

SENSATION SEEKING SCALE: INDIAN ADAPTATION

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SUMMARY

Sensation seeking refers to a biologically based personality dimension defined as the need for varied, novel and complex sensations and experiences, and the willingness to take physical and social risks for the sake of such experiences. Although researched worldwide for nearly three decades now, there is to date no published Indian study utilizing the concept of sensation seeking. This paper describes adaptation of the Sensation Seeking Scale for the Indian population. After due modification of the scale, its reliability, internal consistency and discriminant validity were established. Norms were developed for a defined segment of general population. This study may be seen as the beginning of research in India on the subject of sensation seeking.

INTRODUCTION

Sensation seeking (SS) is defined as "the need for varied, novel and complex sensations and experiences and the willingness to take physical and social risks for the sake of such experiences" (Zuckerman, 1979). It is postulated to be a biologically based personality dimension with high sensation seekers identified as those who actively seek varied, novel or complex sensations or experiences. High sensation seekers appraise physical and social risk as less and anticipate arousal as more positive than low sensation seekers (Zuckerman, 1984). During the past years, many studies conducted in different parts of the world have accumulated a rich research database that generally validates the concept of SS and demonstrates its usefulness as an important research tool in both the basic as well as applied areas of psychobiology (Zuckerman et al, 1984). It is, however, rather surprising not to find any published literature from India utilizing the concept of SS and its applications. To speculate, it may be that the concept has not caught the attention of Indian researchers so far, probably because it might have been considered too ethnocentric - since sensation seeking is influenced by ethnicity, nationality and sociocultural background (Galizio & Stein, 1983).

DESCRIPTION OF THE SCALE

The original sensation seeking scale, form V (SSS-V; Zuckerman et al, 1978) is a 40-item, forced choice inventory where each represents a tendency towards sensation seeking propensity and has two statements (marked A and B) indicating higher (scored as one) or lower (scored as zero) sensation seeking. For example, the item 1 in the original scale has the following two statements (choices):

A. I like "wild" uninhibited parties.

B. I prefer quiet parties with good conversation.

The subject is asked to tick the choice that best suits his/her liking or dispositions. Based on the responses, a total score is constructed that may range from 0 through 40. Greater the score, higher is the sensation seeking. Along with this Total Sensation Seeking score (TSS), the SSS also yields scores for its four sub-scales that were generated by cross-national factor analyses. Each sub-scale has 10 items in it, to make up the total of 40. These sub-scales are as follows:

1. **Thrill and Adventure Seeking (TAS):** contains items expressing desires to engage in sports or activities involving some physical danger or risk-taking (such as mountain climbing, speeding in a car, etc.)

2. **Experience Seeking (ES):** consists of items describing the desire to seek new experiences through the mind and senses by living in a nonconforming life style with unconventional friends and through travel.

3. **Boredom susceptibility (BS):** items indicate an aversion for repetitive experience of any kind, routine work, or even dull or predictable people. Other items indicate a restless reaction when things are unchanging.

4. **Disinhibition (DIS):** comprises of items describing the need to disinhibit one's behavior in the social sphere by drinking, partying and seeking variety in sexual partners.

Although SSS form V is well standardized and is widely used, it has some items that are not suitable for the average middle-class Indian situation in terms of language, content, context or life situation (for example, preference for "wild" parties, "earthy body smells", "swingers" etc.)

AIMS AND OBJECTIVES

The aim of this study was to develop an Indian adaptation of SSS form V (Zuckerman et al, 1978). The specific objectives included adaptation, establishing reliability and validity, and developing norms for a defined population segment.

MATERIAL AND METHOD

The study was conducted at the Department of Psychiatry, Postgraduate Institute of Medical Education & Research (PGIMER), Chandigarh. The adaptation of the scale was done through the following phases:

Phase I: The original SSS form V was distributed to twenty professional colleagues (from psychiatry and related behavioral sciences like Sociology, Clinical Psychology and Social Psychology) in PGIMER, Chandigarh and Punjab University, regarding opinion on face validity and applicability of the scale in an Indian situation. Suggestions were sought with respect to the suitability, comprehensibility and relevance of existing items in the Indian population. Suggestions were also sought regarding modifications, deletion or addition of individual items. All

the suggestions were compiled and thoroughly discussed among authors to arrive at a consensus. On the basis of these discussions and deliberations, the items were duly modified, in which seven items were changed and a few more were paraphrased to make the language more easily comprehensible.

Phase II: The modified scale was then administered to twenty postgraduate students of PGIMER twice at an interval of 6 weeks. The data obtained served as first try-out and also as a measure of test-retest reliability. The Spearman rank-order correlation test as well as Student's paired 't' test were applied on the test and re-test scores of the twenty subjects. The correlation coefficient R was 0.86 ($p < 0.001$) and the 't' value was 0.9 (not significant). Thus, both these tests established high test-retest reliability for the modified SSS.

Phase III: The scale was administered to: (a) 30 male opiate addicts (diagnosed according to DSM-III criteria for opioid dependence, APA, 1980) aged between 18 to 35 years with at least 10 years of formal schooling, attending the Drug Deaddiction and Treatment Centre (DDTC) at the Department of Psychiatry, PGIMER, Chandigarh, and (b) an equal number of non-drug abusers, group-matched on sociodemographic factors to serve as control group. The details of the samples and procedures have been described in another paper (Basu, Varma & Malhotra, "The sensation seeker who is also alienated: towards a new hypothesis for genesis of opiate addiction", submitted for publication). The data thus generated were analyzed to work out the internal consistency and discriminant validity.

Phase IV: Norms were established for a defined sub-section of the general population, i.e. males aged between 18-35 years with at least 10 years of formal schooling. For this purpose, 120 such subjects were contacted personally (by DB) and were asked to fill up the test proforma after the purpose of the study was fully explained to them, and the points concerning anonymity, confidentiality and safety were duly emphasized. Only co-operative subjects were included. Volunteers were not asked for, since volunteering for experiments has been shown to be associated with high sensation seeking (Zuckerman et al, 1967). Care was taken to contact people from all walks of life such as from different technical institutes, colleges, university, offices and at home, including people who were unemployed at the time of the study and people engaged in private jobs like business and agriculture. They were asked to fill up a composite test proforma consisting of socio-demographic profile, personal drug use data and the modified SSS. Sixteen subjects were found to score positive on the "lie items" of the drug use questionnaire (Smart et al, 1980), and they were excluded from further analyses. Norms were derived from the data on 104 subjects.

RESULTS

The test-retest reliability exercise was carried out in Phase II of the study and the results have already been mentioned.

Table 1
Intercorrelations between total and subscale scores of modified SSS in the sample of opiate addicts ($n=30$).

	TSS	TAS	ES	BS
TAS	0.67 [*]			
ES	0.42 [*]	0.11		
BS	0.46 ^{**}	0.33	-0.04	
DIS	0.58 ^{**}	0.15	0.11	0.19

Values for tables 1 and 2 represent Pearson correlation coefficients. For abbreviations, see text.

* $p < 0.05$, ** $p < 0.01$, $df = 28$

Table 2
Intercorrelations between total and subscale scores of modified SSS in the control group ($n=30$).

	TSS	TAS	ES	BS
TAS	0.66 ^{**}			
ES	0.76 ^{**}	0.40 [*]		
BS	0.56 ^{**}	0.23	0.31	
DIS	0.62 ^{**}	0.05	0.32	0.42 [*]

Table 3
Scores of SSS and its subscales in opiate addict (A) and control (C) groups.

	A ($n=30$) Mean (SD)	C ($n=30$) Mean (SD)	t' value
Total Sensation Seeking score (TSS)	24.03 (3.65)	16.77 (4.16)	7.26 ^{***}
Subscale scores:			
1. Thrill & Adventure Seeking (TAS)	7.16 (1.96)	5.67 (1.65)	3.23 ^{**}
2. Experience seeking (ES)	6.70 (1.23)	4.27 (1.57)	6.71 ^{***}
3. Boredom susceptibility (BS)	3.16 (1.17)	2.90 (1.12)	0.88
4. Deinhibition (DIS)	7.00 (1.68)	3.93 (1.68)	7.06 ^{***}

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, $df = 58$

Internal Consistency: This was tested by calculating scale-subscale and inter-subscale correlations of the test scores in the opiate addict and the normal control samples, using Pearson's product-moment correlation. The results are shown in Tables 1 and 2.

Both the tables indicate that there was high correlation between scale and subscale scores, while there was generally poor inter-subscale correlation. Both these facts point towards the fair degree of internal consistency in the scale-subscale structure.

Validity: Discriminant validity of the modified SSS was tested. Since there exists strong research evidence linking higher SS with psychoactive substance use (Craig, 1982; Basu, 1989; Pedersen, 1991), this was used testing the discriminant validity of the modified SSS. Table 3 depicts the SS scores of the opiate addicts vis-a-vis the control group.

The opiate addicts were seen to score significantly higher on total sensation seeking as well as the subscales (except one, boredom susceptibility) as compared to the control group.

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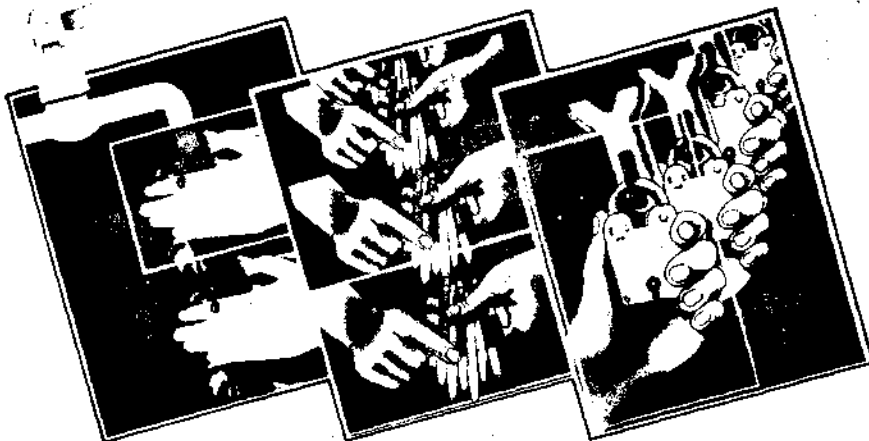


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Table 4

Distribution of scores on modified SSS and its subscales in the opiate addict group between single drug users and polydrug users.

	Single Drug Users (n=11)	Polydrug Users (n=19)	χ^2 value.
TSS	21.73 (2.53)	24.58 (2.16)	2.11
TAS	6.91 (1.37)	7.42 (1.81)	0.70
ES	6.36 (1.54)	6.89 (1.32)	1.14
BS	2.73 (0.71)	3.42 (0.98)	1.00
DIS	6.27 (1.11)	7.32 (1.21)	1.79

$p < 0.05$, $df = 28$
Standard deviation given in parentheses

Table 5

Distribution of scores on modified SSS and its subscales in the non-users and users (tobacco smokers and/or social drinkers) in the control group.

	Non-users (n=18) Mean (S.D.)	Users (n=12) Mean (S.D.)	χ^2 value.
TSS	15.89 (3.01)	18.08 (3.11)	1.43
TAS	5.28 (1.82)	6.25 (1.99)	1.63
ES	4.17 (0.89)	4.42 (1.02)	0.42
BS	2.72 (0.76)	3.17 (0.91)	1.08
DIS	3.38 (1.65)	4.67 (1.32)	2.45

$p < 0.05$, $df = 28$

Table 6

Distribution of scores on modified SSS and its subscales in the non-users and users (tobacco smokers and/or social drinkers) in the general population.

	Non-users (n=71) Mean (S.D.)	Users (n=33) Mean (S.D.)	χ^2 value.
TSS	14.11 (2.92)	15.88 (4.85)	2.43
TAS	5.45 (3.02)	5.53 (1.56)	0.02
ES	4.98 (3.92)	5.48 (3.58)	0.43
BS	2.04 (1.52)	2.30 (1.06)	0.93
DIS	3.38 (3.83)	3.58 (1.87)	0.30

$p < 0.05$, $df = 102$

Table 7

Normative data on scores of modified SSS and its subscales (n=104)

	Mean	S.D.
TSS	14.85	3.75
Subscales:		
TAS	5.00	1.43
ES	4.37	1.49
BS	2.01	0.97
DIS	3.15	1.80

These data are developed on males residing in Chandigarh, U.T., aged 18-35 years, with atleast ten years of formal schooling.

Further discriminant validity exercises were carried out in each of the three groups, i.e. opiate addicts, control group and the general population. In the opiate group, polydrug users generally scored higher on sensation seeking than the single opiate users, as shown in Table 4.

This similar trend linking SS with substance use was seen to be maintained when tobacco smokers and social drinkers were compared to non-users on SSS, either in the control group (Table 5), or in the general population (Table 6), though the differences did not always reach statistical significance.

Norms: Table 7 presents the normative data on modified SSS and its subscales. It must be emphasized, as has already been mentioned earlier, that these are the norms for a particularly defined sub-section of the general population (with age, sex and educational level specifications).

The mean TSS (Total Sensation Seeking score) was 14.65 with standard deviation of 3.75.

DISCUSSION

The development of the concept of SS and the instrument to measure it has largely been the product of research conducted by Marvin Zuckerman and his associates at the University of Delaware, Newark, USA. Since the first published version of SSS (Zuckerman et al, 1964) there was further refinement of the scale for the next 15 years, until the present Form V was developed based on factor analyses of Form IV using a large heterogeneous sample of English twins of both sexes. Factor analyses in the English samples yielded factors highly similar to those found in the American factor analyses. On the basis of the cross-sex and cross-national similarities in item loadings, the new form V was constructed (Zuckerman et al, 1978).

SS has been related to various psychological traits, cognitive and perceptual styles, and different types of experience, such as experience with drugs, sex, alcohol, smoking, food preferences, design preferences, and volunteering for unusual activities and experiments (Neary, 1976; Kohn & Coulas, 1985; Kern et al, 1986; Von Knorring et al, 1987; Pedersen, 1991). Recent studies have shown a strong genetic determination, and there has been replicated research showing association between SS and certain neurophysiological parameters (eg. electrodermal orienting response and cortical reducing response) and biochemical variables (e.g., platelet mono-amine oxidase activity). In clinical psychiatry, the vast majority of research has been on the relationship between SS and psychoactive substance abuse (Zuckerman, 1987). However, there are reports regarding SS and hypomania (Marvel & Hartmann, 1986) and SS and pathological gambling (Anderson & Brown, 1984) as well.

The aim of the present study was to suitably modify the scale for adaptation to the Indian situation. It was not desirable to disturb or distort the basic structure of the scale. Hence, the number of items and their relative position in the scale along with the direction of scoring were all kept constant. Modifications took either of the two forms; in some, the language was made more comprehensible, translating colloquial American English into more plain and explicit simple English. In some other cases, where the content of the items was alien to the usual sociocultural background of an average Indian, the items

were replaced with new items tapping the same dimension but whose content reflected our familiar sociocultural mores. For example, item number 17 in the original scale was regarding the liking (or dislike) for "surf-board riding", a sport not at all familiar to most Indians. Since this was concerned about the TAS (thrill and adventure seeking) dimension of the scale, the modified version intended to tap the same dimension by replacing it with an item expressing liking (or dislike) for "riding a fast, untamed horse". Similarly, "swingers" in item 12 in the original scale was replaced by "sexually promiscuous people" in the modified scale.

The results show that both test-retest reliability and internal consistency measures of the modified SSS are satisfactory. Tables 3 through 6 are concerned with establishing discriminant validity of the scale. The guiding hypotheses here were that, firstly, opiate addicts would be higher sensation seekers than non-opiate users, as has been reported by earlier studies (eg: Platt, 1975; Platt & Labate, 1976; Kern et al., 1986), and, secondly, other substance use (not abuse or dependence will also be related to sensation seeking to a lesser extent (Galizio & Stein, 1983; Pedersen, 1991). The first part of the hypotheses was verified in the present study too (Table 3). Even in the opiate addict sample, polydrug users were found to be higher sensation seekers than single drug (only opiate) users in the total sensation seeking score (Table 4). When tobacco use and/or social drinking was focussed upon in the control group and in the general population (Tables 5 and 6 respectively), the trend was again clear; the users tended to score higher on sensation seeking than the non-users, though the differences did not reach statistical significance always. Thus, the second part of the hypotheses was also verified. To this extent, the modified SSS can be said to possess discriminant validity.

It may be expected that this scale will find larger use in Indian studies now. The next step towards further Indianisation of the scale, of course, will be to develop its translated versions in the local vernaculars. Future work should progress in this direction.

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