JCHR

Journal of Community Health Research 2022; 11(3): 165-174.

Comparison of the Quality of Life of Addicts Participating in Either Narcotics Anonymous or, Therapeutic Community Group Sessions or Receiving Methadone-Therapy a Cohort Study in Mashhad in 2013

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ARTICLE INFO

Original Article

Received: 20 June 2022

Accepted: 15 August 2022

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ABSTRACT

Introduction: Chronic and prolonged illnesses and disorders, such as addiction, can create a crisis in the lives of people with disabilities and reduce in their quality of life. Therefore, in this study, we decided to compare the quality of life of individuals with substance use disorders (SUD) who received either Narcotics Anonymous, Therapeutic Community Session or Methadone Therapy.

Methods: This cohort study was conducted on detoxified patients receiving either narcotics anonymous, therapeutic community sessions or methadone therapy. The quality of life of the subjects was measured by the SF36 Questionnaire at the baseline and 1.5 months after the start of treatment. Descriptive indicators (mean (SD), frequency (%)), ANOVA, paired t-test, Chi-square and Tukey post hoc analysis test were used for data analysis . Data were analyzed in SPSS19 software at the significance level of P< 0.05.

Results: Overall,81 patients were enrolled in three groups of 27 people. The mean ± SD of age was obtained as 34.77±8.49 years old, years of consumption as 7.48±2.87, daily consumption frequency as 3.85±2.14, and cessation of consumption frequency as 7.02±10.56. Of those who participated in the study, 57.5% had secondary school education or higher; 50.6% had a freelance job, and 14.9% were unemployed. The mean (SD) score of quality of life among individuals with SUD participating in the sessions of narcotics anonymous (85.7) and therapeutic community group (73.3) increased significantly 1.5 months after the start of the sessions compared to the baseline (P <0.001).

Conclusion: The results of this study indicated narcotics anonymous and therapeutic community group sessions were effective in improving the quality of life of individuals with SUD. However, this effect was greater in those attending narcotics anonymous sessions. Therefore, it is suggested that individuals with SUD participate in these sessions.

Keywords: Quality of life, Self-Help Groups, Therapeutic Community, Methadone

How to cite this paper:

Bazazkahani H, SalehMoghaddam A, Vaghee S, Hamedi A. Comparison of the quality of life of addicts participating in either Narcotics Anonymous or, Therapeutic Community group sessions or receiving Methadone-therapy a cohort study in Mashhad in 2013. J Community Health Research 2022; 11(3): 165-174.

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[DOI: 10.18502/jchr.v11i3.10868]

Introduction

In all countries, addiction is a major and important public health problem (1). Despite large sums of money being spent worldwide on combating addiction, drug trafficking and the number of people with substance use disorders (SUD) are still on the rise. Despite the social disapproval of narcotics and addiction, various social groups, including men & women, old & young, married & single, employed & unemployed, educated & illiterate are seriously involved with this problem (2).

Addiction, as a chronic and recurrent disease, can disrupt the physical, psychological, and social performance of consumers, leading to misbehavior and disabilities such as continuing substance use despite the negative outcomes, inability to control consumption, forced use, and becoming tolerant to the consumable (3). In addition to genetic factors that can play a key role in the development of this disorder, the role of intrinsic and environmental factors and experiences gained during life cannot be ignored (4). Addiction has serious consequences for health, familial integrity, economics, job & social security, and cultural development. Other ramifications of addiction include under development, political instability and, posing threat to democracy (5).

It is estimated that around 275 million people use illicit drugs around the world (6). Afghanistan, which has 945 kilometers of border with Iran, was the world's largest producer of narcotics in 2017, allocating over 328,000 hectares of its land to opium cultivation (7). Attaining a definite estimate of the prevalence and incidence of substance abuse in Iran is not possible (8). Iran's Drug Control Organization has declared that there are currently 2.8 million "regular drug consumers" in this strictly conservative country, according to the state media. The figure is up from 1.3 million users in the Islamic Republic's 80 million strong population six years ago, spokesperson Parviz Afshar said, with opium fueling 67%of consumption (9).

There is strong evidence that addiction alone has a negative impact on the quality of life of individuals. The quality of life is the perception of individuals about their position in life, as well as in the culture and value systems and is linked to their goals, aspirations, and standards (10). Quality of life has different dimensions, including physical, psychological, social, and spiritual (11). By altering behavior, self-esteem, nutrition, and occupational and social relationships, addiction generally changes a person's routine life and decreases his/her in quality of life (12).

In most countries of the world, three strategies are generally used to combat substance abuse and improve the quality of life of people: legal, educational, and therapeutic strategies. Legal strategies include legitimate ways aiming to limit the distribution or use of substances. The goal of educational strategies is prevention, involving measures that reduce the likelihood of people becoming addicted, augmenting the factors that protect individuals against substance abuse. Therapeutic strategies aim to recover a person's health and include drug therapy and non-drug therapy (2).

Methadone therapy is one form of drug treatment strategies (2). The drugs approved by the US FDA for treating addiction include methadone and buprenorphine. Methadone is a complete receptor agonist and can be misused due to its precise mimicry of the effects of drugs; however, it is still used in addiction clinics (13). Methadone is a synthetic opiate drug that can be used orally and as a substitute for heroin. Methadone (administered 20 to 80 mg daily) was shown to be effective in maintaining people with SUD in a stable state. The duration of its effect exceeds 24 hours (2).

Non-drug treatments include individual psychotherapy, group therapy, family therapy, occupational therapy, exercise therapy, narcotics anonymous, and therapeutic community centers (TC) (2). One successful way to quit addiction is to form self-help groups, in which individuals with SUDs themselves gather to support, discuss, guide, and provide solutions to each other. It seems that the continuing presence of individuals with SUDs in the narcotics anonymous sessions may help

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them learn effective tolerance skills strengthen their resolution for achieving goals. Anonymous Addicts is a 12-step self-help program adapted from Anonymous Alcoholics, which, according to its World Service, is held in 139 countries, with about 40% of its meetings being held in the United States and more than 31% in Iran (14).

Community-oriented treatment is another program known to be very effective in curbing addiction. This residential program encompasses norms such as responsibility, honesty (with oneself and with society), addressing both positive and negative experiences of prior substance consumption and anti-social life, avoiding reusing drugs, and not getting involved with others (15). Therapeutic community, unlike outpatient or individual and group psychotherapy, is an almost long-term residency method that is based on communication processes between peer groups, creating a lasting change in the identity and behavior of clients. In these communities, the correct drug-free lifestyle is practiced by effectively wielding people's strengths and abilities (16). The use of preventive and therapeutic methods, including therapies that reinforce the religious and social dimension of man, has been reported to be effective in restraining the domination of substance abuse (17).

Considering that no research has yet compared the effects of usual therapeutic methods on quality of life in people with SUD in Iran, we aimed to evaluate the quality of life of the individuals who participated in either narcotics anonymous or therapeutic community (TC) sessions or received methadone therapy. The main purpose of our study was to identify the therapeutic method with the largest impact on the quality of life of clients.

Methods

The present experiment was a cohort study (from January to June 2013) performed on detoxified people with SUDs who met our inclusion criteria. Inclusion criteria were admission and continuous consumption of at least one of the narcotic drugs of opium, sap, heroin, crystal, and glass, the use of substances for at least 1 to 10 years, male gender, age between 20 and 55 years, and 5 to 14 days passing since drug use cessation. The quality of life of the participants was evaluated at the baseline and 1.5 months after the start of treatment. The minimum number of the sessions required to change the quality of life is 12, so we held at least two anonymous sessions per week to reach a total of 12 sessions in 1.5 months. Also, the same number of referrals was considered for the methadone therapy; and in the TC method, addicts attended this number of sessions due to their permanent residence in the center (18). Patients who failed to complete the post-test quality of life questionnaire (i.e., 1.5 months after the start of treatment), those who did not follow the treatment according to the protocol, and people diagnosed with any chronic or debilitating disease during the study were excluded.

The SF36 questionnaire, prepared by the International Organization of Quality of Life, is a reliable tool for assessing people's health and quality of life. The tool includes 36 questions in two main areas of physical and mental dimensions and eight health subscales. The subscales related to the physical domain include physical function (10 questions), physical pain (two questions), physical role (four questions), and general health (five questions), and the subscales related to the mental domain were vitality (four questions), social role (two questions), emotional role (three questions) and mental health (five questions). A separate question is also included to address the overall health status. The total score of this questionnaire ranges from 36 to 160, which is transformed to a 100 point scale for ease of measuring and reporting (19).

For content validity, the questionnaire was given to 10 faculty members who were experts in the field of research to confirm the tool's content validity according to their opinions. Studies show that this questionnaire has a high validity in measuring quality of life. In a study, Brazier reported that Cronbach's alpha coefficient was higher than 0.75 for all dimensions except for social performance (19).

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For sample recruitment in the narcotics anonymous group, total relevant sessions (43 sessions) were initially listed and then classified according to the locations based in five districts in Mashhad. Two of the sessions were selected by cluster random sampling. As only one center was available in the city providing therapeutic community (TC) treatment only to men the same center was used for sampling in this group. For participant recruitment in the methadone therapy group, relevant clinics under the supervision of the Ministry of Health were identified, among which one clinic (Dr. Afshari clinic) was randomly selected. Individuals were randomly chosen according to inclusion and exclusion criteria.

In order to estimate the sample size, a pilot study was conducted on 10 individuals from each group. The sample size was finally estimated as 23 individuals per group. In order to account for possible drop-out during follow up, 27 people were considered in each group. In the pilot study, the mean and standard deviation of quality of life were determined in each group (narcotics anonymous: 74.93 ± 13.82, therapeutic community: 67.35 ± 15.76, and methadone therapy: 58.18 ± 19.13). As there was no similar study, the highest mean ± SD obtained was placed in the following formula.

$$n = \frac{\left(Z_{1-\frac{\alpha}{2}} + Z_{1-\beta}\right)^2 (s_1^2 + s_2^2)}{(\bar{x}_1 - \bar{x}_2)^2}$$

$$\frac{(1.96 + 0.80)^2 \times (19.13^2 + 13.82^2)}{(58.18 - 74.93)^2} = 22.68 \cong 23$$

Data Collection

After referring to the above mentioned centers, the researchers first introduced themselves and then explained the purpose and process of the study to the residents in a 20-minute lecture. The residents were assured about the confidentiality of their information and instructed how to fill out the forms and the relevant questionnaire. In the end, a 10 minute session was considered for responding to any question.

Each participant completed and signed an informed consent form before formally entering the study. Then a demographic questionnaire and the SF 36 tool were provided to the research units. The SF 36 questionnaire, provided by the International Quality of Life Survey,is a good tool for assessing people's perception of their health and includes 36 questions in the two main areas of physical and mental health(21). The participants completed the questionnaire, which lasted about 15-30 minutes, and then delivered it to the researcher.

Narcotics anonymous group

The participantsin the narcotics anonymous group attended at least two sessions per week for 1.5 months. The subjects were required to attend at least 80% of the sessions; otherwise, they were excluded from the study.

Therapeutic community group

In the center providing community-based treatment, the permanent residence of the people and the compulsory participation in the meetings and activities of the center facilitated their attendance at the sessions held for 1.5 months.

The researchers were involved in the process of implementing the treatment sessions in coordination with the authorities of the center.

Methadone therapy group

In the methadone therapy group, the patients received methadone on a regular basis for 1.5 months. In this group, four clients initially included in the study were excluded from the study due to the lack of follow-up treatment. These patients were substituted with new eligible participants later.

In all three groups, the clients benefited from the interventions, treatments, and programs routinely provided to them, and the researchers did not interfere with them. During the study, the researcher monitored the regular and active participation of the subjects At the end of the interventions, the researcher referred to the centers and provided the participants who adhered to the study's requirements with the SF-36 quality of life questionnaire as the post-test. After providing a brief 5-minute explanation, the subjects completed the questionnaire. They were thanked for their participation in the research and reassured that their information would remain confidential.

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Statistical analysis

In this study, the mean score of quality of life at the beginning of the study and 1.5 months after the start of treatment, as well as other quantitative demographic variables were compared between the three study groups by one-way ANOVA and post-hoc Tukey analysis to ascertain statistically significant differences. The Chi-square test was used to compare qualitative demographic variables between the groups, and the paired t-test was utilized for the intra-group comparison of quality-of-life scores. Data were analyzed in SPSS19 software at a significance level of P < 0.05.

Results

In the present study, a total of 81 people with SUDs participated in the sessions held as narcotics anonymous (n=27), therapeutic community Group (n=27) and methadone therapy groups (n=27). The overall mean age of the participants was 35.33 ± 8.66 years. There was no statistically significant difference between the three groups (P=0.46). The demographic characteristics of three study groups have been shown in Table 1.

As shown, there were no significant differences between the three groups in terms of demographic features, indicating the homogenous distribution of these variables (p>0.05).

The mean score of quality of life was comparable between the three study groups at the baseline (P=0.455). However, the mean score of quality of life at 1.5 month after the start of treatment was was 70.1±14.2 in the methadone therapy group, 73.3 ± 14.5 in the therapeutic community group, and 85.7 ± 8.2 in the narcotics anonymous group (P <0.001). Table 2 compares the mean score of quality of life between the three study groups, as well as before and after the treatments in each group.

The results of the post-hoc Tukey test showed that the mean score of quality of life was significantly different comparing the narcotics anonymous group vs. the methadone therapy group (P <0.001), and the narcotics anonymous group vs. the therapeutic community group (P = 0.003). However, the mean score of quality of life was not significantly different between the methadone therapy and therapeutic community groups (P >0.05). Therefore, narcotics anonymous sessions were more effective in improving the quality of life of detoxified individuals with SUD.

The mean scores of different dimensions of quality of life in the study groups at baseline and 1.5 months post-treatment have been shown in Table 3.

Table 1. Demographic characteristics of three groups

Variables		Methadone-treated groups	Therapeutic Community	Narcotics anonymous	p
Age(M±SD)		34.3±5.8	37.6±9.3	39.3±6.9	*0.46
Years of drug use		7.6±2.6	7.9±3.3	8.4±2.1	*0.2
Marital status	Single	8(28.6)	10(37)	8(29.6)	**0.56
	Married	19(71.4)	17(63)	19(70.4)	
Job	Governmental	15(57.1)	7(25.9)	14(53.3)	**0.1
	Non-governmental	12(42.9)	20(74.1)	13(46.7)	
Educational level	Elementary	5(19)	5(16.7)	5(20)	**0.7
	Guidance course	5(19)	8(30.6)	5(20)	
	Secondary school	9(33.4)	11(38.9)	10(32)	
	Academic	8(28.6)	3(13.9)	7(28)	
Region	City	26(95.2)	25(94.4)	26(95.2)	**0.43
	Village	1(4.8)	2(5.6)	1(4.8)	
Housing situation	Personal	10(38.1)	17(61.1)	14(52)	**0.23
	Non-personal	17(61.9)	10(38.9)	13(48)	

Significance at 0.05
*ONE way ANOVA
** Chi-square

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[DOI: 10.18502/jchr.v11i3.10868]

Table 2. Comparison of mean score of quality of life in three groups

Groups	Methadone-treated group M±SD	Narcotics anonymous M±SD	Therapeutic Community M±SD	P-value
At the baseline of the study	62.1±18.3	68.3±15.6	63.8±19.8	0. 45*
1.5 months after treatment	70.1±14.2	85.7±8.2	73.3±14.5	<0.001
P-value	0.05	<0.001**	<0.002	

*One way ANOVA
** Paired t- test

Table 3. Mean scores of different dimensions of quality of life in three groups at beginning and 1.5 months after start of treatment

Mean Score Quality of Life		Physical Function (PF)	Role Physical (RP)	Role Emotional (RE)	(vitality) (VT)	mental health (MH)	Social Functioning (SF)	bodily pain (BP)	General Health (GH)
At the beginning of the study	Therapeutic Community	38.7±12.7	64.9±25.6	58.1±28.1	53.7±22.7	72.2±22.8	67±24.6	67±24.6	65.2±26.9
	Narcotics anonymous	41.1±8.2	73.1±24.2	71.1±16.4	62.8±15.9	63.1±24.4	69.1±21.2	66.2±23.9	55.8±18.7
	Methadone-treated group	42.5±6.3	66.6±29.2	65±29.8	56.6±22.2	57.4±32.8	57.1±34.1	58.9±24.7	52±18.07
	P-value	0.36*	0.43	0.11	0.2	0. 2	0.24	0.48	0.11
1.5 months after start of treatment	Therapeutic Community	44.7±6.9	72±19.6	71.9±21.1	64.1±17.5	74.6±21.5	76.7±19.4	79.8±30.2	79.8±17.2
	Narcotics anonymous	46.8±4.1	90.8±11.3	87.7±11.1	81.3±8.9	75.6±18.3	90.4±10.2	88.7±11.9	80.4±12.5
	Methadone-treated group	41.2±6.6	72±23.4	65±26.03	63.7±20.1	58.6±24.4	68.4±25.5	75.5±21.4	57.1±17
	P-value	.013	<0.001	<0.001	<0.001	0.01	<0.001	0.03	<0.001

*One way ANOVA

Discussion

In the present study, the mean score of quality of life between the three study groups did not differ significantly at the beginning of the study. At 1.5-month after the start of the treatment; however, the mean score of quality of life was significantly higher in the narcotics anonymous group compared to the therapeutic community and methadone therapy groups. This can be due to the unique features of narcotics anonymous treatment such as having a certain guiding person, 12-step sessions on a daily basis, and the need for completely avoiding friends and drug use tools.

Also, we noticed that the mean scores of different dimensions of quality of life were significantly different between the three study groups at 1.5-month after the start of the treatment. Accordingly, the mean quality-of-life scores in different aspects of physical health, emotional role, social function, energy, pain, and general health were significantly higher in the narcotics anonymous group compared to the therapeutic community and methadone therapy groups. There was no significant difference in the mean quality-of-life scores between the three study groups at pre-test. Also, no significant differences were observed between the three study groups in terms of demographic variables. Similar studies have reported the effectiveness of narcotics anonymous sessions in alleviating physical symptoms (22), improving physical health (23), and reducing introversion-extroversion scores (24). This can be attributed to the nature of the intervention and its requirements. For example, it is not allowed to use any drug while participating in narcotics anonymous meetings. In addition, lifestyle modification according to the working of the twelve steps can improve the person's relationships and communication with others, as well as understanding and communicating with a Power greater can justify this issue.

Although the quality-of-life score significantly increased in the narcotics anonymous and therapeutic community groups after the

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intervention compared to the baseline, the increase was more pronounced in narcotics anonymous group. This can be attributed to the unique features of narcotics anonymous sessions, such as social learning, support and unity among members, the availability of a guiding, and the presence of a 12-step recovery program. It has been reported that participation in narcotics anonymous meetings can increase psychological well-being (25). Besides, regular attendance at these meetings could reduce alcohol consumption by increasing social support (26).

As mentioned, the self-help program of the narcotics anonymous therapeutic strategy includes 12 steps, aiming to achieve complete relief from addiction, which is generally accompanied by changes in people's attitudes and self-knowledge, as well as improvement in their self-confidence and social status. Factors such as better understanding of the disease, cessation of consumption, improved physical and mental health, establishing and maintaining more successful familial relationships, and professional success are believed to contribute to the adherence of people to this self-help program (27). It was noted that the correct implementation of the 12 steps in the group of Alcoholics and Narcotics anonymous would boost continuity of abstinence and healing (28).

Consistent with our findings in the quality-of-life dimensions of physical health and social functioning, another study reported that narcotics anonymous sessions significantly increased the quality of life of participants in the dimensions of physical health and interpersonal relationships compared to the methadone maintenance therapy group (29). As mentioned earlier, it should be noted that social support, participation in meetings, hearing each other's experiences, service provision, coordination, and intimacy that are observed during narcotics anonymous sessions can improve interpersonal relationships, positively affecting the physical, mental, and spiritual dimensions of people's life quality(30).

In line, Haj Hosseini *et al.* affirmed the superiority of narcotics anonymous sessions over methadone therapy in improving various quality-of- life components. The duration of membership in the narcotics anonymous group was reported to be inversely associated with the signs of depression and physical pain and positively associated with general health and emotional performance (31). Although Sotoudeh *et al.* did not assess the role of therapeutic community approach, their findings were consistent with ours in the dimension of emotional performance(24). The attendance of people at narcotics anonymous meetings improved their psychosocial and introversion extrovert personality scores. Another reason for the improved emotional performance could be the multidimensional approach towards addiction during narcotics anonymous sessions and considering the root of these problems to be emotional reactions caused by failure and confusion, followed by self-centered struggles (30). The presence of a guiding person seems to be of great help to narcotics anonymous members in difficulties and problems faced during drug withdrawal and embarking on a new life.

Regarding the social dimension, studies show that spiritual flourishing and social activities, as the components of spirituality, can significantly contribute to predicting the quality of life of the members of the narcotics anonymous group (30), which is supportive to the results of this research. Therefore, membership and participation in self-help groups such as the narcotics anonymous can be an important source of social support. Accordingly, the greater the social support is, the greater the amount of self-esteem, and vice versa (32). Addicts and alcoholics have two major reasons for participating in narcotics anonymous sessions: first, improving their overall performance, and then finding social support, acceptance, and friendship (33). One of the main slogans in the sessions of narcotics anonymous is "a community, countless friends".

Sadat *et al.* found that the training provided at therapeutic community centers was effective in improving social relationships among individuals (34). The targeted controlled environment of the therapeutic community can increase the concepts

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[DOI: 10.18502/jchr.v11i3.10868]

of realistic thinking towards oneself and the surrounding world by focusing on effective skills, eliminating inefficient skills, creating the necessary skills, and fair criticism and judgment. Thus, this strategy is highly effective in improving the quality of people's social relationships (35). However, there was no comparison with narcotics anonymous in the recent research.

In the present study, our results indicated that attendance at therapeutic community sessions significantly upgraded the quality of life of the patients.People with SUDs referring to therapeutic community centers receive psychiatric care and social support in order to attain better interpersonal communications (36). Admittedly, a social environment that assigns roles to people based on their abilities and encourages them to perform these roles correctly can increase people's social adjustment.

According to our results, people with SUDs participating in narcotics anonymous and therapeutic community sessions benefit from great improvements in their quality of life; nevertheless, this effect was more pronounced in those attending narcotics anonymous sessions. Hence, it is suggested that the Ministry of Health and Medical Education, the Counter Narcotics Office, the Welfare Office, and other organizations that directly or indirectly deal with individuals with SUDs, especially those aiming for drug withdrawal or those who have recently given up, to inform these people about the benefits of attending therapeutic communities and narcotics anonymous meetings. In this manner, these individuals are encouraged to participate in these sessions, which would facilitate drug withdrawal.

There were some limitations in this study that could not be adjusted despite all the efforts made. For starters, differences in the participants' levels of interest and mental states could have affected their responses to the SF-36 questionnaire. In addition, we had restrictions in accessing female addicts in the research environment. Finally, domestic laws hindered us from performing morphine testing to more accurately investigate the relapse of substance abuse, especially in those attending narcotics anonymous sessions.

Conclusion

According to the results of this study, newly detoxified individuals participating in narcotics anonymous and therapeutic community sessions experienced significant improvements in their quality of life. There were significant elevations in all aspects of quality of life in those attending narcotics anonymous sessions. It is suggested that authorities, health care providers, and those involved in addiction treatment programs pay more attention to the therapeutic potential of these meetings and programs.

Acknowledgments

This article was derived from a master's thesis approved by Mashhad University of Medical Sciences under the ethics number code of 1391: 900552. We thank the Vice Chancellor for Research and Technology of Mashhad University of Medical Sciences, officials, colleagues and clients of clinics, the authorities of the therapeutic community center, as well as the members of the Association of narcotics anonymous.

Conflict of Interest

The authors declare that they have no conflict of interest.

Authors' contributions

All authors equally contributed to conducting the project and preparing the manuscript. All authors read and approved the final manuscript.

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