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Sensation seeking in high-risk sport athletes

Potreba po dražljajih pri športnikih rizičnih športov

Abstract

The research investigated sensation-seeking needs in high-risk sport athletes. Our aim was to investigate sensation-seeking factors and compare the results with those of non-risk sport athletes and non-athletes. 38 high-risk sport athletes participated in the research (alpinists, sky divers, parachute gliders, white-water kayakers, downhill mountain bikers, motocross riders, downhill skiers and Nordic jumpers), the group of non-risk sport athletes included 38 swimmers, track athletes, sailors, still-water kayakers, rowers, Nordic skiers, sports climbers and karate players, whereas the group of 76 non-athletes was equalled with the other two groups in terms of age and education. We used the Zuckerman Sensation Seeking Scale IV. We established that high-risk sport athletes scored highest in the general factor, followed by non-athletes, while the lowest scores were achieved by non-risk sport athletes. Groups ranked in the same order in terms of adventure-seeking and risk-taking factors. Disinhibition was highest in non-risk sport athletes, followed by non-athletes, while the lowest score was achieved by high-risk sport athletes. We also suggest some possibilities for further research.

Key words: high risk sports, extreme sports, high-risk sport athletes, sensation seeking

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Izvleček

V raziskavi smo se ukvarjali s potrebo po dražljajih pri športnikih, ki se ukvarjajo z rizičnimi športi. Naš namen je bil ugotoviti izraženost faktorjev iskanja stimulacije pri teh športnikih in njihove rezultate primerjati s športniki, ki se ukvarjajo z nerizičnimi športi, in nešportniki. V vzorec smo zajeli 38 športnikov rizičnih športov (alpiniste, padalce, jadralne padalce, potapljače, ekstremne kajakaše, gorske kolesarje, motokrosiste, smukače in nordijske skakalce), vzorec športnikov nerizičnih športov je sestavljalo 38 plavalcev, atletov, smučarjev, jadralcev, kajakašev na mirnih vodah, veslačev, smučarskih tekačev, športnih plezalcev in karateistov, nešportnike pa smo z obema skupinama športnikov izenačili po starosti, izobrazbi, zbrali pa smo rezultate 76 nešportnikov. Uporabili smo Zuckermanovo Lestvico iskanja stimulacije IV. Ugotovili smo, da so na splošnem faktorju iskanja stimulacije najvišje rezultate dosegli športniki rizičnih športov, sledili pa so jim nešportniki in nato športniki nerizičnih športov, isto zaporedje skupin se je pokazalo tudi na faktorju iskanja pustolovščin in tveganja. Najvišja dezinhibicija se je pokazala pri športnikih nerizičnih športov, sledili so jim nešportniki, najnižji rezultat pa so dosegli športniki rizičnih športov, odpirajo pa se tudi nekatere možnosti za nadaljnje raziskovanje.

Cljučne besede: rizični športi, ekstremni športi, športniki rizičnih športov, potreba po dražljajih

Introduction

A person's motivated activity is regulated by central nervous systems structures that are located mainly in the area of hypothalamus and in reticular formation – the former structures are in charge of maintaining the survival of the organism and the latter maintain an appropriate level of activation (Lamovec, 1988). Sustaining an optimal level of arousal is considered to be one of the basic needs of every organism. Fiske and Maddi (1961) defined arousal on the basis of stimulation (including intensity, subjective importance and variability of stimuli), the source of stimulation (which can be external, proprioceptive or cortical) and individual differences, since they assumed the existence of an optimal level of arousal that remains constant under usual circumstances and is experienced as ordinary or desired by the individual. They assumed that the level of exposure to stimuli in early childhood has a decisive influence on later ordinary level of arousal. Repetition of stimuli makes them perceived as less important, which prompts an individual to broaden his or her interests and diversify them more and more; at the same time, the process of integration takes place – differential elements combine into wider, sensible units, preventing the arousal level from increasing above the desired level.

The first formal theory of the optimal arousal level was put forth by Zuckerman (1994). He began by organising the current findings into a system; the basic theory consists of the following ten postulates (Lamovec, 1988):

1. The current level of activation correlates positively with the strength, complexity, suddenness, incongruence and affective tone of the stimuli and negatively with constancy, repetition and usualness of the stimulus;
2. During stimulation the activation potential of stimuli is in the opposite relationship with the current level of activation;
3. Every individual has an optimal level of stimulation and an optimal activation level, which are affected by body constitution, age, learning, previous stimuli, task requirements and daily rhythm;
4. Cortical activation can vary independently of activation of autonomous nervous system;
5. Positive affections are related with medium levels of stimulation, while negative affections with extreme levels of stimulation;
6. Long lasting and demanding cognitive actions require a moderate level of cortical activation;
7. The absence of directed cortical activity causes activation to spread to the associative areas of the cortex, leading to prevalence of primary processes in thinking;
8. Inappropriate levels of activation disturb functioning of the cortex, which causes inefficiency in thinking and lessens the control of emotional reactions;
9. Inappropriate levels of cortical activation can cause disorientation or hallucinations;
10. Prevention of external sources of a certain sensory modality increases irritability of the relevant cortex areas.

The first proposed definition of sensation seeking by Zuckerman (1979) described sensation seeking as a trait, characterized by the need for differential, novel and complex sensations and experience, and readiness to take physical and social risks in order to obtain them. Subsequent changes were made to this definition, as some legal and financial risks were added (Zuckerman, 1994) based on a more recent factor analysis of risk appraisal (Horvath & Zuckerman, 1993).

Risk taking is connected with sensation seeking, but is not an imperative part of the definition. A person with high sensation-seeking needs can either underestimate the risk or accept it for the price of the reward of experience itself, however few sensation seekers take unnecessary risks, but accept them and try to minimize them (Zuckerman, 1994). The increase in skilfulness decreases the tension experienced in a risky activity, which also decreases the riskiness, as was shown by Brody, Hatfield, Bradley and Spalding (1988, in Zuckerman, 1994). On the other hand, people with low sensation-seeking needs not only attempt to avoid risk but do not feel that it is worth taking risk in order to experience pleasure in an activity.

Sensation seeking seems to derive from an internal feeling of satisfaction, experienced with senses during activities, which raises the question of whether people with high sensation-seeking needs are more hedonically oriented and people with low sensation-seeking needs unable to feel pleasure. Zuckerman (1984b, in Zuckerman, 1994) compared the results of Jackson's Playfulness Scale with those of the Sensation Seeking Scale and established that disinhibition represented an adult form of play, which is expressed through sexuality and parties. He also found that games in adulthood are more socially oriented and that persons with higher sensation-seeking needs (at least males, as Zuckerman (1994) suggested) are more hedonically oriented. Levenson (1990) conducted a study in which he compared sensation-seeking needs in people taking different kinds of risk and established three types of risk takers: "heroes" – prosocial risk takers (firemen, police officers), "drug addicts" – antisocial risk takers, and "climbers" – taking risks in an adventurous manner.

Researchers of sport sensation seeking mainly dealt with sensation-seeking needs in athletes engaging in the so-called high-risk sports, also known as extreme sports. We shall refer to them as high-risk sports, as most researchers do (Breivik, 1995; Campbell, Tyrrell, & Zingaro, 1993; Chirivella & Martinez, 1994; Cogan & Brown, 1999; Cronin, 1991; Goma i Freixanet, 1991; Jack & Ronan, 1998; Kerr, 1991; Rossi & Cereatti, 1993; Zarevski, Marušić, Zolotić, Bunjevac, & Vukosav, 1998; Wagner & Houlihan, 1994;), but expressions such as "extreme" or "adrenaline" are also used (Žiberna, 2000). They are used to describe sports such as mountain climbing, white-water kayaking, diving, Nordic jumping, as well as some other sports (Burnik & Tušak, 1999). Breivik (1995) defines them as any other sport where one has to accept the possibility of severe injury or death as an inherent part of the activity. We can thus add the following sports to the previous list: downhill skiing, parachute skydiving, parachute gliding, downhill bike riding, speleology, freestyle snowboarding, motocross, car racing, speedboat racing, sleigh racing and probably some other modern sports.

Tušak, Burnik and Robič (2001) investigated sensation-seeking needs in divers and although none of the differences was significant, divers showed higher sensation-seeking needs in all factors save disinhibition. Croatian psychologists Zarevski, Marušić, Zolotić, Bunjevac and Vukosav (1998) found high-risk sport athletes to score higher in all four factors of Zuckerman's scale and both factors of Arnette's inventory, when compared to athletes engaged in non-risk sports. Breivik (1999b) found alpinists, white-water kayakers and skydivers to have higher risk-taking and experience factors, but not the disinhibition and boredom susceptibility factors. Another study (Breivik, 1999c) compared top alpinists with other alpinists and found top alpinists to have higher risk-taking and experience factors. Breivik's another study (1999d) showed results that were incongruent with some of his previous findings, namely, that high-risk sport athletes are also willing to take social risks. According to Cronin (1991) alpinists achieved higher results in the general, experience and risk-taking factors.

Campbell, Tyrrell and Zingaro (1993) investigated male and female white-water kayakers and canoers and found that they both scored higher than normative results in the risk-taking factor. Chirivella and Martinez (1994) found that high-risk sport athletes were different in terms of sensation-seeking needs from the medium-risk (karate) and low-risk sport athletes (tennis) – while these two groups did not differ. Some authors tested sensation-seeking needs by means of Telic Dominance Scale; thus Kerr (1991) found high-risk sport athletes to have higher sensation-seeking needs than non-risk sport athletes and similar results were also obtained by Cogan and Brown (1999). Higher sensation-seeking needs were found also by Wagner and Houlihan (1994), Rossi and Cereatti (1993), and Jack and Ronan (1998), while Potgeiter and Bisschoff (1990, in Jack & Ronan, 1998) concluded sensation-seeking needs to be the main reason for people to engage in high-risk sports. Goma i Freixanet (1991) conducted an extensive investigation, according to which high-risk sport athletes had higher risk-taking, experience and general factors when compared to the control group, and she believes that all groups of high-risk sport athletes can be unified in a single group, since she found no differences between them. She also established that they take risk in a socially acceptable manner.

The aim of our research was to investigate the differences in sensation seeking between high-risk sport athletes, non-risk sport athletes and non-athletes, specifically looking for differences between the Sensation Seeking Scale factors. We hypothesised that high-risk sport athletes would have higher sensation-seeking needs, higher risk-taking needs, higher needs for seeking experiences, lower disinhibition and be less susceptible than non-risk sport athletes and non-athletes.

Method

Participants

The first group of participants consisted of 38 male athletes, aged between 17 and 34 ($M = 24.82$ yrs; $SD = 4.53$ yrs), who were engaged in high-risk top level sports (alpinists, skydivers, parachute gliders, divers, white-water kayakers, downhill bikers, motocross riders, downhill skiers, Nordic jumpers). Top level was defined as world and international class according to the Slovene Olympic Committee (Olimpijski komite Slovenije – Združenje športnih zvez, 2003) and definitions of associations.

The second group of participants consisted of 38 male non-risk sport athletes, equalled in terms of age ($M = 23.55$ yrs; $SD = 4.00$ yrs) and education with high-risk sport athletes. They competed at top level in swimming, track and field, alpine skiing (slalom and giant slalom), still-water kayaking, rowing, sailing, Nordic skiing, sports climbing, karate and badminton).

The third group of participants consisted of 76 male non-athletes (age: $M = 24.82$ yrs; $SD = 4.30$ yrs), who have never been actively (competitively) engaged in sports and do not take recreation more than twice weekly. The group was in terms of age and education equalled to the of high-risk sport athletes (2 non-athletic participant to 1 high-risk sport athlete). The age differences between groups were not statistically significant ($F = 1.231$; $p = 0.295$).

Instruments

Slovenian version (Lamovec, 1988) of Zuckerman's Sensation Seeking Scale (SSS-IV) was used to collect the data on the seeking of sensation. The questionnaire consists of 72 pairs of state-

ments, among which the subject chooses the one that best represents him or her. The instrument consists of five factors (Lamovec, 1988):

- a) *General factor* represents the desire for exciting life that is full of adventure and a tendency to experience everything possible; it is also demonstrated as an interest for unusual and exciting sports, unplanned travelling and experiencing extraordinary sensations with the use of drugs, hypnosis etc.; it also includes the desire to associate with unpredictable, dynamic and emotionally expressive people.
- b) *Factor of adventure and risk-taking* encompasses the desire to participate in unusual physical activities, such as sky gliding, sky diving, diving, alpinism, car racing etc.
- c) *Experience factor* refers to seeking out unusual sensual or mental experiences and to the unconventionality of one's lifestyle; it is marked by the need to wear extraordinary clothes, shock other people, show interest in extraordinary places and people, use drugs etc.
- d) *Disinhibition factor* includes seeking for pleasure, mainly sexual; it is marked by the desire to attend wild parties to meet happy and attractive people that give in to uninhibited sensuality, often under the influence of alcohol.
- e) *Factor of boredom susceptibility* includes rejecting of repetitive events, routine, always the same people and places, predictive and boring people; it is connected with the tendency to change job every once in a while, to buy and try new products, to sample new and unknown food etc.

The authors of the test report Cronbach alpha reliability coefficients between 0.68 and 0.84 for risk-taking, experience and disinhibition factors, while as regards boredom susceptibility the coefficients of males were between 0.62 and 0.66 and of females between 0.38 and 0.56. The test-retest method yielded a high coefficient 0.89 after three weeks and 0.75 after 6 to 8 months (Zuckerman, 1994). The Slovene translators of the test report no data on reliability, while Cronbach alpha of our sample was 0.82.

Procedure

The subjects were measured individually at their homes and at the Faculty of Sport in 2001 and 2002. Descriptive statistics and ANOVA were calculated to determine the differences between three groups.

Results

Table 1: Descriptive statistics and normality testing

Factor	High risk		Non risk		Non-athletes		Skewness	Kurtosis	K-S	
	M	SD	M	SD	M	SD			z	Sig.
General	13.24	3.54	11.00	3.73	11.17	4.84	-0.06	-0.54	0.65	0.78
Risk taking	10.95	2.64	8.92	3.23	8.30	3.79	-0.30	-0.96	1.05	0.22
Experience	9.45	2.68	8.03	3.28	9.43	3.88	-0.10	-0.41	0.81	0.53
Disinhibition	5.89	2.48	7.32	2.62	6.83	2.51	0.13	-0.51	1.06	0.21
Boredom susceptibility	7.03	2.69	7.21	2.85	7.72	2.86	-0.21	-0.27	0.93	0.36

Legend:

High risk – high-risk sport athletes

Non risk – non-risk sport athletes

K-S – Kolmogorov-Smirnov test

The largest differences appear in the first two factors (i.e. general and risk-taking factors) – both of which are the highest in the group of high-risk sport athletes. Non-risk sport athletes and non-athletes have lower scores, and they resemble in both scores. In terms of boredom susceptibility the differences are small, whereas high-risk sport athletes have the lowest scores in disinhibition. The experience factor is the lowest in non-risk sport athletes. Analysis of variance may be used, since skewness and kurtosis as well as the Kolmogorov-Smirnov test showed a normal distribution of data. Testing of normality was performed on the sample of non-athletes.

Table 2: Results of one-way ANOVA

Factor		SS	df	MS	F	p
General	Between groups	129.17	2	64.59	3.52	0.03*
	Within groups	2733.64	149	18.35		
	Total	2862.82	151			
Risk taking	Between groups	179.17	2	89.59	7.65	0.00*
	Within groups	1744.70	149	11.71		
	Total	1923.87	151			
Experience	Between groups	56.85	2	28.42	2.36	0.10
	Within groups	1795.04	149	12.05		
	Total	1851.89	151			
Disinhibition	Between groups	40.27	2	20.14	3.14	0.05*
	Within groups	954.57	149	6.41		
	Total	994.84	151			
Boredom susceptibility	Between groups	14.57	2	7.28	0.92	0.40
	Within groups	1182.49	149	7.96		
	Total	1197.05	151			

Legend:

SS – sum of squares

MS – mean square

* – significant difference ($p < 0.05$)

The results of one-way ANOVA show some differences between the groups. Significant differences appeared in the general, risk and disinhibition factors, a trend towards significance showed in the experience factor, whereas no significant differences were established between the three groups in terms of boredom susceptibility.

Table 3: Analysis of homogeneity of variance

Factor	Levene	p
<i>General</i>	2.79	0.07
<i>Risk taking</i>	4.67	0.01*
<i>Experience</i>	3.08	0.05*
Disinhibition	0.06	0.94
Boredom susceptibility	0.18	0.83

Legend:

The factors where post-hoc tests for non homogenous samples were used are in italics.

* – significant difference ($p < 0.05$)

The testing of homogeneity of variance showed a non-homogenous variance in two out of five factors. For these factors post-hoc tests for samples with non homogenous variance were used – namely, Dunnett T3 test for the risk-taking and experience factors and Tukey HSD test for other two factors. The differences in variances in the general factors are not significant but come very close to it, which is why a test for non-homogenous samples was used also for this factor.

Table 4: Results of post-hoc analysis of variance between groups

Factor	Pair	p
General	high risk – non risk	0.03*
	high risk – non-athletes	0.03*
	non risk – non-athletes	1.00
Risk taking	high risk – non risk	0.01*
	high risk – non-athletes	0.00*
	non risk – non-athletes	0.75
Experience	high risk – non risk	0.12
	high risk – non-athletes	1.00
	non risk – non-athletes	0.13
Disinhibition	high risk – non risk	0.04*
	high risk – non-athletes	0.16
	non risk – non-athletes	0.60
Boredom susceptibility	high risk – non risk	0.96
	high risk – non-athletes	0.43
	non risk – non-athletes	0.63

Legend:

Tukey HSD test was used for factors with homogenous variance, and Dunnett T3 test was used for other factors.

* – significant difference ($p < 0.05$)

The post-hoc analysis of variance table shows a more detailed picture of differences between the groups. The general factor shows significant differences between high-risk sport athletes and non-athletes and between high-risk sport athletes and non-risk sport athletes, while the differences between non-risk sport athletes and non-athletes are insignificant. The risk-taking factor shows significant differences between high-risk sport athletes and non-athletes and between high-risk sport athletes and non-risk sport athletes. Disinhibition shows significant differences between high-risk sport athletes and non-risk sport athletes.

Discussion

The aim of our research was to investigate sensation seeking in high-risk sport athletes, non-risk sport athletes and non-athletes, and we defined sensation seeking as a trait, characterized by the need for differential, novel and complex sensations and experience, and readiness to take physical, social, legal and financial risks in order to obtain them (Zuckerman, 1994). Zuckerman developed a Sensation Seeking Scale for measuring sensation seeking. The scale uses five factors and we intended to test the differences between groups of participants on the basis of these factors.

The first factor of Zuckerman's scale is a general factor, in which high-risk sport athletes achieved the highest results. They were followed by non-athletes, whereas the lowest score was attained by non-risk sport athletes – the results of the latter two groups differ only slightly. The differences were significant, especially those between high-risk sport athletes and non-athletes and between high-risk sport athletes and non-risk sport athletes. We thus concluded that high-risk sport athletes have higher sensation-seeking needs than both non-risk sport athletes and non-athletes, which confirms our first hypothesis. High-risk sport athletes strive for an adventurous lifestyle, full of experience and events, attempt to try and experience as much as possible, show an interest in extraordinary and dangerous sports and in travelling without planning ahead, more often demonstrate the desire to try drugs and hypnosis and enjoy the company of unpredictable, dynamic and emotional people, whereas we find fewer such tendencies in non-risk sport athletes and non-athletes. We believe that the interest in unusual and dangerous sports and travelling to extraordinary places (even though such trips are well planned) makes a distinction between the lifestyles of high-risk sport athletes and non-athletes and also of non-risk sport athletes, which seem to need a safe, structured and stable environment in order to practice under optimal conditions. Higher sensation seeking in general in high-risk sport athletes was also established by Cogan and Brown (1999); Cronin (1991), Goma i Freixanet (1991), Kerr (1991), Rossi and Cereatti (1993) and Tušak, Burnik and Robič (2001).

The above stated authors as well as Breivik (1999b) found high-risk sport athletes to have higher risk taking, a result that was also observed in our study. Again, the highest score in that factor was achieved by high-risk sport athletes, followed by non-risk sport athletes, while non-athletes showed the least tendencies to take risks. The differences between the groups were significant, especially between high-risk sport athletes and non-athletes as well as between high-risk sport athletes and non-risk sport athletes – our second hypothesis is thus confirmed. We established that high-risk sport athletes have higher tendencies for risk taking than non-risk sport athletes and non-athletes. They display a strong tendency for engaging in unusual physical activities, such as sky gliding, sky diving, diving, alpinism, car racing, while this tendency is lower in the group of non-risk sport athletes, who prefer to engage in more ordinary sports involving less physical risk. However, this tendency is even lower in non-athletes. Risk taking is correlated with sensation seeking, but is not an essential part of its definition – it is defined as the probability that behaviour will have a negative outcome (Zuckerman, 1994). High-risk sport athletes are often referred to as maniacs, madmen, taking risk for no reason whatsoever, but researchers as well as experts on sport psychology oppose to such terms and refer to them as stereotypes (Žiberna, 2000). Research has shown that gaining mastery in an activity decreases the tension (Brody, Hatfield, Bradley, & Spalding, 1988, in Zuckerman, 1994), that high-risk sport athletes do not consider risk taking as uncalculated and impulsive (Breivik, 1999d), that they do understand the riskiness of the situation they are getting into (Rossi & Cereatti, 1993) and that they try to make it as safe as possible by using a safety gear and practicing. In that way they satisfy their sensation-seeking needs and consider fewer situations to be dangerous.

High-risk sport athletes do not achieve a higher experience factor than non-risk sport athletes and this factor is neither higher than that of non-athletes. Therefore, our third hypothesis has to be rejected. It is interesting that the lowest experience factor was found in non-risk sport athletes. However, this result makes sense, since training in swimming, track-and-field, rowing and other sports can be extremely dull and repetitive in its nature and athletes with a low

need for unusual sensual or mental experiences can endure them more easily. This result is somewhat incongruent with the results obtained by Breivik (1999b), Cronin (1991), Goma i Freixanet (1991) and Wagner and Houlihan (1994).

The boredom susceptibility factor was as predicted, since the highest scores were found in non-athletes, followed by non-risk sport athletes, while high-risk sport athletes attained the lowest scores – no differences were significant. Therefore, we can not assert that high-risk sport athletes have a lower tendency to become bored in comparison with other two groups and we cannot accept our fourth hypothesis. High-risk sports involve a great amount of repetitions and a lot of boredom has to be overcome in order to become good in these sports, which was predicted also by Cronin (1991) – he succeeded in confirming his predictions in one of his studies.

The disinhibition factor was the highest in non-risk sport athletes, followed by non-athletes, while the lowest score was achieved by high-risk sport athletes. The differences were significant, especially between high-risk sport athletes and non-risk sport athletes – our fifth hypothesis can be accepted. Disinhibition in high-risk sport athletes is not lower than that in non-athletes. This factor includes seeking for pleasure, mainly sexual. It is marked by the desire to attend wild parties to meet happy and attractive people that give in to uninhibited sensuality, often under the influence of alcohol. This result is sensible, considering the fact that parties are often the only opportunity for top athletes to relax and experience certain pleasures, from which they usually have to refrain due to rigorous discipline and training regime. At parties they feel they have to make up for that and often go too far in their disinhibited behaviour. Similar results were obtained by Tušak, Burnik and Robič (2001), who found high-risk sport athletes to have lower disinhibition than recreational athletes. The same findings were reported also by Breivik (1999a) and Cronin (1991), whereas some researchers reported the opposite results (Rossi & Cereatti, 1993).

The research presents some new aspects and offers new research possibilities, but it also has a practical value, since it points out the differences between athletes engaged in high-risk sports and other athletes. Some of these differences even have biological foundations – this implies that not every person is fit to take part in such sports, as certain skills simply cannot be learned. Recently, high-risk sports have become relatively fashionable in Slovenia, which inevitably results in the fact that people who are psychologically unfit for high-risk sports actually engage in them. Such persons may reach a certain level of success in a given sport, but are incapable of achieving top results. The role of a sport psychologist in this case would be to check whether the absence of results is a consequence of motivational structure being oriented towards sensation seeking, which is incompatible with the sports' demands, and may advise an athlete on the basis of such findings. Further research should also test the impulsivity of high-risk sport athletes and check the Dahlback's Conflict Theory (1990), which includes the weighing of possible outcomes and the impulsivity of the decision-making process. It would also be interesting to find out how risky high-risk sport athletes find their activities to be, which would help us establish whether they are capable of correctly assessing the characteristics of the activities they engage in, as was assumed by Rossi and Cereatti (1993) and, if the experience of stimulation actually means so much to them, whether they are willing to accept the possible negative outcomes of their actions. It would also be sensible to translate and carry out a research based on the latest version of the Sensation Seeking Scale – especially the version VI,

because it includes the difference between actually engaging in an activity and an intention of taking risk or carrying out an activity that provides a great amount of stimulation.

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