Psychological Well-Being and Quality of Sleep in Addicts under Methadone Maintenance Treatment

Ebrahim Rezaei Dogaheh [1,2], Firozeh Jafari [1], Atousa Sadeghpour [3], Shahab Mirzaei [3], Mohammad Ebrahim Maddahi [4], Abbas Ali Hosseinkhanzadeh [5], Ali Reza Mohammadi Arya [6*]

1. Substance Abuse and Dependence Research Center, University of Social Welfare & Rehabilitation Sciences, Tehran, Iran.
2. Department of Clinical Psychology, University of Social Welfare & Rehabilitation Sciences, Tehran, Iran.
3. Faculty of Psychology, Science and Research Branch, Islamic Azad University, Tehran, Iran.
4. Department of Psychology, Faculty of Humanities, University of Shahed, Tehran, Iran.
5. Department of Psychology, Faculty of Literature & Humanities, University of Guilan, Guilan, Iran.
6. Department of Preschool, University of Social Welfare & Rehabilitation Sciences, Tehran, Iran.

Article info:
Received: 15 Sep. 2012
Accepted: 15 Feb. 2013

Keywords:
Addiction,
Psychological well-being,
Quality of sleep

ABSTRACT

Objective: The aim of the present research was to evaluate the psychological well-being and quality of sleep in addicts under methadone treatment for at least 6 months.

Methods: A total of 40 individuals were selected through purposeful sampling method among the referring addicts to 2 addiction centers in eastern Tehran. Participants took the Ryff scale of psychological well-being (RSPWB) and Pittsburgh sleep quality index (PSQI).

Results: Results of multivariate and univariate variance analysis demonstrated that addicts with more than 6 months of abstinence have significant difference in psychological well-being and quality of life ($P \leq 0.01$) compare to addicts with less than 6 months abstinence period. There was also a significant relationship between sleep and its dimensions ($P \leq 0.01$).

Conclusion: Addicts with abstinence period of more than 6 months have higher psychological well-being and better sleep quality than addicts with abstinence period of less than 6 months.

1. Introduction

In recent years, pathological approach to study human health has been criticized. Despite the viewpoint that defines health as an absence of illness, new approaches emphasize on "being good" instead of "being bad" (Ryff, 2004). Well-being is a subject that has occupied great minds for centuries and recently has been the focus of numerous branches of psychology like positive psychology (Aghababai & Farahani, 2011). In this point of view, absence of psychological symptoms is not an indicator of health but adaptability, happiness, self-esteem, and other positive characteristics are indicators of health. Main goal of the personal life and development is actualization of personal abilities.

Theories like self-actualization of Maslow, fully functioning of Rogers, and mature human of Allport have accepted and used this basic assumption. Following emergence of these theories and positive psychology movements that emphasized on positive characteristics and development of personal potentials in psychological health, some psychologists used psychological well-being instead of psychological health because they believed that latter term evokes positive dimensions more (Ryff, 1998). Accordingly, models like Jahoda, Diener's mental well-being, and Ryff's 6-factor of psychological well-being have been complied that focus on the abilities

*** Corresponding Author:**
Ali Reza Mohammadi Arya, PhD
Address: *Substance Abuse and Dependence Research Center, University of Social Welfare & Rehabilitation Sciences, Tehran, Iran.*
E-mail: *dr.mohammadiarya@uswr.ac.ir*

and personal potentials instead of illness and wellness to explain psychological health (Compton, 2001).

Ryff's model that is used in this research is one of the most important models in the area of psychological well-being. He defined psychological well-being as "striving for perfection in order to prove true potentials of individual." In this point of view, well-being means the effort for enhancement and transcendence that flourish in the establishment of personal potentials and talents (Ryff, 1995). In this theory, indexes of "good life" are based on ideas of philosophers like Aristotle and Russell.

So, psychological well-being consists of following items; (1) self acceptance: positive attitude towards self and acceptance of different dimensions of self like good and bad characteristics about past life; (2) positive relations with others: feeling of satisfaction and intimacy of relationship with others and understanding the importance of these dependencies; (3) autonomy: feeling of independence and effectiveness on life events and active role in behaviors, (4) dominance on environment: feeling of dominance on environment, controlling external activities, and effective use of surrounding opportunities; (5) purposeful life: having a goal in life and believing that the past and present life are meaningful; and (6) personal growth: feeling of personal growth and achievement of new experiences as a person that has potential talents.

Sleep is a sudden decline of blood flow when body and mind activities diminish and visual hallucinations replace clear real images. Mammals, birds, fish, and other animals have periods of sleep and wake that are important for their physical and psychological health and well-being (Prinz, 2005). All addictive materials usually impair sleep quality and the individual does not experience a convenient sleep any more. Sleep deprived individuals can be vigilant and lethargic. In a research on rats, sleep deprivation caused symptoms such as poor appearance, skin lesions, weight loss, increase in energy and food consumption, decline of body temperature, and death (Kaplan & Sadock, 2003).

Research has demonstrated that natural variations in age, medical problems, psychiatric problems, psychosocial issues in development and ageing can alter sleep pattern and affect quality of life in adults (Smith, 1999). Another study demonstrated that sleep dysfunction could influence quality of life and psychological health deeply (Kupperman et al., 1995). Archer (1992) in a study that examined the causes of sleep dysfunctions, showed that 10%-15% of individuals with long-term sleep dysfunction have some drug abuse difficulties. Sleep dysfunction is categorized with different varieties of under and over sleeping, sleep with and without quality like sleep terror, and consistent, and inconsistent sleep. Regarding the type of the drug, many addicted individuals have sleep dysfunctions before or after drug abuse. Insomnia is the most prevalent sleep disorder in addicted individuals which is due to dissatisfaction of quantity, quality, or timing of the sleep (Peles, Schreiber, & Adelson, 2006).

Today in addition to abstinence from addict drugs, great attention has been devoted to consequences of different kinds of addiction treatments and much emphasis has given to issues such as quality of life, level of hopefulness, psychological well-being, and purposefulness of addicted individuals in recovery period (Friedman, 2006). Methadone maintenance treatment programs can provide a more effective treatment for addicts. Efficacy of methadone in the treatment of heroin abuse, social adaptability, and psychiatric condition have been clarified in numerous retrospective and prospective studies.

Research demonstrates that methadone can increase quality of functioning, quality of life, psychiatric conditions, and general adaptability of treated patients in long-term period (Giacomuzzy, 2003). There are controversial findings regarding the effectiveness of methadone maintenance treatment and addicts' sleep. Some research demonstrated that unlike general population, addicts under treatment of methadone have higher levels of psychological problems and experience emotional disorders like depression and anxiety more often (Peles et al., 2006). One study demonstrated that addicts under methadone maintenance treatment have dysfunctions in psychomotor speed, work memory, decision-making, and metamemory compared to control group (Mintzer & Stitzer, 2002). In addition, possible dysfunctions were demonstrated in inhibitory mechanisms, dysfunction in estimation of time, conception or long-term memory inflexibility in addicts under treatment of methadone.

According to controversial findings regarding the effectiveness of preserving treatment of methadone under different situation, it is necessary to clarify characteristics of treated individuals. Therefore, the aim of the present research was to compare the quality of sleep and psychological well-being between addicts under treatment of methadone with more than 6-month abstinence and those with lower than 6-month abstinence.

2. Methods

Present study was based on a post-facto design. Study population included all addicts referring to 2 addiction centers in eastern Tehran that among them 40 individuals were selected through random sampling method. Inclusion criteria consisted of 2 years of drug abuse, tendency to participate in research, 20-55 years of age and to experience the methadone therapy. All participants were male

Table 1. Mean and standard deviation of psychological well-being and quality of life considering the abstinence periods.

Variable	Abstinence period less than 6 months		Abstinence period more than 6 months	
	Mean	SD	Mean	SD
Psychological wellbeing	66.45	9.14	82.80	6.08
Quality of life	9.55	3.31	2.80	1.28

(n=40)

with age ranges of 25-35 years (57.5%), 36-45 years (20%), 46-55 age (15%), and 56-65 years (7.5%). The types of drug abuse included opium (60%), and stimulants, like methamphetamine (40%).

Instruments

Pittsburgh sleep quality index (PSQI)

This questionnaire was designed to assess quality of life and patients' attitude toward quality of sleep and help individuals with their sleep. PSQI has 18 items. This questionnaire discriminates between quality of good and bad sleep. Seven subscales of this questionnaire are as follows: (1) general description of individual of sleep quality, (2) delay in going to sleep, (3) duration of useful sleep, (4) adequacy of sleep (based on duration of useful sleep out of all spending time at bed), (5) sleep disorders (defined as night awakening), (6) amount of used drugs, and (7) morning functioning (experienced problems of individual during the day due to the bad sleep). Reliability and validity of this questionnaire have been reported in different research. PSQI was translated at first to Persian and then translated back to English to examine the accuracy of Persian translation. Reliability and validity of the questionnaire has already been confirmed (Cronbach α of 0.78 to 0.82) (Hasanzadeh, 2008). At the present study, the Cronbach α was 0.73.

Ryff scale of psychological well-being (RSPWB)

This scale was designed by Ryff (1980). Original form consisted of 120 questions but in later studies shorter forms of 48 and 54 questions as well as an 18-question short form was provided. In this research, the 18-item form was used. This questionnaire measures psychological well-being and has 6 subscales of self-acceptance, positive relation with others, purposeful life, personal growth, and dominance on environment with 3 statements in each subscale. This questionnaire is provided for adults and each participant should rate his acceptance in a 6-point rating (1=completely opposed, to 6=completely accepted). Reliability and validity of each statement have been reported in various studies. Dyerndock (2005) reported suitable internal consistency (Chronbach's alpha of 0.77 to 0.90). Chamet and Ryff (1997) reported internal consistency of 0.82 to 0.90. In another research, Ryff et al. (2004) reported internal consistency of 0.86 to 0.93. In the present research, Cronbach α of questionnaire was of 0.85.

The researchers referred to 2 addiction centers and after getting permission of authorities, the sample was selected based on inclusion criteria. The goal of the research was explained to participants and they were assured about the confidentiality of the obtained information.

3. Results

Mean and standard deviation of psychological well-being and quality of life in two abstinence periods (more than or less than 6 months) are presented in Table 1. Results showed that addicts with more than 6 months of abstinence period in comparison to the group with less than 6 months abstinence period have higher scores in psychological well-being and lower scores in quality of life.

Results of Table 2 demonstrated that F value of Wilks's lambda in abstinence period is 35.12 ($P \leq 0.01$). Therefore, difference of at least one dependent variable (psychological well-being and quality of life) in abstinence period can be considered. Results of univariate variance analysis demonstrated significant differences between

Table 2: Multivariate and univariate variance analyses of psychological well-being and quality of life regarding the abstinence period (less than or more than 6 months).

Source	Multivariate ANOVA Wilks's lambda	F	Univariate ANOVA psychological well-being	quality of life
Abstinence period	0.65	35.12	44.32	72.09

Table 3. The Pearson correlations between psychological well-being and dimensions of quality of sleep.

Variable	1	2	3	4	5	6	7	8
1. Psychological well-being	1							
2. Quality of life	-0.90**	1						
3. Mental quality of sleep	-0.76**	0.77**	1					
4. Sleep duration	-0.59**	0.75**	0.41**	1				
5. Delay in going to sleep	-0.68**	0.73**	0.53**	0.38*	1			
6. Useful sleep	-0.68**	0.65**	0.42**	0.32*	0.80**	1		
7. Sleep disorders	-0.62**	0.77**	0.29**	0.85**	0.43**	0.30	1	
8. Using soporific drugs	-0.54**	0.64**	0.55**	0.58**	0.14	-0.05	0.64**	1
9. Interference in daily functioning	-0.42**	0.45**	0.50**	0.09	-0.05	0.11	0.25	0.51**

* P≤0.01 ** P≤0.05, (n=40).

PRACTICE in CLINICAL PSYCHOLOGY

two groups in variables of psychological well-being and quality of life (P≤0.01).

The findings of Table 3 showed that correlations between psychological well-being and all dimensions of PSQI but the interference of daily functioning were significant. As lower grade in PSQI means better quality of sleep, with decreasing each one of quality of sleep dimensions, psychological well-being increases.

4. Discussion

The aim of the present research was to compare the psychological well-being and quality of sleep in referring addicts of addiction centers with abstinence period of higher than 6 months with those addicts of lower than 6 months of abstinence period. Results showed that addicts with longer abstinence period have higher mean scores of psychological well-being and lower mean scores of quality of sleep compared to addicts with shorter abstinence period. These findings are consistent with the findings of previous studies about sleep dysfunctions in patients under treatment of methadone (Austin, 2002) and are consistent with results of Ghanizadeh research (2006) that demonstrated 3 months of preserving treatment with methadone can produce positive and significant changes in the quality of life and psychological well-being of the patients.

Results of another study that compared the effectiveness of preserving treatment with methadone and detoxification treatment with methadone in decreasing depressive and anxiety symptoms of addicted individuals showed that all depressive and anxiety symptoms in individuals under treatment decreased after 45-90 days (Pournaghash and Tehrani, 2006).

Dean et al. (2004) argued that addicts under treatment of methadone in a 3-month follow-up period showed a significant decline in depressive signs. Hull and Kushner (2003) have also reported significant decline in anxiety symptoms of addicts under treatment of detoxification with methadone in a 4-month follow-up period. Rostami (2005) believed that preserving treatment with methadone is especially used for the treatment of dependency with addictive drugs but in addition, with this treatment clients can change their life style too. To explain the findings, the effective factor of time should be considered. The significant correlations imply the relationship between psychological well-being and dimensions of quality of life. It seems that addictive drugs directly and indirectly through physical signs affect quality of life.

These findings are consistent with Bagheri's results (2006) that demonstrated quality of life is related to quality of life in nurses. Murrey et al. (2009) studied the relationship between drowsiness, time of sleep, variation in sleep time, and psychological functions (depression and anxiety) in adolescents. It seems that drowsiness was related to high grades in scales of depression and anxiety. A fast and easy way of screening psychological health in individuals is questioning their quality of life, amount of sleep, and good sleeping. Three factors of psychiatric dysfunctions, chronic pain, and benzodiazepine consumption have close relationship with sleep dysfunctions in patients under preserving treatment of methadone (Peles et al., 2006). Therefore, mutual relationship of drug consumption and sleep dysfunction should be con-

sidered, i.e. insomnia and dissatisfaction of sleep can decrease psychological well-being and drug abuse.

Present research demonstrated that quality of sleep and psychological well-being are correlated with each other. Therefore, quality of sleep can be considered as one indicator of psychological well-being. On the other hand, physical health dimension of the World health organization (WHO) consisted of sleep, rest, pain, sadness, energy, and tiredness (Bonomi et al., 2000). Thus, screening of sleep dysfunctions in addicts under treatment of methadone is the first step of helping them to deal with the prevalent problem. As sleep dysfunctions are usually due to multiple reasons, targeting psychological and physical risk factors is necessary (Peles et al., 2006). Differentiation of sleep dysfunctions regarding the type of used drug can be beneficial in choosing the treatment strategies. Further research is recommended to study the effectiveness of methadone and other influential factors on the quality of life of addicts under treatment.

References

Archer, L., & Gordis, E. (1992). Alcohol and the elderly. *Clinical Geriatric Medicine, 8*(1), 127-141.

Bagheri, H., Shahbani, Z., Ebrahimi, H., & Alaei-Nejad, F. (2006). [Relationship between sleep quality and quality of nurse's life (Persian)]. *Journal of Nursing and Midwifery of Medical Sciences of Tehran University (Hayat), 12*(4), 13-20.

Bonomi, A. E., Patrick, D. L., Bushnell, D. M., & Martin, M. (2000). Validation of the United States' version of the World Health Organization Quality of Life (WHOQOL) instruments. *Journal of Clinical Epidemiology, 53*(1):19-23.

Compton, W. C. (2001). Towards a tripartite factor structure of mental health: subjective well-being, personal growth, and religiosity. *Journal of* Psychiatric, *135*(5), 486-500.

Dean, A. J., & Bell, J., Christie, M. J., & Mattick, R. P. (2004). Depressive symptoms during buprenorphine vs. methadone maintenance: findings from a randomized, controlled trial in opiod dependence. *European Psychiatry*, *19*(8), 510-513.

Friedman, G. L. (2006). *Narcotic Anonymous: Promotion of change and growth in spiritual health, quality of life and attachment dimensions of avoidance and anxiety in relation to program involvement and time clean* (Doctoral Dissertation). Los Angeles, California, USA: Alliant International University.

Ghanizadeh, I. (2006). [*Compare of quality of life and psychological well-being of adverse drug user before and after methadone treatment* (Persian)] (Unpublished MA Thesis). Tehran, Iran: Tehran Faculty of educational science and psychology, Tehran University.

Hasanzadeh, H., Alavi, K., Ghaleh-Bandi, M. F., Yadolahi, Z., Gharaei, B., & Sadeghi-Kia, G. (2008). Sleep quality in Iranian drivers recognized as responsible for severe road accidents. *Mental Health Research Center*, *6*(2), 97-107.

Kupperman, M., Lubeck, D., Mazonson, P. D., Patrick, D. L., Stewart, A. L., Buesching, D. P., & et al. (1995). Sleep problems and their correlates in a working population. *Journal of General Internal Medicine, 10*(1), 25-32.

Mintzer, M., & Stitzer, M. (2002). Cognitive impairment in methadone maintenance patients. *Drug and Alcohol Dependence, 67*(1), 41-51.

Peles, E., Schreiber, S., & Adelson, M. (2006). Variables associated with perceived sleep disorders in methadone maintenance treatment (MMT) patients. *Drug and Alcohol Dependence*, *82*(2), 103-110.

Prinz, P. N., Vitiello, M. V., & Borson, S. (2005). Psychiatric disorders of late life: Sleep disorders. In B. J. Sadock & V. A. Sadock (Eds.), *Kaplan and Sadock's Comprehensive Textbook of Psychiatry* (8th ed.) (pp. 3669-3673). Philadelphia, PA: Lippincott Williams and Wilkins.

Rostami, R. (2005). *Practical guide maintenance treatment with methadone*. Tehran: Tabalor.

Ryff, C. D, Singer, B. H., & Love, G. D. (2004). Positive health: Connecting well-being with biology. *Philosophical Transactions of the Royal Society of London*, *359*(1449), 1383-1394.

Ryff, C. D. (1995). Psychological well-being in adult life. Current *Directions in* Psychological *Science*, *4*(4), 99-104.

Ryff, C. D., & Keyes, C. L. (1995). The structure of psychological well-being revisited. *Journal of Personality and Social Psychology, 69*(4), 719-727.

Ryff, C. D., & Singer, B. (1998). The contours of positive human health. *Psychological Inquiry, 9*(1), 1-28.

Sadock, B. J., Kaplan, H. I., & Sadock, V. A. (2003). Normal sleep and disorders. In B. J. Sadock, H. I. Kaplan, V. A. Sadock & P. Ruiz (Eds.), *Kaplan & Sadock's synopsis of psychiatry: behavioral sciences/clinical psychiatry* (pp. 466-470). Philadelphia, PA: Wolter Kluwer Health/Lippincott Williams & Wilkins.