



Effect of Abstinence on Psychological Distress Scores, Social Dysfunction Scores, Total General Health Questionnaire Scores-12, and Total Quality of Life Scores in Men with Methamphetamine Dependence in Therapeutic Community

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Abstract

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AIM: We looked for differences in abstinence influence on Psychological Distress Scores, Social Dysfunction Scores, Total General Health Questionnaire – 12 (GHQ-12), and Total Quality of Life Scores on men with Methamphetamine dependence in the Therapeutic Community.

METHODS: This study was conducted a numerical comparative analytical analysis paired with twice measurements with subject retrieval done using consecutive sampling. The participant of this study was 47 subjects who selected by inclusion and exclusion criteria.

RESULTS: Found psychological distress score of the abuser was $p < 0.001$, different with social dysfunction score there was no significant difference where the score was $p = 0.062$, the total GHQ-12 score was a significant difference where the score was $p = 0.025$ while in the total quality of life score (SF-36) there was a significant difference with the score of $p < 0.001$.

CONCLUSIONS: After abstinence, quarantine was found to improve attitude, behavior, cognitive, and social function such as appropriate communication and active social relationship with others compared with before abstinence quarantine.

Introduction

Around the world, physical, psychological, and mental health problems were substance use disorders are often associated with many psychiatric disorders, including depression and anxiety [1].

Methamphetamine (MA) dependence can be related to various mental and emotional disorders. Be that as it may, few researches have efficiently inspected these disorders and conceivable chance variables. The research used structured diagnostic interviews to evaluate the prevalence and comorbidity patterns of mental and emotional disorders in individuals with MA dependence and search the risk factors for this comorbidity [2].

MA is a drug that highly addictive, and in the past few years, its misuse has become more prevail. About 0.3–1.3% of the world's population has been abuse the amphetamine drug. This rate is also higher in the Middle East. Although the leading cause of death is not drug use disorders, it has an important role in the burden of disability around the world. In 2010, about 0.8% of

the world's disability-adjusted living years (20.0 million) were directly related to illegal drug dependence [3], [4].

Data obtained from the Data and Information Center from the Ministry of Health of the Republic of Indonesia, it is known that the abuse of narcotics from year to year its prevalence continues to increase. The results of the survey reported by the National Narcotics Agency and the Center for Health Research, University of Indonesia in 2008 obtained a prevalence rate of 1.9% and in 2011 increased to 2.2% or approximately 4 million Indonesians aged 10–60 years as narcotic abuse. Data from the United Nations Office on Drugs and Crime in 2011 estimated that 3.6–6.9% of the world's population aged 15–64 use narcotics at least once a year [5].

Substance dependence is a major health problem, especially at the age of 12–65 years. The study conducted by Jose, Loraine, and Jacqueline reported about seven out of every ten people aged 12–65 living in Lima, Peru's capital, reported taking illicit drugs in 2010 that 4.8% of the national population had used illicit drugs in their lives and the users in 2010 increased to 180,700. The potential addiction to illicit drugs was

also explained by the study, which showed that 58,556 people had signs of dependence on marijuana, cocaine paste about 33,280 and 23,852 on cocaine. These signs are determined based on the criteria in the International Statistical Classification (ICD-10) [4].

Methods

Study participants

Participants of this study were men who entered in Insyaf Social Rehabilitation Center of Narcotic Abuser in North Sumatra, they were diagnosed by substance dependence syndrome using Assessment Smoking and Substance Involvement Screening Test (ASSIST). The inclusion criteria were aged from 15 until 45 years old, who undergoing abstinence program, only MA substance more than one year, from the ASSIST rating scale got score ≥ 27 and cooperative population. The exclusion criteria were no history of other medical illnesses, organic mental disorders, and other psychiatric disorders according to mini ICD-10 rating scale, the study was conducted from August 2019 to December 2019.

Measurements

Outcome

Data retrieval was preceded by screening using inclusion and exclusion criteria. Before entering the therapy program, first carried out urine toxicology rapid test, and who qualified in this study, who positively the only MA who was asked for approval to follow this study. Conducting screening using Mini ICD-10, measuring the level of sustainability using ASSIST using the General Health Questionnaire- 12 (GHQ-12) questionnaire and the SF - 36 quality of life questionnaire with the beginning of a brief explanation of the questionnaire, following abstinence in the Therapeutic Community, then re-examining urine through a rapid test.

Statistical analysis

This study was an experimental study with pre- and post-design, using categorical comparative analysis of pairs of twice measurements, taking subjects by nonprobability sampling, consecutive sampling. Analysis of the data collected was conducted using the statistical package for service solution. When normally distributed data was performed, data analysis used paired t-tests. If the data were not distributed normally, then the data transformation was carried out using Log, if it remained not distributed normally, then the data analysis was carried out using the Wilcoxon Test. Categorical variables were presented with n (%), normal distribution numeric variables were presented with the

average score \pm of the standard deviation, the numeric variable of the distribution was not normally presented with the median score (minimum-maximum score).

Results

Characteristic demographic

From Table 1, the highest education level of the participant was senior high school (57.4%), with unmarried (66%), had variety job (59.6%), duration's use between 1 until 10 years.

Table 1: Characteristic demographic

Variable	Average \pm s.b	n(%)
Age(years)	22.60 \pm 4.62	
Education level		
Elementary Schools		5 (10.6)
Junior High Schools		10 (21.3)
Senior High Schools		27 (57.4)
University		5 (10.6)
Marital Status		
Married		16 (34)
Not Married		31 (66)
Job status		
Work		28 (59.6)
Not work		19 (40.4)
Use duration		
Median(min-max)	4 (1-10)	
ASSIST	33.91 \pm 4.10	

Bivariate analysis

Table 2 shows the effect of abstinence on psychological distress scores in men with methamphetamine dependence in therapeutic community. They were showing the median score in psychological distress scores in week 0 before abstinence was 12 with a minimum score limit – maximum 10–16 while in week four after abstinence was 12 with a minimum score limit – maximum 8–14. The results of the analysis with the Wilcoxon test for the effect of abstinence on psychological distress scores in week 0 and week 4 had $p < 0.001$ scores indicating there was a very significant difference.

Table 3 shows the effect of abstinence on social dysfunction scores, total general health questionnaire-12 score, and total quality of life score in men with methamphetamine dependence in therapeutic communities. The average score on the social dysfunction score in the 0th week before abstinence was 11.02 with a standard deviation of ± 1.713 , while in the 4th week after abstinence was 11.64 with a standard deviation of ± 1.799 . The results of the paired t-test analysis showed no significant differences in the effect of abstinence on social dysfunction scores in week 0 and week 4 with a score of $p = 0.062$. In the total score of GHQ-12 in the 0th week before abstinence was 23.64 with a standard deviation of ± 3.082 , while in the 4th week after abstinence was 22.74 with a standard deviation of ± 3.025 . The results of the paired t-test analysis showed there was a significant difference in the effect of abstinence on social dysfunction

scores in week 0 and week 4 with a score of $p = 0.025$ while in the total quality of life scores in week 0 before abstinence 22.83 with a standard deviation of ± 1.629 while in the 4th week after abstinence was 19.98 with a standard deviation of ± 2.480 . The results of the paired t-test analysis showed that there was a very significant difference in the effect of abstinence on social dysfunction scores in week 0 and week 4 with a $p < 0.001$ scores.

Table 2: Effect of abstinence on psychological distress scores in men with methamphetamine dependence in therapeutic community

Effect of abstinence on psychological distress scores	n	Median(minimum-maximum)	p-score
0 weeks	47	12(10–16)	<0.001*
4 weeks	47	12(8–14)	

*Wilcoxon Test.

Discussion

MA known as "shisheh" in Iran is a widely used drug in many parts of the world and nearly a decade is available to most drug users and has considerable use [6], [7], [8]. MA provides its behavioral effects by altering the use of monoamines as neuron signals in the brain, especially in catecholamine neurons in reward pathways and executive functions of the brain. It increased dopaminergic activity in the mesolimbic pathway. The effects of MA that stimulate euphoria and locomotors depend on the size and speed of increased concentrations of synaptic dopamine and norepinephrine in the striatum and short-term effects of MA including euphoria, alertness, wakefulness, increased confidence, hyperactivity, and loss of appetite [8], [9].

Table 3: Effect of abstinence on social dysfunction scores, total general health questionnaire-12 score, and total quality of life score in men with methamphetamine dependence in therapeutic communities

Effect of abstinence on social dysfunction scores	n	Average \pm sb	CI 95%	p-score
0 weeks	47	11.02 \pm 1.713	-1.267–0.032	0.062
4 weeks	47	11.64 \pm 1.799		
On the total score of GHQ-12				
0 weeks	47	23.64 \pm 3.082	0.119–1.669	0.025*
4 weeks	47	22.74 \pm 3.025		
On the total score of life quality				
0 weeks	47	22.83 \pm 1.629	2.09–3.58	<0.001*
4 weeks	47	19.98 \pm 2.480		

Paired t-test.

MA using possibly associated to alteration of psychological and social function. But there was still lack of general information about potential psychosocial behaviors and relationship, psychological distress, and in particular regarding factors potentially mediating the relationship between socio-demographic characteristics and mental health, for example, stressful experiences or family functions. Hence, while family type and marital status have been reported to be relevant, the quality of family relationships may be the same or even more important [1].

The results of the study obtained on the influence of abstinence on psychological stress, the total score of GHQ-12 and quality of life score are, there were significant differences according to the study conducted by Bishal *et*

al. [1], Mariam *et al.* [3], Garcia *et al.* [10], and Masri *et al.* [11]. This was because dopamine was released, so it was responsible for the effects of euphoria, but long-term use of MA caused molecular changes in the dopamine system and contributes to damage to nerve terminals in the brain and caused motor disorders, a rapid decrease in cognitive ability, increased anxiety [4], [8].

Community therapeutics is an intensive and comprehensive care model developed for use by adults that have been used to treat adolescent health disorders. The therapeutic community for addiction treatment originated in 1958, when other systems of therapy, such as psychiatry and general medicine, failed to treat alcohol or drug use disorders. The first Therapeutic Community for drug users (Synanon) was founded in California by Chuck Dederich, one of the earliest members of Alcoholics Anonymous (AA), who wanted to provide a controlled (substance-free) environment in which alcohol and substance users could rebuild lives, using the principle AA principles along with social learning models [12].

In social dysfunction scores on the influence of abstinence with the dependence of MA substances, there was no significant difference in the effect of abstinence on social dysfunction scores. In contrast to studies conducted by Garcia *et al.* [10] in which this study showed significant differences, this was due to several factors that have the potential to mediate the relationship between socio-demographic characteristics and mental health, such as stress experiences or family factors. Other factors may be relevant to socio-cultural contact [1].

Conclusion

This study can be used as a reference to compare the dependence on not just one type of substance but several types of substances. It is expected that clinicians and related parties pay attention to psychosocial interventions to prevent the occurrence of MA dependence. It is recommended to have a psychiatrist to determine the follow-up related to the high psychological distress of substance use. This study requires monitoring of psychological distress before and after abstinence in men with substance dependence and requires collaboration between psychiatrists and clinical psychologists for further treatment.

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