

## Impact of Nursing Intervention about Sleep Disturbance among Elderly Patient

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**Abstract:** Sleep disturbance are common in the general adult population, and as the population ages. Among several changes that occur with ageing, changes in sleep quality and quantity can be the most difficult for many older adults. The aim of this study was to improve elderly knowledge and practice related to sleep disturbance. The aim was to be reached through achievement of the following objectives: To assess elderly knowledge and practice concerning sleep disturbance; To develop and implement an educational training program about sleep disturbance and To evaluate the effect of educational training program on elderly knowledge and practice. A quasi-experimental design was used in carrying out this study, with pre-post assessment. This study carried out in outpatient clinics at Assiut University Hospital. It includes diabetes mellitus, chest, cardiac, cancer, hypertension, hepatitis viruses and physiotherapy clinics. The sample included 200 elderly patients suffering from sleep disturbance. An interview questionnaire sheet was developed by the researchers based on a review of relevant literature. It consists of three main parts: Part I: It includes items related to socio-demographic characteristics such as age, sex, educational level and marital status Part II: It includes items related to history of medical problems and information regarding sleep condition. Part III: program about exercise and sleep hygiene tips it include question about importance of exercise, technique of exercise and tips to improve sleep condition. Data was collected in a period of 6 months starting from January 2012 to the end of June 2012. Results: Two hundred adults aged  $\geq 60$  years with sleep disturbance mean age 63.17 SD  $\pm 3.9$  years; 46% male & 54% female. The vast majority of the elderly had complained from coronary disease, diabetes, osteoporosis and osteoarthritis. The majority of sample 87.5% had drinking tea before sleep and the minority 10.5% of them practice exercises also 40.0 % of them take antihypertensive drugs and only 8.5% of them take hypnotics drug. After the program they improved in sleep quality on the sleep latency period ( $p=0.04$ ), sleep duration ( $p=0.001$ ), and also had reductions in use of sleep medications ( $p=0.000$ ). As regards to elderly knowledge about sleep hygiene tips it was found that there is statistical significance difference before and after program about sleep hygiene tips. Based on the findings of this study, it is concluded that the educational program which includes the moderate intensity physical exercise plus sleep hygiene education is effective in improving self reported sleep quality and quality of life in older adults with sleep disturbance. In The light of these results, it is recommended to that general approach to detecting sleep disorders in an ambulatory setting. Patient with sleep disturbance should be educated about good exercise, sleep hygiene, home ventilation, and balanced diet. It can be achieved through mass media, health classes in different health agencies.

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### 1. Introduction:

Sleep disturbance are commonly under diagnosed and are a significant source of concern in the geriatric population. Chronic sleep disturbance is reported by nearly 50% of the elderly population. Insomnia affects up to 25% of older adults, and it's more prevalent in postmenopausal women (Subramanian & Surani, 2007). Several diverse factors may contribute to sleep disturbances in a large percentage of the elderly population, including retirement, health problems, death of spouse/family members, and changes in circadian rhythm (Avidan, 2005). Changes in sleep patterns may be part of the normal aging process; however, many of these disturbances may be related to pathological processes that are not considered a normal part of aging (Cole &

Richards,(2007) and Mahowald & Bornemann, 2007).

Among the elderly, mortality due to common causes (cardiovascular disease, stroke and cancer, etc) is about twice as often in people with sleep disorders than among those with good quality sleep. Another problem related to poor quality sleep is maintaining a good family and social relationship, the increase in pain, the tendency to a poor evaluation of their own health, the reduced capacity to perform daily activities and the increase in the utilization of health services (Middelkoop, et al., 2006).

Particularly common in this age group is chronic insomnia, characterized by fragmented sleep and early morning awakening (Middelkoop, et al., 2006). Insomnia in older adults is associated with mood and anxiety disorders, falls and cognitive impairment

(Ancoli-Israel, 2000, Cricco, et al., 2001, Stewart, et al., and Stone, et al., 2006). Drug may cause insomnia through their mode of action e.g frusemide causing nocturia or may have direct effect on sleep structure. Environment and behavior may also impair an individual ability to sleep. Excessive heat, cold, noise or light will clearly affect people's sleep (Harbison, 2002).

As changes in the circadian system are considered a hallmark of aging, and are implicated as underlying factors of reduced sleep quality in the elderly, it is plausible to assume that routine lifestyle rhythms may serve as a protective mechanism contributing to the maintenance of high quality of sleep (Kubitz, et al., 2006) Also environmental factors can influence this normal sleep-wake process. Changes in sleep patterns may be part of the normal aging process; however, many of these disturbances may be related to pathological processes that are not considered a normal part of aging (Webb & Campbell, 2000, Montgomery & Dennis, 2002 and Bloom, et al., 2009).

Sleep disorder are very common among elderly population and are highly prevalent in patients with chronic diseases. On this basis, older age and respiratory disorder likely interact, thus impairing and disruption nocturnal sleep (Bellia, et al., 2003). Hormone changes are also likely to cause sleep disruption in post-menopausal women (Bloom, et al., 2009).

Both subjective and objective measures of sleep quality provide support for age-related sleep changes. Subjectively, older adults report waking up at earlier times, increased sleep onset latency, time spent in bed, night time awakenings, napping and decreased total sleep compared to younger adults (Roepke & Ancoli-Israel, 2010).

Poor sleep quality and sleep disorders have a particular relevance among the elderly, because in addition to its high frequency, they may cause harms to their daily life and health. Attention deficits, reduced response speed, harms to the memory, concentration and performance may all be caused by poor sleep. Especially among the elderly, these signs may be interpreted as cognitive loss or dementia (Stone, et al., 2008).

Recent studies from our group indicate that increased levels of structured social and physical activity have positive effects on sleep and performance in older adults (Naylor, et al., 2000 and Benloucif, et al., 2004). In addition, participation in a regular exercise program can also have positive effects on sleep quality, mood and cognitive abilities (O'Connor, et al., 2003, Driver & Taylor, 2000 and Singh, et al., 2007).

Most studies examining the effects of exercise on sleep have focused on young good sleepers (Youngsted, 2005). The limited data available in older

adults also indicate an association between physical activity levels and sleep quality. For example, older physically fit men had shorter sleep onset latencies, less wake time after sleep onset; higher sleep efficiency and more total slow wave sleep than sedentary older men (Edinger, et al., 2000). There are many good reasons evident to encourage regular physical activity in older individuals given its positive effect on functional and cognitive status (Bloom, et al., 2009).

The amount of sleep required may change with age. If a significant change in amount of sleep occurs but there are no disturbances in daily functioning, there shouldn't be a cause for worry. Patients should be instructed to go to bed at the same time, wake up at the same time, and avoid daytime napping, caffeine, heavy meals, nicotine, alcohol, and exercise at bedtime. Sedentary elderly persons should be encouraged to start a daily exercise program in the morning, as moderate training (60 min/d) has been shown to improve sleep quality. Another useful tool is to turn the bedroom into an environment that is quiet, dark, and cool and ultimately promotes sleep (Stevenson & Topp, 2000 and Morin, et al., 2006).

The behavioural treatment of insomnia often involves teaching sleep hygiene techniques in combination with other behavioural treatments to counteract maladaptive or dysfunctional beliefs. Basic sleep hygiene rules for older adults are; do not spend too much time in bed, maintain consistent sleep and wake times, get out of bed if unable to fall asleep, restrict naps to 30 min in the early afternoon, exercise regularly, spend more time outside, without sunglasses, especially in the day, increase overall light exposure, avoid caffeine, tobacco, and alcohol after lunch and limit liquids in the evening (Roepke & Ancoli-Israel, 2010).

When assessing sleep patterns in the elderly, nurses must use a combination of objective and subjective data. Simply because an elderly individuals eyes are closed during nighttime checks does not mean for signs of fatigue and decreased participation in activities and should ask the elderly how they feel about the adequacy of their sleep and rest (Ebersole, et al., 2008). It is important to provide patient education to treat sleep difficulties or disorders. When possible, it is better to teach elders non pharmacologic measures to improve sleep. Significant improvement can occur by simply suggesting that people establish a relaxing bedtime ritual each evening. Refraining from caffeine after midday and limiting fluids after dinner can relieve nocturia. In addition, advise elders to avoid naps, and strenuous exercise late in the day, and establish a routine for going to bed and getting up. Also, watching TV and reading books that could cause stress or anxiety before bedtime can interfere with sleep (Roccichelli, 2010).

**Significance of the study**

Older adults frequently complain about having trouble sleeping. Older individuals consider quality sleep to be an essential part of good health (Mahowald, et al., 2007). Individual with sleep problems are more likely to develop hypertension, depression, cardiovascular, and cerebrovascular disease (Kamel & Gammack 2006). (Bloom, et al., 2009) reported that Sleep disturbance or insomnia is the third most common patient complaint, ranking behind headaches and the common cold.

**Aim of the study:**

The aim of this study was to improve elderly knowledge and practice related to sleep disturbance. The aim was to be reached through achievement of the following objectives: and.

1. To assess elderly knowledge and practice concerning sleep disturbance.
2. To develop and implement an educational training program about sleep disturbance
3. To evaluate the effect of educational training program on elderly knowledge and practice.

It was hypothesized that implementation of the program will result in an improvement of sleep condition among elderly person.

**2. Patients and Methods**

**Research design:** A quasi-experimental design was used to carrying out this study.

**Setting:** This study carried out in outpatient clinics at Assiut University Hospital. It includes diabetes mellitus clinic, chest, cardiac, cancer, hypertension, hepatitis viruses and physiotherapy clinics.

**Sample:**

The sample of this study was 200 elderly patients aged 60 years and above whose complains from sleep disturbance attending to the previously mentioned setting during six month starting from the first of January 2012 to the end of June 2012. The total numbers of them were 200 elderly patients.

**Inclusion criteria:**

- 1- Patients aged 60 years and above.
- 2- Elderly patient complain from sleep problems
- 3- Both sexes.

**Exclusion criteria:**

- 1- Brain related disorders including: cerebrovascular disease.
- 2- Psychiatric disorders.

**Tools for data collection:**

An interview sheet was developed by the researchers based on relevant literature in order to evaluate elderly patients for sleep problems. It consists of three main parts:

Part I was for socio-demographic characteristics it includes, age, sex, resident, marital status, level of education, occupation, and family size.

Part II was for history of medical problems and it includes chronic illness, such as hypertension, diabetes mellitus, liver diseases, heart diseases, kidney diseases.....etc.

Part III assessment of sleep condition it includes number of sleep hours at day and night, special practice before go to sleep, sleep, and causes of sleep disturbance.....etc.

Part IV assessment of knowledge and practice about exercise it includes question about importance of exercise, technique of exercise and sleep hygiene tips.

**Observation checklist:** used to assess the practice of exercise for elderly patient.

Scoring system for practice, items correctly done were scored (one) and the incorrect or not done (zero) scores were summed and converted into percent scores.

**Educational program**

**1- Preparation:** for preparation of the program, review of relevant literature was done. The program lectures were prepared in Arabic aids and media included discussions, handout, and the practical part by using demonstration and re-demonstration.

**2- Program content of two parts:**

- **Theoretical part:** it included one session, about the importance of exercise, types and time available for doing exercise and sleep hygiene tips

- **Practical part:** this part also consisted of one session about technique of exercise. This was divided into demonstration by the investigators in stimulate situations using doll (10 minutes), and re-demonstration by participants (10 minutes).

**Pilot study:**

A pilot study was carried out collected on 10 elderly patients. These patients were excluded from the actual sample. It served testing the practicability of the tools used to detect any deviation of the questions and determine time needed to fulfill it. As a result of the pilot study, the necessary modifications in the tools were done.

**III. Data collection:**

After obtaining official permissions, and finalization of the tools and educational program, the researchers selected the out patient clinic to be included in the study sample. Then, they met with the staff of each clinic and explained to them the nature and purpose of the study and encouraged them to participate. A pre-test was conducted to the elderly to assess their knowledge and practices before the implementation of the program. This was done through interviewing and observation using the designed tools. Each subject was interviewed individually and reassured that the information obtained will be confidential and used only for the purpose of the research.

Then, the developed educational program was implemented. It include two sessions was used .The first session for filling the questionnaire sheet. Separate sessions were planed for each clinic including elderly who complains sleep disturbance. A copy of the program contents was delivered to them at the end of the sessions. Teaching methods involved lecture, discussion, demonstration and re-demonstration. Using teaching aids as pictures for practice. After 3 month from implementation of the program, a post-test for knowledge and practice was done using the same tools. Data was collected during the period from the first of January 2012 to the end of June 2012. Every day collected about 5-7 sheet. Two days every week, time needed for full sheet approximately 20-30 minutes.

#### VI. Statistical analysis:

The obtained data were reviewed, prepared for computer processing, coded, analyzed and tabulated. SPSS Version 17.0 (SPSS Inc., Chicago, IL) were used for all data analyses. Data was presented using descriptive statistics in the form of frequencies and percentages, means, standard deviations and using chi-square test. Statistical significance was considered at P-value <0.05.

**VII. Limitations and obstacles:** The researcher spent more time to interpret all items of the sheet during the interviewing of the elderly patients related to their difficulty of hearing changes, difficulty of mobility and more numbers of illiteracy in the study.

#### 3. Results:

The sample characteristics are described in **Table (1)** it shows that 41.0% of study group their age ranged from 60-74ys with mean age 63.1 years. (46.0%) of them male and (54.0%) were female. (11.0%) of studied sample were university graduates, also (73.5%) of sample were married. **Table (2)** shows the distribution of the studied sample as regards to medical diseases it was found that high percent of cases complains of hypertension, diabetes mellitus and coronary diseases (95.0%, 84.0%, and 80.0%) respectively. **Table (3)** represents the distribution of the studied sample as regards to sleeps status it was found that the majority of sample (87.5%) had drinking tea before sleep and the minority (10.5%) of them practice exercises.

**Table (4)** reveals distribution of the studied sample as regards to drug history it was found that (40.0%) of elderly take antihypertensive drug, 80% cardiac, and 84% DM drug while (20.0%) of them take antidepressant drug and only (25%) of them take hypnotics drug. **Table (5)** represents distribution of studied sample as regards factors affecting sleep. The majority of sample (91.0%) had excessive daytime sleepiness and the minority (30.5%) of them had bad dreams or nightmares.

**Table (6):** shows the distribution of studied sample as regards to exercise before and after 3 months of program it was reveals that a statistically significance difference for knowledge of important exercise  $P<0.03$  and an highly statistically significance difference for practicing exercise  $P<0.001$  . **Table (7):** illustrate the distribution of studied sample as regards to elderly knowledge about Sleep hygiene tips it was found that there is statistical significance difference before and after program about sleep hygiene tips.

**Table (8)** show the characteristics of sleep in study group with highly statistical significance difference before and after program about Sleep latency, Sleep onset, Duration of sleep and Use of sleep medications  $P<0.05$  and insignificance for time of waking up. **Figure (1)** show the relation between sleep disturbance and gender after the program, more than two third of the elderly complains from sleep disturbance (64.13%) had male and (38.8%) had female with a statistically significance difference  $P<0.05$ . **Figure (2)** show the relation between sleep disturbance and age after the program it was found that more than half of the sample (53.54%) in age more than 74 years complains from sleep disturbance and there is statistically significance difference  $P<0.001$ . **Figure (3)** represent that the relation between sleep disturbance and dependency after the program, there is a statistically significance difference  $P<0.05$ . **Table (9)** show the relation between sleep disturbance and chronic diseases there is a statistically significance difference about coronary, chest, renal and osteoarthritis diseases  $P<0.04$   $P<0.02$   $P<0.04$   $P<0.02$  respectively and not statistically significance deference about DM, hypertension, visual and hearing diseases.

**Table (1): Distribution of studied sample as regards to socio-demographic data (n=200).**

Item	Descriptive
<b>Age "years"</b>	
60-74 ys	82 (41.0%)
75-84 ys	75 (37.5%)
+84ys	43 (21,5%)
Mean $\pm$ S.D	63.17 $\pm$ 3.9
<b>Gender</b>	
Male	92 (46.0%)
Female	108 (54.0%)
<b>Education:</b>	
Illiterate	30 (15.0%)
Primary	57 (28.5%)
Secondary	91 (45.5%)
University	22 (11.0%)
<b>Marital status:</b>	
Single	33 (16.5%)
Married	147 (73.5%)
Window	20 (10.0%)

**Table (2): Distribution of studied sample as regards to medical diseases (n=200).**

Item	Descriptive
<b>Medical diseases:#</b>	
• Cardiovascular diseases	160 (80.0%)
• DM	168 (84.0%)
• Hypertension	190 (95.0%)
• Chest diseases	44 (22.0%)
• Renal diseases	28 (14.0%)
• Osteoarthritis and osteoporosis	72 (36.0%)
• Visual hearing disease	56 (28.0%)
• Gastrointestinal disease	47 (23.5%)

#more than one answer

**Table (3) Distribution of the studied sample as regards to life style.**

Item	Descriptive
<b>Number of sleep hour at days naps</b>	
• Adequate	132 (66.5%)
• In adequate	68 (34.0%)
<b>Special practice before sleep#</b>	
• Eat food	90 (45.0%)
• Drink water	114 (57.0%)
• Drink tea	175 (87.5%)
• Drink coffee	85 (42.5%)
• Drink milk	90 (45.0%)
• Do exercise	12 (6.0%)
<b>Complication of sleep disturbance#</b>	
• Headache	144 (72.0%)
• Mood disturbance	113 (56.5%)
• Increase smoking	81 (40.5%)
• Thinking disturbance	73 (36.5%)
• General aching	104 (52.0%)

**Table (4): Distribution of studied sample as regards to drug history (n=200).**

Item	Descriptive
<b>Drug history:#</b>	
• Antihypertensive drug	80 (40.0%)
• Cardiac drug	160 (80.0%)
• DM drug	168 (84.0%)
• Stimulating agent	24 (12.0%)
• Antidepressant	40 (20.0%)
• Corticosteroids	19 (9.5%)
• Sedative	50 (25.0%)
• Hypnotics	17 (8.5%)
• Medications for liver and gastritis	30 (15.0%)

#more than one answer

**Table (5): Distribution of studied sample as regards factors affecting sleep.**

Factors affecting sleep#	Descriptive
• Nocturnal sleep	132 (66.0%)
• Waking up at night or too early in the morning	90 (45.0%)
• Feeling very hot	72 (36.0%)
• Pain	154 (77.0%)
• Coughing or snoring very loud	45 (22.5%)
• Bad dreams or nightmares	61 (30.5%)
• Excessive daytime sleepiness	182 (91.0%)

# More than one answer

**Table (6): Distribution of studied sample as regarding to exercise practice in pre and post program.**

Item	Pre- program No. (%)	Post-program No. (%)	p- value
<b>Do you know important of exercise:</b>			
-Know	106 (53.0%)	156 (78.0%)	P<0.02)*
-Don't know	94 (47.0%)	44 (22.0%)	
<b>Knowledge about important of exercise:</b>			P<0.03*
Improve physical status.	85 (42.5%)	165 (82.5%)	
Improve psychological status.	103 (51.5%)	171 (85.5%)	
Positive effect on social status.	87 (43.5%)	139 (69.5%)	
Prevent several diseases	106 (53.0%)	166 (83.0%)	
<b>Practicing Exercise:</b>			P<0.001**
1-Doing exercise in bed	6 (3.0%)	115 (57.5%)	
2-Doing exercise in sitting position	3 (1.5%)	89 (44.5%)	
3- Doing exercise at any time	4 (2.0%)	25 (12.5%)	

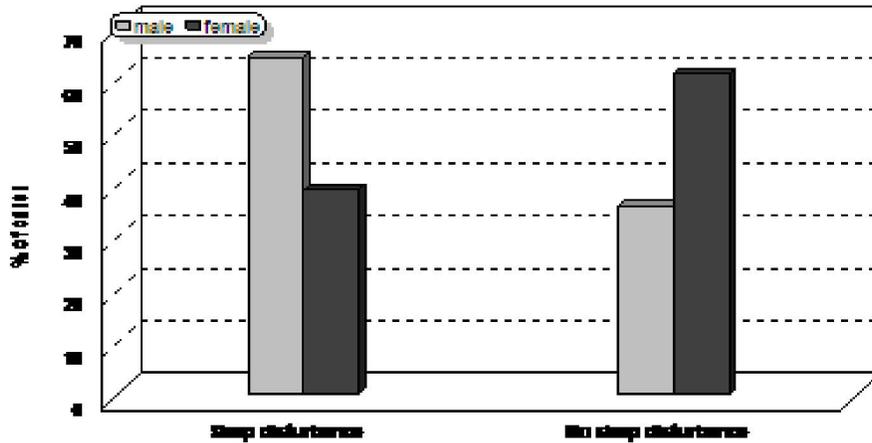
\*Several diseases (sleep problems, GIT, respiratory, musculoskeletal system)

**Table (7): Distribution of studied sample as regards to knowledge about sleep hygiene tips in pre and post program.**

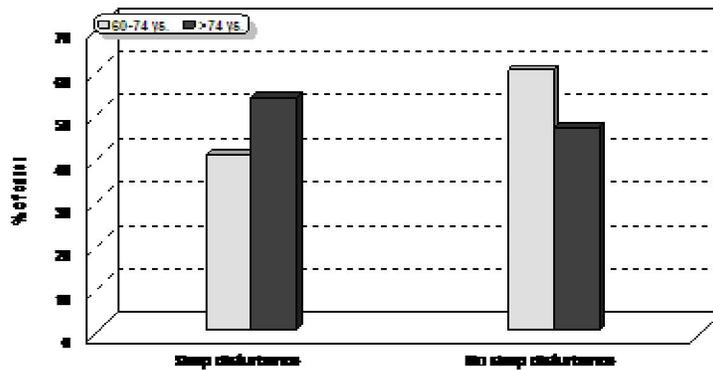
Item	Pre-program No. (%)	Post-program No. (%)	p- value
<b>Sleep hygiene tips</b>			
Do not spend too much time in bed	6 (3.0%)	96 (48.0%)	P<0.02)*
Maintain consistent sleep and wake times	21 (10.5%)	84 (42.0%)	
Get out of bed if unable to fall a sleep	8 (4.0%)	78 (39.0%)	
Restrict napes to 30 min in the early afternoon	10 (5.0%)	120 (60.0%)	
Exercise regularly	12 (6.0%)	182 (91.0%)	
Spend more time outside, especially in the day	21 (10.5%)	133 (66.5%)	
Increase overall light exposure	25 (12.5%)	174 (87.0%)	
Avoid caffeine, tobacco, and alcohol after lunch	85 (42.5%)	150 (75.0%)	
Limit liquids in the evening	20 (10.0%)	182 (91.0%)	

**Table (8): Distribution of studied sample as regards to sleep condition in pre and post program.**

Item	Pre-program	Post- program	p- value
1- Sleep latency (mints).	26.47±13.42	21.42±11.08	P<0.04*
2- Sleep onset (mints).	13.12±0.30	8.43± 3.54	P<0.03*
3- Duration of sleep (mints).	4.52±1.25	6.78±2.43	P<0.001**
4- Time of awakening	6.24±0.32	7.86±3.43	P=0.530n.s
5- Use of sleep Medications	23 (11.5%)	3 (1.5%)	P<0.000***



**Fig (1): Relation between sleep disorders & gender after the program.**



**Fig (2): Relation between sleep disorders & age after the program.**

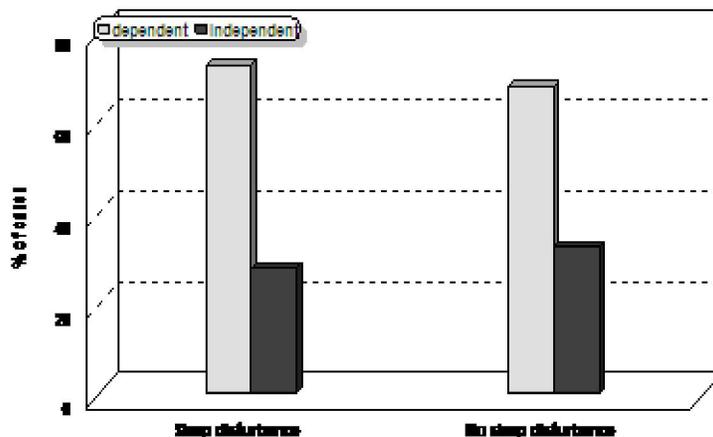


Fig (3): Relation between sleep disorders & dependent after the program

Table (9): Relation between sleep disturbance and chronic diseases in post program.

Item	Sleep disturbance	No sleep disturbance	p-value
<b>Medical history:</b>			
• Cardiovascular diseases	98 (97.02)	62 (62.62%)	P< 0.04*
• DM	84 (83.16%)	84 (84.84%)	P=0.371n.s
• Hypertension	100 (99.0%)	90 (90.9%)	P=0.241n.s
• Chest diseases	34 (33.6%)	10 (10.10%)	P<0.02*
• Renal diseases	20 (19.8%)	8 (8.8%)	P<0.04*
• Osteoarthritis	54 (53.46%)	18 (18.18%)	P< 0.02*
• Visual & hearing disease	26 (25.74%)	30 (30.30%)	P=0.471n.s
• Gastrointestinal disease	27 (26.73%)	20 (20.20%)	P=0.418n.s

#### 4. Discussion:

Sleep disturbance are very common in the elderly and a progressive decrease in duration and deterioration in quality of sleep may assumed as hallmark of aging Bellia et al., (2003). The results of this study indicated that moderate intensity physical activity plus sleep hygiene education is effective in improving self reported sleep quality, quality of life in older adults with insomnia. These results highlight the potential of structured physical activity, sleep hygiene programs to improve the effectiveness of standard behavioral approaches for the treatment of insomnia, particularly in a sedentary older adult population Roepke & Ancoli-Israel, (2010).

The present study showed that 41.0% of elderly their age ranged from 60-74years and 21.5% of them their age more than 84 years. Also in post test there is statistically significance difference between age and sleep disturbance (P<0.001). This study agree with Bellia et al., (2003) who stated that positive correlation between age and prevalence of sleep disturbance was observed in case group.

One possible contributing factor placing women at increased risk for sleep difficulties are

changes related to menopause. In fact, sleep difficulty is one of the hallmark symptoms of menopause, with approximately 25-50% of women undergoing menopause reporting sleep complaints compared to approximately 15% of the general population Bloom, et al., (2009).

In pre test more than half 54.0% of studied elderly complain from sleep disturbance were female and 46.0% of them were male. After the program the percentage improved to more than two third of the elderly complains from sleep disturbance 64.1% had male and 38.8% had female with a statistically significance difference (P<0.05).

These results agree with Eichling, & Sahni, (2005) who reported that older women are particular risk for sleep difficulties. Also it is agree with Byles et al., (2005) who reported that in a large epidemiologic study of people older than 70 years, 35% of women reported moderate to severe insomnia, compared to only 13% of men. Leger, et al., (2001) who found the significant differences were found for sleep quality among men.

Individual with sleep disorders are more likely to develop hypertension, depression, cardiovascular, and cerebrovascular diseases. Conversely, individuals

with any of these diseases are at higher than normal risk of developing sleep problems Bloom et al., (2009).

Concerning the distribution of medical disease in the present it was found that the majority 95.0% of studied sample complains from hypertension and 84.0% complains diabetes mellitus and 36.0% complains from osteoarthritis those patients take medications for these diseases it may interfere with sleep condition. This result is incongruent with Youngsted, et al., (2005) and Bellia, et al., (2003) who reported that the prevalence of main disease was as follows hypertension 27.3% arthritis 27% diabetes 12.7% and coronary artery disease 11.4% that sleep difficulties were not related to aging itself but instead were related to medical and psychiatric disorders and related health burdens. Department of Health and Human Services, (2001) reported that recent investigations have shown a growing association between sleep disturbance and the occurrence of cardiovascular disorders, strokes, loss of cognitive functions and memory, and dementia.

As regards the relation between sleep disturbance and chronic diseases there is a statistically significance difference about coronary, chest, renal and osteoarthritis diseases ( $P < 0.04$ ), ( $P < 0.02$ ), ( $P < 0.04$ ), ( $P < 0.02$ ) respectively and not statistically significance deference about DM, hypertension, visual and hearing diseases in relation to pre & post program.

In the present study 8.5% of the studied elderly receive hypnotic to treat sleep disturbance. Clarkson-Smith and Hartely, (2009) indicated that the analgesics and sedative hypnotic medications prescribed for chronic pain and promoting sleep have both analgesic and sedating effects, so it is difficult to ascertain whether reducing sleep disturbances contributed to the reduction of pain interference on sleep or the soporific effects of the medications. Bloom, et al., (2009) who stated that approximately 15% of the adult population in the United States has insomnia of significant enough severity to seek medical attention. Of the US population, 1.7% receives a hypnotic prescription annually, and another 0.8% purchase nonprescription sleep aids. Fifty million Americans occasionally take some form of sleep medication.

As regarding the elderly practice before sleep the present study found that the majority of elderly drink tea and more than half of them drink water before sleep these fluids had increase the frequency of maturation at night which might interfere with sleep condition.

In the present study about three quarter 77.0% of the elderly patient had complain with pain that affecting on sleep condition it is believed that the investigation of the origin of pain and its appropriate treatment could have reduced the frequency of this complaint. It is agree with Gehrman, et al., (2003) who found that sleep disturbances were associated with

some medical disorders related to pain symptoms such as arthritis, low back pain, headache, and fibromyalgia. In a similar study by Avidan et al., (2005) who reported that the 21.1% of the elderly has been troubled sleep by pain three times a week or more, and 71.1% reported this fact once or twice a week. Similar results with Germain, et al., (2007) who found that severity and the distribution of pain were both strongly associated with sleep disturbances. However, we did not find consistent associations between individual sites of pain and sleep difficulties, and only shoulder and hand pain independently are associated with some sleep disturbances. And it disagrees with Clarkson-Smith and Hartley, (2009) who stated that pain complaints were reported by 33% of the elderly. Pain is a recognized factor of nocturnal sleep disorder, generally more prevalent in the elderly, and associated to reflexes in performance during wakefulness.

Regarding the elderly complains with waking up at night or too early in the morning the present study presented that 45.0% of the elderly had complains waking up at night or too early in the morning. The fragmented sleep and early awakening are characteristic changes in sleep patterns observed among the elderly.

Concerning the patient had complained with coughing or snoring very loud the finding of the present study showed that 22.5% of the elderly and 30.5% of them had bad dreams or nightmares, a percentage that cannot be neglected since this type of complaint refers to the possibility of sleep disturbance. This is a major sleep-related breathing disorder, and is highly prevalent in the elderly.

The feeling very hot, pointed out as problems by 36.0% of the elderly, suggests that the room temperature can be an important determinant of the quality and quantity of sleep. Brassington, et al., (2000) who found that in environments of high temperature, periods of sleep are characterized by increased waking and changes in sleep architecture. This factor was reported as disturbing the sleep. Avidan, et al., (2005) Evidence suggests that sleep architecture disruption in menopausal women is associated with vasomotor symptoms such as hot flasher.

Among the problems related to nocturnal sleep, there is the need to get up to go to the bathroom, reported by 66.0% of the elderly. Another author showed similar results Avidan, et al., (2005) with 71% of seniors reporting the complaint of nocturia. King, et al., (2007) noticed that nocturnal sleep should be seen as an important disorder that, if not treated properly, may have costly consequences for the individual and society, among them the greater susceptibility to falls and reduced quality of nighttime sleep because of the need to wake up at night to go to the bathroom..

Concerning the characteristics of sleep in study group with highly statistical significance

difference before and after program about Sleep latency, Sleep onset, Duration of sleep and Use of sleep medications ( $P < 0.05$ ) and insignificance for time of waking up. Also the duration of sleep increase after the program. The larger effect seen in this study may be due to differences in the duration and intensity of the physical activity level and the characteristics of the participants. Irwin et al., (2006) they reported that Improvements were seen in sleep duration following two weeks of intervention.

The same line with Morin, et al., (2000) and King, et al., (2008) who stated that increase in self reported sleep duration in the exercise sleep education group is higher than before program. This large increase in sleep duration may be in part due to the inclusion criteria of having habitual sleep duration of less than 6.5 hours a night, thus, improved sleep continuity may also have contributed to the self reported increase in sleep duration.

The present study showed that a positive correlation between age and prevalence of sleep disturbance was observed in the case group after program. It congruent with Bellia, et al., (2003) who reported that positive correlation between age and prevalence of sleep disturbance was significantly higher in asthma group. A more thorough assessment of possible differences between men and women of this study.

The present study showed that a positive correlation between degree of dependence and prevalence of sleep disturbance was observed in the case group after program. It congruent with Kramer, et al., (2007) who reported that elderly patients, complaints about sleep were shown to be related not only to the presence of diseases but also to the presence of disabilities, which could, indirectly, indicate a high degree of dependence. Inactivity, on the other hand, can lead to fragmentation, i.e., reduced sleep efficiency. Another factor to consider is that some of the dependent elderly require receiving care from others during the night, which implies they would be woken up in order to receive such care.

### Conclusion:

In this study the educational program which includes the moderate intensity physical exercise plus sleep hygiene education is effective in improving self reported sleep quality and quality of life in older adults with sleep disturbance.

### Recommendations:

1. Encouragement of the elderly people about the importance of follow up and periodic check-up to detect early health deviation to make early management and to prevent complication or any deterioration of the skin health.

2. Health education to the patient about the normal changes associated with aging and their related problems in important to help increasing awareness of people about aging process, improving the skin health.
3. Elderly people and their families should be acquainted with different services available in the community, which helps them to meet their needs whether skin care.

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