Original Article
The effect of extended nursing on the relapse of patients with alcohol-induced mental disorders

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Abstract: Objective: To investigate the effect of extended nursing care on the relapse of patients with alcohol-induced mental disorders. Methods: A total of 113 patients with alcohol-induced mental disorders admitted to our hospital were divided into two groups. The patients in group A (n = 56) were managed with conventional discharge instructions and the patients in group B (n = 57) were provided with extended nursing services. At discharge and 12 months after discharge, the Social Support Rating Scale (SSRS), the Medical Coping Modes Questionnaire (MCMQ), the Social Disability Screening Schedule (SDSS), and compliance with treatment evaluation were used to assess the patients. The results of the one-year abstinence and/or relapse after discharge were recorded as well. Results: at 12 months after discharge, group B had higher support utilization, objective support, subjective support, and total social support scores than group A ($P<0.05$); group B reported lower 'yield' and 'avoid' and higher 'face' scores at 12 months after discharge compared with group A ($P<0.05$). The patients in group B had lower SDSS scores ($P<0.05$) and showed better compliance with the treatment ($P<0.05$) than the patients in group A at 12 months after discharge. Although group B had fewer cases of limited drinking (17.54%) and failure to abstain (3.51%) than group A, the patients abstaining from alcohol completely accounted for 78.95% ($P<0.05$), and the relapse rate was reduced to 21.05% ($P<0.05$). Conclusion: Extended nursing care for patients with alcohol-induced mental disorders is beneficial for reducing re-drinking and therefore improves psychiatric symptoms, social support, and compliance with treatment.

Keywords: Alcohol, mental disorders, extended nursing care, reduction, relapse

Introduction

Psychoactive substances are objects that, once ingested, will exert significant mental effects and affect physical health in the long run [1, 2]. Alcohol is neurotropic, so excessive alcohol consumption at one time may lead to psychological problems, and excessive alcohol consumption for a long time will even cause various mental disorders [3, 4]. In addition, some patients may show signs and symptoms of physical abnormalities [5, 6].

Patients usually present in a state of intoxication, and chronic alcoholism, Korsakov psychosis, alcoholic dementia, alcohol-induced mood disorders, and alcohol-induced personality changes. Patients with alcohol-induced psychotic disorders are prone to alcoholism and other troubles. They may encounter difficulties in

their work and life, thus losing their sense of responsibility for their family and society [7, 8]. Alcohol-induced psychotic disorder has become a serious social and medical problem [9]. Abstinence may last a long time, and while short-term treatment can eliminate physical dependence, it is difficult to eradicate psychological dependence [10]. A study has shown a close correlation between the degree of social support and family supervision received by patients with alcohol-induced mental disorders and the risk of relapse [11]. Extended nursing is considered a mode of continuous nursing service, which not only provides patients with nursing services during hospitalization but also extends the services to the families and communities so that the patients can still receive the corresponding nursing services after discharge. Patients and their families are provided with guidance and counseling after discharge so

as to obtain more social support to improve their lifestyle and prevent the recurrence of the disease [12, 13]. At the present stage, extended nursing has been widely used in the nursing field at home and abroad, and certain application results have been obtained. Patients' self-care ability, treatment compliance, service satisfaction, and quality of life have been significantly improved.

In view of this, in order to reduce relapse and ensure continuous nursing after discharge in patients with alcohol-induced psychotic disorders, the subjects in this study were managed with extended nursing.

Materials and methods

Materials

A total of 113 patients with alcohol-induced mental disorders in our hospital were divided into two groups. The patients in group A (n = 56) were given conventional discharge instructions and the patients in group B (n = 57) were managed with extended nursing. Among the patients in group A, there were 47 (83.93%) males and 9 (16.07%) females, ranging in age from 25 to 66 years, with the average age of (43.25 ± 1.05) years, and with a histories of drinking for 11-19 years or (15.02 ± 1.28) years on average. The numbers of cases with an education level of primary school or below, junior high school, or senior high school or above were 13 (23.21%), 35 (62.50%), and 8 (14.29%), respectively. Among the patients in group B, there were 49 (85.96%) males and 8 (14.04%) females, ranging in age from 26 to 68 years, with the average age of (43.28 ± 1.02) years, and with histories of drinking for 10-20 years or (15.19 ± 1.25) years on average. The numbers of cases with an education level of primary school or below, junior high school, or senior high school or above were 15 (26.32%), 33 (57.89%), and 9 (15.79%), respectively. (1) Inclusion criteria: the subjects met the Diagnostic Criteria for Alcohol-induced Psychotic Disorder in the Chinese Classification of Mental Disorders Version 3 (CCMD-3) [14], had been drinking for > 10 years, and along with their families agreed to follow-up. This study was approved by the Ethics Committee of the People's Hospital of Zhangqiu District. Each patient's family signed and provided a written informed consent. (2) Exclusion criteria: Sub-

jects who failed to meet the clinical recovery criteria at discharge or who had other serious mental disorders or diseases of the brain or any other physical diseases.

Methods

Group A: At the time of discharge, the patients were provided conventional discharge instructions together with a distributed contact card and health brochure. Any questions from them or their families were answered meticulously. A week later, the nursing staff carried out telephone follow-up to collect information about each patient's condition, and to ask them to return for treatment if their condition recurred. At 15 days after discharge, the nursing staff asked the patients to undergo periodic check-ups in the company of their families. In addition to health education, targeted guidance was required, and patients were not subject to any other nursing services after discharge.

Extended nursing for patients in group B: A professional team was established, including two nurses in charge, two doctors in charge, one primary nurse and one head nurse in the open ward. All the members were professionally trained, and they had good communication skills and psychological expertise. The doctors in charge were mainly responsible for the rating scales, and the head nurse was responsible for supervising any and all continuous nursing care. An open ward, *i.e.* day-care unit, was set up in the hospital headquarters and allowed visits for 1-2 days a week when a patient's condition was stable. The sickbed nurses were in charge of making a round of visits, including handling laboratory tests, ECG, and blood pressure measurements. The patients were able to contact the medical staff by telephone at any time. In the case of recurrence, it was necessary to transfer the patient to the Psychiatry Department for closed treatment. At discharge and at 12 months after discharge, all the patients were subject to a follow up evaluation.

Files created: Each patient' chart was archived at discharge, including name, gender, age, contact number, home address, treatment, alcohol dependence, *etc*. A contact card indicating the contact numbers of the nurses in the open ward and the primary nurses was distributed to each patient. Furthermore, the patients and

their families voluntarily signed the informed consent.

In-hospital nursing: 1-3 days before discharge, the patients were subject to an overall assessment to determine their psychological needs, social support, and conditions. At the same time, the medical staff discussed the causes of alcohol addiction and relapse risk factors with the individuals, informed each patient of effective ways to avoid alcohol consumption, developed plans for the work and lives of the patients after discharge with the families, and finally issued the health brochure and made an appointment for a later consultation.

Out-of-hospital extended nursing: (1) Follow-up: At seven days after the discharge, two telephone follow-ups were performed. At 30 days after the discharge, they were transferred to the related community where the community medical workers arranged visits every 15 days. Each follow-up took place about 60 minutes before meals. The purpose of follow-up was to investigate the patients' mental states, sleep, conditions, *etc.*, and to introduce methods for resisting alcohol temptation, to inform them that doctors were available once withdrawal symptoms occurred, and then to communicate with the family members and encourage them to provide more support and care, which were important for improving their emotional as well as social functions. The family members were told to accompany the patient for the follow up consultation at two months after the discharge. From then on, subsequent visits were arranged every two months in order to record their alcohol dependence and create an awareness of the dangers of drinking, encouraging the patients to report any and all problems they encountered in the process of alcohol withdrawal for targeted countermeasures. (2) Knowledge lectures: in the communities, monthly lectures on abstinence were organized, inviting all the patients and their families to attend. The content involved disease-related knowledge, the correct ways to cope with drinking, signs of relapse, and precautions for medication. Meanwhile, any changes in the psychological statuses of the patients were observed. They were instructed to develop hobbies and stay away from alcohol utensils and alcoholics. When they feel the desire to drink, they should stifle it by chewing gum or listening to music. At the end of a lecture, all the patients were organized together to discuss the "role model" who encouraged the other's confidence and determination in alcohol withdrawal. (3) Group activities: the team organized quarterly outdoor activities for all the patients and their families. Around hills, in the shade, and along streams, photography, dancing, and singing as well as hiking encouraged them to experience nature and learn how to control the desire to drink. In the course of the activities, comprehensive guidance and counseling were available as well.

Outcome measures

(1) SSRS Scale: This scale was used at discharge and at 12 months after discharge separately in both groups to make a social support assessment. The SSRS scale covers three dimensions, including support utilization, objective support, and subjective support, and a total of 10 items are scored using multiple scoring or 4-level scoring. The social support level is directly proportional to the total score [15].

(2) MCMQ Scale: This scale was administered at discharge and at 12 months after discharge separately in both groups to perform a mental assessment. There are three subscales: yield, avoid, and face. For the 20 items, each could be scored from 1-4. A higher total score indicates a greater tendency to engage in specific behaviors [16].

(3) SDSS Scale: This scale was used at discharge and at 12 months after discharge separately in both groups to evaluate social functions. Each of 10 items could be scored from 0-2. A higher total score indicates a more severe social disability [17, 18].

(4) Compliance with treatment: This was measured at discharge and at 12 months after discharge separately in both groups and evaluated drug treatment, control of the desire to drink, exercise and diet, and a regular review. Each variable could be scored from 0-3. A higher total score indicates better compliance with treatment [19].

(5) Abstinence: This was measured at one year after discharge. Overcoming alcohol addiction along with the absence of drinking behavior within one year after discharge is considered complete abstention from alcohol. Intermittent

Table 1. General data of the two groups of patients [n (%)]/($\bar{x} \pm s$)

Variables		Group A (n = 56)	Group B (n = 57)	t/X^2	P
Gender (case)	M	47 (83.93)	49 (85.96)	0.092	0.762
	F	9 (16.07)	8 (14.04)		
Age (years)		43.25 ± 1.05	43.88 ± 1.02	0.154	0.878
Alcohol history (years)		15.02 ± 1.28	15.19 ± 1.25	0.714	0.477
Education level (cases)					
Primary school and below		13 (23.21)	15 (26.32)	0.025	0.859
Junior high school		35 (62.50)	33 (57.89)		
Senior high school and above		8 (14.29)	9 (15.79)		

drinking or limited drinking occurring within one year is considered limited drinking. Abstinence lasting for less than one year and the occurrence of continuous drinking occurred were recorded as "not abstained" [20].

(6) Relapse: This refers to the reoccurrence of drinking behavior within one year after discharge, and limited drinking and not abstaining are included.

Statistical analysis

SPSS 22.0 was applied for the data analysis. The measurement data were expressed as the mean ± standard deviation (mean ± SD). Results following a normal distribution were subject to t tests; otherwise, Mann-Whitney U tests were performed. The enumeration data were expressed as [n (%)] and subject to X^2 tests. $P<0.05$ indicates a statistically significant difference.

Results

General data of the two groups

There were no significant differences with respect to gender, age, history of drinking, or educational level between the two groups ($P > 0.05$) (**Table 1**).

Comparison of the SSRS scores between the two groups

In group A, the support utilization, objective support, subjective support, and total social support scores at discharge were (6.58 ± 1.05), (8.15 ± 0.52), (18.05 ± 1.28), and (30.12 ± 1.58), respectively, which showed no significant differences compared with group B at discharge ($P > 0.05$). At 12 months after dischar-

ge, the support utilization, objective support, subjective support, and total social support scores were (12.98 ± 1.05), (15.96 ± 0.99), (25.69 ± 0.85), and (39.98 ± 5.28), respectively in group B, which were higher than the scores in group A, and showing statistically significant differences ($P<0.05$). Compared with those at discharge, the support utilization, objective support, subjective support, and total social support scores of the two groups were all increased at 12 months after discharge, and the differences were statistically significant ($P<0.05$) (**Figure 1**).

Comparison of the MCMQ scores between the two groups

In group A, the yield, avoid, and face scores at discharge were (17.85 ± 1.59), (18.05 ± 0.69), and (12.05 ± 0.55), respectively, and they had no significant differences compared with the scores in group B ($P > 0.05$). At 12 months after discharge, the individual yield and avoid scores were (8.52 ± 0.26) and (10.52 ± 0.22) in group B, which were both lower than the corresponding scores in group A, and the face score was (19.98 ± 2.15) in group B, which was superior to the score in group A, and which had a statistically significant difference ($P<0.05$). Compared with the scores at discharge, the yield, avoid, and face scores in the two groups were all increased at 12 months after discharge, and the differences were statistically significant ($P<0.05$) (**Figure 2**).

Comparison of the SDSS scores between the two groups

There was no significant difference in the SDSS scores at discharge between the two groups ($P > 0.05$). At 12 months after discharge, the SDSS scores were reduced in both groups, with
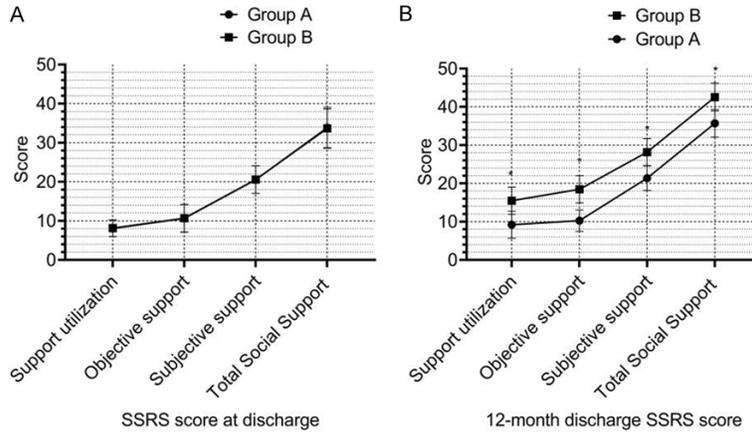
Figure 1. The SSRS scores in both groups. There was no difference in the SSRS scores at discharge between the two groups (*P* > 0.05). At 12 months after discharge, the support utilization, objective support, subjective support, and total social support scores in group B were higher than those in group A (*P*<0.05).
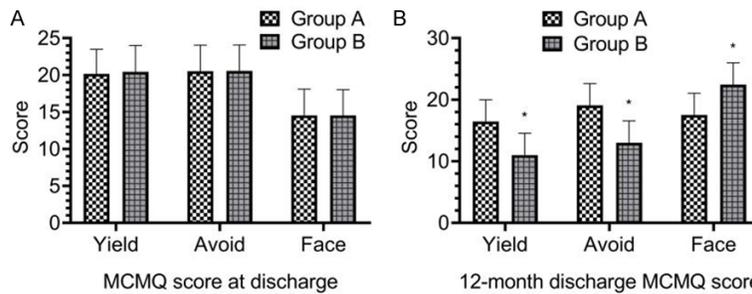
Figure 2. The MCMQ scores in both groups. There was no significant difference in MCMQ scores at discharge between the two groups (*P* > 0.05). At 12 months after discharge, the individual scores of yield and avoid in group B were lower than they were in group A, while the face score in group B was superior to that in group A (*P*<0.05). *donates *P*<0.05 as compared with group A.

Table 2. Comparison of the SDSS Scores between the two groups ($\overline{x} \pm s$, scale)

Group	At discharge	At 12 months after discharge
Group A (n = 56)	11.58 ± 2.15	10.36 ± 1.05[#]
Group B (n = 57)	11.62 ± 2.13	8.15 ± 0.88[#,*]
t	0.099	12.134
P	0.921	0.000

Notes: [#]denotes *P*<0.05 compared with the scores at discharge; [*]indicates *P*<0.05 compared with the scores in group A.

a statistically significant difference (*P*<0.05), and the scores in group B were lower than those in group A, showing a statistically significant difference (*P*<0.05) (**Table 2**).

Comparison of the treatment compliance between the two groups

Similarly, there was no significant difference in treatment compliance at discharge between the two groups (*P* > 0.05). At 12 months after discharge, the compliance with treatment was elevated in both groups, showing a statistically significant difference (*P*< 0.05), and the level in group B was better than it was in group A, showing a statistically significant difference (*P*<0.05) (**Table 3**).

Comparison of the abstinence rates between the two groups

In group A, 16 (28.57%) cases abstained from alcohol completely, 19 (33.93%) were controlled up to limited drinking, and 21 (37.50%) did not abstain from alcohol; the corresponding cases in group B were 45 (78.95%), 10 (17.54%), and 2 (3.51%), respectively. The results showed that 78.95% of the patients in group B completely abstained from alcohol, which was higher than the rate in group A, and the alcohol restriction and the non-abstinence rates (17.54% and 3.51%, respectively) were lower than they were in group A (*P*<0.05) (**Table 4**).

Comparison of the relapse rates between the two groups

A total of 40 patients reinitiated drinking behavior, resulting in a relapse rate of 71.43% in group A. In group B, 12 patients started drinking again, leading to a relapse rate of 21.05%, which was significantly lower than the rate in group A (*P*<0.05) (**Table 5**).

Discussion

Hospitalization is only the first step in abstinence, and while physical dependence is elimi-

Table 3. Comparison of the compliance with treatment between the two groups ($\overline{x} \pm s$, scale)

Group	At discharge	At 12 months after discharge
Group A (n = 56)	3.28 ± 0.52	7.85 ± 1.28[#]
Group B (n = 57)	3.32 ± 0.48	11.28 ± 0.88[#,*]
t	0.425	16.624
P	0.672	0.000

Notes: [#]denotes $P<0.05$ compared with the rate at discharge; [*]indicates $P<0.05$ compared with the rate in group A.

Table 4. Comparison of abstinence rates between the two groups [n (%)]

Group	Cases	Abstain from alcohol completely	Limited drinking	Not abstained
Group A	56	16 (28.57)	19 (33.93)	21 (37.50)
Group B	57	45 (78.95)[*]	10 (17.54)[*]	2 (3.51)[*]
X^2		28.857	15.269	13.289
P		0.000	0.012	0.008

[*]indicates $P<0.05$ compared with the rate in group A.

Table 5. Comparison of the relapse rates between the two groups [n (%)]

Group	Cases	Relapse
Group A	56	40 (71.43)
Group B	57	12 (21.05)[*]
X^2		28.857
P		0.001

Notes: [*]denotes $P<0.05$ compared with the rate in group A.

nated to some extent, psychological dependence may be hard to eradicate [21, 22]. Successful abstinence depends on the close connection and cooperation of family-health care-society. Once the patient is discharged, the absence of supervision by medical staff makes it easy for the patient to have the desire to drink again [23, 24]. In this study, the complete abstinence of group B was higher than it was in group A, suggesting that extended nursing is beneficial to abstinence and a reduced relapse rate. Its mechanism of action can be explained by the consolidated belief and confidence in the abstinence of these patients, thanks to the medical staff for continuously counseling the patients in and out of the hospital, insisting on carrying out lectures on abstinence each month, and organizing collective discussions where the patients find their own role models [25]. In addition, follow-up visits exert the role of supervision in the implementation of alcohol withdrawal plans over the previous week. The patients were instructed to divert attention from their drinking desires to other healthy hobbies. A science-based lifestyle developed step by step improved their ability to resist the temptation to drink and to consciously quit drinking.

A clinical study has shown that the social support system can function to increase the attention paid to the patients by society and their families and in the end elevate patient confidence in their rehabilitation [7]. The patient's family members are the main sources of social support. After the onset of disease, the patients are usually afraid that the family members and neighbors will cast a different eye on themselves, which easily makes them depressed or even refuse any social support other than drinking [26, 27]. Uncompensated mental deficits, poor self-control, and the absence of supervision can lead to a relapse [28]. In this study, the SSRS, MCMQ, and SDSS scores as well as the compliance with treatment in group B at 12 months after discharge were superior to those in group A, suggesting that extended nursing improved the patients' social support, compliance with treatment, and social functioning. To explore its mechanism of action, the application of extended nursing provides the patients with a medical environment within their community and at home after discharge. In order to strengthen the beliefs in the patients' health, home visits were arranged every 15 days to emphasize the introduction of the dangers of alcoholism and the importance of psychological resistance to alcohol temptation so as to promote great changes in behavior, emotion, and cognition. Also, specialized education along with professional guidance and counseling for related family members contributed to the positive attitude of the family members to patients by providing all-round social support, and expressing concerns and cooperating with the medical staff to arrange the patient supervision, keeping them away from alcohol-related things and friends.

In summary, extended nursing for patients with alcohol-induced mental disorders is beneficial to reducing relapse by improving psychiatric

symptoms and social functioning and elevating social support with compliance.

Despite the results obtained in this study, the small sample size determined its limitation. Research and analysis with larger a sample size are warranted so as to provide a more comprehensive scientific reference.

Disclosure of conflict of interest

None.

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