
- 2) Regular in-service training programs to be developed for nursing students' to consider application of sleep hygiene.
- 3) A further research is needed to investigate the sociocultural circumstances that may enhance the individual to be sleep well.

- 4) Suggestive program is recommended for helping caregivers improve their sleep quality, provide anticipatory guidance about sleep hygiene, plan interventions to reduce sleep problems and assist patient with schizophrenia to have healthy sleep.
- 5) Nurses should be informed about the sleep hygiene to prevent risk of sleep problems during dealing with patient with schizophrenia by continuous training programs for improving sleep quality.
- 6) Reassurance and support should be emphasized from patients, caregivers, which is consistent with findings elsewhere of the importance of healthy sleep.
- 7) Raising nursing awareness and that of caregivers about the importance of healthy sleep among patients with schizophrenia, through mass media, posters, psychiatric patient videos and illustrated booklets.
- 8) The nurses role in family psycho-education needs to be fostered with the aim of improving their sleep quality.
- 9) Nurses should be regularly observed and evaluated regarding their sleep quality fort patient with schizophrenia.
- 10) Further studies are needed to explore how to train nurses to practice sleep hygiene.
- 11) To ensure a long term effect of intervention program, they should be repeated interval s short period enough to provide booster refreshing of information, and keep patient improvement in sleep well and practice regarding sleep hygiene.

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