

EXAMINATION OF THE RELATION BETWEEN PERSONAL CHARACTERISTICS AND THE HIGH RISK SEXUAL BEHAVIOUR

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Abstract: In the article is presented the application of protection motivation theory to the field of sexual health research and promotion. Several hypothesis about the regulation of the risky sexual behavior were tested: the role of the cognitive appraisals, the maladaptive coping, the protective effects of the fear of sexually transmitted diseases, behavioral intentions to use condom and past sexual behavior (Umeh, 2004; Ingledew & Ferguson, 2007). The focus of the research article is on the predictive role of personality traits (Lachman & Weaver, 1997). The subjects are between 16 and 55 years old. The results demonstrate the regulative functions of the conscientiousness and openness for men. All five personality dimensions are predictive about the adaptive coping with sexual health threat for the women from the sample. The age effects show a shift from a dominating role of the fear in motivating protective sexual behavior to an increased personal control and self-efficacy in coping with this health threat. The individual differences in motivational processes and personality may be used in designing intervention programs for sexual health promotion.

Keywords: personality traits, unsafe, sexual, behavior, STDs, education, AIDS, HIV, health,

ИЗСЛЕДВАНЕ НА ВРЪЗКАТА МЕЖДУ ЛИЧНОСТНИТЕ ЧЕРТИ И РИСКОВОТО СЕКСУАЛНО ПОВЕДЕНИЕ

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Резюме: В настоящия доклад са верифицирани обяснителните възможности на предпазно-мотивационната теория (Rogers, 1985) за промоция на протективното сексуално поведение. Проведеното емпирично изследване проверява множество хипотези за регулацията на рисковото сексуално поведение: когнитивните оценки на заплахата; ефективното и неефективно справяне; протективните ефекти на страха; поведенческите намерения за използване на презерватив и миналия рисков сексуален опит (Umeh, 2004; Ingledew & Ferguson, 2007). Акцентът е поставен върху изследването на прогностичната роля на личностните черти (Lachman & Weaver, 1997). Изследваните лица са на възраст от 16 до 55 години. Констатирани са следните диференциални различия по пол и възраст: при мъжете по-ясно изразена е регулативната роля на личностните черти съзнателност и отвореност към нов опит; при жените и петте личностни измерения в голяма степен мотивират адаптивното справяне със здравната заплахата. Във възрастов план се констатира преход от доминиращата роля на страха и заплахата от ХИВ към нарастване на мотивационната функция на личния самоконтрол в справянето с тази заплахата. Индивидуалните различия в мотивационните процеси и личността могат да послужат при разработването на интервенционни програми за намаляване на рисковото сексуално поведение.

Ключови думи: личностни, черти, рисково, сексуално, поведение, ХИВ, СПИН, изследване

1. INTRODUCTION

Actuality of the studied problem: In Bulgaria, according to the National Program for Prevention and Control of HIV / AIDS at the Ministry of Health, by December 15, 2017, the HIV-positive men and women in Bulgaria are 2 756. The actual number of infected people is about 6,000. This is what the estimates of the UNAIDS (UNAIDS) system for scientific assessment and prognosis of the epidemic shows. The mean age for men is 31 years, and for women 32 and there is still a critical decrease in the lower age limit. Over 57% of newly registered in 2017 are in the age group of 15-29 [27].

Sexual risk behavior prevention programs often underestimate the context, partner characteristics, age, motivation, and personality differences in intimate relationships. Compared to routine sexual education campaigns, a

significant change in behavior and belief is achieved through participation in theoretically grounded programs. In the prevention of risky sexual behaviors, the focus is on behavioral change [5]. A task of the scientists is to create theoretically grounded intervention programs that reduce "risky" and increase "healthy" behaviors. AIDS prevention programs based on cognitive and socio-cognitive models of health behavior research are of proven effectiveness [20, 23, 3].

The purpose of the current study is to examine the relationship between personality traits ("The Big Five"), the motivation to protect and the past sexual experience of people from 16 to 55 years of age. The accepted definition of risky sexual behavior as 'a behavior that increases the risk of unwanted pregnancy and sexually transmitted disease' [12] is accepted in the research practice.

Theoretical prerequisites for empirical research

Safety-motivational theory

Safety-motivational theory is a widely used cognitive model for predicting health behaviors. In its original form it is assumed that it is a function of four components: personal effectiveness, response effectiveness, severity (of the disease) and vulnerability. These components predict the intentions of the ultimate behavior. Later, R. Rodgers offers a fifth component, which he calls "fear" or "emotional response" to health information on the topic studied (Figure 1) [18].

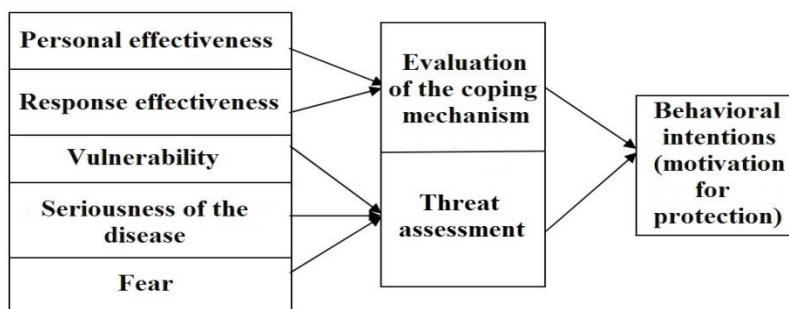


Figure 1. - Elements of the motivational-safety theory [18]

The model distinguishes two cognitive dimensions: *threat appraisal* and *coping appraisal*. The severity of the disease, the vulnerability and the fear form threat appraisal, the effectiveness of the response and the personal effectiveness - the coping appraisal. These two cognitive assessments reflect the external and internal rewards and penalties respectively from the acceptance (or non-acceptance) of preventive behavior. A strong threat appraisal and a strong assessment of the ability to cope contribute to the motivation for protection, which is indexed by behavioral intentions. According to P. Riptou and R. Rogers, past behavioral experience strongly stimulates cognitive assessments [19]. This information influences the five components described above, thus causing an adaptive (e.g. behavioral intent) or non-adaptive coping reaction (e.g., avoidance, denial, ignoring). The adaptive strategy generates a condition called "protective motivation", which keeps the necessary activity to address the health threat. Non-adaptive responses (so-called "non-adaptive coping") suppresses the motivation for prevention and are aimed at reducing anxiety rather than eliminating danger [23].

Meta-analytical studies report that cognitive assessments explain most of the variation in behavioral intentions, although some results speak of a moderate relationship. Fear is presented as a significant predictor as cognitive variables [16].

A number of studies show: a negative correlation between non-adaptive coping and motivation to prevent [19, 24, 4, 23]; the impact of past experience on protection motivation (previous non-adaptive behavior is associated with reduced levels of protective motivation) [24, 4].

In a study of safety-motivation theory, it is revealed that high levels of fear are not functional because people focus their attention on reducing anxiety rather than on avoiding danger by changing behavior. An important practical result is that health promotion campaigns that focus on fear may have a rather negative effect [24]. As the results of the research on the relationship between cognitions and emotions are inconsistent, in the framework of the present study, their verification is of interest concerning the Bulgarian culture.

K. Umeh examines the relationship between non-adaptive coping strategies, cognitive assessments, and past behavior linked with condom use in students of British culture [23]. threat appraisal and coping appraisal are not

significant predictors, which is an unexpected result given the widely accepted belief that cognitive assessments are a necessary prerequisite for protective motivation [6,16]. A significant predictor in this study is the fear, that is, rather, emotion than cognition. The idea that health determinants are necessarily based on rational reasoning is overturned.

In modern health psychology one of the main tasks is the study of the cross-cultural validity of the applied social practices for the promotion of health behavior. L. Xiaoming and his team check the relevance of China's cautionary-motivation theory to migrant research into urban areas. Here, risky sexual behavior is associated with reduced cognitive assessments of coping and threat [26].

A study of Bulgarian students confirms the need to incorporate a dimension of past experience in safety-motivation theory. This achieves a higher percentage of explained variance in the sample. Cognitive assessment of the HIV threat proved to be a significant predictor of behavioral intentions for using a male condom. This result is consistent with previous studies [6,16]. In analyzing the direct effect of past risky sexual behavior, there is a negative relationship with behavioral intentions for condom use in both men and women. Thus the less risky past sexual behavior implies a strong motivation for protection [2].

A study of the predictive function of the individual attachment style confirms the link between a secure attachment style and non-adaptive strategies to deal with the HIV threat in women alone. Here the interpretation allows two alternatives. Inherent to this individual style of affection, high values of interpersonal trust and a positive model of others lead to ignoring the threat of sexually transmitted diseases. But the result obtained may also be related to the tendency towards more stable and monogamous connections in secure attachment, where sexually transmitted diseases are significantly less frequent [1].

As a critique of the precautionary-motivation theory, it is suggested that people act rationally (despite the irrational element - fear). An attempt to enrich the explanatory possibilities is to include the behavioral forms of habit and the relevance of the environment and social factors (Ogden, 2007). In our view, improving the prognostic capabilities of the theoretical model under discussion, along with past experience [2], also implies the consideration of the relationship between personality traits, motivation and behavioral intentions for healthy behavior.

The big five and risky sexual behavior

The relationship between personality and health risk behaviors has been investigated in a number of studies. They focus mainly on variables such as the search for sensations, attitudes, strategies for stress management, emotions and coping, as well as temperamental and motivational differences, the influence of the reference group. Less often in the research practice are the taxonomic patterns of the personality, especially with regard to risky sexual behavior.

Previous studies have reported that some of the main dimensions of the personality are associated with risky sexual behavior. According to the results obtained in other cultures in early youth, a positive link between extravagance, number of partners and early onset of sexual life (in males) was identified. There is a negative relationship between openness to new experiences and unprotected sex as well as the early onset of sexual life. Also - a negative correlation between the focus on others, the number of partners and the early onset of sexual life. Consciousness is negatively related to the use of alcohol and psychoactive substances before or during sexual intercourse [15]. In another study, high neurosis, low awareness, and focus on others have been associated with more risk behaviors with regard to HIV [25,22].

Hoyle and his team conduct a meta-analytical study of the relationship between personality and risky sexual behavior. Here, neuroticism is poorly associated with the number of partners ($r = .11$) and moderately with the past sexual experience without protective means ($r = .20$). The direction towards others correlates negatively with the number of partners ($r = -.16$) and sex without protective means ($r = -.23$). Consciousness is associated with overall risk-taking ($r = -.12$), and, in particular, with unprotected sex ($r = -.26$). No significant gender differences are found [10].

And in later studies, weak consciousness and focus on others have been associated with debilitating sexual behavior [8, 14, 11]. Researchers from the evolutionary paradigm also find that these variables are related to a tendency towards promiscuous behavior and adultery [21].

We could get a consistent negative relationship between risky sexual behavior, consciousness, and focus on others. Not so explicit are the positive links between risk taking, extravagance and neuroticism. As regards openness to new experiences, the results are contradictory. It is still difficult to reach a consensus on the influence of personality traits and sexual behavior. These differences are probably due to limitations (and differences) in the tools used, the operationalization of risky sexual behavior, socio-cultural and socio-sexual particularities.

2. PURPOSE OF THE STUDY

Objectives and hypotheses of the empirical study

The purpose of the current study is to investigate the impact and interrelation of the five key personal dimensions on motivation for prevention and risky sexual behavior. It is also intended to examine the explanatory capabilities of the precautionary-motivation theory and its components for the study of risky sexual behavior of different age groups. Based on the theoretical overview and the objective of the study, the following hypotheses are formulated:

1. The personal traits will influence the components of the precautionary-motivation theory and the behavioral intentions of using a condom
2. High cognitive assessments will be positively related to protective motivation, while non-adaptive coping and high index of past risky sexual behavior will be negatively related to protective motivation.
3. Gender and age should have a differentiating function with regard to risky sexual experience, cognitive assessments and motivation for prevention.

3. MATERIALS AND METHODS

The following scales and tools are used:

- **MIDI Personality scales.** The scale consists of 25 adjectives (personality traits) that evaluate the five basic personality dimensions [13].

- **A Scale of Past Sexual Behavior** [11]. Of the eight questions, two variables are derived - *sexual experience* and *an index of risky sexual behavior*. The first variable distinguishes the one without sexual experience from those with sexual experience. The second measures the index of past risky sexual behavior, which increases if: the surveyed report sexual experience before 14 years of age; have a greater number of sexual partners than the average for the sample; report to at least one partner they did not know or knew too little about; have sex without a condom with at least one partner; have sex without a condom because they were under the influence of alcohol or drugs; had a pregnancy test or a test for sexually transmitted disease (or had to by their partners).

- **Questionnaire on motivation to prevent sexually transmitted diseases.**

The R. Ho tool was used to evaluate the components of the safety-motivation theory [9]. It includes five scales (20 in total): non-adaptive coping, threat assessment, assessment of coping, fear, behavioral intentions. The questionnaire is adapted to the Bulgarian cultural context and shows good psychometric capabilities [1].

All three instruments show high and acceptable coefficients of inner consistency.

The survey was conducted in a random manner between March 2017 to July 2018 in the cities of Sofia, Plovdiv, Varna, Burgas, Ruse, Blagoevgrad, Haskovo, Kardzhali and Gotse Delchev. The subjects surveyed (n = 168) which are divided into the following groups:

Sign	Group	Number	Percent
Gender:	Male:	48	28,6
	Female:	120	71,4
Age:	16 – 18 years:	40	23,8
	19 – 25 years:	79	47
	26 – 55 years:	49	29,2
Populated place:	Capital:	58	34,5
	Big City:	98	58,3
	Small Town:	12	7,2
Education:	Higher education:	53	31,6
	Secondary education:	75	44,6
	Students:	40	23,8
Sexual Experience:	With sexual experience:	152	90,5
	Without sexual experience:	16	9,5

Table 1. - Distribution of people surveyed by signs

4. RESULTS

In the analysis of the results, the surveyed were divided into three age groups: adolescents (16-18 years), early youth (19-25 years), youth and middle age (26-55 years).

Only 16 of the surveyed are without sexual experience. The majority (n = 11) are girls from the first age group (16-18 years). Logistic regression involves the five personality dimensions as a predictor of sexual experience. The results obtained did not show statistically significant differences.

On table. 2 and 3 are shown the interdependencies between: the personality dimensions, the motivation for protection and its components, the past risky sexual behavior.

	X	O	1	2	3	4	5	6	7	8	9	10
1. Index of past risky sexual behavior	12,77	5,51	1									
2. Age	24,35	10,05	.228	1								
3. Orientation towards others	16,04	2,83	.001	.246	1							
4. Openness to new experience	16,27	2,20	-.077	.326*	.220	1						
5. Consciousness	16,02	2,29	.035	.031	.131	.282	1					
6. Neuroscience	10,06	2,86	.123	-.041	-.032	-.287*	.000	1				
7. Extraversion	16,58	2,17	.104	.144	.263	.149	.083	-.499**	1			
8. Non-adaptive coping	12,42	4,18	.097	-.236	-.138	-.514	-.150	.149	-.144	1		
9. Coping Appraisal	15,21	3,32	.049	.000	.019	-.104	.086	-.192	.275	.026	1	
10. Threat Appraisal	24,59	6,60	-.163	-.233	-.056	-.181	-.128	-.005	.259	.026	.501**	1
11. Motivation for transmission	15,67	4,14	-.458**	-.035	.101	.050	.072	-.144	.105	-.010	.373**	.401**

* p < 0,05; ** p < 0,01

Table 2. - Interdependencies between personality dimensions, protective motivation, risky sexual behavior (men)

	X	O	1	2	3	4	5	6	7	8	9	10
1. Index of past risky sexual behavior	9,87	3,57	1									
2. Age	25,99	10,41	.173	1								
3. Orientation towards others	17,65	2,17	-.046	-.062	1							
4. Openness to new experience	16,78	2,15	.015	.134	.336**	1						
5. Consciousness	16,90	2,40	-.130	.126	.422**	.216*	1					
6. Neuroscience	10,90	2,57	-.084	-.048	.002	.072	-.150	1				
7. Extraversion	17,40	2,29	-.071	.028	.459**	.241**	.256**	-.088	1			
8. Non-adaptive coping	11,31	3,84	-.013	-.073	-.115	-.019	.136	-.292**	-.035	1		
9. Coping Appraisal	16,02	3,18	-.163	.002	.144	.143	-.016	.044	.055	.041	1	
10. Threat Appraisal	27,23	5,98	-.105	-.207*	.126	-.134	-.093	.237**	-.049	-.285**	.235**	1
11. Motivation for transmission	16,79	3,84	.024	-.061	.195*	.226*	.114	.081	.213*	-.126	.408**	.312**

* p < 0,05; ** p < 0,01

Table 3. - Interdependencies between personality dimensions, protective motivation, risky sexual behavior (women)

The correlation analysis performed shows the following statistically significant interdependencies with respect to the hypotheses set above: **openness to new experience** correlates negatively with **non-adaptive coping** in men. Thus, people who are curious, creative, willingly embracing new ideas and values, unconventional and wider interests are less inclined to deny and ignore the threat of HIV. In them, **the index of past risky sexual behavior** correlates negatively **with the behavioral intentions of using a condom (protective motivation)**. I.e. past risk experience also implies weaker intentions to use a condom in the future.

Women have a negative correlation between **age and threat assessment**. We can explain this interrelation with the tendency to engage in a permanent monogamous relationship, which implies a significantly lower risk of sexually transmitted diseases. In women, **the focus on others, extraversion and openness to new experiences** are positively linked to the **protective motivation**. Although there were no direct statistically significant links between features and past sexual experience in the Bulgarian socio-cultural context, behavioral intentions also provided sufficient information on attitudes towards protection. What remains open is to what extent these intentions will become a current protective behavior. According to meta-analytical studies, cognitive and socio-cognitive models predict between 19% and 38% of behavioral variation [16].

In order to establish the causal relationships between the studied variables in the three age groups a regression analysis was carried out. The statistically significant results are presented in Table 4:

Sex and age group	Predictor	Dependent variable	β	R^2
Men 16 - 18	Fear	Motivation for protection	.886*	.786
	Threat appraisal		.876*	.935
	Past sexual experience		-.960*	.923
Women 16 - 18	Extraversion		.523*	.236
	Fear		.581*	.517
Men 19 - 25	Extraversion	Fear	.429*	.151
	Openness to new experience	Non-adaptive coping	-.471*	.222
	Consciousness	Effectiveness of the response	.490*	.255
	Threat Appraisal	Motivation for protection	.276*	.255
Women 19 - 25	Neuroticism	Fear	.358*	.074
	Consciousness	Past sexual experience	-.395*	.192
	Openness to new experience	Cognitive assessment of the threat	-.385**	.119
	Fear	Motivation for protection	.349*	.122
	Coping Appraisal		.400**	.320
	Threat appraisal		.310*	.320
	Neuroticism	Non-adaptive coping	-.387*	.124
Men 26 - 55	-----	-----	-----	-----
Women 26 - 55	Openness to new experience	Motivation for protection	.346*	.120
	Neuroticism		.447**	.199
	Consciousness	Threat appraisal	-.394*	.109
	Neuroticism		.470**	.220
	Neuroticism	Fear	.341*	.124
	Consciousness		-.378*	.119
	Neuroticism	Non-adaptive coping	-.326*	.099
	Non-adaptive coping	Motivation for protection	-.315*	.133
	Fear		.476*	.558
	Coping Appraisal		.375*	.186

** p < 0,01; * p < 0,05

Table 4. - Impact of the explored predictors on protective motivation

For men of the first age group (16-18 years), personality traits do not show prognostic function. In them the **fear** of sexually transmitted diseases has a statistically significant connection with **the motivation for protection**. This emotional response to the HIV threat has a strong impact on the formation of behavioral intentions to use a condom in the future. In multiple regression, it is precisely **the threat appraisal** that has a high prognostic value with regard to future **intentions of using a condom**. The reported past venture sexual experience is associated with **reduced motivation for protection**. This confirms the idea that future conservation intentions are largely a function of past experience. In women in the same group as men, **fear** affects **the motivation for protection**. However, there is also a personality dimensional **extraversion** in them. Personal features as friendly, friendly, active, cheerful and so on. are associated with more pronounced intentions of protection in the future. In this age group (16-18 years) the research results show that the focus on the threat, vulnerability and severity of HIV virus in prevention programs could increase the motivation for protection.

Among men in the second age group (19-25 years) (unlike the first one) the following statistically significant effects of the personality traits were found: **extraversion** is associated with **fear** of sexually transmitted diseases, **openness to new experiences** - negative with **non-adaptive coping**. Thus, intelligence, curiosity and broad interests imply acceptance of the health threat and motivate more effective coping. **Consciousness** is associated with the belief that condoms are an effective barrier to HIV infection. Here too, **threat appraisal** is a decisive factor in future **intentions of using a condom**. Women in this age group have the following dependencies: **neuroticism** is associated with **fear** of sexually transmitted diseases, and **consciousness** - with less risky **past sexual experience**. Such a result has been obtained in previous studies in other cultures (Miller et al., 2004). The personality trait **open to new experiences** implies a weaker **cognitive assessment of the threat** (i.e. perceived vulnerability and severity of the HIV virus). Among women in the second age group, **fear** is proving to be a **precautionary motivation**. In them, the more pronounced neuroticism is associated with **the non-adaptive coping**. Perhaps this result complements the high motivational power of HIV-positive in the first age group. The study of causal links with the two main cognitive dimensions as a predictor shows that both have a statistically significant impact on the motivation for protection. Coping Appraisal is with a slightly higher regression rate ($\beta = .400$) compared to that of the threat assessment ($\beta = .310$).

No statistically significant effects were found in the men in the third age group. In women aged 26-55 years, the following trends emerged: **openness to new experiences** and **neuroticism** positively influence the motivation for protection. It is found that women with high **neuroticism** and low **consciousness** show a greater fear and generally give a higher **cognitive assessment** of the threat of HIV. Naturally, **non-adaptive coping** is negatively related to **protection motivation**. **Neuroticism** in this group also suggests that people do not rely on non-adaptive coping strategies. **Fear** also has a statistically significant impact on **protection motivation**. The more they feel threatened by HIV, the more people surveyed report stronger intentions to use a condom. However, these intentions increase the role of personal self-control in dealing with this threat. When multiple regression analysis was applied to women (26-55 years), an important predictor of **motivation for protection** was the **treat appraisal**. This result implies accentuating on the personal efficacy and effectiveness of condoms as protective means to achieve stronger motivation for protection.

The one-dimensional dispersion analysis performed aims to test the differentiation of age and gender in past sexual experience and the regulation of risky sexual behavior. Thus, **gender** has statistically significant influence over the **past sexual experience**, with men showing a higher risk index ($x = 12.92$) than women ($x = 9.87$, $p = 0$, $F = 16.15$). This result is consistent with previous research [7]. Women ($x = 15.25$) show even stronger HIV **fears** than men ($x = 13.46$, $p < 0.05$, $F = 5.77$). **Age** is proving to be predictive of **threat appraisal**, with the first group (16-18) demonstrating the highest threat rating ($x = 29$), followed by the 19-25 age group ($x = 26.47$) and the third age group ($x = 24.46$).

5. CONCLUSION

The conducted empirical study confirmed partial results of the effects of personality traits on the regulation of risky sexual behavior found in previous studies. The multidimensional model of the precautionary theory theory applied in this study has allowed us to identify the following significant variations of the studied variables, typical of the Bulgarian socio-cultural context. The most important of these are the gender differences in the motivational function of the studied personality traits. In men, the regulatory role of personality traits, consciousness and openness to new experience, is more pronounced. Among women, it is found that the high values of all five features included in the taxonomic personal profile under study are largely motivating adaptive coping with the health threat.

An important outcome of the empirical study is the change in the transition age from the dominant role of fear and the threat of HIV to an increase in the motivational function of personal self-control in addressing this threat. This trend is more pronounced in women. The results obtained have an applied value for the differential focus of programs for the prevention of risky sexual behavior.

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