

L. Rybina, V. Garkavenko

KIMEP University, Kazakhstan, Almaty, e-mail: liza.rybina@gmail.com

THEORY OF REASONED ACTION AND ANTISMOKING SOCIAL MARKETING

There is a range of behavior change models used in social marketing. The past studies suggest that theories can serve as valuable frameworks for the design and evaluation of health interventions. This article aims to provide a revision of theoretical models used in social marketing and health promotion, specifically Theory of Reasoned Action, and test this theory on health risk behavior change. Smoking behavior among youth was selected as a specific context for this study due to importance of the health of youth for the economic and social development of Kazakhstan and opportunity to prevent or reduce smoking behaviors and subsequently mitigate negative consequences of smoking among youth. A deductive approach was undertaken and quantitative survey method was applied. The total sample after cleaning for incomplete data consisted of 2307 respondents. The study found that the Theory of Reasoned Action successfully predicted cigarette smoking behavior among youth. The TRA could provide solid explanations of intention to uptake cigarette use. The results indicated that attitude toward cigarette smoking and subjective norm directly influenced intention to use cigarettes. These findings might usefully be integrated in an intervention program aimed at reducing or preventing smoking initiation, especially among youth. Social marketing health intervention programs are recommended to be directed at the attitude and subjective norms by targeting underlying beliefs.

Key words: social marketing, health promotion, Theory of Reasoned Action.

А. Рыбина, В. Гаркавенко

КИМЭП Университеті, Қазақстан, Алматы қ., e-mail: liza.rybina@gmail.com

Негізделген іс-әрекет теориясы және темекіге қарсы әлеуметтік маркетинг

Әлеуметтік маркетингте қолданылатын мінез-құлықтың бірқатар теориялары бар. Алдыңғы зерттеулер көрсеткендей, денсаулыққа байланысты бағдарламаларды әзірлеуде теориялар құнды нұсқаулық қызметін атқарады. Бұл мақалада денсаулықты нығайтудың әлеуметтік маркетингте қолданылатын теориялық модельдеріне шолу жасалады, атап айтқанда: Негізделген іс-әрекет теориясы және бұл теорияны денсаулыққа қауіпті мінез-құлық контекстінде сынайды. Қазақстанның экономикалық және әлеуметтік дамуы үшін жастар денсаулығының маңыздылығын, темекі шегудің алдын алу және азайту, темекі шегудің жағымсыз әсерлерін азайту мүмкіндігінің маңыздылығын ескере отырып зерттеу нысаны ретінде жастар арасында темекі шегу таңдалды. Дедуктивті тәсіл және сауалнамалар арқылы сандық талдау әдісі қолданылды. Толық емес деректерді жойғаннан кейін жалпы іріктеу 2307 респондентті құрады. Зерттеу Негізделген Іс-әрекет Теориясының жастар арасындағы темекі шегу әрекетін сәтті болжайтыны анықтады. Нәтижелер темекі шегуге деген көзқарас пен субъективті нормалардың темекі шегуге деген ниетіне тікелей әсер ететіндігін көрсетті. Бұл нәтижелер әсіресе жастар арасында темекі шегуді азайтуға және алдын алуға бағытталған бағдарламаларды жасау үшін қолданылуы мүмкін. Салауатты өмір салты әлеуметтік маркетингті терең сенімдерге бағытталған көзқарастар мен субъективтік нормаларға бағыттау ұсынылады.

Түйін сөздер: әлеуметтік маркетинг, денсаулықты нығайту, Негізделген Іс-әрекет Теориясы.

А. Рыбина, В. Гаркавенко

Университет КИМЭП, Казахстан, г. Алматы, e-mail: liza.rybina@gmail.com

Теория обоснованного действия и антитабачный социальный маркетинг

Существует ряд используемых в социальном маркетинге теорий поведения. Предыдущие исследования показывают, что теории служат ценным руководством для разработки программ, связанных со здоровьем. Данная статья представляет обзор теоретических моделей, используемых в социальном маркетинге продвижения здоровья, в частности рассматривается теория Обоснованного Действия и тестируется в контексте поведения, связанного с рисками для здоровья. Курение среди молодежи было выбрано в качестве объекта исследования в

силу важности здоровья молодежи для экономического и социального развития Казахстана, возможностей предотвратить и сократить уровень курения, а также уменьшить негативные последствия курения. Были применены дедуктивный подход и количественный метод анкетирования. Общая выборка после удаления неполных данных составила 2307 респондентов. Исследование показало, что Теория Обоснованного Действия успешно прогнозирует поведение, связанное с курением среди молодежи. Теория Обоснованного Действия может представить объяснения употреблению сигарет. Результаты показывают, что отношение к сигаретокурению и субъективные нормы напрямую влияют на намерение курить. Эти выводы могут быть использованы для разработки программ, нацеленных на сокращение и предотвращение курения, особенно среди молодежи. Социальный маркетинг здорового образа жизни рекомендуется направлять на отношение и субъективные нормы путем целевого воздействия на глубинные убеждения.

Ключевые слова: социальный маркетинг, продвижение здоровья, Теория Обоснованного Действия.

Introduction

Kazakhstan is the largest economy in Central Asia with an average of 4.91 percent growth in the Gross Domestic Product (GDP) for the period from 1995 till 2019 (Agency of Statistics of the Republic of Kazakhstan, 2019). The developments in the economy go along with the improvements in the social sector. However, Kazakhstan encounters challenges in public health with the health indicators lagging behind the economic growth. Having the top priority and importance of the improvement in social issues and well-being of the citizens, social marketing is becoming of a growing interest and potential for academicians, practitioners, and policy makers in applying marketing approaches directed at social issues.

The literature indicates that social marketing has high potential to enhance the effectiveness of health improvement work if it is built on core health promotion principles (Hastings, Angus, & Bryant, 2012). In order to increase the effectiveness of social marketing for health promotion and public health, the literature (Chichirez & Purcărea, 2018; Griffiths, Blair-Stevens, & Parish, 2009) recommends for social marketing to have better understanding of health promotion principles and models of behavior change. Therefore, this paper aims to provide a revision of theoretical models used in social marketing and health promotion, specifically Theory of Reasoned Action, and test this theory on health risk behavior change.

The literature emphasizes the importance of research on the youth behavior to develop effective policies on young consumer protection and education (Gbadamosi, 2018). Especially, youth is considered as a vulnerable group in regard to tobacco use. Smoking disproportionately affects members of vulnerable populations such as youth, and by acting on multiple socioecological levels, serves to reinforce negative

impacts on health and wellbeing (Marbin & Gribben, 2019). Therefore, the smoking behavior among youth was selected as a specific context for this study due to importance of the health of youth for the economic and social development of Kazakhstan and opportunity to prevent or reduce smoking behaviors and subsequently negative consequences of smoking among youth and advocate for economic, social, and health policies to disrupt youth smoking.

Literature review

Health marketing, as a part of social marketing, aims at influencing individuals, voluntarily, through various social programs, in order to accept, reject, modify or abandon a behavior in favor of a healthier lifestyle (Chichirez & Purcărea, 2018). There are numerous models of behavior change used in social marketing and health promotion studies. The past studies suggest that theories and models can serve as valuable frameworks for the design and evaluation of health interventions (Luca & Suggs, 2013). In the overview of behavior change models and their uses, Darnton (2008) reported around 60 models. Not surprisingly, there are overlaps between many models. A group of the models generally known as ‘cognitive decision models’ or Knowledge - Attitude - Behavior (KAB) models, emphasizes how beliefs and attitudes influence individual decision making and behavior change. The other group of the models emphasizes how behavior change occurs over time for individuals or populations, such as stage of change models and diffusion models. Most of cognitive decision models conceptualize the influences on behavior and provide a theoretical framework for conducting formative research, developing strategy and evaluating campaigns. The models of this type are based on the assumption that an individual’s beliefs will determine the individual’s attitude.

These attitudes in turn will predict an individual's intentions. Lastly, environmental facilitators and inhibitors, both perceived and actual, and both situational and structural, will impact whether or not these intentions would result in actual behavior. Changes in the major components of these models, such as attitudes, norms and efficacy, have been proved to be good predictors of changes in behaviors and intentions (Webb & Sheeran, 2006).

Adapted from the social and behavioral sciences, from such disciplines as psychology, sociology, consumer behavior, and marketing, the commonly used theories root in the behavioral motivation theory of Lewin, who proposed that behavior depends on two variables: the value an individual places on a particular behavioral outcome, and the expectancy, as a likelihood that an individual will be successful in achieving his or her goal (Lewin, Dembo, Festinger, & Sears, 1944). The class of expectancy-value theories include the Health Belief Model (Carpenter, 2010; Hochbaum, 1958), the Theory of Reasoned Action (Fishbein & Ajzen, 1975), the Theory of Planned Behavior (Ajzen, 1991), the Protection Motivation Theory (Rogers, 1975; Rogers, 1983), and the Extended Parallel Process Model (Witte, 1992; Witte, 1998). These theories differ in the variables they include and how the variables are related to predict behavior. Adequately addressing an issue in social marketing communications may require more than one theory, as behaviors, populations, cultures, and contexts are broad and varied across various demographic and socio-economic groups. Among a number of behavior change theories commonly used by health communication researchers and social marketing practitioners, the current study reviews the Health Belief Model, the Protection Motivation Theory, the Extended Parallel Process Model, and the Theory of Reasoned Action.

The Health Belief Model. The Health Belief Model (HBM) is widely used in social marketing for public health and health promotion (Carpenter, 2010; Patterson et al., 2018; Tanner-Smith & Brown, 2010). The original model states that health protective behavior is influenced by personal beliefs about a disease and strategies to decrease the occurrence of the disease (Hochbaum, 1958). The model suggests that the stronger perceived seriousness, susceptibility, and benefits and the weaker perceived barriers, the greater the likelihood that an individual will perform preventive health actions. In recent years, researchers expanded upon this theory, adding cues to action, modifying factors, and self-efficacy constructs.

For more than fifty years of its existence, Health Belief Model has been used to predict a large range of health behaviors such as eating a healthy diet (Deshpande, Basil, & Basil, 2009), mammography behavior (Tanner-Smith & Brown, 2010), and sexually transmitted diseases (Belcher, Sternberg, Wolotski, Halkitis, & Hoff, 2005). However, the available evidences indicate that the overall explanatory power of the Health Belief Model is limited (Galvin, 1992). More recent studies have raised questions regarding the extent to which perceived threat is an effective behavioral motivator (Abraham & Sheeran, 2005), especially in the contexts of child and teenage behaviors (Baranowski, Cullen, Nicklas, Thompson, & Baranowski, 2003). A low predictive power of HBM in most areas of health related behavior can be attributed to the poor definition of the constructs, lack of combinatorial rules, and limited predictive validity of the core components of the model (Armitage & Conner, 2000). The effectiveness of this model is limited as shown in the recent study with the low predictive capacity ($R^2 < 0.21$ on average) coupled with the small effect size (Orji, Vassileva, & Mandryk, 2012). In a comparative meta-analysis of preventive health behavior models, Zimmerman and Vernberg (1994) conclude that the Health Belief Model is in essence a list of variables rather than a theoretical model based on systematically specified relationships. In a systematic review of studies using HBM, "intervention success appeared to be unrelated to HBM construct addressed challenging the utility of this model as the theoretical basis for adherence-enhancing interventions" (Jonesa, Smitha, & Llewellyna, 2014, p. 253). Therefore, more complex models should be examined to design and structure theory-based interventions.

The Protection Motivation Theory. Protection Motivation Theory (PMT) proposed by Rogers (1975, 1983) is another major behavioral change model extensively used in health communication and social marketing. It provides a conceptual framework to explain the impact of fear appeals on behavioral modification. According to PMT, external environment and personal factors pose a health threat, which activates two cognitive processes: threat appraisal and coping appraisal. The threat appraisal includes intrinsic and extrinsic rewards, severity of the threat, and vulnerability to it. The coping appraisal consists of response efficacy, self-efficacy, and response costs associated with protective behavior. The individual will respond to the threat in adaptive or maladaptive manner depending on the evaluation of threat and individual

ability to cope with that threat. The theory states that people engage in adaptive behavior if they believe that the threat is severe and they are vulnerable to it; consider themselves capable to respond to the threat; and perceive that preventive behavior reduces risks. The Protection Motivation Theory has been empirically tested using different research methods such as focus groups, experiments, and surveys in various health related settings including smoking (Yan et al., 2014), drinking (Cismaru, Lavack, & Markewich, 2008), infectious disease epidemic (Williams, Rasmussen, Maharaj, Kleczkowski, & Cairns, 2015). Being heavily used for influencing and predicting health behaviors, PMT as a framework is nevertheless ambiguous. Floyd, Prentice-Dunn, and Rogers (2000) report the moderate magnitude of the overall effect size, suggesting that Protection Motivation Theory components may be useful for both community and individual interventions, while the meta-analysis of literature on protection motivation theory (Milne, Sheeran, & Orbell, 2000) shows the threat appraisal constructs (perceived severity and vulnerability) have small effect sizes and the coping appraisal variables (self-efficacy, perceived response efficacy, and response costs) have medium effect sizes.

The Extended Parallel Process Model. More recently, another fear appeal theory, Extended Parallel Process Model (EPPM), proposed by Witte (1992), gained a considerable prominence in health communication and social marketing research. The EPPM specifies the same variables as the Protection Motivation Theory, but states that perceived efficacy determines the nature of the response and the perceived threat determines the strength of the response. In contrast to the PMT, the Extended Parallel Process Model identifies different types of responses and gives explanation of why fear appeals may fail or succeed. Furthermore, the EPPM proposes a sequential model of processing information, in contrast to the PMT assuming all variables are processed simultaneously with the highest impact of response costs and self-efficacy on persuasion (Cismaru & Lavack 2007; Milne, Sheeran, & Orbell, 2000) and that the effects of all PMT variables on behavioral change are independent. In comparison with PMT, the Extended Parallel Process Model proposes that threat information is to be processed first, followed by perceptions of response efficacy and self-efficacy. Past research showed that successful fear appeals should contain a high level of threat and even higher level of efficacy to promote danger-control responses and change in behavior (Gore

& Bracken, 2005). The Extended Parallel Process Model has been tested in a multitude of topics such as meningitis (Gore & Bracken, 2005), drug taking (Shi & Hazen, 2012), and smoking (Chung & Rybina, 2011). Overall, EPPM variables have been found effective in variety of studies; however, the recent meta-analysis of the literature reports the lack of consistency in operational definitions: out of the twelve propositions of the EPPM, not a single one received unequivocal empirical support (Popova, 2011).

The Theory of Reasoned Action. Despite a range of evidences to support various models in predicting health behavior, there are factors involved in risky health behaviors which are not explained by these models and theories. Therefore, many researchers in health promotion and social marketing have looked at the Theory of Reasoned Action (TRA) to understand complex risk behaviors such as cigarette smoking where a number of physiological and psychological factors influence behavior. The framework of the TRA has been widely used in a variety of fields including health communication research, such as healthy eating behavior (Hackman & Knowlden, 2014), exercise behaviors (Arevalo & Brown, 2019), condom use (Fishbein, 2008), addiction related behaviors such as alcohol abuse (Carrera, Albarracín, Muñoz, Caballero, & Fernández, 2012) and smoking (Guo et.al 2007). Overall, the meta-analyses of the application of the TRA report large effect sizes and provide strong support for the validity of this theory (Hardeman et al., 2002).

According to the TRA personal factors such as social influence and the individual positive or negative evaluations are to be taken into consideration. These factors determine whether a person will intend to give up or continue problem behavior. The TRA assumes behavioral intention is the most important determinant of behavior. Specifically, the Theory of Reasoned Action proposes that attitudes and subjective norms linearly combine to cause intention, and intention in turn impacts a person to perform a behavior within the context of other influences (Ajzen & Fishbein, 2005; Fishbein & Ajzen, 1975). People are more likely to perform a behavior when they have an intention to perform that behavior. The attitude toward the behavior is an interactive function of the strength of the individual's beliefs about what would happen if he or she would perform the target behavior and the strength of the extent to which an individual values outcomes. Subjective norms are defined as the person's evaluations of how other individuals important to him/her would feel he or she should

behave. Based on the revision of the literature and the specific context of youth smoking in Kazakhstan selected for this study, the following hypotheses were stated:

H1: Attitudes to smoking health risk behavior impact behavioral intention.

H2: Subjective norms about health risk behavior impact behavioral intention.

Methodology

As this paper aims to apply the Theory of Reasoned Action to test the impact of attitudes and social norms on health risk behavior in the context of youth smoking in Kazakhstan, a deductive approach as recommended by the literature (Saunders, Lewis & Thornhill, 2019) was undertaken. The survey quantitative method was applied. The construct measures were adapted from past studies (Alanazi, et al, 2017). Attitudes were measured on semantic differential scales with opposite adjectives, for example “Good vs. Bad”, “Foolish vs. Wise”, “Like vs. Dislike”. Subjective norm was measured with five questions assessing participants’ perception of what other people think about engaging in smoking. The items included injunctive and descriptive items such as “Most people who are important to me think that (I should/I should not) smoke cigarettes”, “The people in my life whose opinions I value (Smoke/do not smoke) cigarettes. Behavioral intention was assessed by four questions. Participants were asked questions using a 5-point scale (from 1 to 5 where 1 = strongly disagree/ extremely unlikely and 5 = strongly agree/extremely likely). For example, participants answered questions such as: “I intend to smoke cigarettes in the future” and “How likely is it that you will smoke cigarettes?” (Extremely likely/Extremely unlikely). As there is a possibility of different meanings of questions across languages, problems can arise when a questions are translated too closely, focusing on the words and not the meaning of the questions. Though, all measures used have been proven psychometrically sound in cross-cultural contexts, in the process of translation and cross-cultural adaptation of the

research questionnaire (scale items), the guidelines for conducting international consumer research by Craig and Douglas (1999) were followed. The survey included questions measuring individual factors such as questions of age, gender, income, and academic performance.

Onwuegbuzie and Collins (2007) defined two major components of sampling design: the sampling scheme and the sample size. They define “sampling schemes as specific strategies used to select units (e.g., people, groups, events, settings). As the context of this study is youth health risk behavior, the sample unit was represented by students at schools and universities. For the quantitative survey, multi-stage purposeful random sampling was employed as suggested by Onwuegbuzie and Collins (2007).

The paper and pen and on-line data collection methods were employed. The consent to participate was secured from administration and teachers of eight schools and seven universities in three cities of Kazakhstan. The dates, time, and classes/groups to participate in the surveys were agreed with individual teachers and instructors. Moving to the sample size discussion, it is necessary to point out that the quantitative research utilizes large sample sizes to detect differences or relationships of statistical significance, while in qualitative research a much smaller sample is used to capture lived experiences through social contexts (Denzin & Lincoln, 2005). Therefore, the total sample after cleaning for incomplete data consisted of 2307 respondents. The sample was represented by 63% of female and 47% of male. The age of respondents varied from 16 to 25-year-old. The data were further used for factor analysis and regression model.

Results and Discussion

To address the objectives of this study, a principal component factor analysis with varimax rotation was performed on scales. There were no items producing double loadings, but two items that produced low loadings were eliminated from further analysis (see Table 1).

Table 1 – Factor Analysis Results

Attitude Items	Factor Loading	Subjective Norm Items	Factor Loading	Behavioral Intention Items	Factor Loading
ATT1	.820	SN1	.889	BI1	.900
ATT2	.863	SN2	.361*	BI2	.924

<i>Continuation of the table</i>					
ATT3	.828	SN3	.905	BI3	.914
ATT4	.805	SN4	.873	BI4	.900
ATT5	.567	SN5	.914		
ATT6	.627	SN6	.794		
ATT7	.421*	SN7	.890		
Cronbach's Alpha = 0.86		Cronbach's Alpha = 0.94		Cronbach's Alpha = 0.93	

*items with low loadings were excluded from analysis

The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy of 0.88 is classified as good and is far above the minimum level of 0.5 that means that the sample can be used for the factor analysis. Reliability of the scales was established using Cronbach's Alpha. For all scales, alpha values are "respectable or better" (see Table 1), i.e. higher than 0.7 as recommended in the literature (DeVellis, 2011).

The resulting factors were further used in the regression model with attitude and subjective norms

about health risk behavior as independent variables and behavioral intention as dependent variable. The assumptions for the use of regression model were tested. The results of the regression model are presented in Table 2. The results show that attitudes to smoking health risk behavior is significantly related to behavioral intention to smoke (p-value of 0.00 is significant at $p < 0.05$ level). The subjective norm about health risk behavior is also related to behavioral intention (p-value of 0.03 is significant at $p < 0.05$ level).

Table 2 – Regression Results

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	
	B	Std. Error	Beta			
(Constant)	2.299	.157		14.655	.000	
1	ATT	.112	.023	.099	4.789	.000*
	SN	.113	.020	.118	5.705	.003*

Dependent Variable: BI

* significant at $p < 0.05$ level

The results of the regression model support both hypotheses stating that attitudes to health risk behavior impact behavioral intention (H1) and subjective norms about health risk behavior impact behavioral intention (H2) in the context of youth smoking in Kazakhstan. This findings are consistent with the predictions from the meta-analysis conducted by Topa and Moriano (2010) of 35 data sets (N= 267,977), where smoking intentions were based on attitudes (weighted mean $r = 0.16$) and subjective norms (weighted mean $r = 0.20$). However, several other studies that used theory of planned behavior, an extended version of TRA, found that

subjective norms were either the weakest predictor of intentions (McMillan, Higgins & Conner, 2005), or were non-significant in the prediction of intention (Norman, Conner & Bell, 1999). Also, the present findings are consistent with the previous studies on other health risk behaviors such as healthy eating behavior (Hackman & Knowlden, 2014), condom use (Fishbein, 2008), alcohol abuse (Carrera, Albarracín, Muñoz, Caballero, & Fernández, 2012). The study provided support for the utility of the Theory of Reasoned Action to predict cigarette smoking. Overall, the findings of the current study and the past literature indicate that the Theory of

Reasoned Action can be used for the development of theory-based social advertising and health promotion.

Conclusions and Recommendations

This study reinforces the call to action for applying theories and models of behavioral change to guide and evaluate health interventions and social marketing campaigns. Theories and models for social marketing and health promotion abound, however there is little formal consensus on which types of models for what types of social problems and what types of situations are most appropriate. Social marketing practitioners do not always understand how to use and apply theories and models in the design of interventions, campaigns or tools, and scholars do not always understand how to translate these theories into practice (Manikam & Russell-Bennett, 2016). The present study support that the Theory of Reasoned Action has high predictive validity. This is confirmed by the results of the analysis of quantitative survey data collected for this study that demonstrate that attitudes to health risk behavior and subjective norms about health risk behavior impact behavioral intention in the context of youth smoking in Kazakhstan.

The study indicated that the Theory of Reasoned Action successfully predicted cigarette smoking behavior among youth. The TRA could provide solid explanations of intention to uptake cigarette

use. The results indicated that attitude toward cigarette smoking and subjective norm directly influenced intention to use cigarettes. These findings might usefully be integrated in an intervention program aimed at reducing or preventing smoking initiation, especially among youth. Health marketing intervention programs might be directed to the attitude and subjective norms by targeting underlying beliefs. However modifications to this theory can be recommended by re-specifying constructs to take into account additional moderating factors and applying the outcomes of research on variations in beliefs and attitudes to enhance the strength of intentions as predictors of behaviors.

One of the limitations of this study is based on self-reported responses which might be susceptible to biases. Moreover, the results of this study may not be generalized to rural Kazakhstan areas as the study sample included only participants from the cities. Regardless of these limitations, this study has some advantages. From the academic perspective, the Theory of Reasoned Action was applied and confirmed to have utility in the context of youth smoking in Kazakhstan. In addition to the value to academicians, this study provides valuable information to the practitioners and policy makers by providing specific directions as to the development of theory-based health interventions. The further research can address model re-specification and selecting other sample populations for the study.

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