

Effectiveness of a drinking-reduction program on drinking behavior, stages of change, drinking refusal self-efficacy, and resilience in Koreans with moderate alcohol use disorder[☆]

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ABSTRACT

The purpose of this study was to examine the effects of a drinking-reduction program on drinking behavior, stages of change, drinking refusal self-efficacy, and resilience in Koreans with moderate alcohol use disorder. This study used a quasi-experimental nonequivalent control design. This study was performed from March 2015 to July 2015. The drinking-reduction program was conducted once per week for 11 weeks. This program improved drinking behavior, stages of change, drinking refusal self-efficacy, and resilience in the experimental group compared to the control group ($p < .05$, $n = 34$). The drinking-reduction program can be used as a nursing intervention for people with moderate alcohol use disorder.

Introduction

The American Psychiatric Association (2013) defines alcohol use disorder as meeting at least two of 11 criteria, including, but not limited to, repeated use of alcohol in dangerous situations such as driving, failure to fulfill major role obligations, craving, tolerance for alcohol, or withdrawal symptoms. Lifetime prevalence of alcohol use disorder is 13.4% in Korea and 10.8% worldwide (Korean Institute for Health and Social Affairs, 2011; Slade et al., 2016). The economic losses caused by alcohol use disorder in Korea, including medical charges, premature death, property damage, and decreased productivity, are estimated to be approximately 20 billion dollars, accounting for about 3.19% of its Gross Domestic Product (GDP) (Ministry of Health & Welfare, 2012).

Alcohol-reduction is the initial goal for people with alcohol use disorder, then abstinence becomes the next goal if they fail to reduce alcohol consumption (Edelman & Filellin, 2016). Previous experimental studies for alcohol use disorder focused on abstinence of alcohol. However, there are a few studies that focused on a reduction in alcohol consumption (Aubin & Daeppe, 2013). Cognitive-behavioral therapy, motivational interviewing, art therapy, recurrence prevention, group counseling, twelve-step programs, and self-help groups have been used for alcohol-reduction (Cha & Park, 2011).

The drinking-reduction program in this study adopted the principles

of therapeutic community, which is based on the mutual self-help social learning model and focuses on physical, psychological, social, and spiritual healing (Lee, 2010). Few studies have examined the effect of therapeutic community on reduction in alcohol consumption.

Cognitive factors affecting positive changes in behaviors related to alcohol use disorder are a willingness to reduce drinking alcohol and drinking refusal self-efficacy (Tak & An, 2011). A willingness to reduce drinking alcohol is the end result of three stages of behavioral change: precontemplation, contemplation, and action. The precontemplation is a stage of denying a problem. The contemplation is a stage of acknowledging a problem but not being ready to change one's behavior. The action is a stage of changing behavior (Prochaska et al., 1994). According to Kim and Hong (2013), a shift to the contemplation or action stages corresponded to a reduction in alcohol consumption. Drinking refusal self-efficacy is “a person's belief in their ability to resist alcohol” (Oei, Hasking, & Young, 2005). Drinking refusal self-efficacy was related to the consequences of alcohol use or alcohol (Ehret, Ghaidarov, & Labrie, 2013).

Resilience is the capacity to turn adversities or disasters into experiences of growth and is negatively related to alcohol use disorder (Kim & Lee, 2011; Long et al., 2017). It is developed through a combination of problem-solving skills (e.g., adaptive responses, communication, ability to react, planned activity), personal attributes (e.g.,

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optimism and belief), and demographic characteristics, which interact with family and external resources (Windle, 2011). Resilience can also be acquired and cultivated through external help or education (Kim & Kim, 2013).

The purpose of this study was to identify the effectiveness of a drinking-reduction program on drinking behavior, stage of change, drinking refusal self-efficacy, and resilience among individuals with alcohol use disorder.

Method

Design

This study used a quasi-experimental nonequivalent control design.

Participants

Specific criteria for selecting participants were having: 1) alcohol use disorder, measured by the Alcohol Use Disorders Identification Test-Korean Version (AUDIT-K) (males scoring at least 10 points and females scoring at least 6 points); 2) a willingness to participate in at least eight sessions of a drinking-reduction program; 3) an ability to communicate and to read questionnaires; and 4) a self-report of no history of hospital admission for alcohol use disorder.

Data collection

Data were collected from March 31, 2015 to March 30, 2016. The sample size was decided using G*power 3.1. An effect size of a drinking-reduction program was 1.004 using mean differences on the AUDIT-K (5.83 ± 2.55 , 3.30 ± 2.49 , $n = 54$) (Do, 2005). Power analysis was carried out with a significance level of $\alpha = 0.05$ and power = 0.85 using a one-tailed *t*-test. As a result, a total sample size of 30 individuals was calculated: 15 in the control group and 15 in the experimental group. In consideration of potential dropouts, 21 people were recruited for the experimental group and 20 people for the control group.

Procedure

The institutional review board (IRB) at the Inha University in the Republic of Korea approved the current study. It was conducted in two urban addiction management centers. Recruitment flyers indicating the study's purpose, participation method, and a contact number were posted on a bulletin board in each center. People who visited addiction management centers were invited to participate. Participants who wanted to participate in the drinking-reduction program were assigned to the experimental group, while those who did not want to participate in the program but agreed to complete questionnaires were assigned to the control group. Written consent was obtained after explaining the research purpose and method.

Kim (2008) developed a family therapeutic community program for parents and children. The author revised Kim's program for people with alcohol use disorder. The program was conducted for 2 h once per week for 11 weeks. It consisted of 4 topics: introduction, understanding I, understanding family, and being with the community (Table 1). The program used three tools for holistic change: a behavioral management tool, which included writing a health diary, establishing a plan for reducing or stopping drinking alcohol, practicing a personal growth strategy, and homework for married couples; an emotional and psychological management tool, which included individual counseling, couples counseling when appropriate, lectures on relevant topics, such as preparation for family change and finding out the cause of anger in daily life, family photo presentation, and couples communication training; and an intellectual and spiritual development tool, which included orientation of the drinking-reduction program, understanding I, self-introduction, sharing experiences with the graduates of the

program, one observation of an Alcoholics Anonymous (AA) meeting, serenity prayer, reading a philosophy of therapeutic community, and a completion ceremony with the whole family (Fig. 1). The experimental group observed the AA meeting once during the drinking-reduction program to help participants realize the severity of alcohol use disorder because most participants denied that they had alcohol use disorder. Members of the control group received the usual care at the addiction management center, such as initial counseling, assessment, and writing a health diary, and were informed that they could participate in the drinking-reduction program after the research was concluded. The experimental received the usual care as well as the drinking-reduction program at the addiction management center. The control group received a cup as a reward for participating in the study, while the experimental group received a book and a cup. After completing the program, the experimental group participated in the self-help group monthly.

Measures

Alcohol use disorders identification test-Korean version (AUDIT-K)

The AUDIT-K was used to measure drinking behaviors, such as the frequency and amount of drinking, alcohol addiction symptoms, and drinking-related problems that individuals had experienced over the last 10 years. The AUDIT-K was developed in 1989 by the World Health Organization (WHO) and was translated into Korean by Kim, Oh, Park, Lee, and Kim (1999). The AUDIT-K consists of 10 items with a 5-point scale. Scores range from 0 to 40: normal drinking (0 to 9 points for males; 0 to 5 points for females), high-risk drinking (10 to 19 points for males; 6 to 9 points for females), and alcohol use disorder (20 to 40 points for males; 10 to 40 points for females) (Joe et al., 2009). Cronbach's alpha was 0.83, sensitivity was 0.87, specificity was 0.58, and parallel validity was 0.71 (Lee, Lee, Lee, Choi, & Nam, 2000).

Readiness to change questionnaire (RCQ)

The Readiness to Change Questionnaire (RCQ) was used to measure the stage of behavioral change. It was developed by Rollnick, Heather, Gold, and Hall (1992) and was translated into Korean by Yoo (2001). The RCQ consists of three subscales: the precontemplation stage, the contemplation stage, and the action stage. It is composed of 12 items with a 5-point Likert scale, with responses ranging from "1 = strongly disagree" to "5 = strongly agree." The highest average score of items in each subscale is defined as the degree of readiness to change in people with alcohol use disorder (Rollnick et al., 1992). The Kaiser-Meyer-Olkin value was 0.74, which means that variables were appropriately selected (Yoo, 2001). In this study, Cronbach's alpha was 0.84 for the precontemplation stage, 0.84 for the contemplation stage, and 0.84 for the action stage.

Drinking refusal self-efficacy questionnaire-revised (DRSEQ-R)

The Drinking Refusal Self-Efficacy Questionnaire-Revised (DRSEQ-R) was used to measure a person's ability to resist alcohol in different situations, such as "being alone," "watching TV," or "on the way home from work" (Oei et al., 2005). It is composed of 19 items, with three subscales: social pressure (five items), emotional relief (seven items), and drinking opportunity (seven items). It presents items on a 6-point Likert scale, with responses ranging from 1 point ("totally uncontrollable") to 6 points ("definitely controllable") regarding the desire to drink. Scores range from 19 to 114: the higher the score, the higher the drinking refusal self-efficacy. The DRSEQ-R was highly correlated with the AUDIT-K ($r = -0.62$, $p < .001$) (Tak, An, & Woo, 2008). In this study, Cronbach's alpha coefficient was 0.89 for the total scale, 0.83 for the social pressure subscale, 0.93 for the emotional relief subscale, and 0.83 for the drinking opportunity subscale.

Table 1
Contents of a drinking-reduction program.

Step	Subject	Program contents
1	Introduction	Orientation and self-introduction -Introduction of a drinking-reduction program and writing of a letter of consent to participation -Writing of a self-introduction and goal setting -Explanation of the health diary writing method and writing thereof -Writing of a pretest sheet -Self-introduction and disclosure of drinking-reduction strategies
2	Workers' healthy drinking culture	-Delivery of public notices and tasks -Disclosure of the health diary and talking about life in the last week -Lecture on workers' healthy drinking culture -Sharing feedback
3	Understanding myself	A journey in search of myself - 1 -Delivery of public notices and tasks -Disclosure of the health diary and talking about life in the last week -Introduction of personality test and writing of a test sheet -Human mind and Enneagram Lecture I -Sharing feedback
4		A journey in search of myself - 2 -Delivery of public notices and tasks -Disclosure of the health diary and talking about life in the last week -Enneagram Lecture II -Establishment and presentation of interrelationship and growth strategies -Sharing feedback
5	Anger and stress management	-Delivery of public notices and tasks -Disclosure of the health diary and talking about life in the last week -Presentation of practicing interrelationship and growth strategies -Lecture on anger management and stress and group activity -Sharing feedback
6	Understanding the family	Preparation for happy change for myself and my family -Delivery of public notices and tasks -Disclosure of the health diary and talking about life in the last week -Presentation of practicing interrelationship and growth strategies -Lecture on family and addiction -Presentation of family photos -Sharing feedback
7		To be a happy couple - 1 -Delivery of public notices and tasks -Disclosure of the health diary and talking about life in the last week -Lecture on healthy communication between husband and wife -Sharing feedback
8		To be a happy couple - 2 -Delivery of public notices and tasks -Disclosure of the health diary and talking about life in the last week -Practice of healthy communication between husband and wife -Sharing feedback
9	Joining the community	Understanding of and joining AA meetings -Delivery of public notices and tasks -Disclosure of the health diary and talking about life in the last week -Introduction of and joining AA meeting. -Sharing feedback
10		Meeting with the drinking-reduction program's graduates -Delivery of public notices and tasks -Disclosure of the health diary and talking about life in the last week -Message and lecture from drinking-reduction program's graduate -Conversation with the graduates -Sharing feedback
11		Plans for afterwards and completion ceremony -Delivery of public notices and tasks -Disclosure of the health diary and talking about life in the last week -Planning after completing the drinking-reduction program -Writing of post-assessment sheets -Completion ceremony and sharing feedback

Resilience scale

The Resilience scale was used to measure the level of resilience. It was developed by Wangnild and Young (1993) and is comprised of 25 items measured on a 7-point scale, with responses ranging from “1 = strongly disagree” to “7 = strongly agree.” Scores range from 25 to 175 points, with higher scores reflecting higher levels of resilience (Kim & Lee, 2011). Cronbach's alpha for the original scale was 0.91. Cronbach's alpha in this study was 0.94 for the total scale. Concurrent validity of the Resilience scale was good with the Life Satisfaction Index A ($r = 0.30$, $p < .001$), with the Philadelphia Geriatric Center Morale Scale ($r = 0.28$, $p < .001$), and with the Beck Depression Inventory ($r = -0.31$, $p < .001$) (Wangnild & Young, 1993).

Data analysis

Data were analyzed using SPSS 20 for Windows. A two-tailed test and $\alpha = 0.05$ were used as statistical standards. Frequency, percentage, mean, and standard deviation were used as general characteristics of participants. The pre-test homogeneity of the control group and of the experimental group was analyzed using an independent t -test and χ^2 test. In the case of the χ^2 test, $> 20\%$ of cells in all variables had an expected frequency of < 5 , and, thus, there was a need to interpret the significance of the test results. Accordingly, a significance probability (p) based on Fisher's exact test was used.

Results

A total of 34 people completed the study, with a dropout rate of 15% ($n = 7$; 4 from the experimental group and 3 from the control

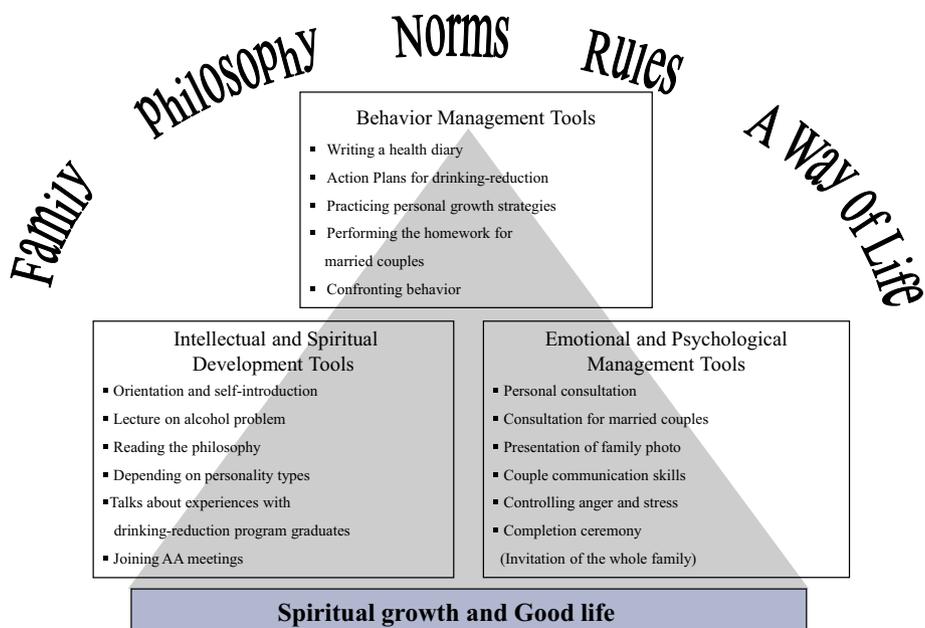


Fig. 1. Structure of drinking-reduction program by utilizing healing community.

Table 2
General characteristics of subjects (N = 34).

Variables	Categories	n(%) or mean ± SD		χ ² or t	p
		Exp. (n = 17)	Cont. (n = 17)		
Marital status	Age (years old)	44.2 ± 7.6	41.5 ± 8.3	0.99	.33
	Unmarried	2(11.8)	3(17.6)	7.105	.07
	Married	14(82.4)	7(41.2)		
	Divorced	1(5.9)	6(35.3)		
	Bereaved	0	0		
	Separated	0	0		
	Cohabitation	0	1(5.9)		
Others	0	0			
Religion	Protestant	4(23.5)	1(5.9)	4.02	.40
	Buddhist	1(5.9)	3(17.6)		
	Catholic	3(17.6)	3(17.6)		
	Others	1(5.9)	0		
	None	8(47.1)	10(58.8)		
Subjective economic status	High	0	0	3.84	.28
	Mid-high	6(35.3)	4(23.5)		
	Mid	7(41.2)	5(29.4)		
	Mid-low	4(23.5)	5(29.4)		
	Low	0	3(17.6)		
Drinking-related problems	Age of the first drinking	17.7 ± 2.0	17.6 ± 2.7	0.14	.89
	Trial of quitting or stopping drinking	0.7 ± 0.8	1.7 ± 2.7	-1.56	.13
	Longest duration of quitting or stopping drinking	1.7 ± 2.4	2.7 ± 5.2	-0.69	.49
	Family history of drinking	2.4 ± 1.8	2.8 ± 2.0	-0.62	.54
	Physical disease	5(29.4)	5(29.4)	0	1.00
	Economic loss	15(88.2)	14(82.4)	0.23	.62
	Job problem	9(52.9)	9(52.9)	0	1.00
	Conflict between husband and wife	14(82.4)	8(47.1)	4.63	.03*
	Conflict with children	5(29.4)	4(23.5)	0.15	.70
	Family disorganization	5(29.4)	6(35.3)	0.13	.71
	Physical violence and fights	4(23.5)	12(70.6)	7.56	.01**
	Drunk driving	10(58.8)	12(70.6)	0.52	.47
	Legal problems	1(5.9)	1(5.9)	0	1.00

** p < .01.

* p < .05.

group). There were no significant differences between the experimental and control group in age, marital status, religion, the age of first drink, family history of drinking, drunk driving, and economic loss due to drinking alcohol. At baseline, no participants had ever attended Alcoholics Anonymous. There were significant differences between the two groups in conflict with spouses and physical violence (Table 2). A

total of 82.4% (n = 14) in the experimental group and 47.1% (n = 8) in the control group experienced conflict between husband and wife. In addition, four people (23.5%) in the experimental group and 12 people (70.6%) in the control group experienced physical violence and fights with others.

The average age of the experimental group was 44.2 years (± 7.6)

Table 3
The differences of alcohol use, drinking refusal self-efficacy, resilience, and stage of change between the experimental group and control group.

Variables	Mean ± SD				t/χ ²		p	
	Exp. (n = 17)		Cont. (n = 17)		Pre	Post	Pre	Post
	Pre	Post	Pre	Post				
AUDIT-K	22.41 ± 6.37	6.82 ± 6.43	22.82 ± 6.38	25.82 ± 6.29	-0.19	7.53	.85	< .01
DRSEQ-R	64.76 ± 12.43	87.53 ± 21.29	65.18 ± 17.08	62.29 ± 15.39	-0.08	-4.72	.94	< .01
Total	23.76 ± 6.17	31.29 ± 10.17	23.12 ± 9.64	21.4 ± 19.10	0.23	-3.49	.82	< .01
Emotional relief	31.65 ± 5.84	37.59 ± 5.43	29.94 ± 7.98	31.12 ± 5.24	0.71	-2.32	.48	.027
Opportunity	9.71 ± 4.52	18.59 ± 7.71	12.12 ± 5.24	9.76 ± 4.31	-1.4	-4.93	.16	.01
Social pressure	115.94 ± 18.69	129.06 ± 16.35	122.29 ± 28.92	112.59 ± 24.48	-0.76	-3.90	.45	< .01
Resilience	82.88 ± 13.30	91.12 ± 11.44	84.35 ± 20.37	78.76 ± 17.41	-0.25	-3.48	.81	.01
Personal-competence	33.06 ± 5.47	37.94 ± 5.29	36.35 ± 9.35	33.82 ± 7.85	-1.3	-3.97	.22	< .01
Acceptance of self and life	0	0	3(17.6%)	4(23.5%)	7.87	19.26	.73	.08
RCQ	14(82.4%)	2(11.8%)	8(47.1%)	12(70.6%)	9.78	12.31	.55	.26
Precontemplation	3(17.6%)	15(88.25%)	6(35.3%)	1(5.9%)	7.73	29.33	.81	< .01
Contemplation								
Action								

and that of the control group was 41.5 years (± 8.3). The average age at which participants in the experimental group first began drinking was 17.7 years (± 2.0) and in the control group was 17.6 years (± 2.7). A total of 88.2% (n = 17) in the experimental group and 82.4% (n = 17) in the control group experienced economic loss due to drinking alcohol. A total of 58.8% (n = 10) in the experimental group and 70.6% (n = 12) in the control group experienced drunk driving.

There were no significant differences in drinking behaviors, stage of change, drinking refusal self-efficacy, or resilience between the experimental and control groups at baseline (Table 3). Regarding drinking behaviors, the experimental group scored an average of 22.41 points (± 6.37) on the AUDIT-K, whereas the control group scored 22.82 points (± 6.38). In fact, there were no statistically significant differences of any kind between the two groups on the AUDIT-K. The average score for DRSEQ-R in the experimental group (64.76 ± 12.43) was not significantly different from that of the control group (65.18 ± 17.08). The average resilience score in the experimental group (115.94 ± 18.69) also was not significantly different that of the control group (122.29 ± 28.92). Consequently, the experimental and control groups were homogeneous at baseline in terms of pre-test drinking behaviors, stage of change, drinking refusal self-efficacy, and resilience.

After completing the drinking-reduction program, average AUDIT-K scores in the experimental group were reduced from 22.41 points (± 6.37) to 6.82 points (± 6.43), which was a significant reduction compared to the control group (22.82 ± 6.38, 25.82 ± 6.29) (t = 7.53, p < .01). Average RCQ scores for the experimental group improved from “contemplation stage” (n = 14, 82.4%) to “action stage” (n = 15, 88.25%), while most of the control group was in the contemplation stage (n = 8, 47.1% at the baseline; n = 12, 70.6% at post-test). Prior to the intervention, 17.6% (n = 3) of the experimental group were in the action stage, 82.4% (n = 14) were in the contemplation stage, and 0% were in the pre-contemplation stage, whereas following the intervention, 88.25% (n = 15) were in the action stage, 11.8% (n = 2) were in the contemplation stage, and 0% were in the pre-contemplation stage. For the control group, prior to the intervention 35.3% (n = 6) were in action stage, 47.1% (n = 8) were in the contemplation stage, and 17.6% (n = 3) were in the pre-contemplation stage, whereas following the intervention, 5.9% (n = 1) were in the action stage, 70.6% (n = 12) were in the contemplation stage, and 23.5% (n = 4) were in the pre-contemplation stage. This means that there was a statistically significant improvement in the experimental group compared to the control group.

After the drinking-reduction program was implemented, the average score on DRSEQ-R for the experimental group increased from 64.76 points (± 12.43) to 87.53 points (± 21.29), which was a significant improvement when compared to the control group

(65.18 ± 17.08, 62.29 ± 15.39) (t = -4.72, p < .01). Regarding the subscales, the experimental group increased their scores by 7.35 points (± 8.50) on “emotional relief,” by 5.94 points (± 5.85) on “drinking opportunity,” and by 8.88 points (± 8.75) on “social pressure.” These scores increased significantly in the experimental group compared to the control group. After the drinking-reduction program was implemented, total resilience scores for the experimental group increased from 115.94 (± 18.69) to 129.06 points (± 16.35), which was a significant improvement compared to the control group (122.29 ± 28.92, 112.59 ± 24.48) (t = -3.90, p < .01). Regarding the resilience subscales, scores on “personal competence” increased by 8.24 points and scores on “acceptance of life” increased by 4.88 points in the experimental group. Both subscales showed statistically significant increases compared to the control group.

The drinking-reduction program decreased AUDIT-K scores among individuals in the experimental group compared to those in the control group. At baseline, six people in the experimental group had AUDIT-K scores of 10 to 19 points, five of 20 to 25 points, and six of 26 points or more; after the intervention, five had AUDIT-K scores of 0 points (abstinence), six of 9 points or less (normal drinking), and six of 10 to 19 points (high-risk drinking). There were no participants with 20 points or more. Of the four participants who had AUDIT-K scores of > 30 points at baseline, after the intervention three had a score of 0 and the fourth had decreased from 30 to 13 points. Of the two participants who had AUDIT-K scores of 27 points at baseline, after the intervention one scored 0 points and the other scored 13 points. Of the five participants who had AUDIT-K scores of 20 to 25 points at baseline, after the intervention one had a score of 0, two of 2 points and 8 points, respectively, and a fourth's score decreased from 23 to 19 points. On the other hands, at baseline, six people in the control group had AUDIT-K scores of 10–19 points, five of 20–25 points, and six of 26–30 points. After the intervention, none had a score of 0 (abstinence) or scores of 9 points or less (normal drinking); three had scores of 10–19 points, three of 20–25 points, and eleven of 26–30 points.

Discussion

The drinking-reduction program decreased the severity of alcohol use disorder in the experimental group. This result is somewhat consistent with previous studies. Palmer and colleagues reviewed eight randomized controlled trials for alcohol reduction. They reported that interventions using text messages, a mobile phone application, an interactive voice response were effective in the number of binge drinking days, alcohol consumption per drinking day, and alcohol-related harm (Palmer et al., 2018). Charlet and Heinz reviewed 63 randomized controlled trials and cohort studies for alcohol reduction. They found that various alcohol reduction interventions were effective in reducing

body weight, recovering ventricular heart function in alcoholic cardiomyopathy, lowering blood pressure, improving liver diseases, and normalizing biochemical parameter (Charlet & Heinz, 2017). Further studies are needed to examine the effect of the drinking-reduction program on various physical and biochemical parameter.

In this study, the drinking-reduction program increased scores on the RCQ in the experimental group. This result is consistent with previous studies. An alcohol reduction intervention using text messages increased readiness to change (Mason, Benotsch, Way, Kim, & Snipes, 2014). Johansson et al. (2016) found that higher scores on baseline readiness predicted a reduction in alcohol consumption at follow-up. Further studies are needed to examine the effect of drinking-reduction programs on the readiness to change.

The drinking-reduction program was effective in improving drinking refusal self-efficacy in the experimental group. Of the three subscales of the DRSEQ-R – “drinking opportunity,” “emotional relief,” and “social pressure” – the pre-intervention “social pressure” scores were lowest among all participants. Ha and Jeong (2015) explained that “social pressure” is the most influential variable for alcohol use disorder. Low scores on the DRSEQ-R reflect that participants cannot refuse a drink when being offered by a friend, co-worker, or when at a company dinner (Ha & Jeong, 2015). Using a role play, the experimental group practiced how to refuse if people encouraged drinking. Group members shared their experience of refusing drinking alcohol and discussed how to refuse alcohol. These factors might lead to increase scores on the DRSEQ-R. Drinking refusal self-efficacy, which is the capability to effectively reject an offer for a drink, can be a useful skill to reduce drinking problems (Lee & Choi, 2010). Further studies are needed to examine the effect of the drinking-reduction program on drinking refusal self-efficacy.

The drinking-reduction program was effective in increasing resilience scores in the experimental group. Woo (2015) reported that since people with alcohol use disorder were exposed to high-risk situations in individual, familial, and societal contexts, they had low resilience compared to the general population. Resilience in the experimental group might be increased by understanding oneself, support of their spouse, positive feedback from group members, the development of coping skills, communication training, practice of the personal growth strategies, and achievement of their goal for alcohol-reduction. Repeated studies are needed because there are a few studies using resilience to examine the effect of drinking-reduction programs.

In this study, four people (23.5%) in the experimental group and twelve people (70.6%) in the control group reported that they experienced physical violence and fights with others under the influence of alcohol. According to the Korean National Police Agency, in 2012 18% of criminals committed crimes in a drunken state. In total, 62.9% of violent crime and 60.8% of obstruction of justice were related to drinking alcohol (Korean National Police Agency, 2012). A husband's drinking was significantly correlated with language violence, physical violence, sexual violence, and injury toward the wife (Jang, Kim, & Park, 2010), leading to the dismantling of the family (Casswell & Thamarangsi, 2009; Klingemann & Gmel, 2001). Further studies are needed to examine the effect of the drinking-reduction program on the frequency of violence.

Limitations

Limitations of the study are that subjects chose their intervention and they were not assigned at random, leading to potential self-selection bias: Those subjects who agreed to participate in the drinking-reduction program were placed in the experimental group and those who did not were placed in the control group. Non-randomization could affect the stage of change at baseline. Because of community characteristics, random assignment was difficult to achieve during the process of recruiting subjects. Most people who visited the addictions management center wanted to get counseling as soon as possible.

Counselors obliged by explaining the drinking-reduction program to all visitors. Therefore, assigning those people who wanted to participate in the drinking-reduction program to the control group is not ethical.

Conclusion

The current drinking-reduction program was effective in decreasing problem drinking, as well as in improving the stage of change, drinking refusal self-efficacy, and resilience among Koreans with alcohol use disorder, compared to those in the control group.

The program took an integrative and holistic approach that focused on physical (writing a health diary), psychological (counseling), social (group feedback and support), and spiritual healing (serenity prayer and reading a philosophy of the therapeutic community). Holistic nursing is consistent with the therapeutic community model. The drinking-reduction program can be used as a nursing intervention for people with alcohol use disorder, as well as for people with behavioral addiction and substance addiction in the community.

The non-homogeneous characteristics of the experimental and control groups – namely, marital status and physical violence/fighting – were different at baseline between the two groups. Another limitation was that the study relied on participant self-report, not on physiological indicators such as blood alcohol or alcohol measurements. Future studies are needed to identify the long-term effects of the drinking-reduction program, with randomized controls and using physiological indicators.

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