

Web-based Social Marketing for Quitting Drug Abuse

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Abstract

For many reasons, specially perceived social risks or prosecution, addicted people who try to voluntary quite drug abuse, usually use the Internet to find appropriate information, websites, therapeutic and addiction treatment centers. So, using appropriate web-based interventions are necessary. So, the purpose of this study is to investigate the effect of web-based social marketing interventions developed by Doshi et al. (2003) on self-efficacy, as one of the main beliefs that influence people's intentions and behaviors are based on theory of Planned Behavior. An online questionnaire was designed based on Doshi's developed scales and was put on the 8 websites of addiction treatment centers. Finally, 304 questionnaires were gathered and data analyzed using structural equation modeling (SEM) technique. Results showed that three web-based social marketing interventions – knowledge, cognitive strategies and therapeutic interventions – had significant and positive effect on Self-Efficacy, while two other interventions – behavioral strategies and emotion-focused strategies – did not have significant effect on self-efficacy. Also, self-efficacy influences intention and so, intention can significantly affect target behavior – attending to therapeutic centers to quit drug abuse. Social marketing researches considered vast issues, but few of them concentrate on internet strategies, web-based interventions and its impact on behavior change. So, findings of this research enable the addiction treatment centers to improve their websites' effectiveness and to motivate addicted individuals to attend in the addiction treatment centers.

Keywords: Social marketing, Web-based social marketing interventions, Quitting drug abuse, Addiction treatment centers

Introduction

Drug abuse is a phenomenon of the modern life which caused by a wide range of reasons - like perceived functions (Boys, Marsden, & Strang, 2002), family problems, peers pressure, feeling abandoned by the society (Tang, Wiste, Mao, & Hou, 2005) etc. Based on United Nations Office on Drugs and Crime (UNODC), in Iran about 2.26 percent of population aged 15-64 use opioids (2010), less than 0.1 percent use Cocaine (2009) and 0.1 percent use Amphetamines (2010). Also in 2008/2009, Iran has about 600.000 treatment episodes in which 1.7 percent of these people used Cannabis, 83.4 percent used Opioids, 0.2 percent used Cocaine, 2.6 percent used Amphetamines-Group and 0.1 percent used Ecstasy-Group (UNODC, 2010). So, trying to design effective programs to prevent people to use drugs or encourage addicted people to quit is noticeable.

For many reasons - specially perceived social risks or prosecution – addicted people who intend to voluntary quit drug abuse, usually use the Internet to find appropriate information, websites, therapeutic and addiction treatment centers. So, in order to be effective, using appropriate

web-based interventions based on social marketing techniques and theoretical points of view are important.

There are several theories and models that can be used in web-based social marketing interventions to change addicted people's intentions and try to quit their habits – by attending to the addiction treatment centers voluntarily – but it seems that Health Belief Model, Trance-Theoretical Model, Theory of Reasoned Action, Theory of Planned Behavior and Social Cognitive Theory are more popular and practical (Paek, Bae, Hove, and Yu, 2011).

Behavior change is the main goal of social marketing strategies and interventions (Andreasen, 2006). So, considering the process of shaping and changing behavior is important. As scholars mentioned, attitudes and beliefs determine intentions, and so intentions determine behaviors. Thus, for shaping or changing behavior, considering some main beliefs is important. As Bandura (1986, 1991) mentioned, self-efficacy is one of the main beliefs that affect people's behaviors severely (Bandura, 1986) (Bandura, 1991). So, the present study aimed to investigate the impact of web-based social marketing interventions on self-efficacy and its impact on target behavior – quitting drug abuse by attending addiction treatment centers.

Social marketing

The extension of marketing concept into social issues has been considered for several decades (Kotler and Levy, 1969) and social marketing emerged out of it. The beginning of such idea traced back to 1951, when Wiebe asked “why can't you sell brotherhood and rational thinking like you sell soap?” (Stead, et al, 2007) and caused marketing communities face challenges.

Social marketing, at the first stages of its development challenged identity crisis. For example, at that time, social marketing did not have an integrated definition and some distinct topics – like nonprofit marketing, social marketing and socially responsible marketing – tended to be confused (Andreasen, 2003). Also, some scholars and practitioners confused this concept with social advertising and thought that social marketing only contain communication and advertisement activities (Domegan, 2008).

In 1971, the term social marketing was introduced as a social change technology for increasing the acceptability of social ideas in target groups (Kotler and Roberto, 1989) (Kotler and Lee, 2008). However, changing ideas as social marketing essence challenged a lot of scholars and they mentioned that, this cannot be its real nature. Finally, in the 1990s scholars and practitioners found out that the essence of social marketing is behavior change. So, this concept found its true nature and identity (Andreasen, 2003).

As Kotler and Zaltman (1971) mentioned, social marketing is not a special theory, but it is a structure drawing from various scientific areas and theories (Kotler & Zaltman, 1971) –like psychology, sociology, anthropology, communications theory (Stead et al., 2007), public health, criminology, politics etc.

Also, as mentioned above, its main goal is to change people's voluntary behaviors (Donovan, 2011). Because many social problems are behavioral or have underlying behavioral causes (Domegan, 2008) and such behaviors are determined and influenced by their social context – Immediate Environment and Wider Social Context. Such change may be occurred at individual/society, micro/group/macro, downstream/upstream levels (Hastings, MacFadyen, and Anderson, 2000) and for a short/long term (Donovan, 2011; Lefebvre, 2011).

In 1995, Andreasen defined social marketing as “marketing social change” (Andreasen, 1995):

The application of commercial marketing techniques to the analysis, planning, execution and evaluation of programs was designed to influence the voluntary behavior of target audiences to improve their personal welfare and that of society (p. 7).

There are many definitions of social marketing and each scholar sees this concept at his/her point of view. Considering current changes in marketing arena, Dann (2010) examined commercial and social marketing definitions and by using a content analysis with Leximancer software, determined the main facets of social marketing and offered a comprehensive definition:

Social marketing is the adaptation and adoption of commercial marketing activities, institutions and processes as a means to induce behavioral change in the target audience on a temporary or permanent basis to achieve a social goal (Dann, 2010).

According to this definition; (1) social marketing is a part of the broader marketing discipline (Donovan, 2011) which (2) behavior change occurred (3) voluntarily, (4) using marketing concepts and activities and (5) it will increase gained benefits (welfare) for society (Stead, et al, 2007). So, social marketing apply the principle of exchange for behavior change (Stead et al., 2007)

Models and theories of behavior change

Social studies and practices are guided by human behavior theories (Hastings, MacFadyen, & Anderson, 2000). So, wide range of theories and models can be used in social marketing programs (Stead et al., 2007). For example, some theories and models that can be used in such programs consist of:

□ **Health Belief Model (HBM):** This is one of the first theories that are mostly considered in health behavior and its origin is rooted in expectancy-value theory (Montano, 1986). This theory tries to explain why few people participate in disease preventions and detection programs. So, the theory illustrates encouraging and discouraging factors to participate in such programs (Glanz & Rimer, 2005). For this reason, the theory provides a framework consisting of six factors that facilitate people health behavior - perceived susceptibility, perceived severity, perceived benefits, perceived barriers, cue to action and self-efficacy (Janz & Becker, 1984).

□ **Trans-Theoretical Model:** Its explanation proves behavior change that occurs through a series of stages. Also, this model addresses target audiences in both cognitive and behavioral levels.

□ **Theory of Reasoned Action (TRA) and Theory of Planned Behavior (TPB):** These two theories are so interrelated. Indeed, these theories are taken into account when Wicker – based on his research – claimed that attitude does not predict behavior (Armitage & Conner, 2001). Generally, TRA has explained the relationship between beliefs, attitudes, intentions and behavior (Slocombe, 1999) (Chan & Tsang, 2011). TPB – based on social cognitive theories – add perceived behavioral control – people's perceptions to his/her ability or feelings of self-efficiency to perform a behavior – to the TRA (Paek et al., 2011).

□ **Social Influence Theory:** It insists on the importance and influences of social and cognitive factors.

□ **Social Cognitive or Social Learning Theory:** This theory implies that people learn special behavioral patterns not only based on their own experiences, but also from observing others' behavior patterns. So, the theory explains how people learn and maintain these patterns. So, the theory demonstrates relationship between internal factors, external factors and behavior. It is noteworthy that self-efficiency is one of the main internal factors (Paek, Bae, Hove, & Yu, 2011) (Hastings, 2007)

□ **Other Theories:** Theories of community organization and community participation, Planned approach to community health model, Stage theory of innovation, Behavior change theory

and Organizational change theory are some other theories and models which can be used in social marketing programs and researches.

Literature review

It is obvious that there are many social issues that marketing principles can be used to change behaviors. Like other scientific fields, social marketing at first was used in limited practical area and then expanded to other fields. But, it seems that family planning and reproductive health are the most focused social marketing efforts around the world (Lefebvre, 2011).

In researches, social marketing considered in vast issues like health improvement and disease control. Then, applications of these techniques expand to other related issues like alcohol, tobacco and quitting drug abuse or substance prevention (Meyrick & Yusuf, 2006; Sun, et al, 2011; Wall, 2007; Szmigin, et al, 2011; Tang, et al, 2005), healthy food consumption and nutrition habits (Redmond & Griffith, 2006; Redmond & Griffith, 2006, Piggford, et al, 2008; Richards et al., 2009, Wymer, 2010; Chan & Tsang, 2011; French & Blair-Stevens, 2006; Redmond & Griffith). A pilot study to evaluate the effectiveness of a social marketing-based consumer food safety initiative using observation, 2006), safe sex and AIDS prevention (Kates, 2002), blood donation (Zhou et al., 2009), physical activities and exercises (Doshi, Patrick, Sallis, & Calfas, 2003), obesity prevention (Hastings, 2006), efficient energy usage (Marcell, Agyeman, & Rappaport, 2004), drunk driving prevention (Cismaru, Lavack, & Markewich, 2009) (Rothschild, Mastin, & Miller, 2006), fastening seatbelt, morality and social behavior consideration (Crane & Desmond, 2002) (Quinna, et al, 2007), environment considerations, and other social needs.

Web-based social marketing interventions

Doshi et al, (2003) using these four theories, distinguished 20 web-based social marketing interventions. So, they listed interventions physical activity websites used to change behaviors and evaluated them by thirteen health promotion and health communication expert. Also, they demonstrated theory/theories underlying each intervention and finally categorized them into five main strategies – knowledge, cognitive strategies, behavioral strategies, emotional-focused strategies, and therapeutic interventions (Doshi et al., 2003; Paek et al., 2011). Table 1 represents these strategies and their underlying theory/theories.

Table 1: Web-based social marketing interventions, adapted from Doshi et al. (2003) and Peak et al. (2011)

Web-based interventions	Descriptions	HBM	Trans-Theoretical Model	TPB	Social Cognitive theory
Knowledge					
General Information	Providing general information about target behavior (e.g. prevalence of drug abuse among people, statistics etc.)	×	×	×	×
Cognitive Strategies					
Perceived benefits	Providing general information about benefits of target behavior (e.g. feel better, enhancing life quality and etc.)	×	×	×	×

Web-based interventions	Descriptions	HBM	Trans-Theoretical Model	TPB	Social Cognitive theory
Perceived barriers	Providing general information about barriers or disadvantages of target behavior (e.g. time constraints)	×	×		×
Perceived risks	Providing general information about the risks of target behavior (e.g. drug abuse increase the risk of cancer or HIV)	×		×	
Self-efficacy	Providing general information about the concept of self-efficacy and its importance (e.g. you can quit drug abuse)		×	×	×
Self-talk	Providing general information about persons' mental talks with themselves (e.g. do you tell yourself to quit drug abuse?)		×		×
Perceived social norms	Providing general information about others approve or disapprove of target behavior (e.g. quitting drug abuse is socially acceptable)		×	×	
<i>Behavioral Strategies</i>					
Self-monitoring	Providing general information about self-monitoring techniques regarding target behavior (e.g. throwing away drugs and don't keep any substance near them)		×		×
Realistic goal setting	Providing general information about realistic goal setting for changing target behavior (e.g. you should become ready at first and then try to quit completely)				×
Time management	Providing general information about time management for changing behavior				×
Stimulus control	Providing information about controlling the stimulus for doing target behavior (e.g. things person should remind when quitting drug abuse)		×		×
Self-reward	Provides information about encouraging themselves (e.g. self-praise)		×		×

Web-based interventions	Descriptions	HBM	Trans-Theoretical Model	TPB	Social Cognitive theory
Social support	Providing information about social supports of target behavior (e.g. communities or online support groups)		×		×
Modeling/vicarious learning	Providing information about others for modeling or vicarious learning as a method for doing target behavior				×
Relapse prevention	Providing information about how persons don't do previous behavior after change		×		×
Emotion-focused strategies					
Stress management	Providing information about managing stresses for enable persons to do target behavior				×
-Negative affect management	Provide information about mood management techniques to do target behavior				×
Therapeutic interventions					
Skill building/overview	Providing information for improving persons' skill to do target behavior		×		×
Increasing knowledge	Providing additional information or resources	×	×	×	
Motivational readiness	Providing information about how persons can increase their readiness to do target behavior (quitting drug abuse needs right time)		×		

Self-efficacy

As mentioned before, self-efficacy is one of the main internal factors that drive behaviors. So, considering it in social marketing programs is important. Self-efficacy is based on social cognitive theory – which states that individuals can control their thoughts, motivation and action – and refers to the belief that one is capable of performing particular activity or achieving one's goals (Fort et al., 2011).

Indeed self-efficacy reflects person's beliefs about his/her skill, determines how people feel, think, motivate themselves and behave (Bandura, 1997) and adjust human functions through cognitive, motivational, affective, and decisional processes (Bandura & Locke, 2003).

Self-efficacy has been considered in many researches and its determinant role in various human behaviors and functions – like psychological functions (Holden, et al, 1990), counseling (Larson & Daniels, 1998) (Lent, Hill, & Hoffman, 2003), teaching (Lev & Koslowsky, 2009)

(Woolfolk Hoy & Davis, 2006), leadership (Schyns & Sczesny, 2010), health behaviors (Holden G., 1991), physical activity (Luszczynska, et al, 2006),

So, based on results of such researches, it is obvious that self-efficacy and efficacy beliefs influence behaviors significantly. And, based on some theories like theory of planned and reasoned action, this construct influence person's intention toward a specific action and determine behavior. So, current research assesses the influence of online social marketing interventions on self-efficacy and so its impact on behavior intension.

The level of self-efficacy beliefs is determined by (1) individual's interpretation of previous tasks – mastery experiences – (2) success or failures of other's tasks - vicarious experiences – (3) social evaluative feedback – social persuasions - and (4) physiological and affective states – like stress, fatigue, anxiety and mood (Bandura, 1997; Fitzgerald & Schutte, 2010).

These sources of self-efficacy measured differently in various researches - with both quantitative and qualitative methods. In this research, (1) mastery of experiences measured by assessing respondents' appraisal of their quitting drug abuse experiences; (2) vicarious experiences measured by respondents' appraisal of others experiences and comparing them with his/her ones; (3) social persuasions measured by respondents' assessment about others' support and persuades; and finally (4) physiological and affective states measured by assessing respondents' stress and anxiety while thinking about quitting drug abuse (Poulou, 2007).

Materials and Methods

Finally, based on researches and theories mentioned above, especially based on TRA and TPB, this research tried to investigate the effect of web-based social marketing interventions (Doshi, Patrick, Sallis, & Calfas, 2003) on self-efficacy, as one of the main beliefs that influence person's intentions and behaviors.

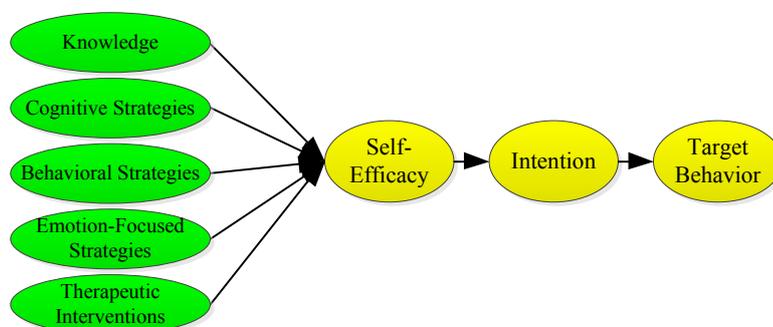


Figure 1: Research's conceptual model

So, the research hypothesizes are:

- H1) "Knowledge" has significant effect on "Self-Efficacy".
- H2) "Cognitive Strategies" has significant effect on "Self-Efficacy".
- H3) "Behavioral Strategies" has significant effect on "Self-Efficacy".
- H4) "Emotional-Focused Strategies" has significant effect on "Self-Efficacy".
- H5) "Therapeutic Interventions" has significant effect on "Self-Efficacy".
- H6) "Self-Efficacy" has significant effect on "Intention"
- H7) "Intention" has significant effect on "Target Behavior"

For this reason, an online questionnaire was designed. Also using the three most popular search engines in Iran – Google, Yahoo and MSN (Alexa - Top sites in Iran, 2011) – a list of

addiction treatment centers' websites gathered. This list gathered by searching with some keywords like "addiction treatment center", "drug and substance abuse", "quitting drug abuse", and etc. in Persian language. Then authors sent them an email to absorb their contributions by putting the online questionnaire in their website. 8 numbers of them accepted the request and contributed in data gathering. Finally, 304 questionnaires was completed and used in data analysis.

Table 2: Web-based social marketing interventions factor analysis

Factor	Questions	Factor load	Mean	SD
Knowledge	This website provides general information about drug abuse	0.893	3.88	1.000
	This website provides general information about quitting drug abuse	0.912	3.86	1.008
	This website provides statistical information about drug abuse status	0.851	3.75	0.991
Cognitive Strategies	This website represents the benefits of quitting drug abuse	0.819	3.84	1.015
	This website represents the barriers of quitting drug abuse	0.743	3.56	1.043
	This website represents the risks of drug abuse	0.822	3.97	1.072
	This website represents ways of increasing self-efficacy	0.869	3.06	1.095
	This website represents addicted individual self-talks	0.744	2.79	1.010
	This website represents others approval of quitting drug abuse	0.620	3.27	1.162
Behavioral Strategies	This website represents self-monitoring techniques for quitting drug abuse	0.445	2.41	1.061
	This website offers realistic goal setting for quitting drug abuse	0.826	2.13	1.107
	This website offers a schedule for quitting drug abuse	0.842	3.39	1.050
	This website represents ways for controlling temptations during quitting drug abuse	0.845	2.87	1.105
	This website represents ways for encouraging yourself to quit drug abuse	0.880	3.09	1.157
	This website represents social support of quitting drug abuse	0.860	3.10	1.252
	This website represents others experiences of learning in quitting drug abuse	0.865	3.21	1.193
	This website represents ways of avoiding drug abuse again, after quitting	0.821	2.80	1.118
Emotion-Focused Strategies	This website represents ways of stress management to quit drug abuse	0.777	3.56	1.112
	This website represents ways of mood management to quit drug abuse	0.907	2.70	0.999
	This website represents ways of avoiding stress to quit drug abuse	0.646	2.09	1.092

Factor	Questions	Factor load	Mean	SD
Therapeutic Interventions	This website represents ways of skill improvement to quit drug abuse	0.840	3.30	0.986
	This website provides additional information resources about quitting drug abuse	0.832	3.46	1.094
	This website provides ways of increasing readiness for quitting drug abuse	0.767	2.89	1.186
Web-Based Interventions	Knowledge	0.903	3.83	0.883
	Cognitive Strategies	0.881	3.41	0.822
	Behavioral Strategies	0.893	2.88	0.910
	Emotion-Focused Strategies	0.544	2.78	1.828
	Therapeutic Interventions	0.860	3.21	0.846

Table 3: Self-Efficacy, Intention and Target Behavior factor analysis

Factor	Questions	Factor load	Mean	Variance
Self-Efficacy	How do you evaluate the success of your efforts for quitting drug abuse	0.749	3.29	1.080
	How much your friends or neighbors have successful experience in quitting drug abuse	0.853	3.17	1.031
	How do you evaluate the success of your efforts, compare to your friends of neighbors	0.857	3.18	1.082
	How much do your family or friends support your efforts	0.858	3.20	1.212
	How much your family or friends remember you, your ability for quitting drug abuse	0.877	3.21	1.097
	How much your family or friends remember you, your improvement caused by quitting drug abuse	0.832	3.30	0.984
	How much thinking about quitting drug abuse make you feel anxious	0.709	3.35	1.055
	How much do you believe that you can quit drug abuse	0.471	3.22	1.105
Intention	How much do you want to quit drug abuse	0.686	3.10	1.144
	How much do you want to attend an addiction treatment centers to quit drug abuse	0.739	3.17	1.120
	How much do you want to help from an expert to quit drug abuse	0.891	3.22	1.084
Target Behavior	How much did you try to quit drug abuse	0.908	3.27	1.095
	How much did you try to attend an addiction treatment center to quit drug abuse	0.904	3.33	1.051
	How much do you observe experts recommendation for quitting drug abuse	0.802	3.36	1.085

Results

It is noteworthy that for reducing perceived risk, the designed questionnaire doesn't have any demographic questions to ensure respondents that the data gathered only for academic usage (and

not for prosecution). Also, authors had to eliminate some questions from the main questionnaire to suit it to the drug abuse cases and Iran situations.

For testing the proposed model, structural equation modeling (SEM) technique was used with LISREL software. SEM results showed that three web-based social marketing interventions – Knowledge, Cognitive Strategies and Therapeutic Interventions –had significant and positive effect on “Self-Efficacy”. While two other interventions – Behavioral Strategies and Emotion-Focused Strategies – did not have significant effect on “Self-Efficacy”. In other words, H1, H2 and H5 were approved, while H3 and H4 were rejected.

It is also obvious that “Self-Efficacy” has significant and positive effect on “Intention” and so, “Intention” effect “Target Behavior” significantly. So, H6 and H7 were accepted. The fitness indexes of the model represent the suitability of the overall model.

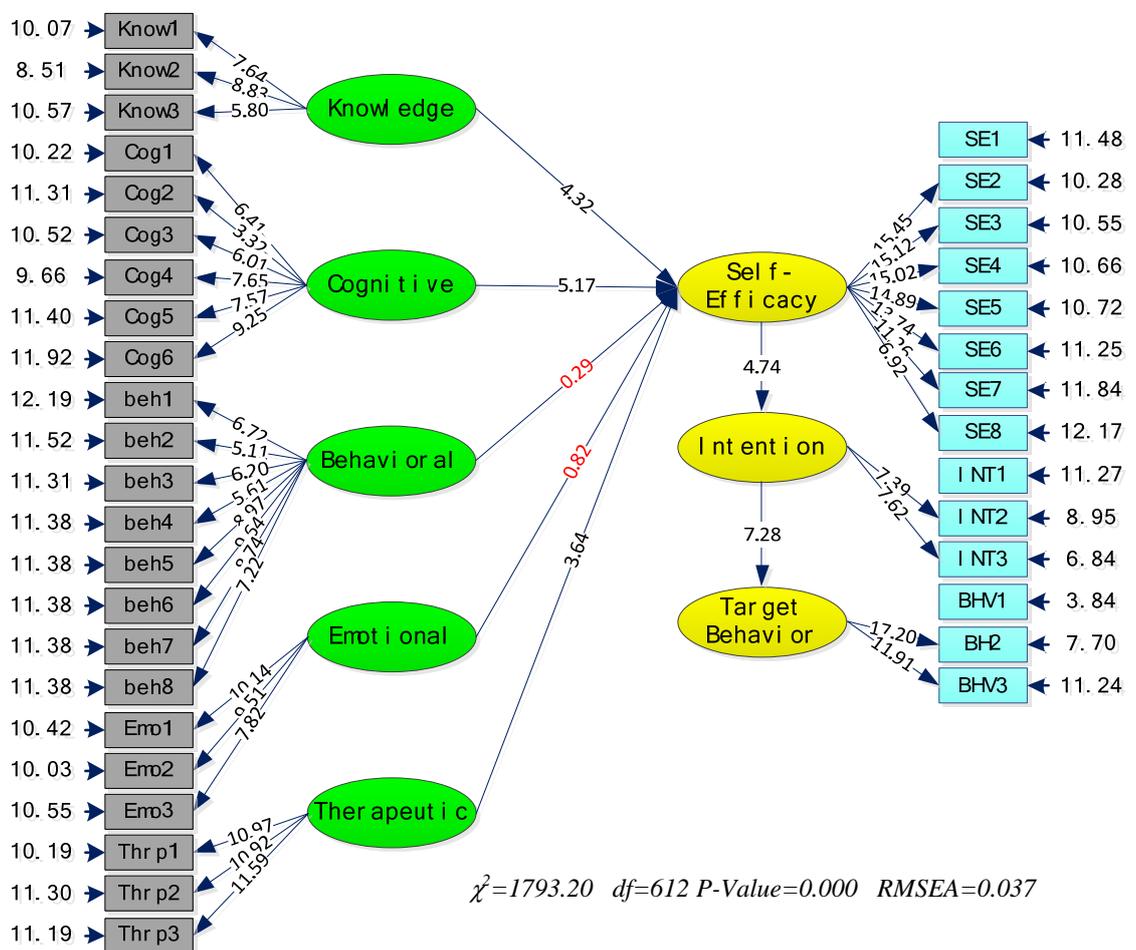


Figure 2: Structural Equation Modeling (T-Value)

Discussion

As mentioned above, the internet (especially websites of addiction treatment centers) is one of the main ways to gather information about quitting drug abuse. So, it is obvious that nowadays, the internet considered as one of the main ways for promoting health level (Paek, et al, 2011) and behavior change. Then, it can encourage and help addicted individuals to quitting drug abuse

effectively. For this reason, using effective social marketing interventions based on theoretical points of view is necessary.

As mentioned above, social marketing researches considered vast issues. But few of them concentrated on internet strategies, web-based interventions (Doshi, et al, 2003) and its impact on behavior change. So, this study investigated extend of using five main web-based social marketing interventions, developed by Doshi et al. 2003, through some related websites and examined its influence on self-efficacy (as one of the main factors that impact the intention and so behavior).

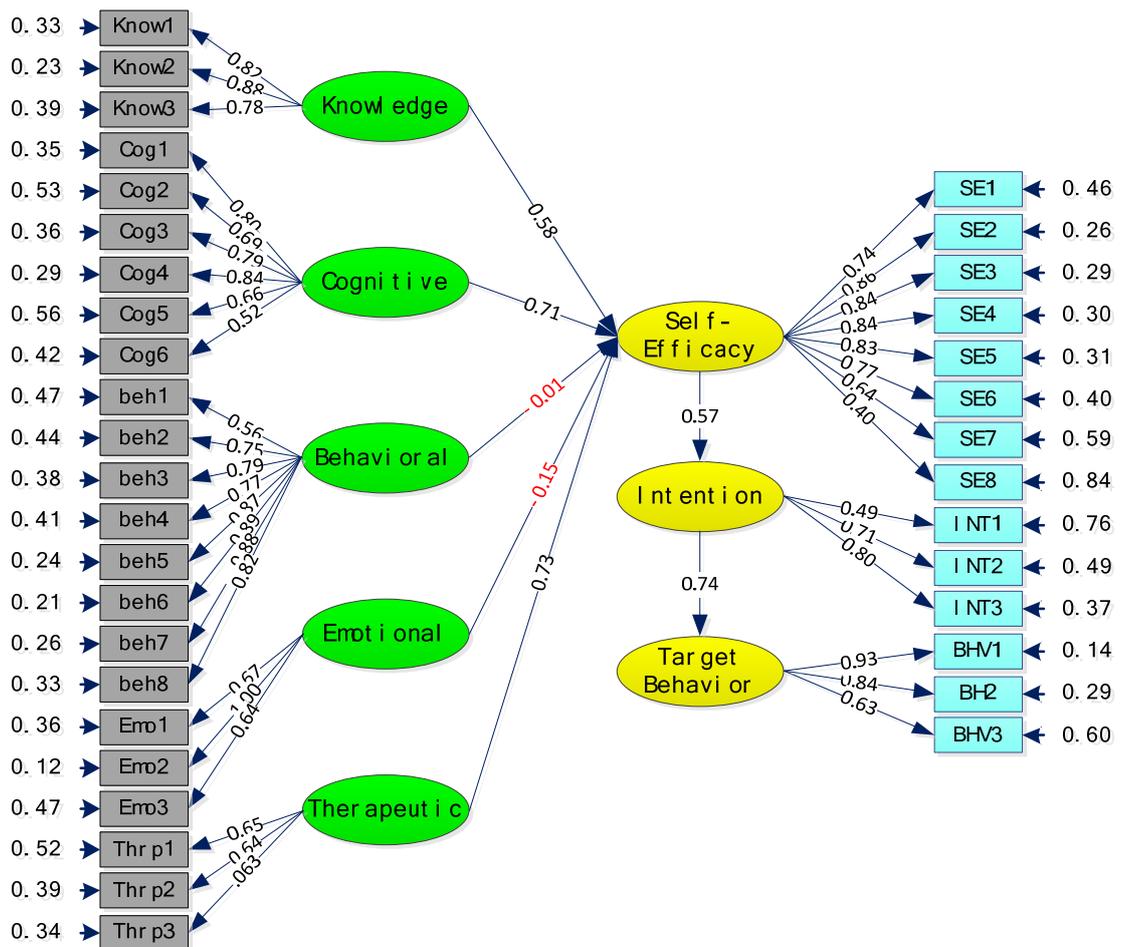


Figure 3: Structural Equation Modeling (Standardized Solution)

Findings showed that web-based social marketing interventions can affect self-efficacy. In other words, internet and web-based interventions can influence the level of self-efficacy and so, intention and target behavior. But in this way, the “Therapeutic Interventions”, “Cognitive Strategies” and “Knowledge” have significant effect on self-efficacy, while two other interventions - “Behavioral Strategies” and “Emotion-Focused Strategies” – do not have such effect. So, trying to use such interventions can effectively increase the level of self-efficacy.

Accordingly, the websites examined provide more information about drug, related statistics and quitting drug abuse. So, these websites provides general information about this field and concentrate on “knowledge” more than other interventions. “Cognitive strategies” and “therapeutic interventions” are also used through examined websites, but it is obvious that such interventions also