O R I G I N A L   P A P E R

The Application of Alcohol Brief Intervention Using the Health Belief Model in Hospitalised Alcohol Use Disorders Patients

Abed El-Rahman Mona, PhD, RN
Assistant Professor, Faculty of Nursing, Port Said University, Egypt

Al-Kalaldeh Mahmoud, PhD, RN, MSN, CNS
Assistant Professor, Zarqa University, Jordan

Mahmoud Amal, PhD, RN
Associate Professor, Faculty of Nursing, Port Said University, Egypt

Shahin Mahmoud, PhD, RN, MSN
Assistant Professor, Faculty of Nursing, Al-Isra University, Jordan

Correspondence: Abed El-Rahman Mona, PhD RN, Assistant Professor, Faculty of Nursing, Port Said University, Egypt. Postal address: B.O. Box: 132222-13132. E-mail: monayasser@yahoo.com

Abstract

Background: Hazardous alcohol addiction is one of the worldwide problematic issues that entail physical, social, and psychological negative consequences. Heath education was found as a key to increase patients' level of awareness of those factors triggering addiction and prohibiting alcohol quitting.
Aim: To examine the effect of implementing a brief alcohol intervention, using the heath-belief model, on the perception of susceptibility, severity, benefits, and barriers.
Method: This pre-test post-test interventional study recruited 70 alcohol use disorders patients residing in the addiction centre in Amman-Jordan. The programme consisted of three 30-minuts sessions and included an introduction about alcohol abuse, orientation of the consequences of alcohol addiction, and practices towards promoting self-motivation. Data were collected before and two weeks after the intervention using a questionnaire of 58 items covering all the health-belief model components which were mentioned earlier.
Results: Fifty seven out of 70 patients completed all study phases. After receiving the intervention, patients had improved their knowledge about factors triggering alcohol addiction including stress and tension. They showed better understanding of physical harms caused by addiction such as brain, heart, and liver damaging. Self-awareness of controlling the environmental factors and self-rewarding as attempts for quitting alcohol addiction had also increased. Lack of supportive systems such as families, care providers, and media were viewed as influential factors for quitting alcohol. On overall, perceived severity and benefits had shown a significant improvement after the delivery of intervention while perceived susceptibility and perceived barriers did not change over the study duration.
Conclusion: Brief heath education for hospitalised alcoholic patients can increase patients' ability to clustering variables anticipating and triggering alcohol addiction. In addition, it increases self-awareness of factors impending alcohol quitting.

Key Words: Addiction, alcohol, intervention, heath-belief model

Introduction

Alcohol abuse is serious public health and social problem. It is associated with higher morbidity and mortality secondary to liver damage, cardiopulmonary disease, and infectious diseases such as hepatitis and acquired immunodeficiency syndrome (Cook et al., 2013, Stavrianopoulos, 2011). On the other hand, alcohol abuse is associated with domestic violence, crimes, traffic accidents, and murders (WHO, 2014). The cause of alcohol dependence is complex and involves many psychobiological factors. Alcohol abuse often begins with curious experimentation and progresses to habituation, psychological and physical dependence, and finally addiction (Cook et al., 2013, Stavrianopoulos, 2011, Alameida, 2010).

The significance of health education is proven in this field. The health belief model is the best to explain the impact of health education on alcohol abuse (Sharifirad et al., 2009; Roden, 2004). The main feature of this model holds various characteristics of those individuals who have to select decisions regarding their health interests. This model assumes that whether an individual take an action to protect his/her health depends on whether he/she believes in the susceptibility of occurring such illness which might have serious consequences (Field et al., 2013; Tsai et al., 2009). Through the core elements of this model which are perceived severity, perceived susceptibility, perceived threatens, benefits and barriers, individual heath believes and attitudes to alcohol abuse are well assessed through these elements.

Research questions:

The study adopted the following research question:

Is there a significant difference in the perception of alcohol addiction patients in regard to the Heath belief model components after implementing alcohol brief intervention?

Study hypothesis

Patients undergoing alcohol brief heath education would exhibits improvements in their perceived knowledge and attitudes towards hazardous alcohol addiction.

Background

According to the WHO report in 2014, Jordanian accounted one of the lowest prevalence of alcohol use disorders and alcohol dependence (0.3 and 0.2 of total population, respectively). In addition, the prevalence of heavy episodic drinking of the total population in Jordon in 2010 was <0.1 (WHO, 2014).

The issue of alcohol abuse and dependence is still controversial because many different theories appeared to explain the trigger of this disorder. It was found that the impact of community is more influential to manipulate personnel habitual experience and attitudes to consuming alcohol (Gaume et al., 2008, Strobbe et al., 2012; Govier & Rees, 2013). Increasing the level of awareness is therefore fundamental to enhance individuals understanding of these consequences of alcohol abuse.

A number of barriers appeared to oppose screening alcohol abuse such as social sensitivity towards the nature addiction, fearing from negative patients' responses when identified, and the risk for violating personal identity and privacy (Field et al., 2013; Davies, 2012). While handling the problem is required, no curative pharmacological therapies are offered and the most of rehabilitation regimens are combined therapies of related biological, psychological, social and economic aspects. Studies found that the conventional confrontational counselling style creates a lot of resistance by client, which, in turn contribute to fewer alcohol abuse reductions, while self-motivational therapies are more likely to elicit patient resistance and increase binding to the rehabilitation protocols (Broyles et al, 2013; Cook et al, 3013).

Methodology

This pre-test-post-test interventional study recruited 70 alcoholic patients residing in the addiction centre located in Amman-Jordan. Patients entitled for health education were aged above 18 years old, screened positive for an alcohol use disorder, mentally oriented, and cooperative. The researchers excluded patients who were severely injured or unwell to participate, had a serious mental health problem, or were grossly intoxicated.

The intervention consisted of three 30-minute individual sessions aimed to improve the patient's knowledge about alcohol abuse. At the first session, an introduction about alcohol abuse and risks for alcohol addiction were provided. The second session, the seriousness of alcohol addiction and its consequences on heath and daily living activities were explained. At the last session, self-motivated activities were applied to increase the recognition of the dimensions of quitting alcohol and managing signs and symptoms of alcohol withdrawal. Data were collected over two phases; before intervention and two weeks after the education program using a questionnaire which consisted of 58 questions including demographic data, specific details about the health and social consequences of hazardous and harmful drinking, health belief models components, and a list of benefits that would be gained from quitting alcohol consumption. The instrument pertained for the heath belief model was already assessed for its validity and reliability (Kartal & Ozsoy, 2007). However, this instrument was delivered in Arabic, so translation process was subject to forward-backward translation.

Regarding ethical issues, ethical approval was obtained from the IRB committee presented in the ministry of heath. an informed consents were used prior introducing the study for each participant and confidentiality were also maintained through giving initials or codes for each participants.

Data were collected in a confidential process and entered into SPSS software (version 17) Descriptive statistics including frequency, percentage, mean, and standard deviation were measured. Comparing student knowledge and attitudes before and after the intervention was measured using paired t-test showing the sig. level which was adjusted at 0.05. Chi-square was also used to find differences for those categorical variables.

Results

Participants' demographics

Fifty seven out of 70 participants completed the study programme. More than half of the study participants were aged between 31 and 40 years old, while 28.1% of them were between 20-30 years old. The majority of the participants were single (40.4%), 78.9% of them were at the school level of education, and the majority (73.7%) were employed. Regarding duration of addiction, nearly one third of the study sample (31.6%) had been addicted for 6 to 10 years, and around one third had been addicted for more than 15 years. Table 1 shows demographic distribution for participants.

Perception of factors anticipating alcohol addiction

There were some significant changes in perceiving factors associated with alcohol addiction. Table 2 shows these factors changed between pre-test and post-test phases. As shown in the table, the majority of questions revealed a significant change in participants' recognition to the factors associated with addiction. For instance, the role tension, anxiety, and depression in triggering alcoholism and the effect of addiction in the psychological status scored higher after the education. On the other hand, participants had changed their recognition towards some factors. For example, they became less convinced with the role of environmental and community influence as factors precipitating alcohol addiction (Table 2).

Perceiving seriousness of alcohol addiction

The most of participants' perception of seriousness of alcohol addiction were improved after delivering the educational programme. For instance, heath long term consequences of addition affect liver, nervous system, vitamins levels, blood glucose levels, and infertility have significantly scored higher after the intervention as shown in Table 3. However, negative impacts of alcohol addiction on the gastrointestinal functioning including GI disturbances and appetite had not significantly changed after the educational programme.

Table 1: Participants' demographics			
	Category	**Frequency**	**Percent (%)**
Age	<20	2	3.5%
	20-30	16	28.1%
	31-40	32	51.1%
	41-50	5	8.8%
	>51	2	3.5%
	Total	**57**	**100%**
Marital status	Single	23	40.4%
	Married	22	38.6%
	Widow	4	7.0%
	Divorced	8	14.0%
	Total	**57**	**100%**
Level of education	School	45	78.9%
	University	9	15.8%
	None	3	5.3
	Total	**57**	**100%**
Employment status	Employed	42	73.7%
	Unemployed	15	26.3%
	Total	**57**	**100%**
Duration of addiction (in years)	1-5	14	24.6%
	6-10	18	31.6%
	11-15	8	14.0%
	>15	17	29.8%
	Total	**57**	**100%**

No.	Item	Pre test		Post test		t value	Sig.
Table 2: Assessing the perception of factors anticipating alcohol addiction.							
		Mean	**SD**	**Mean**	**SD**		
1	Does alcohol addiction relate to your age when you started addiction?	3.70	1.33	3.33	1.20	1.94	0.058
2	Does alcohol addiction relate hereditary to the presence of addicts in the family?	3.86	1.38	4.56	0.57	-3.68	0.001
3	Does alcohol addiction relate to the tension, anxiety, and depression?	2.16	1.42	1.23	0.85	4.027	<0.001
4	Does alcohol addiction relate the community or surrounding environment?	2.49	1.18	3.07	1.30	-2.620	0.011
5	Does alcohol addiction relate to the reduction of an individual's level of tolerance or fragility?	2.51	1.25	2.51	1.71	2.02	0.078
6	Does alcohol addiction relate to your friends?	2.26	1.23	1.32	0.76	6.028	<0.001
7	Does alcohol addiction relate to the failure in coping with problems and psychological pressure?	2.26	1.29	1.46	0.91	5.844	<0.001
8	Does alcohol addiction relate to the family fragmentation?	2.49	1.54	2.89	1.33	-1.460	0.150
Scores ranged from 1 strongly agree to 5 strongly disagree							

No.	Item	Pre test		Post test		t value	Sig.
Table 3: Assessing the perception of seriousness of alcohol addiction.							
		Mean	**SD**	**Mean**	**SD**		
1	Does alcohol addiction cause loss of appetite and gastrointestinal disturbances?	2.0	1.28	1.96	1.28	0.177	0.860
2	Does alcohol addiction cause inflammation, failure or cirrhosis of the liver?	1.74	1.26	1.04	0.19	4.091	<0.001
3	Does alcohol addiction cause deficiency in essential vitamins?	1.86	1.08	1.40	0.56	3.569	0.001
4	Does alcohol addiction cause heart attaches?	2.07	1.28	1.91	1.09	1.069	0.289
5	Does alcohol addiction alter glucose level on the blood?	2.37	1.16	2.02	0.74	2.259	0.028
6	Does alcohol addiction induce infertility and male impotence?	1.93	1.12	1.46	0.63	4.173	<0.001
7	Does alcohol addiction affect nervous system functioning?	1.81	1.09	1.47	0.36	2.502	0.015
8	Does alcohol addiction cause damage in brain tissue?	1.86	0.99	2.04	0.80	-1.121	0.267
9	Does alcohol addiction cause nausea, vomiting and body imbalance?	1.77	0.95	1.60	0.50	1.237	0.221
Scores ranged from 1 strongly agree to 5 strongly disagree							

Table 4: Assessing the perception of quitting alcohol addiction.						
No.	Item	Pre test		Post test		t value	Sig.
		Mean	SD	Mean	SD		
1	Did you try keeping away from places that induce alcoholism?	2.37	1.28	2.49	0.97	-0.613	0.542
2	Did you try keeping away from people who encourage alcoholism?	2.65	1.36	2.16	1.22	2.166	0.035
3	Did you try reducing the amount of alcohol consumption?	2.53	1.28	2.63	0.99	-0.531	0.597
4	Did you try seeking help from family or friend to stop consuming alcohol?	3.23	1.35	3.26	1.04	-0.175	0.862
5	Did you try searching for useful activities to fill your time instead of alcoholism?	2.89	1.22	2.84	1.01	0.299	0.766
6	Did you try solving the problems associated with your alcoholism?	2.75	1.35	1.98	0.86	4.120	<0.001
7	Did you try imagining your future without alcoholism?	2.32	1.27	2.33	1.20	-0.091	0.928
8	Did you try strengthening your link to the God to leave alcohol?	2.65	1.23	2.70	0.94	-0.327	0.745
9	Did you try rewarding yourself when you attempt leaving alcohol?	2.79	1.21	2.40	0.78	2.694	0.009
Scores ranged from 1 strongly agree to 5 strongly disagree						

Table 5: Assessing the perception of factors impeding alcohol quitting.						
No.	Item	Pre test		Post test		t value	Sig.
		Mean	SD	Mean	SD		
1	Fear from pain is considered a factor impeding alcohol quitting.	2.25	1.31	2.47	1.27	-0.799	0.333
2	Lack of institutions and medical centres that are concerned with addiction is a factor impeding alcohol quitting.	3.0	1.43	2.65	1.37	1.465	0.148
3	Exorbitant cost of alcohol treatments is a factor impeding alcohol quitting.	3.75	1.30	2.98	1.53	4.120	<0.001
4	Absence of motivation and encouragement from family and friend is a factor impeding alcohol quitting.	3.04	1.32	3.05	1.01	-0.098	0.923
5	Lack of media programs that increase awareness towards the risks of addiction is a factor impeding alcohol quitting.	3.18	1.44	3.44	1.52	-1.150	0.255
6	Impaired self-confidence of the ability to quit addiction is a factor impeding alcohol quitting.	2.56	1.28	2.51	1.40	0.260	0.796
Scores ranged from 1 strongly agree to 5 strongly disagree						

Table 6: Heath-belief model subscales total scores							
Variable	Before-intervention		After-intervention		t	df	Sig.
	mean	SD	mean	SD			
Perceived Susceptibility	21.74	4.87	20.46	4.10	1.777	56	0.081
Perceived Severity	18.77	8.10	15.98	3.58	2.830	56	0.006
Perceived Benefits	24.18	8.51	22.81	2.29	5.478	56	0.001
Perceived Barriers	17.77	4.61	17.11	3.93	0.983	56	0.330
Internal consistency for each sub-domain using Chronbach's Alpha statistics were as follows: 1) Susceptibility: 0.46 2) Severity: 0.89 3) Benefits: 0.89 4) Barriers: 0.58							

Perception of quitting alcohol addiction

This section shows results of the ability of participants for quitting alcohol addiction. As shown in Table 4, only three aspects had shown a significant change over the study period: try keeping away from people who encourage alcoholism; try solving the problems associated with your alcoholism; try rewarding self when attempt leaving alcohol. These aspects have significantly scored higher after delivering the educational programme.

Perception of factors impeding alcohol quitting

In this last section, a number of questions delivered to gain understanding of factors impeding alcohol stop. The only change occurred after the delivery of alcohol education as a barrier of quitting alcohol was the high alcohol treatment costs (Table 5). Other factors such as lack of self-confidence, lack of family encouragement, and the scarcity of heath awareness media programs, have not been affected by alcohol education. However, some of these supportive systems were scored above the midpoint at the early of the study (>2.5) meaning that participants were well understood the importance of them in quitting alcohol addiction.

Overall heath-belief model sub-scales

Table 6 shows the mean and standard deviation of each component of the health belief model before and after intervention as well as the significant level of means differences. After intervention, perceived severity and perceived benefit of alcohol were scored higher after alcohol education, revealing statistically significant differences in means (0,006 and 0,001 respectively). Perceived susceptibility and perceived

barriers did not change over the study period (Table 6).

Discussion

This study examined the effect alcohol brief intervention which is based on the heath belief model on susceptibility, severity of alcohol drinking, benefits of alcohol quitting, and factors considered barrier to quitting alcohol. The study showed that patients had improved their knowledge about alcohol and its impact on their life. Patients had improved their knowledge about factors anticipating alcohol addiction such as the role of stress and tension in triggering drinking; in addition they showed better understanding of addiction negative consequences especially physical harm. The study also showed that alcoholic patients had improved their attitudes towards addiction. For instance they became more aware of steps that may minimize the triggers of drinking such as controlling the environmental factors, self-rewarding. Lack of supportive systems such as families, heath care providers, and media were also perceived as influential factors for quitting alcohol.

The implementation of brief intervention for hazardous and harmful drinkers in hospital settings was viewed essential to eradicate some risks of excessive alcohol consumption. This brief programme had showed its usefulness in many places. In Taiwan, this programme was conducted to identify it impact on hospitalised patients and followed by twice follow-ups (after 6-month and 12 months) (Tsai et al., 2009). This study showed significant progress on patients' knowledge and attitudes to harmful drinking. This fact was also supported by other research which indicated the benefits from delivering brief interventions to heavy alcohol users admitted to hospital in term of reduction

of alcohol consumption. These studies suggested also that health education is sufficient for hospitalized inpatients and outpatients who suffer from hazardous and harmful drinking (Liu et al., 2011; McQueen et al., 2011; Tsai et al., 2011). Other evidence supported the premise of applying brief intervention in the emergency department which may be effective for alcoholic patients using the concept "teachable moment" (Pengpid et al., 2013, DiFulvio et al., 2012, Blow et al., 2009). In a study by Govier and Rees (2013), an emergency department injured alcohol programme was applied on 494 patients who were randomly assigned to receive either a brief advice or no advice regarding alcohol followed by 12-months follow-up. The study found that patients received the brief advice tended to report lower alcohol consumption at 12-month follow-up compared to those who did not receive advice.

Impaired self confidence, self-esteem, and inability to imagining future without alcohol were seen as barriers to quit alcohol addiction. Bandura, (1977) defined self-efficacy as the belief that one has the ability to cope effectively with highly risk situations. It is noted that higher individual confidence is that the ability to avoid drinking and eliminate relapsing episodes by the mean of effective coping strategies (Bandura, 1977). Some studies used the components of the social cognitive theory to describe patients self efficacy while identified as harmful drinker. They believed that self-efficacy is a key to predict relapsing status of alcohol addiction in patients with alcohol use disorders (Greenfield et al., 2000; Trucco et al., 2007). Therefore, heath education is the best recognised tool used for manipulating self-confidence and self-efficacy in severely alcohol addict patients to eradicate the episodes of relapsing.

Although this study found spirituality less related trigger for quitting alcohol, other studies contradicted that claim and found that spirituality or religion are core elements of health care that help individuals to recover from addiction. It is believed that addicted people may struggle to find the purposeful meaning of their behaviour and thus, they are seeking to that support which buffers the effects of stress and isolation and answer the questions about long term outcomes yielded from their unexplained behaviours (Moss et al., 2013; Mason et al., 2012).

There were some various supporting systems appeared in this study to stop alcoholism. In the Arabic societies, drinking alcohol is still less regarded and considered stigma, so people try to drink privately and conceal signs that may show him/her to the public as a drinker (Room, 2005). Absence of motivation and encouragement from community, family, and friends were found as factors impeding alcohol quitting. This finding conforms to Akram and Copello (2013) who demonstrated family-based intervention as the best to bring success to alcohol addiction treatment. The study found that stigma associated alcohol addiction appears as a barrier to seeking and receiving treatment from the public heath sectors because the majority of people believe that social embarrassment, moral weakness, and fear from discrimination are major barriers to find treatment from alcohol addiction (Akram & Copello, 2013; Annis & Davis, 1988).

Conclusion

Hazardous alcohol addiction is one of the worldwide community-based problems. The impact of a brief heath education programme for severely alcoholic individuals is manifest in patients' knowledge, attitudes, and ability to attempt recovery from this unexplained behaviour. The study found that

providing a brief heath education may contribute to positive change in addicts' level of awareness about these factors precipitating alcohol addiction and these factors impeding alcohol quitting. A brief heath education may also increase the level of awareness about the negative physical and psychosocial consequences of uncontrolled alcohol addiction.

Acknowledgment

References

Akram, Y. & Capello, A. (2013). Family-based interventions for substance misuse: a systematic review of reviewers. The Lancet, (382):24-29.

Alameida, M.D., Harrington, C., LaPlante, M., Kang, T. (2010). Factors Associated with Alcohol Use and its Consequences. Journal of Addictions Nursing, 21:194–206.

Annis, H.M., & Davis, C.S. (1988) Assessment of expectancies. In: Donovan, D.M., and Marlatt, G.A., eds. Assessment of Addictive Behaviors: Behavioral, Cognitive, and Physiological Procedures. New York: Guilford Press: 84–111.

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. Psychological Review, 84:191–215.

Blow,F.C., Ilgen, M.A., Walton, M.A., Czyz, E.K., McCammon, R, Chermack, S.T., et al. (2009). Severity of baseline alcohol use as a moderator of brief interventions in the emergency department. Alcohol & Alcoholism, 44(5):486-90.

Broyles, L.M., Conley, J.W., Harding, J.D., Gordon, A.J. (2013). A Scoping Review of Interdisciplinary Collaboration in Addictions Education and Training. Journal of Addictions Nursing, 24(1):29-36.

Cook, S., Leon, D.A., Kiryanov, N., Ploubidis, G.P., De Stavola, B.L. (2013). Alcohol-Related Dysfunction in Working-Age Men in Izhevsk, Russia: An Application of Structural Equation Models to Study the Association with Education. Alcohol-Related Dysfunction and Education, 8(5): 63792.

Davies, N. J. (2012). Alcohol misuse in adolescents. Nursing Standard, 42 (26): 43-48.

DiFulvio, G.T., Linowski, S,A., Mazziotti, J.S., Puleo, E.(2012). Effectiveness of the Brief Alcohol and Screening Intervention for College Students (BASICS) Program with a Mandated Population. Journal of American College Health, 60(4):269-80

Field, C.A., Klimas, J., Barry, J., Bury, G., Keenan, E., Smyth, B.P., Cullen, W. (2013). Problem alcohol use among problem drug users in primary care: a qualitative study of what patients think about screening and treatment. BMC Family Practice, 14:98.

Gaume, J., Gmel, G., Daeppen, J.B. (2008). Brief Alcohol Interventions: Do Counsellors' and Patients' Communication Characteristics Predict Change?. Alcohol Alcohol, 43(1):62-69.

Govier. A. & Rees, C. (2013). Reducing alcohol-related health risks: the role of the nurse. Nursing Standard. 27, 50, 42-46.

Greenfield, S.F., Hufford, M.R., Vagge, L.M., Muenz, L.R., Costello, M.E., Weiss, R.D. (2000). The relationship of self-efficacy expectancies to relapse among alcohol dependent men and women: a prospective study. Journal of Studies On Alcohol, 61 (2): 345-351.

Kartal, A., Ozsoy, S.A. (2007). Validity and reliability study of the Turkish version of Health Belief Model Scale in diabetic patients. International Journal of Nursing Studies, 44(8):1447-1458.

Liu, S.I., Wu, S.I., Chen, S.C., Huang, H.C., Sun, F.J., Fang, C.K., Hsu, C.C., Huang, C.R., Yeh, H.M., Shih, S.C. (2011). Randomized controlled trial of a brief intervention for unhealthy alcohol use in hospitalized Taiwanese men. Addiction, 106(5):928–940.

Mason, M.J.,Schmidt, C., Mennis, J. (2012). Dimensions of religiosity and access to religious social capital: correlates with substance use among urban adolescents. Journal of Primary Prevention, 33(5):229-237.

McQueen, J., Howe, T.E., Allan, L., Mains, D., Hardy, V. (2011). Brief interventions for heavy alcohol users admitted to general hospital wards. The Cochrane Database of Systematic Reviews, 10(8).

Moss, W. B., Woodruff, K. (2013). Relationship of Spirituality or Religion to Recovery From Substance Abuse. Journal of Addictions Nursing, 24(4): 217-226.

Pengpid, S., Peltzer, K., Skaal, L., Van der Heever, H. (2013). Screening and brief interventions for hazardous and harmful alcohol use among hospital outpatients in South Africa: results from a randomized controlled trial. BMC Public Health, 13:644.

Roden, J. (2004). Revisiting the Health Belief Model: nurses applying it to young families and their health promotion needs. Nursing & Health Sciences, 6(1):1-10.

Room, R. (2005). Stigma, social inequality and alcohol and drug use. Drug and Alcohol Review, 24, 143 – 155.

Sharifirad, G., Entezari, M. H., Kamran, A., Azadbakht, L.(2009). The effectiveness of nutritional education on the knowledge of diabetic patients using the health belief model. JRMS, 14 (1).

Stavrianopoulos T. (2011). The risks of alcohol and effective preventive practices, A systematic review. Health Science Journal, 5 (3): 188-195.

Strobbe, S., Hagerty, B., Boyd, C. (2012). Applying the Nursing Theory of Human Relatedness to Alcoholism and Recovery in Alcoholics Anonymous. Journal of Addictions Nursing, 23 (4): 241-247.

Trucco, E.M., Connery, H.S., Griffin, M.L,. Greenfield, S.F. (2007). The relationship of self-esteem and self-efficacy to treatment outcomes of alcohol-dependent men and women. The American Journal on Addictions, 16(2): 85–92.

Tsai, M.C., Tsai, Y.F., Hwang, F.M., Liu, C.Y. (2011). Effectiveness of a brief intervention for managing hazardous drinking problems of inpatients in Taiwan. Journal of Advanced Nursing, 67 (9):2038–2046.

Tsai, Y.F., Tsai, M.C., Lin, Y.P., Chen, C.Y. (2009). Brief intervention for problem drinkers in a Chinese population: a randomized controlled trial in a hospital setting. Alcoholism, Clinical And Experimental Research, 33(1):95–101.

World Health Organization. (2014). Global status report on alcohol and health 2014 ed. WHO Library Cataloguing-in-Publication Data: 1-86.