



## Original Article

# Evaluation of the twelve-month follow-up results from the alcohol-dependent patients followed by the tidal model

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### Abstract

**Objectives:** The aim of this study was to determine the twelve-month follow-up results from the alcohol-dependent patients who were followed by the psychiatric nursing approach based on the Tidal Model.

**Methods:** Data were collected by telephone contacts with 36 individuals (18 experimental, 18 control) twelve months after giving up alcohol.

**Results:** In this study, 88.9% of the experimental group (n=16) and 83.3% of the control group (n=15) were reached. We found that 37.5% of the experimental group and 53.3% of the control group stated that they came to the outpatient clinic during the 12 months. We found that 68.8% of the experimental group (n=11) and 80% of the control group (n=12) stated that they were alcohol users. There was no significant difference between groups. When the time of starting alcohol use was examined, the rate of alcohol use in the first month after discharge was 27.3% in the experimental group and 75% in the control group. The rate of alcohol use after one month was 72.7% in the experimental group and 25% in the control group. The difference between the groups was found to be statistically significant. When the state of reaching individual goals at the beginning of the one-to-one sessions performed with individuals in the experimental group was examined, 3 of the individuals (18.8%) had not reached their goals; 10 of them (62.4%) had partially reached their goals, and 3 of them (18.8%) had reached their goals completely.

**Conclusion:** The rate of individuals' alcohol use is similar to rates reported in the literature during 12 months of follow-up. The rate of alcohol use in the experimental group at the first month after discharge was less than in the control group. It is recommended that one-to-one sessions should be maintained after discharge to prevent relapse into alcohol dependence.

**Keywords:** Alcohol dependence; relapse; the Tidal Model.

#### What is known on this subject?

- The first 12 months after leaving the substance used is a period of high risk of relapse. Relapse rates ranging from 35% to 90% are reported in the literature.

#### What is the contribution of this paper?

- Rate of individuals' alcohol use is similar to the literature during 12 months follow-up.

#### What is its contribution to the practice?

- The Tidal Model is effective on individuals' resumption of alcohol use. The One-to-One sessions should be maintained after discharging.

The process of recovery in alcohol dependence, which is a chronic disease with relapse and remission periods, can be improved by preventing relapses or, in other words, by extending remission times as much as possible.<sup>[1]</sup>

Relapse is defined as starting to drink alcohol again after a certain non-drinking period, losing control, and turning back to the situation (both in quantity and behavior) as in the previous alcohol-use periods.<sup>[2,3]</sup> In DSM-5, remission is defined in two ways. Early remission occurs when the individual meets none of the diagnostic criteria for substance use disorder in

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a period of less than 12 months and for at least 3 months, whereas permanent remission occurs when the individual meets none of the diagnostic criteria for substance use disorder in a 12-month period or for a longer period of time, except the criteria of "having a great desire to drink alcohol".<sup>[4]</sup>

The risk of relapse is high in the first 12 months after giving up substance use.<sup>[5]</sup> Approximately 40–50% of patients who stop using alcohol or another substance restart using it in the first six months.<sup>[3]</sup> A study reported that 81% of the patients experienced relapse in the first year, and the rate of relapse in the first six months was 55%.<sup>[6]</sup> Studies report relapse rates ranging from 35% to 90%.<sup>[3,7–9]</sup>

Recovery, a concept that has attracted attention in recent years, is the way to live a fulfilled, hopeful, and productive life with the limitations caused by the disease.<sup>[10]</sup> The Institute of Mental Health, one of the leading mental health institutes in the UK, defines four successive recovery stages. The last stage of recovery does not refer to a lack of symptoms, but the ability to manage the disease, to live a whole and meaningful life, to show flexibility in facing relapses, and to have positive attitudes towards the future.<sup>[11]</sup>

The Tidal Model, a recovery model developed by nurses, has been derived from practice-based research on why people need nurses and what nurses do to make a difference in patients' lives.<sup>[12,13]</sup> The Tidal Model is a way of thinking about what should be done to facilitate the recovery process.<sup>[14]</sup> It focuses on what individuals need to adapt to and/or overcome their problems.<sup>[15]</sup>

It is important to provide individuals with self-control skills that they can apply in situations and environments with high risk of relapse, in order to end their drinking behaviors and then to ensure their continuation of non-drinking behaviors.<sup>[16]</sup>

Each individual was provided with individualized care for his/her specific needs, using the Tidal Model-based psychiatric nursing approach, in order to assist alcohol-dependent patients to exert efforts for getting away from alcohol and to acquire new life skills, as well as to avoid the cyclical relapse of alcohol use.<sup>[17]</sup>

This study aimed to determine the twelve-month follow-up results of alcohol-dependent patients who were followed by a psychiatric nursing approach based on the Tidal Model.

## Materials and Method

The sample of this cross-sectional study consisted of a total of 31 individuals, including 16 individuals in the experimental group and 15 individuals in the control group. This study constitutes the follow-up part of another study conducted by Savaşan and Çam<sup>[17]</sup> (2017). The data were collected via phone calls with 36 participants (experimental group: 18, control group: 18) 12 months after they had quit drinking alcohol. Following a power analysis of the research, the sample size was calculated based on the change difference (effect size) between experimental and control groups which was found in the pilot study. The effect size was found to be 0.97. When determining the number of samples by power analysis, the type I ( $\alpha$ ) and II ( $\beta$ ) errors were taken to be 0.05 and 0.2, respectively. The value of  $1-\beta$  (0.80), which shows the power of the study, was chosen as the lowest possible power value in clinical studies. The Power and Sample Size 3.0 package program was used to calculate the sample size, and when the values were entered into the program, it was determined that a minimum of 18 individuals should be taken for each of the experimental and control groups. The study included alcohol-dependent patients (with medium and high severity of alcohol dependence) aged between 30 and 50 years who received 2 points from the Dependency Profile Index.

The individuals were reached within one year after the completion of the study in December 2014. Of the experimental group, 88.9% (16 individuals) were reached, and of the control group, 83.3% (15 individuals) were reached.

In the present study in which the Tidal Model-based psychiatric nursing approach was applied, in addition to routine treatment and follow-up sessions in the AMATEM Clinic, approximately 10 individual interviews were conducted with the experimental group. The control group continued to receive routine treatment and follow-up sessions in the AMATEM

**Table 1. Interview plan**

Interviews	Objective	Content
1. interview	Preliminary assessment	Applying the measurement tools
2. interview	Orientation	The concept of recovery, the change phase of the individual, the holistic assessment, creating the personal security plan
3. interview	Planning the process	Determining the targets, starting one-to-one sessions
4. interview	Recovery is possible	Accepting the alcohol addiction, taking responsibility for change, focusing on strengths, instilling hope
5. and 6. interviews	Strengthening	Coping with crisis, reducing anxiety, relaxation exercises, preventing alcohol use, strengthening individual roles, sociability, and self-esteem
7. and 8. interviews	Taking control of life, taking responsibility for recovery	Taking responsibility for behaviors, expressing anger properly, discovering feelings, thoughts, and behaviors
9. interview	Creating a supporting environment	Increasing new interactions, relationships, and social skills, introducing the support group (AA)
10. interview	Evaluation	Finalizing the personal security plan, using new knowledge and behaviors in the recovery journey, evaluating the process

Clinic. The individual interviews were initiated to provide individualized care to the individuals in the experimental group, and the interventions were applied according to the goals of the individuals and the objectives of the study. An interview plan with details of the interviews to be performed with alcohol-dependent patients was formed taking into account the Tidal Model's basic processes, care steps, basic approach, and Tidal competencies. One-to-one sessions were held according to this interview plan. The mean duration of the interviews with individuals was less than 50 minutes, where 55.6% lasted less than 50 minutes and 44.4% lasted 50 minutes or more.<sup>[17]</sup> The interview plan is shown in Table 1.

The hypothesis that the psychiatric nursing approach based on the Tidal Model is effective in sustaining the abstinence of alcohol-dependent patients was tested in the study.

The necessary permissions for conducting the study were obtained from the Ethics Committee of Ege University Nursing Faculty and from İzmir Katip Çelebi University Atatürk Training and Research Hospital. The written consents were obtained from the participants.

## Data Analysis

The data were evaluated using numbers and percentages. The Pearson Chi-Square and Fisher's Exact tests were used to compare intra-group categorical data. The statistical significance level was taken as  $p < 0.05$ .

## Results

The results regarding the individuals' descriptive characteristics can be found in the study of Savaşan and Çam<sup>[18]</sup> (2016). The mean age of the individuals in the experimental and control groups were  $43.33 \pm 6.55$  and  $42.44 \pm 7.03$ , respectively. The gender distribution of the individuals in both groups was equal. The majority of the individuals were married or divorced, had graduated from primary school, and 61.1% of them were employed.

At the end of the 12-month period after they gave up drinking alcohol, 36 individuals, who participated in the study, were called via telephone, and 88.9% (16) of the individuals in the experimental group and 83.3% (15) of the individuals in the control group were reached. We successfully got 37.5% of the

**Table 2. Distribution of individuals by some variables in 12-month follow-up**

	Experimental		Control		Total		X <sup>2</sup> /p
	n	%	n	%	n	%	
Accessibility							
Yes	16	88.9	15	83.3	31	86.1	0.232
No	2	11.1	3	16.7	5	13.9	0.50
Follow-up clinical control							
Yes	6	37.5	9	60.0	15	48.4	1.569
No	10	62.5	6	40.0	16	51.6	0.18
Marital status							
Same	13	81.2	12	80.0	25	80.6	0.008
Changed	3	18.8	3	20.0	6	19.4	0.64
Occupational status							
Same	4	25.0	7	46.7	11	35.5	1.588
Changed	12	75.0	8	53.3	20	64.5	0.18

**Table 3. Distribution of individuals by the state, time of drinking alcohol and stages of change in the 12-month period**

	Experimental		Control		Total		X <sup>2</sup> /p
	n	%	n	%	n	%	
State of drinking alcohol							
Yes	11	68.8	12	80.0	23	74.2	0.512
No	5	31.2	3	20.0	8	25.8	0.68
Time of drinking alcohol (after the discharge)							
In one month	3	27.3	9	75.0	12	52.2	5.239
In more than 1 month	8	72.7	3	25.0	11	47.8	0.03
Stages of change							
Slip/Lapse	8	50.0	5	33.3	13	41.9	2.763
Relapse	3	18.8	7	46.7	10	32.3	0.25
Maintenance	5	31.2	3	20.0	8	25.8	

**Table 4. Distribution of individuals by their reasons for drinking alcohol**

Reasons for drinking alcohol	Experimental		Control		Total	
	n	%	n	%	n	%
Desire to drink	5	45.4	5	41.7	10	43.5
A circle of friends	3	27.3	3	25.0	6	26.1
Failure to cope with problems	3	27.3	4	33.3	7	30.4

individuals who were reached in the experimental group and 60% of the individuals who were reached in the control group, to come to follow-up sessions within 12 months (Table 2).

In addition, 81.2% of the individuals in the experimental group and 80% of the individuals in the control group had no change in their marital status. Twelve individuals in the experimental group (75%) and 8 individuals in the control group (53.3%) had changed their jobs. No statistically significant difference was found between the groups with respect to the change in job status ( $X^2=1.588$ ,  $p=0.18$ ) (Table 2). Three individuals in the experimental group (75%) and 6 individuals in the control group (85.7%) had a positive change in their job status. The number of individuals who already had a job and maintained this positive job status during the 12-month follow-up period was 8 in the experimental group (66.7%) and 6 in the control group.

In the 12-month period, 68.8% ( $n=11$ ) of the experimental group and 80% ( $n=12$ ) of the control group were reported to drink alcohol. No statistically significant difference was found between the groups ( $X^2=0.512$ ,  $p>0.05$ ) (Table 3).

The percentage of the patients who restarted drinking alcohol within one month after being discharged from the hospital was 27.3% in the experimental group and 75% in the control group. The percentage of the patients who restarted drinking alcohol within a period of more than one month after being discharged from the hospital was 72.7% in the experimental group and 25% in the control group. A statistically significant difference was found between the groups with respect to the time to restart drinking alcohol ( $X^2=5.239$ ,  $p<0.05$ ) (Table 3).

At the end of the 12 months after being discharged from the hospital, 31.2% of the individuals in the experimental group restarted to drink alcohol, 50% had sustained abstinence from drinking alcohol (lapse stage), and 18.8% restarted drinking alcohol (relapse stage). However, 20% of the individuals in the control group continued to drink alcohol, 33.3% had sustained abstinence from drinking alcohol (lapse stage), and 46.7%

restarted drinking alcohol (relapse stage). No statistically significant difference was found between the groups ( $X^2=2.763$ ,  $p>0.05$ ) (Table 4).

The desire to drink alcohol was observed as the leading reason why the individuals started to drink alcohol again (Table 4).

Regarding the status of reaching the individual goals determined at the beginning of the one-to-one sessions with the individuals in the experimental group, 3 (18.8%) of the individuals could not reach their goals, 10 individuals (62.4%) partially reached their goals, and 3 individuals reached all of their goals. A statistically significant difference was found between the individuals who partially reached their goals and those who did not reach or completely reached their goals ( $X^2=6.125$ ,  $p<0.05$ ) (Table 5).

## Discussion

In this study, the 12-month follow-up results of the alcohol-dependent patients who were followed using a psychiatric nursing approach based on the Tidal Model as a recovery model, were examined. The data were collected from the individuals via phone calls 12 months after they gave up drinking alcohol. In this study, 88.9% of the individuals in the experimental group and 83.3% of the individuals in the control group were reached. The majority of the individuals in the experimental group stated that they did not attend a follow-up session after being discharged from the hospital, whereas the majority of the individuals in the control group stated that they attended a follow-up session after being discharged from the hospital. The fact that the majority of the individuals in the experimental group did not attend a follow-up session can be explained by the support they receive in the individual interviews, in which the psychiatric nursing approach based on the Tidal Model was applied. The marital status of the majority of the individuals did not change. We saw that 12 individuals in the experimental group (75%) and 8 individuals in the control group (53.3%) experienced a change in their job status. The difference between the groups was not significant.

In addition, 11 individuals (68.8%) in the experimental group ( $n=16$ , 88.9%) and 12 individuals (80%) in the control group (15, 83.3%) were evaluated as having relapsed to drinking alcohol during the 12-month follow-up period, indicating no statistically significant difference between the groups. In the previous study evaluating the alcohol use status of individuals at the end of three months after being discharged from the

**Table 5. Distribution of individuals in the experimental group by the status of reaching goals**

The status of reaching goals	n	%	$X^2/p$
No	3	18.8	6.125
Partially	10	62.4	0.04
Yes	3	18.8	
Total	16	100.0	

hospital, the percentage of alcohol use in the experimental group (44.4%) was found to be less than the percentage of alcohol use in the control group (77.8%), indicating a statistically significant difference between the groups ( $p < 0.05$ ). The lower number of alcohol-dependent individuals in the experimental group compared to the control group was considered to be an important result showing the effect of the Tidal Model on the tendency of individuals to sustain abstinence from alcohol use. The process of strengthening individuals through strategies such as coping with crisis, reducing anxiety, and preventing alcohol abuse in individual interviews has been interpreted as effective in sustaining abstinence from alcohol use.<sup>[18]</sup> As a result of this study, the fact that there was no significant difference between the groups with respect to alcohol use patterns suggests that one-to-one sessions should be continued even after patients discharge from the hospital, to ensure that the psychiatric nursing approach based on the Tidal Model is effective in sustaining abstinence in the long term. In addition, studies report that addiction treatment does not only include a hospitalization process, that treatment should be continued out of the hospital, and that residential treatment after discharge from the hospital will also increase the likelihood of recovery success.<sup>[19]</sup> Lack of participation in out-of-hospital treatment programs after discharge from the hospital is determined as one of the factors causing relapse in the 12-month follow-up period.<sup>[7]</sup>

The difference between the groups with respect to the time to restart drinking alcohol in the 12-month follow-up period was found to be statistically significant. The percentage of patients who restarted drinking alcohol within one month after being discharged from the hospital was lower in the experimental group (27.3%) than in the control group (75%). In a study of the relationship between relapse and biochemical factors in male alcohol dependent patients, 68% of the patients experienced relapse in the first month following inpatient treatment.<sup>[20]</sup> Studies report that at least 50% of patients experience relapse within the first month following discharge from the hospital.<sup>[21]</sup> The fact that compared to the number of those in the control group, a smaller number of individuals in the experimental group restarted drinking alcohol in the first month following discharge from the hospital, in which the risk of relapse was high, suggests that the Tidal Model affects the time of restarting to drink alcohol. This result is important for individuals to abstain from alcohol use and to prolong their remission periods.

At the end of 12 months, the rate of permanent abstinence from alcohol use and the rate of slip/lapse in drinking alcohol in the experimental group was higher than in the control group. The rate of relapse was found to be higher in the control group than in the experimental group; however, the difference between the groups was not statistically significant. A statistically significant difference was found between the experimental and control groups in the previous study, which evaluated the individuals in terms of the change phase at the end of a 3-month follow-up period. The rate of the individuals in the experimental group who sustained abstinence from drinking

alcohol was higher than the rate in the control group, whereas the rate of relapse was higher in the control group than the experimental group. This result shows the effect of the Tidal Model on the individuals' stages of change. In individual interviews, the individuals are informed about the possible effects of the Tidal Model-based psychiatric nursing approach on their stages of change, stating that the approach aims to make individuals undertake the responsibility for change, see their own strengths, and get hope for recovery.<sup>[18]</sup> A statistically significant difference was found between the experimental and control groups with respect to their stages of change at the end of three months, whereas no such difference was found at the end of twelve months after being discharged from the hospital. This result indicates that one-to-one sessions should continue after discharge.

Studies report different rates of restarting to drink alcohol in the first 12 months after giving up drinking alcohol, during which the risk of relapse is high, ranging between 35% and 90%.<sup>[3,7-9]</sup> In a study conducted by Evren et al.<sup>[7]</sup> (2010), who reached patients via phone calls at the end of one year after they were discharged from the hospital, 66.2% of 136 patients who were reached via phone call and 61.8% of 102 patients who came to face-to-face interviews were found to drink alcohol again in a 12-month period after discharge. Another study reported that 81% of patients experienced relapse in the first year.<sup>[6]</sup> Another study also reported that at least 60% of the individuals who received treatment for alcohol addiction used alcohol at least once in the 12 months after discharge.<sup>[22]</sup> In a study of alcohol intake specifying relapse without time and quantity, the rate of relapse after inpatient treatment was 52.9%, the rate of maintenance was 39.5%, and the rate of those who had used no alcohol for a month after relapse was 7.6%.<sup>[23]</sup> Studies also report different rates of maintenance, ranging between 20% and 78%.<sup>[8,24,25]</sup> The rate of relapse of drinking alcohol among the individuals in the 12-month follow-up period found in the present study is consistent with those found in the literature.<sup>[7,8]</sup>

The desire to drink alcohol was the leading reason for restarting to drink alcohol. In the initial evaluation of individuals, the desire to drink and the inability to cope with problems are reported as the most frequent causes of relapse.<sup>[18]</sup> The desire to drink, which is one of the main features of addiction, can be experienced for many years after giving up drinking alcohol and is one of the most important factors in restarting to drink alcohol.<sup>[7,26-30]</sup> Evren et al.<sup>[7]</sup> (2010) found that at the end of 12 months after being discharged from the hospital, the severity of the desire to drink alcohol was higher in the group who restarted drinking alcohol than in those with remission. The previous study, in which the severe desire to drink alcohol was evaluated at the end of three months after the discharge, found that the mean score of the severe desire to drink alcohol decreased in the experimental group, but increased in the control group, and the difference between the groups were significant. Studies suggested that as a result of the decrease in the scores of the severity of the desire to drink alcohol in the individuals to whom a psychiatric nursing approach based

on the Tidal Model was applied, the experimental group was more advantageous than the control group with respect to relapse into drinking alcohol.<sup>[18]</sup> Individuals should continue to be monitored in one-to-one sessions, in order to maintain this advantageous situation.

A failure to cope with problems, one of the causes of relapse, should be most frequently emphasized in alcohol abusers. "Ineffective individual coping" should be dealt with in the psychiatric nursing process with an appropriate diagnosis.<sup>[31–36]</sup> Saatçioğlu et al.<sup>[3]</sup> (2007) found the rate of insufficiency of coping skills to be 22.7%.

Regarding the achievement of individual goals determined in the third interview, in which individuals in the experimental group were assisted in identifying realistic and achievable goals, those who partially reached their goals constituted the majority. This can be considered as a positive result compared to those who did not reach their goals. Considering that some of the goals can take some time to achieve, it may be advisable to follow the individuals in the long term.

## Conclusion

The results of this study, in which the 12-month follow-up results from the alcohol-dependent patients who were followed up with a psychiatric nursing approach based on the Tidal Model as a recovery model, can be summarized as follows:

- The percentage of individuals with relapse of drinking alcohol was lower in the experimental group (68.8%) than in the control group (80%), but the difference between the groups was not significant.
- The percentage of individuals who restarted drinking alcohol within one month after being discharged from the hospital was lower in the experimental group (27.3%) than in the control group (75%), and the difference between the groups was significant.
- The rate of slip/lapse in drinking alcohol and the rate of maintenance were higher in the experimental group than in the control group. However, the rate of relapse into drinking alcohol was higher in the control group than in the experimental group. The difference between the groups was not significant.
- The rates of relapse into drinking alcohol both in the experimental (68.8%) and control (80%) groups found in this study were consistent with those found in the literature.
- The desire to drink alcohol is the individuals' most frequently reported reason for restarting drinking alcohol.
- The majority of the individuals in the experimental group partially reached their individual goals.

## Recommendations

In line with the present study results, it may be advisable to maintain one-to-one individual interview sessions even after

discharge from the hospital, in order to prevent relapse into alcohol dependence. In addition, it is recommended that follow-up studies be conducted in a randomized controlled manner.

## Limitations

As the phone numbers of some individuals had changed, the whole sample could not be reached. Since the data were collected by phone calls, biochemical tests (CDT, ethyl glucuronide, and ethanol level) were not required from the patients, and their statements were considered valid.

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