



## Relation of Anxiety, Sleep Disorders and Drug Abuse with Patient's Tendency Toward Sedative Drugs in Semnan Prison

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**ABSTRACT:** According to statistics and reports, excessive use of sedatives can lead to serious illness or even death. Taking sedatives is rising among the prisoners. Investigating the possible causes of this drug use and finding alternatives to minimize it is an important issue that needs professional attention, whether in the field of medical science or in the realms of psychology. This study aimed to investigate the relationship of anxiety, sleep disorders and drug abuse with sedative drugs in male patients of Semnan prison. Due to the lack of population, all sedatives users of Semnan prison were considered as sample. A list of names was prepared with the assistance of prison physician. Participants in this study responded to Pittsburgh Sleep Disorders (The Pittsburgh Sleep Quality Index), Spiel Berger State-Trait Anxiety questionnaires and a five-choice question for assessment of drug abuse. The results showed that there is a relationship between anxiety, sleep disorders and taking sedatives. But there is no relationship between drug abuse and taking sedatives.

**Keywords:** Sedative, Drug Abuse, Sleep Disorders, Anxiety.

### INTRODUCTION

Tranquilizers are drugs that bring some relief by reducing the activity of the central nervous system. These drugs include painkillers, anti-anxiety drugs and sleeping pills. The best known tranquilizers are benzodiazepines, barbiturates and sleeping medications. Sedative abuse occurs when legal drugs are misused or overused. These drugs cause relief or sleep recovery (Aliloo, 2012). The decision whether or not to prescribe weak tranquilizers has become the apparent dilemma for mental health professionals working in prison. Prescribe medications to reduce anxiety may help prisoners cope with the hard conditions, but it may also help drug dependence (Diamond et al., 1981). The recent research by the "Centers for Disease Control and Prevention" show that currently 15,000 people lose their lives annually due to the excessive consumption of painkillers and sedatives. This means that deaths by taking this type of drugs exceeded the number of deaths from heroin and cocaine addiction. Interesting to note that in some states of America, painkillers and sedatives account for more deaths than automobile accidents. In 2007, almost 100 people lost their lives on a daily basis due to the excessive consumption of drugs in America. Mortality rate of 11.8 per 100,000 people in 2007 were almost double the rate of 1991. Since 1999, prescribed drugs are responsible for much of the increase in the death rate (Warner et al., 2009). The anxiety was and is one of the biggest disasters of human life and its resulting factors are entirely tangible in individual and social life (Nikbakht, 1999).

Benzodiazepines (anti-anxiety drugs) and quetiapine (an antipsychotic drug) are among sedative abuse cases in prison. Quetiapine is also expensive with serious side effects. The prescription of these drugs for anxiety and insomnia is the first choice in prison (Reeves, 2011). Anesthesiologists inject sedation prior to anesthesia in surgeries. Of course, taking sedatives can come along with many side effects. These side effects can be noted: dizziness, poor concentration and memory, blurry vision, headaches, feeling sick. Older persons encountered with sedative side effects more than others. Loss of consciousness can leave a negative impact on the working person. One who uses sedation may be required to refrain from working with machinery or driving (Butler and Hope, 1995). Harsh life conditions of prison can be one of the factors making for anxiety and threatening mental health. The name of prison is closely associated with difficult conditions filled with suffering for most of the people. The name of prison reminds most of the people of scary, dark and frightening environment. Prison environment has strange conditions and features. Overall, the prison is one of the most stressful and anxious conditions for anyone (Akbari et al., 2012). In research by Konrad et al. (2012), the concept of prison psychiatric has been studied. Prison psychiatric is a desolate area of mental health care system. In fact, in most cases, therapy is for people without access to community-based healthcare systems (Konrad et al., 2012). This illustrates the importance of considering psychological conditions of

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clients in prisons. Anxiety is a warning of external or internal threats with lifesaving qualities. In the lower level, anxiety is a warning of physical injury, pain, distress, possible punishment, failure of social and physical needs, being apart from the popular ones, threat to the strength and success and ultimately threatens the integrity and security of person. Distinction between anxiety and fear is that, fear is a proper answer to a known threat; while anxiety is a response to the unknown, ambiguous or contradictory threat (Kaplan and Sadock, 2010). As to the sleeping area, we do sleep nearly a third of our lives. Sleep quality has a major role in health and well-being of life (WHO, 2004). On the other hand, sleep disorders can be either direct or indirect serious threat to the lives of the people. It can be effective not only on your own life but also on your family, colleagues and the community (Sadock and Sadock, 2000). Inadequate rest hurts the ability to think and concentrate (Fernández-mendoza et al., 2009). Dealing with stress will be reduced and the immune system impaired (WHO, 2004). Sleep disorders are accompanied by symptoms such as negative mood, poor social functioning, depression, anxiety, panic disorder, daytime confusion, fatigue, physical and mental illnesses, reduced quality of life, organic diseases, skin lesions, reduced weight, daily sleepiness and so (Gregory et al., 2004). Addiction in the world today, is just as the devastating and deadly "war" controlling young people more than anything else, thus communities seeking progress and bright future should stand up against this unwanted war in full force (Kariminia, 2002).

## MATERIALS AND METHODS

This study is a cross-sectional, correlational research. Population included all patients taking tranquilizers in the Semnan prison. This test requires participants to be among tranquilizers users (in the morning or afternoon) regardless of age, educational level and other cases. The names of all patients taking tranquilizers in the Semnan prison from the early 2013 were prepared with the assistance of prison physician, totaling 123 people. So that after receiving the list, all subjects were considered as sample. Participants responded to Spielberger Anxiety and Pittsburgh Sleep Disorders Inventories. In this study, there is also a researcher made questionnaire for the assessment of drug abuse. The question had five options examining the state of drug abuse among the participants. Questionnaires were read to illiterate people and their responses were recorded.

Pittsburgh Sleep Quality Index has Cronbach's alpha coefficient of 0.78 to 0.82. This questionnaire is designed to assess sleep quality with questions in the seven fields of individual opinion as to sleep quality, sleep duration, and sleep latency, efficiency of good sleeping habits, restless sleep, using sleep medications, and impaired daily function. These matters are graded from 0 to 3 by the subjects. As a result, scores of between 0 and

21 are obtained. Higher scores are associated with worse sleep quality (Hasanzadeh et al., 2008).

State- Trait Anxiety Inventory of Spielberger is a self-evaluation tool that has been used widely. The questionnaire consists of two separate self-evaluation psychometric scales for measuring two distinct, but associated, concepts. In the state anxiety, an emotional status can cause conscious and subjective perception, perceived stress, fear, nervousness, anxiety and high activity (arousal) of the autonomous nervous system. Situational anxiety is often variable and a function of situational stress. Trait anxiety is individual differences in the tendency to perceive or evaluate the stress situation as either threatening or dangerous. Response to these situations increases anxiety (Keedwell and Snaith, 1996).

## RESULTS

The findings showed that the correlation coefficient between anxiety and sedative drugs is equal to 0.174, which is not significant. But the correlation coefficient of trait anxiety and sedative drugs equals to 0.282, which is significant at the alpha level of less than 0.001. Given the positive correlation coefficient, increased amount of individual anxiety is associated with the significant increase in the consumption of tranquilizers and vice versa. Therefore correlation between trait anxiety and taking sedative drugs was approved.

According to Table 1, the correlation coefficient between sleep disorders and sedative drugs is equal to 0.420, which is significant at the alpha level of less than 0.001. Given the positive correlation coefficient, increased amount of individual sleep disorders is associated with the significant increase in the consumption of tranquilizers and vice versa. Therefore correlation between sleep disorders and taking sedative drugs was approved.

Also, using tranquilizers and sleeping subscales are significantly related. According to Table 1, the correlation coefficient between subjective sleep quality subscale and taking tranquilizers is equal to 0.350, which is significant at the alpha level of less than 0.001. The correlation coefficient between taking tranquilizers and sleep latency subscale equals to 0.182, which is significant at the alpha level of less than 0.005. Four other scales, including sleep duration, good sleep, sleep disorders and daily functional impairment did not show a relationship with sedative drugs. There is a significant relationship among Sleep Disorders Inventory subscales. The relationship of subjective sleep quality with sleep duration and latency ranges from 0.315 to 0.289 respectively, which is significant at the alpha level of less than 0.001. The relationship of good sleep with sleep duration and subjective sleep quality is equal to 0.649 and 0.314 respectively and its relationship with sleep latency is equal to 0.318 which is significant at the alpha level of less than 0.001.

**Table 1.** Correlation of Variables

	Drug abuse	Sleep duration	Use of sleeping medication	Subjective sleep quality	Sleep latency	Sleep efficiency	Sleep disturbances	Daytime dysfunction	Total score of sleep disorders	Trait anxiety	State anxiety
<b>Drug abuse</b>	1										
<b>Sleep duration</b>	-0.157	1									
<b>Use of sleeping medication</b>	0.105	0.031	1								
<b>Subjective sleep quality</b>	0.042	0.315**	0.350**	1							
<b>Sleep latency</b>	-0.037	0.289**	0.182*	0.430**	1						
<b>Sleep efficiency</b>	-0.087	0.649**	-0.044	0.314**	0.318**	1					
<b>Sleep disturbances</b>	-0.01	0.167	0.216*	0.333**	0.278**	0.079	1				
<b>Daytime dysfunction</b>	-0.027	.318**	0.229*	0.454**	0.381**	0.233	0.296**	1*			
<b>Total score of sleep disorders</b>	-0.054	0.716**	0.420**	0.710**	0.641**	0.679	0.467**	0.640**	1**		
<b>Trait anxiety</b>	0.12	-0.041	0.282**	0.235**	0.164	-0.073	0.17	0.162**	0.173**	1	
<b>Istate anxiety</b>	-0.041	0.001	0.174	0.195*	0.127	-0.055	0.179	0.242	0.168*	0.46	1

According to Table 1, the correlation coefficient between drug abuse and sedative drugs is equal to 0.105, which is not significant. This result can partially reflect inefficient researcher made inquiries as to the status of drug abuse or lack of integrity among the participants. However, table 2 shows the frequency distribution of drug abuse among sedatives users. According to this table, the highest observed frequency (46.3%) is of those who had drug abuse in the past; this could indicate a link between consumption of tranquilizers and drug abuse in the past.

To test the contribution of state anxiety, trait anxiety, sleep disorders and drug abuse in taking tranquilizers in prison, the regression was used.

According to Table 3, using regression for the dependent variables as state anxiety, trait anxiety and sleep disorders to predict consumption of sleeping drugs is appropriate. And these variables predict 3.23 percent of the variance in taking sleeping drugs. Considering

suitability of the regression analysis, the coefficients of regression effect are given in Table 4.

According to Table 4, the effect of two variables, trait anxiety and sleep disorders, on desire to use tranquilizers is significant. But the variables, state anxiety and drug abuse, due to the higher T-error than 0.05, have had no significant effect on desire to use tranquilizers. Also the variable of sleep disorders with regression coefficients of 0.389 and trait anxiety variable with regression coefficient of 0.19 have had the highest regression effect on desire to use sedative drugs respectively.

That means increasing one standard deviation in sleep disorders could increase the subject's desire to use sedative drugs by 0.389 of the standard deviation. Also increasing one standard deviation in trait anxiety could increase the subject's desire to use sedative drugs by 0.19 of the standard deviation.

**Table 2.** Frequency of Drug Abuse

Drug abuse	Percent	Frequency
None	20.3	25
Severe	13.8	17
Every Day	9.8	12
Recreational	9.8	12
In the past	46.3	57
Total	100	123

**Table 3.** Results of Regression Analysis

Item	Sum of Squares	df	Mean Square	F	Sig.	R	R <sup>2</sup>
Regression	27.503	4	6.876	8.94	.000 <sup>b</sup>	0.482	0.233
Residual	90.757	118	769				
Total	118.26	122					

**Table 4.** The Regression Effect Coefficients

Variable	B	Std. Error	Beta	T value	Sig.
(Constant)	0.173	0.49		0.353	0.725
Drug abuse	0.063	0.049	0.105	1.276	0.204
State anxiety	0.048	0.169	0.026	0.285	0.776
Trait anxiety	0.235	0.114	0.19	2.051	0.042
Total score of sleep disorders	0.092	0.019	0.389	4.713	0.001

## DISCUSSION

In response to the research questions as to the relationship between taking sedative drugs and anxiety in prison, statistical analysis results showed that trait anxiety is associated with sedative drugs, but there was no connection between state anxiety and sedative drugs. On the scale of state anxiety, the subjects were asked to report their level of feelings at the time of research. While on the scale of trait anxiety, subjects should identify their overall

feelings in most of the time. Therefore it can be concluded that in most cases the prisoners taking tranquilizers feel anxiety.

Thus there is a relationship between feeling anxiety and taking sedative drugs.

A survey in 2012 entitled "the Prevalence of Mental Illness" as done among aboriginals and islanders of Torres Strait in Queensland prison. This research reported 51% and 20% anxiety disorders in women and men,

respectively (Heffernan et al., 2012). Another research titled "Mental Health Survey of Injecting Drug Abusers" was done in Kashan prison in 2007 by Qureshi et al. This research showed that 48 injecting drug users were susceptible to disorders based on the General Health Questionnaire. Based on clinical interviews, 44 patients were diagnosed with psychiatric disorders in which 8 patients (1.18 percent) were diagnosed with anxiety disorders (Qureshi et al., 2007). Of other studies we can point to the epidemiology of mental disorders in male prisoners of Adel Abad in 2003 by Ashkaniet al. The results of this study reported anxiety disorders of 1.8 percent (Ashkaniet al., 2003).

Another survey research has examined the factors associated with mental health of prisoners in Ilam. This work was done by Almasi and Moradi in 2012. Results showed that the mean mental health score of the study population was 83.17 which indicate the lack of proper mental health in prisoners. In this study, anxiety was estimated (with the mean score of 21.71) among the prisoners (Almasi and Moradi, 2012). These results are consistent with trait anxiety in prisoners taking tranquilizers.

There was no significant relationship between drug abuse and taking tranquilizers. As it was mentioned in third chapter under the part of research tool, a five-choice researcher made question was used to measure addiction. One of the reasons why there is no relationship between sedative drugs and drug abuse can be inadequate and inefficient questions. Due to the different sections of the prison and the prisoners' dissatisfaction with transferring to other wards because of addiction, participants may answer the questions with bias which is another reason. However, according to Table 2, the majority of prisoners reported drug use in the past. Linda Teplin's study titled "Psychiatry and Drug Abuse Disorders of Male Prisoners of City Prison" was done on 728 prisoners. This research showed very high rates of drug use disorders. 29.1 percent (for now) and 66.3 percent (for the lifetime) was estimated (Linda and Teplin, 1994). This result is consistent with the high percent of using drugs in the past.

In examining the relationship between sleep disorders and tranquilizer abuse, the results indicated the presence of sleep disorders in the majority of cases and confirmed this hypothesis. Also two subscales of subjective quality and sleep latency of the Sleep Disorders Questionnaire showed a significant relationship with taking tranquilizers. Statistical analysis showed that sleep disorders is associated with using sedative drugs in prisoners. Regarding the above results, we have found that there is a significant relationship between sleep duration subscales and subscales of subjective quality, sleep latency, good sleep and impaired daily functioning. Research done in 2009 as "Prison Life: Television, Sports, Work, Stress and Insomnia in People Imprisoned Again"

proved that insomniac prisoners were more complained for sleep disorders significantly more than the prisoners without insomnia, primarily by roommates and then by the guards (Elger, 2009). The Pittsburgh Sleep Questionnaire was used in this research. This is associated with high prevalence of sleep disorders in prisoners taking tranquilizers. Also, a review titled "Can We Infer Ailment by Using Prescription Drugs? Results of a Nation-wide Prison Population Study" was conducted in 2005. It showed that depressive disorders (11%) and sleep disorders (11%) were of the most common disorders (Kjelsberg and Hartvig, 2005).

The study is distinct from related research in terms of some aspects. The study was conducted on prisoners. Usually high frequency of using sedative drugs in prison is one of the problems of health care personnel. Although sedative drugs is a health issue, but the prison environment and incentives for taking these drugs is more psychological in prisoners. Thus researcher has investigated the predisposing variables (anxiety and sleep disorders) to attract the attention of experts and planners to the predisposing factors of taking sedative drugs. More research should be done on alternatives to tranquilizers. Also, questionnaires were done by a psychologist in prison individually to increase the accuracy of data collection. And in the case of illiterate prisoners, the psychologist asked the questions and recorded the answers.

Of the limitations, we can note the unavailability of suitable questionnaires to measure drug abuse. Despite the availability of a list provided by the physician of Semnan prison, gaining access to people who were taking sedatives made the data collection difficult since sometimes they were uncooperative or taking the leave of absence. Unavailability of similar research in the field of sedative drug use among prisoners and not identifying the tranquilizers were of the other limitations. Atmosphere of mistrust and fear of stopping tranquilizers were of the problems affecting the real responses of prisoners. To solve this, prison psychologist took the questionnaire in consulting unit, overcoming a great deal of distrust.

Significant relationship between trait anxiety and tranquilizers indicates that psychological factors have a large share in the consumption of tranquilizers. To reduce the consumption of these types of medications, psychological interventions were used for the treatment. Even in later research one can examine the effects of psychological interventions in reducing drug use in prisons. Due to the increasing use of sedative drugs in prisons, and even among the general population, finding its reason and also its alternatives is important and worthwhile. If researchers can find and examine other factors increasing the likelihood of tendency toward taking tranquilizers, probably good results can be achieved in the next-to-use alternatives. Considering that a lot of research has not been done in the field of sedative drugs, whether in

Iran or in the world, more attention and deeper surveys can be very helpful.

Other researchers can also classify tranquilizer users according to medications; compare men and women imprisoned in the realms of sedative drugs; assess other psychiatric disorders in tranquilizers consumers and use other populations, such as spouses of addicts, divorced women or female prisoners to examine this issue.

The results showed a significant relationship of using tranquilizers with anxiety and sleeping disorders. But there was no relationship found between taking tranquilizers and drug abuse.

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