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RELATIONSHIP BETWEEN GENERAL HEALTH AND SLEEP QUALITY IN PATIENTS WITH HIV AND ADDICTS TREATED WITH METHADONE

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ABSTRACT

Health is an important factor in the progress , improvement and well-being of society. Mental health is a dimension of health. Addiction is a physico-psychological condition which threatens the health of individual, family and society due to its progressive nature in all aspects of life. AIDS or Acquired Immunodeficiency Syndrome is a neural-general fatal disorder which is associated with infection with retroviridae virus. Sleep disorder is often an early symptom of a mental illness. Considering the high prevalence of psychiatric disorders among addicted patients and patients with HIV positive, this study was conducted to determine the type of health services among these two groups. This was a cross-sectional, descriptive-analytic research. The studied population included 60 patients with HIV and 300 addicts treated with methadone. Data were collected by 28-item General Health Questionnaire (GHQ-28) and Pittsburgh Sleep Quality Index (PSQI). Data were analyzed by SPSS-11 ($p<0.05$). The Mann-Whitney test showed a significant relationship between patients and their four mental disorders. Chi-square test showed a significant relationship between patients and impaired sleep quality ($p<0.001$). Impaired sleep quality was high in both groups and more than three-quarters of the patients complained of this disorder. AIDS and addiction increases the risk of four mental disorders (psychosomatic, anxiety, social dysfunction and depression) and impaired sleep quality. Therefore, preventive measures could be made possible and proper treatment can significantly reduce or prevent these disorders.

KEYWORDS: ***Acquired Immunodeficiency Syndrome, Depression, general health, Sleep Quality***

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INTRODUCTION

Health is an important factor in the development and welfare of the society. Mental health is an important subject among scientists, public health officials and policy makers in the recent years. The World Health Organization considers mental health as one of the principles of primary health care on the agenda of member states. Physical, psychological and social health is necessary for growth of humans. Mental health has different definitions from different perspectives. [1]. Mental Health is an aspect of health. According to WHO experts, health is a state of complete physical, mental, social welfare and not merely the absence of disease or disability and emphasis on the fact that none of these dimensions are preferred over each other. [2,3]The history of mental disorders is probably as much as human kind. Moreover, health has been important since the dawn of mankind. However, its physical dimension was more focused than other health dimensions. [4] Addiction is a physical-mental disease which threatens health of family and society because of its progressive nature in all aspects of life. This is a major personal and social problem not only causes physical and mental disorders for addicts, but also threatens public health in terms of socio-economic, political and cultural factors. Psycho- personality characteristics of drug addicts are not only caused by drugs; in fact, addicts have serious psychological and personality disorders before addiction and appear becomes more destructively. [5] People with HIV positive are exposed to psychosocial stress due to fatal and incurable nature of the disease. A range of mental distresses from relatively small modes like morbid apathy, guilt, helplessness and despair to extreme modes such as anxiety disorders, major depression and suicidal thoughts is seen in those people. Sleep disorders are major psychiatric problems and lead to dysfunction in everyday life. More than 30% of people suffer from sleep disorders. [6] Sleep is essential for health and quality of life; however, natural variations in age, psychiatric problems, psychosocial subjects of growth and aging can alter sleep patterns and thus affect quality of life for adults. [7] The following items show the necessity to study the different aspects of problems such as mental health, quality of sleep and associated mental diseases: 1) The drug addiction and HIV infection in society and national health system, 2) Widespread and dangerous complications of these two diseases. Increasing and expanding prevalence of these problems in the modern society 3) The significant of mental health and mental diseases in influenced by drugs and intravenous addictions which lead to HIV and AIDS, 4) Untreated mental disorders are associated with failure of medical programs and recurrence of disorder. Hence, this study attempts to determine the relationship between general health and quality of sleep in patients with HIV and addicts treated with methadone.

Literature Review

Keshavarz et al [8] examined sleep quality and its relationship with general health among college students in Karaj and reported 56% and 42% has poor sleep quality and bad general health, respectively. They found that 55% of students with poor sleep quality had impaired general health. [8] Examining the quality of sleep among the medical students in Zanjan, Ghorayshi et al[9] reported 59.4% good sleep quality and 40.6% poor sleep quality. Priority of poor sleep quality were in interns (53.5%), students who lived in their houses (44.6%), students who lived in dormitories (37.6%), and students who lived with their parents (20.8%).[9]Soleymani et al[10] examined general health and its relationship to the quality of sleep in nurses and reported 67.3% good general health, 10.2% poor general health, 62.9% good sleep quality and 37.1% poor sleep quality. [10] Through a case-control study, Farnia et al[11] examined the relationship between stress and coping styles and general health in opioid-dependent and -independent people. In this study, 67% of opioid-dependent people had maladaptive coping styles and 33% had adaptive coping styles, while 14% of opioid-independent people had maladaptive coping styles and 86% had adaptive coping styles. Moreover, 51% of opioid-dependent people experienced moderate to high stress and the rest of them experienced low stress, while 84% of opioid-independent people experienced low stress and 16% experienced moderate stress.[11]

MATERIALS AND METHODS

This was a cross-sectional, descriptive-analytic study. The studied population included 60 patients with HIV and 300 addicted patients treated with methadone. First, all patients with HIV and treated addicts were invited; questionnaires and procedures were explained for participants. Consent was obtained from participants. Participants were asked to fill the questionnaires. Data was collected by 28-item general health questionnaire (GHQ-28)

including four subscales (depression, anxiety, somatization disorder and social dysfunction)[12] and Pittsburgh Sleep Quality Index (PSQI) including seven components (subjective sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disturbances, use of sleeping medication, and daytime dysfunction)[13]. Questionnaires were studied; and the obtained data was analyzed. To analyze data, the following statistical techniques were used

1. Descriptive statistics such as frequency and percentage, mean and standard deviation
2. Chi-square test and t-test (additional analyses were used)
3. Mann-Whitney test

Data was analyzed by SPSS-11 ($p<0.05$).

RESULTS

The studied population included 60 patients with HIV and 300 addicted patients treated with methadone. Frequency distribution of age is shown in the table below. The highest frequency was related to patients aged 20-29 years and the lowest frequency was related to patients aged 50-59 years.

Table 1
Frequency distribution of age groups in addicts and HIV patients

			HIV	Addicts	Total
Age	20-29	N	25	134	159
		%	41.7%	44.7%	44.2%
	30-39	N	19	98	117
		%	31.7%	32.7%	32.5%
	40-49	N	12	51	63
		%	20.0%	17.0%	17.5%
	50-59	N	4	17	21
		%	6.7%	5.7%	5.8%
Total		**N**	**60**	**300**	**360**
		%	**100.0%**	**100.0%**	**100.0%**

Frequency distribution of education is shown in the table below. In both groups, the highest frequency was related to male.

Table 2
Frequency distribution of gender in addicts and HIV patients

			HIV	Addicts	Total
Gender	Male	N	55	298	353
		%	91.7%	99.3%	98.1%
	Female	N	5	2	7
		%	8.3%	7%	1.9%
Total		**N**	**60**	**300**	**360**
		%	**100.0%**	**100.0%**	**100.0%**

Frequency distribution of education is shown in the table below. In both groups, the highest level of education was secondary school and the lowest level of education was academic education.

Table 3
Frequency distribution of education in addicts and HIV patients

			HIV	Addicts	Total
Education	Illiterate	N	4	32	36
		%	6.7%	10.7%	10.0%
	Elementary	N	18	87	105
		%	30.0%	29.0%	29.2%
	Secondary	N	31	111	142
		%	51.7%	37.0%	39.4%
	High school	N	1	14	15
		%	1.7%	4.7%	4.2%
	High school diploma	N	3	48	51
		%	5.0%	16.0%	14.2%
	Academic education	N	3	8	11
		%	5.0%	2.7%	3.1%
Total		**N**	**60**	**300**	**360**
		%	**100.0%**	**100.0%**	**100.0%**

Frequency distribution of occupation is shown in the table below. In addicts, the highest frequency was related to self-employed people, followed by unemployed people and the lowest frequency was related to retired people and government employees. In HIV patients, the highest frequency was related to unemployed people, followed by self-employed people.

Table 4
Frequency distribution of occupation in addicts and HIV patients

			HIV	Addicts	Total
Occupation	Unemployed	N	45	54	99
		%	75.0%	18.0%	27.5%
	Self-employed	N	15	237	252
		%	25.0%	79.0%	70.0%
	Government employee	N	0	8	8
		%	0.0%	2.7%	2.2%
	Retired	N	0	1	1
		%	0.0%	0.3%	0.3%
Total		**N**	**60**	**300**	**360**
		%	**100.0%**	**100.0%**	**100.0%**

Frequency distribution of marital status is shown in the table below. In both groups, the highest frequency was related to single people, followed by married people.

Table 5
Frequency distribution of marital status in addicts and HIV patients

			HIV	Addicts	Total
Marital status	Married	N	23	141	164
		%	38.3%	47.0%	45.6%
	Single	N	37	158	195
		%	61.7%	52.7%	54.2%
	Divorced	N	0	1	1
		%	0.0%	0.3%	0.3%
Total		**N**	**60**	**300**	**360**
		%	**100.0%**	**100.0%**	**100.0%**

this section addressed mental health and frequency of mental disorders in addicts treated and HIV patients. Frequency distribution of psychosomatic disorder is shown in the table below. Obviously, 28.3% of HIV patients and 8.7% of addicts suffered from this disorder. In other words, the risk of this disorder was higher in HIV patients than addicts.

Table 6
Frequency distribution of psychosomatic disorder in addicts and HIV patients

			HIV	Addicts	Total
Psychosomatic disorder	Yes	N	17	26	43
		%	28.3%	8.7%	11.9%
	No	N	43	274	317
		%	71.7%	91.3%	88.1%
Total		**N**	**60**	**300**	**360**
		%	**100.0%**	**100.0%**	**100.0%**

Frequency distribution of anxiety disorder is shown in the table below. Frequency of this disorder was higher in HIV patients than addicts.

Table 7
Frequency distribution of anxiety disorder in addicts and HIV patients

			HIV	Addicts	Total
Anxiety disorder	Yes	N	20	28	48
		%	33.3%	9.3%	13.3%
	No	N	40	272	312
		%	66.7%	90.7%	86.7%
Total		**N**	**60**	**300**	**360**
		%	**100.0%**	**100.0%**	**100.0%**

Frequency distribution of social dysfunction is shown in the table below. Obviously, 31.7% of HIV patients and 11.3% of addicts suffered from this disorder.

Table 8
Frequency distribution of social dysfunction in addicts and HIV patients

			HIV	Addicts	Total
Social dysfunction	Yes	N	19	34	53
		%	31.7%	11.3%	14.7%
	No	N	41	266	307
		%	68.3%	88.7%	85.3%
Total		**N**	**60**	**300**	**360**
		%	**100.0%**	**100.0%**	**100.0%**

Frequency distribution of depression disorder is shown in the table below. Obviously, 31.7% of HIV patients and 14.3% of addicts suffered from this disorder.

Table 9
Frequency distribution of depression disorder in addicts and HIV patients

			HIV	Addicts	Total
Depression disorder	Yes	N	19	43	62
		%	31.7%	14.3%	17.2%
	No	N	41	257	298
		%	68.3%	85.7%	82.8%
Total		**N**	**60**	**300**	**360**
		%	**100.0%**	**100.0%**	**100.0%**

Frequency distribution of impaired sleep quality is shown in the table below. Obviously, 20% of HIV patients and 24.3% of addicts suffered from this disorder.

Table 10
Frequency distribution of impaired sleep quality in addicts and HIV patients

			HIV	Addicts	Total
Impaired sleep quality	Yes	N	12	73	85
		%	20.0%	24.3%	23.6%
	No	N	48	227	275
		%	80.0%	75.7%	76.4%
Total		**N**	**60**	**300**	**360**
		%	**100.0%**	**100.0%**	**100.0%**

This section addresses other findings related to sleep quality. The studied variables and findings are presented in the form of questions.
Q1: during the past month, when have you usually gone to bed?
Both groups responded to this question. Obviously, 76.7% of HIV patients and 48% of addicts went to bed after 12 am.

Table 11
Frequency distribution of the time to go to bed in addicts and HIV patients

			HIV	Addicts	Total
Q1	Before 10 pm	N	1	24	25
		%	1.7%	8.0%	6.9%
	10-12 pm	N	13	132	145
		%	21.7%	44.0%	40.3%
	12-2 am	N	25	104	129
		%	41.7%	34.7%	35.8%
	After 2 am	N	21	40	61
		%	35.0%	13.3%	16.9%
	Total	**N**	**60**	**300**	**360**
		%	**100.0%**	**100.0%**	**100.0%**

Q2: during the past month, how long (in minutes) has it taken you to fall asleep each night?
Both groups responded to this question. Obviously, it took more than 60 minutes to fall asleep for 38.3% of HIV patients and 37% of addicts.

Table 12
Frequency distribution of the time taken to fall asleep in addicts and HIV patients

			HIV	Addicts	Total
Q2	Less than 1 hour	N	37	189	226
		%	61.7%	63.0%	62.8%
	1-2 hours	N	14	61	75
		%	23.3%	20.3%	20.8%
	2-3 hours	N	8	41	49
		%	13.3%	13.7%	13.6%
	More than 3 hours	N	1	9	10
		%	1.7%	3.0%	2.8%
	Total	**N**	**60**	**300**	**360**
		%	**100.0%**	**100.0%**	**100.0%**

Q3: during the past month, what time have you usually gotten up in the morning?
Both groups responded to this question. Obviously, 8.4% of addicts get up before 6 am.

Table 13
Frequency distribution of the time to get up in addicts and HIV patients

			HIV	Addicts	Total
Q3	Before 4 am	N	1	10	11
		%	1.7%	3.3%	3.1%
	4-5 am	N	1	22	23
		%	1.7%	7.3%	6.4%
	5-6 am	N	3	29	32
		%	5.0%	9.7%	8.9%
	6-7 am	N	8	68	76
		%	13.3%	22.7%	21.1%
	7-8 am	N	4	72	76
		%	6.7%	24.0%	21.1%
	8-9 am	N	12	72	84
		%	20.0%	24.0%	23.3%
	After 9 am	N	31	27	58
		%	51.7%	9.0%	16.1%
	Total	**N**	**60**	**300**	**360**
		%	**100.0%**	**100.0%**	**100.0%**

Q4: during the past month, how many hours of actual sleep did you get at night?
Both groups responded to this question. Obviously, 58.3% of HIV patients and 71% of addicts get less than 7 hours of actual sleep. Moreover, 13.3% of HIV patients and 5.3% of addicts get more than 9 hours of actual sleep.

Table 14
Frequency distribution of hours of actual sleep in addicts and HIV patients

			HIV	Addicts	Total
Q4	Less than 3 hours	N	11	33	44
		%	18.3%	11.0%	12.2%
	3-5 hours	N	7	85	92
		%	11.7%	28.3%	25.6%
	5-7 hours	N	17	95	112
		%	28.3%	31.7%	31.1%
	7-9 hours	N	17	71	88
		%	28.3%	23.7%	24.4%
	9-11 hours	N	8	12	20
		%	13.3%	4.0%	5.6%
	More than 11 hours	N	0	4	4
		%	0.0%	1.3%	1.1%
	Total	**N**	**60**	**300**	**360**
		%	**100.0%**	**100.0%**	**100.0%**

Q5: during the past month, how often have you taken medicine (prescribed or over the counter)?
Both groups responded to this question. Obviously, 45% of HIV patients and 27.4% of addicts reported a history of taking medicine over the past month. It is noteworthy that methadone was not listed as medicine for addicts.

Table 15
Frequency distribution of medicine taken by addicts and HIV patients

			HIV	Addicts	Total
Q5	Not during the past month	N	33	218	251
		%	55.0%	72.7%	69.7%
	Less than once a week	N	19	32	51
		%	31.7%	10.7%	14.2%
	Once or twice the week	N	3	32	35
		%	5.0%	10.7%	9.7%
	Three or more times a week	N	5	18	23
		%	8.3%	6.0%	6.4%
	Total	**N**	**60**	**300**	**360**
		%	**100.0%**	**100.0%**	**100.0%**

Q6: During the past month, how often have you had trouble staying awake while driving, eating meals, or engaging in social activity?
Both groups responded to this question. Obviously, 41.7% of HIV patients and 31.6% of addicts reported this problem over the past month.

Table 16
Frequency distribution of trouble staying awake in addicts and HIV patients

			HIV	Addicts	Total
Q6	Not during the past month	N	35	204	239
		%	58.3%	68.0%	66.4%
	Less than once a week	N	18	61	79
		%	30.0%	20.3%	21.9%
	Once or twice the week	N	6	16	22
		%	10.0%	5.3%	6.1%
	Three or more times a week	N	1	19	20
		%	1.7%	6.3%	5.6%
	Total	**N**	**60**	**300**	**360**
		%	**100.0%**	**100.0%**	**100.0%**

Q7: During the past month, how much of a problem has it been for you to keep up enthusiasm to get things done?
Both groups responded to this question. Obviously 40% of HIV patients and 29.3% of addicts reported this problem over the past month.

Table 17
Frequency distribution of lack of enthusiasm to get things done in addicts and HIV patients

			HIV	Addicts	Total
Q7	Not during the past month	N	17	112	129
		%	28.3%	37.3%	35.8%
	Less than once a week	N	19	100	119
		%	31.7%	33.3%	33.1%
	Once or twice the week	N	19	67	86
		%	31.7%	22.3%	23.9%
	Three or more times a week	N	5	21	26
		%	8.3%	7.0%	7.2%
	Total	**N**	**60**	**300**	**360**
		%	**100.0%**	**100.0%**	**100.0%**

Q8: During the past month, how would you rate your sleep quality overall?
Both groups responded to this question. Obviously, 36.6% of HIV patients and 27.3% of addicts reported fairly bad and very bad sleep quality.

Table 18
Frequency distribution of quality of sleep in addicts and HIV patients

			HIV	Addicts	Total
Q8	Very good	N	11	53	64
		%	18.3%	17.7%	17.8%
	Fairly good	N	27	165	192
		%	45.0%	55.0%	53.3%
	Fairly bad	N	14	49	63
		%	23.3%	16.3%	17.5%
	Very bad	N	8	33	41
		%	13.3%	11.0%	11.4%
	Total	**N**	**60**	**300**	**360**
		%	**100.0%**	**100.0%**	**100.0%**

Q9: Is there a significant relationship between HIV and addiction and psychosomatic disorders, anxiety, social dysfunction and depression?
Chi-square and Mann-Whitney test (Z) were used to address this question. According to chi-square test and frequency table, there was no significant relationship between HIV and addiction and four disorders. However, Mann-Whitney test revealed a significant relationship between HIV and addiction and psychosomatic disorders (Z=4.28), anxiety (Z=4.98), social dysfunction (Z=4.05) and depression (Z=3.24) ($p<0.001$).

Table 19
Four disorders

	HIV	N	Mean Rank	Sum of Ranks
Psychosomatic disorder	HIV	60	151.00	9060.00
	Addict	300	186.40	55920.00
	Total	360		
Anxiety	HIV	60	144.50	8670.00
	Addict	300	187.70	56310.00
	Total	360		
Social dysfunction	HIV	60	150.00	9000.00
	Addict	300	186.60	55980.00
	Total	360		
Depression	HIV	60	154.50	9270.00
	Addict	300	185.70	55710.00
	Total	360		
Sleep quality	HIV	60	187.00	11220.00
	Addict	300	179.20	53760.00
	Total	**360**		

Table 20
Test statistics

	Psychosomatic disorder	Anxiety	Social dysfunction	Depression
Z	4.282	4.985	4.052	3.242
Asymp. Sig. (2-tailed)	.000	.000	.000	.001

Q10: is there a significant relationship between HIV and addiction and impaired sleep quality?
Chi-square and Mann-Whitney test (Z) were used to address this question. According to chi-square test and frequency table, there was a significant relationship between HIV and addiction and impaired sleep quality ($p<0.001$; $X2=21.60$ for HIV and $X2=79.05$ for addiction). However, Mann-Whitney test revealed no significant difference in sleep quality (Z0.720; $p<0.05$), which indicates similar quality of sleep in two groups.

Table 21
Quality of sleep in addicts

	Observed N	Expected N	Residual
Good	73	150.0	-77.0
Bad	227	150.0	77.0
Total	**300**		

Table 22
Test statistics

	Sleep quality of addicts
Chi-Square(a)	79.053
Df	1
Asymp. Sig.	.000

Table 23
Quality of sleep in HIV patients

	Observed N	Expected N	Residual
Good	12	30.0	-18.0
Bad	48	30.0	18.0
Total	**60**		

Table 24
Test statistics

	Sleep quality of HIV patients
Chi-Square(a)	21.600
Df	1
Asymp. Sig.	.000

DISCUSSION AND CONCLUSION

The studied population included 60 patients with HIV and 300 addicts treated with methadone. The highest age frequency was related to people aged between 20 and 29, followed by people aged 30-39 years. In other words, 73.4% of HIV patients and 77.4% of addicts aged 20-39 years. This is consistent with statistics provided by disease control centers and Drug Control Headquarter of Iran. This indicates high prevalence of addiction and HIV in young and middle-aged people; thus, it is essential to provide prevention, control and treatment programs such as goal-oriented training programs based on target group, particularly for addicts. In Iran, the most common cause of AIDS and HIV is intravenous drug abuse. Majority of participants had elementary and secondary school education (81.7% of HIV patients and 66% of addicts). Although a vast majority of patients had low literacy levels, addiction and HIV can be seen in all literacy levels from illiterate to academic education. Thus, education can be substantially effective in controlling addiction and HIV; however, addiction and HIV do not belong to a certain social class and even well-educated people are at risk of addiction and HIV. Moreover, 75% of HIV patients were unemployed and 25% were self-employed, while 79% of addicts were self-employed and 18% were unemployed. HIV infection leads to various physical, mental complications and physical disabilities, and social problems such as stigma; thus, HIV patients are not able to work. The lack of working conditions can cause physical and mental problems and increase social damage and tendency towards next risky behaviors and even the spread of disease by harming and infecting others. Third, unemployment rate is considerably lower in addicts. Since the most important cause of HIV is intravenous addiction, unemployment increases by increasing addiction, followed by intravenous addiction and ultimately HIV infection. Thus, the increase in addiction rate and HIV can lead to worse job performance. About two-thirds of people infected with HIV and one-third of addicts were single. Considering high frequency of addiction and HIV in single people, it is essential to consider better and more accurate training plans for single people and reduce age of marriage to control addiction and HIV. Frequency of mental disorders in two studied groups is listed below. In addicts:

- Psychosomatics 8.7%
- Anxiety 9.3%
- Social dysfunction 11.3%
- Depression 14.3%

In HIV patients

- Psychosomatics 28.3%
- Anxiety 33.3%

- Social dysfunction 31.7%
- Depression 31.7%

A study reported 4.2% psychosomatics, 4.5% anxiety, 2.5% social dysfunction and 2.2% depression. Previous studies reported prevalence of psychiatric problems in rural areas of Khuzestan province as 6.7% psychosomatics, 5.6% anxiety, 2.82% social dysfunction and 8.9% depression. Comparison of these frequencies shows a significant increase in these disorders in addicts and HIV patients (more than 4-6 times increase in addicts and 7-14 times increase in HIV patients compared to general population). According to these findings, it can be claimed that:

1. Addiction and HIV occurs more in people with mental disorders; in other words, higher frequency of mental disorders increases the risk of addiction and HIV.
2. Addiction and HIV increase the risk of mental disorders; this increase is particularly higher in people with HIV.

In practice, health care processes are not well responded due to underlying diseases. Identification, control and treatments provided to control these underlying diseases can considerable influence control and medical responses of these diseases. Furthermore, 80% of HIV patients and 75.7% of addicts complained of poor sleep quality. Previous studies evaluated sleep quality of drivers responsible for severe road accidents; in this study, 14.8% of drivers reported bad sleep quality. Through another study examined the relationship between general health and sleep quality in fixed- and floating-shift nurses of teaching hospital and found that 37.1% of nurses had bad sleep quality. Comparison of results showed that stressful working conditions or disorders or underlying diseases can underlie impaired sleep quality. High prevalence of this disorder in addicts can be an effective factor in recurrence of disease or medical negligence to treatment. Poor sleep and fatigue can reduce immune system and increase the risk of AIDS phase. Chi-square test and Man-Whitney test were used to determine the significance of parameters. Chi-square test found no significant relationship between addiction and HIV and four mental disorders, while there was a significant relationship between addiction and HIV and sleep quality. In other words, AIDS and addiction increase impaired sleep quality. Man-Whitney test showed a significant relationship between addiction and HIV and psychosomatic, anxiety, social dysfunction and depression. This test indicated a difference in addicts and HIV patients. HIV patients are more likely to develop these four disorders than addicts. However, there was no significant difference in sleep quality between two groups. This indicates similar chance of impaired sleep quality in addicts and HIV patients. This study tends to evaluate general health and sleep quality in HIV patients and addicts treated with methadone. Findings show that

1. Frequency risk of four mental disorders (psychosomatic, anxiety, social dysfunction and depression) is higher in addicts and patients with HIV positive than general population and it is higher in patients with HIV positive than addicts. Thus, frequency of these four disorders is higher in patients with HIV positive, followed by addicts and general population, respectively.
2. Frequency of impaired sleep quality was very high in HIV positive patients and addicts and more than three quarters of patients complained of this disorder.
3. AIDS and addiction increase the risk of impaired sleep quality. Thus, prevention, treatment and control procedures can reduce or prevent this disorder.
4. AIDS and addiction increase the risk of four mental disorders. HIV patients are more likely to develop these four disorders than addicts treated with methadone.

CONFLLICT OF INTEREST

Conflict of interest declared none.

REFERENCES

1. Asadzandi M, Sayari R, Ebadi AB, Sanainasab H.. Mental health status of military nurses. Journal Mil Med. 2009 Oct 15;11(3):135-41.
2. Farni MR. Comparison of stress and coping styles and its relationship with general health in opion-dependent and -independent people. Med. Sci, J. 2004;5(1):435-41.
3. Ghorayshi A. Sleep quality of medical students. Tehran Univ. Med. J. 2008;66(1):61-7.
4. Hasanzadeh M. Sleep quality of drivers responsible for severe road accidents. Journal of Research in Behavioural Sciences. 2008;6(2):97-107.

5. Hojjati H, Aloustani S, Akhondzadeh G, Heidari B, Sharif_Nia H. Study of mental health and its relation with quality of life in addicts. SSU_Journals. 2010 Aug 15;18(3):207-14.
6. Jahani-Hashemi H. mental health of medical students. Payesh, 2002;3(1):145-52.
7. Khosropanah MH. Epidemiology of Mental Disorders in 15-year old people and older living in urban and rural areas of Dezful. Master Thesis, Ahvaz, Ahvazislamicazad University. 2007.
8. Nourbala A, Mohamad K, Bagheriyazdi A, Yasemi MT. an overview of mental health profile in Iran. Tehran: Department of Disease. Master Thesis, 2001.
9. Nourbala A, Mohamad K, Bagher yazdi A. Prevalence of psychiatric disorders in Tehran city. Hakim. 1998;2(4):212-223.
10. Soleymani MA. General health and its relationship with sleep quality of fixed and floating-shift nurses in teaching hospitals of Iran University of Medical Sciences. Med. J. Shahrekord Uni. 2007;1(3):70-5.
11. Taghi N, Palahang h, shahmohamadi, D. Epidemology of mental disorders in Kashan. Thought Behav. 1996; 2(4):19-27.
12. Mahfoud Y, Talih F, StreemD, Budur K. Sleep disorders in substance abusers: how common are they? Psychiatry (Edgmont). 2009;6:38-42
13. Blanco M, Kriguer N, Perezlioret, Cardinali D, Attitudes towards treatment among patients suffering from sleep disorders. A Latin American survey, BMC family practice. 2003;4:17