The Relationship between Boredom Proneness and Sensation Seeking among Adolescent and Adult Former Drug Users

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***Abstract*—** Boredom has been shown to be associated with a variety of untoward individual subjective feelings including worthlessness, having nothing to do, feeling that time is going slowly, dissatisfaction, hopelessness, fretfulness, stress and feeling trapped. These feelings can be caused by situations outside the individual that are repetitive or unstimulating or by the tendency of the individual to find ordinary situations boring. This condition in individuals is thought to be related to maladaptive sensation-seeking behavior such as drug abuse as a form of fulfillment of the need for stimulation through novel and intense stimulus. This present study attempted to examine the relationship between boredom proneness and sensation-seeking among adolescent and adult former drug users. Participants in this study were 68 males (32 adolescents 16–25 years old and 36 adults 30–59 years old), collect through non-probability sampling. Participants were former drug users who were in rehabilitation at Balai Besar Rehabilitasi Badan Narkotika Nasional, Indonesia. Using quantitative research and a correlational research strategy, this study found a positive and significant relationship between boredom proneness and sensation-seeking among former drug users (r total = 0.248, p = 0.021, significant with level 0.05 one-tailed). Correlations show a significant relationship among adolescent participants (r = 0.371, p = 0.018, significant in level 0.05 one-tailed) but no significant relationship among adult participants (r = 0.177, p = 0.151, coefficient value is not significant in level 0.05 one-tailed). Our major conclusion is that a higher level of boredom proneness is associated with higher levels of sensation-seeking behavior and vice versa.

Keywords: Boredom Proneness, Sensation-Seeking, Former Drug Users

Introduction

In 2009, according to the national narcotics agency Badan Narkotika Nasional (BNN), the prevalence of drug abuse in Indonesia was 1.9% among Indonesians 10–59 years old, totaling about 3.6 million people. In 2010, the prevalence increased to 2.21 percent, totaling 4.02 million people. This figure increased further in 2011 to 2.8 percent or about 5 million people (Kistyarini, 2011). By 2017, BNN revealed that almost 6 million people in Indonesia exhibited dependence on drugs (Mudassir, 2017).

Zuckerman (2007) explains that there are three types of motivation that can encourage individuals to use prohibited substances. These motivations are curiosity, pleasure, and pain relief. Zuckerman (2007) also explains that curiosity and pleasure have associations with what is called sensation-seeking behavior. This was confirmed previously by Satinder and Black (1984) in their research on 48 high school and college students in Canada who were cannabis users but non-users of other prohibited substances. That research revealed that the use of marijuana, a prohibited substance in Canada, was related to the individuals' orientation toward sensation-seeking. The result of this research indicated that drug abuse in general is related to orientation toward sensation-seeking.

Zuckerman (2007) also mentions that drug use is not the only maladaptive sensation-seeking behavior; other examples include driving at high speeds and engaging in casual sex. Zuckerman (1994) also defines sensation-seeking as the tendency to seek novel, varied, complex, and intense sensations and experiences and the willingness to take physical, social, legal or financial risks for the sake of such experiences. In addition, Arnett (1994), who also explored the meaning of sensation-seeking behavior, defined sensation-seeking as the predisposition or potential to looking for sensation, which may be expressed in many ways depending on the individual's tendencies and especially on how the individual's social environment directs, forms and emphasizes that tendency.

Samuels and Samuels (1974) uncovered various factors that can encourage adolescents to use narcotics. According to their research, which was conducted among 37 women and men in rehabilitation centers in America who had used narcotics in the past, the perception that one's life is boring is one of the motives for individuals to use narcotics. Boredom, in fact, was the biggest contributor to drug abuse as it was reported by 73.6% of all participants. Farmer and Sundberg (1986) explained boredom as a general affective reaction felt by an individual, indicated by a lack of interest in one's surroundings; hence it can also manifest as a feeling of sadness. Martin, Sadlo and Stew (2006) reported that boredom can be caused by external factors (called the state of boredom) or by internal factors (called the trait of boredom or boredom proneness). Boredom as a trait or boredom proneness was defined by Farmer and Sunberg (1986) as an individual's tendency to feel bored caused by internal factors of the individual, such as an inability to entertain oneself and a failure to get sufficient external stimulation in normal conditions, which eventually becomes a chronic tendency toward boredom.

Previous studies, many of which are cited above, have confirmed that drug abuse is one aspect of sensation-seeking behavior (Zuckerman, 2007) and that it can be motivated by boredom (Samuels & Samuels, 1974). Additionally, Boden (2009) in his review of boredom proneness and impulsive behavior proposes boredom proneness as a factor that may be related to sensation-seeking behavior. Boden (2009) also explains that the phenomenon of boredom is usually followed by maladaptive sensation-seeking behavior.

Working from this foundation, the present researcher designed this study to clarify the relationship between boredom proneness and sensation seeking among male adolescent and adult former drug users in BNN Rehabilitation Center. The study was limited to male participants in accordance with a previous report by Arnett (1994) that males show higher levels of sensation-seeking behavior compared to females. The choice to include both adolescents and adults was in accordance with the results of Experiment 2 by Arnett (1994) which indicated that adolescents had more significant sensation-seeking tendencies than did members of an adult population sample. Therefore, the main research questions are as follows:

RQ_1: "Is there a positive and significant relationship between boredom proneness and sensation seeking among former drug users?"

RQ_2: "Is there a positive and significant relationship between boredom proneness and sensation seeking among adolescent former drug users?"

RQ_3: "Is there a positive and significant relationship between boredom proneness and sensation seeking among adult former drug users?"

RQ_4: "Is there a significant difference in mean score for boredom proneness between adolescent and adult former drug users?"

RQ_5: "Is there a significant difference in mean score for sensation seeking between adolescent and adult former drug users?"

A "positive" relation means that as boredom proneness increases, so does sensation-seeking, and vice versa.

In the present study sensation seeking is measured according to the Arnett Inventory of Sensation-Seeking (AISS), and its correlation with boredom proneness is assessed. Boredom proneness is measured according to the Short Boredom Proneness Scale (SBPS) adapted by Struk, Carriere, Cheyne and Danckert (2017) from the Boredom Proneness Scale (BPS) which was developed by Farmer and Sundberg (1986). This research is important for efforts to learn more about the factors that may affect the relation between sensation seeking and drug abuse. Our findings are expected to be useful in formulating solutions and prevention or intervention methods to stop maladaptive sensation-seeking behavior and in making more people aware of the dangers of the trait of boredom so they can anticipate and overcome boredom in any situation.

Theory

Boredom Proneness

Martin, Sadlo and Stew (2006) proposed that boredom is an individual subjective feeling or impression of worthlessness, having nothing to do, feeling that time is passing slowly, dissatisfaction, hopelessness, fretfulness, stress and feeling trapped. Traditionally, as reported by Fisher (1993), boredom is considered an affective reaction caused by an external driving factor, namely, an external situation that is repetitive (e.g., a monotonous stimulus that is repeated excessively) or unstimulating (very little stimulus from the environment). Boredom as a reaction to one's external drive, according to Spaeth, Wichold and Silbereisen (2015), is called a state of boredom. This is different from the type of boredom that Farmer and Sundberg (1986) identified as a reaction to one's internal drive, which indicates that the individual has a tendency to find most situations boring based on internal factors. Boredom as internal drive, according to Spaeth, Weichold, and Silbereisen (2015), is also called the trait of boredom or boredom proneness.

The same distinction between state and trait boredom is also discussed by Martin, Sadlo, and Stew (2006) who posited that boredom can be caused by external (state of boredom) or

internal (trait of boredom or boredom proneness) factors. Boredom as a state is boredom that appears as a reaction to one's situation, for instance, feeling bored at work. An external factor comes from outside an individual, and the resulting boredom is considered a reaction to one's environment. Boredom as a trait, on the other hand, is an individual's tendency to feel bored in almost all situations, in response to internal factors from inside the individual. This is the meaning of boredom proneness. In this research, the kind of boredom that will be researched is boredom proneness as a trait.

More comprehensively, boredom proneness is defined by Boden (2009) as a personality trait that has been linked to cognitive, attentional, and neuropsychological phenomena that are associated with an inability or a disinclination to focus attention on a task in the environment. Farmer and Sunberg (1986), who researched boredom proneness, explained that boredom proneness is an individual's tendency to get bored, related to internal factors such as the inability to entertain oneself or to get sufficient stimulation from the external world under normal conditions.

Sensation Seeking

The concept of sensation-seeking was popularized by Zuckerman (1994), who defines sensation-seeking as the tendency to seek novel, varied, complex, and intense sensations and experiences and the willingness to take physical, social, legal or financial risks for the sake of such experiences. In addition, sensation-seeking is also defined by Arnett (1994) as a predisposition or potential to look for sensation which may be expressed in many ways depend on the individual's tendencies and especially on how the social environment directs, forms and emphasizes those tendencies.

Arnett (1994) proposed that sensation-seeking has two components related to the individual's need for novelty and intensity. This is different from Zuckerman's concept, which focuses on the components of novelty and complexity. Wohlwill (1984, in Arnett, 1994) reveals that, as a companion to novelty, the intensity component is a better means of understanding sensation-seeking than complexity is. Furthermore, Arnett (1994) also reveals that sensation-seeking applies especially to risky behavior such as driving dangerously (Zuckerman & Neeb; Arnett, 1992), engaging in casual sex (Zuckerman, Tushup & Finner, 1976), using alcohol (Schwarz, Burkhart, & Green, 1978), and abusing drugs (Satinder & Black, 1984). In this research, we focus on the type of sensation-seeking that motivates drug abuse. Satinder and Black (1984) in their research have investigated the abuse of marijuana and its relation to individuals' orientation toward sensation-seeking. Their research, which was conducted with 48 students who were cannabis users but non-users of other drugs, reported that risky behavior in the form of drug abuse was related to orientation toward sensation-seeking. In general, this research also supports the findings of Zuckerman (in Satinder & Black, 1984) that male and female students with higher scores for sensation-seeking also reported higher rates of drug abuse.

Boredom Proneness, Sensation Seeking and Drug Abuse

The phenomenon of drug use might be started by factors related to the individual's traits, especially a tendency to find most situations boring. The tendency to be bored makes an individual feel bored easily in conditions that offer low levels of stimulus, or even in conditions that offer a great deal of stimulus, bringing the individual to a saturation point. Furthermore, this tendency can cause individuals to feel a need for uncommon levels of stimulus, or for stimulus of a certain intensity, in order to feel stimulation at a normal level. This can encourage the individual to engage in sensation-seeking behavior to get the stimulus they need. According to this explanation, sensation-seeking was considered by Arnett (1994) to involve two components of the individual's orientation toward stimulation: the need for novelty and the need for intensity.

It is known that sensation-seeking can appear in many forms of behavior, including, as revealed by Arnett (1994), driving dangerously (Zuckerman & Neeb, 1980; Arnett, 1992), engaging in casual sex (Zuckerman, Tushup, & Finner, 1976), using alcohol (Schwarz, Burkhart, & Green, 1978), and abusing drugs (Satinder & Black, 1984). With regard to drug abuse, however, Kalivas (2002, cited in Zuckerman, 2007) has argued that all abused drugs, including nicotine, opioids, ethanol, cocaine, and amphetamines, can produce a pleasant effect through the delivery of the neurotransmitter dopamine in the mesolimbic pathways. Zuckerman (2007) has explained that other kinds of sensation-seeking activities probably stimulate the same "pathways to pleasure," but drugs provide a fast and intense sensation in their initial effects on the brain. In fact, suppressant drugs like alcohol and heroin also produce this effect initially before their physiological suppressant effects become noticeable. This is the reason why alcoholics reported that the initial effect of alcohol is pleasant or refer to is as "getting high" or "getting one's kicks." The continuing need for a pleasant experience encourages users to consume drugs over the long term. In addition, users try to fulfill the need for pleasant experiences by increasing their dose until they become victims of drug addiction. Therefore, it can be said that people start to use drugs for pleasure but eventually come to use them for pain relief or to feel normal. Sensation seekers tend to seek out the effects of the initial stage of drug abuse in order to satisfy their need for novel experiences, yet eventually some of them will develop drug abuse or drug addiction.

Method

Hypothesis

H_a1: "There is a positive and significant relationship between boredom proneness and sensation seeking among former drug users."

H_a2: "There is a positive and significant relationship between boredom proneness and sensation seeking among adolescent former drug users."

H_a3: "There is a positive and significant relationship between boredom proneness and sensation seeking among adult former drug users."

H_a4: "There is a significant difference in mean score for boredom proneness between adolescent and adult former drug users."

H_a5: "There is a significant difference in mean score for sensation-seeking between adolescent and adult former drug users."

Participants and Research Design

Participants in this research were former drug users who were undergoing rehabilitation in BNN Rehabilitation Center. The participants were 68 male patients, 32 adolescents (16–25 years old) and 36 adults (30–59 years old), collected by means of non-probability sampling. This research had a non-experimental design and was quantitative in nature according to the correlational research strategy. In the process, out of consideration for ethical issues related to this research, the researcher arranged for permit documents prior to conducting this research and received all required permissions. During the research process, the researcher was accompanied at all times by a supervisor from the BNN. According to ethical research procedures, those participants who did not have ID (below 17 years old) were considered underage and were not allowed to participate in this research even if they were allowed to participate by the BNN's supervisor.

Measurement Instrument Research

Boredom proneness was measured using the SBPS adapted by Struk, Carriere, Cheyne, dan Danckert (2017) from the BPS developed by Farmer and Sundberg (1986). The SBPS measuring instrument has demonstrated its unidementionality and the scores have provided accurate measurements of boredom with high reliability and validity. Compared to the original BPS, the SBPS has a better internal consistency score and construct validity. Sensation-seeking was then measured using the AISS which was adapted by Arnett (1994) from the Sensation-Seeking Scale (SSS) Form V which was developed by Zuckerman (1979). The adaptation was done by Arnett (1994) as his study found that the complexity component in the SSS Form V was difficult to incorporate into sensation-seeking theory. The component of novelty, however, was maintained. In the AISS (20 items), therefore, Arnett used Intensity (10 items) and Novelty (10 items) as more reliable components to measure sensation-seeking. Arnett (1994) explained that the AISS measurement consisted of two scales, Intensity and Novelty. Intensity was described as the individual's need for intensity of stimulation, whereas Novelty was described as the individual's need for new stimulation.

Readability tests for the SBPS and the AISS were conducted for 10 participants who matched the research sample's characteristics, namely, former drug users undergoing rehabilitation in BNN's Rehabilitation Center. The participants had also agreed to provide informed consent in accordance with ethical research principles. SBPS and AISS measurement was also conducted via a questionnaire in the form of a booklet. After the questionnaires were completed by the participants and the data were acquired, reliability and validity tests on the measurements were conducted using Statistical Package for Social Science (SPSS) software.

Reliability test was performed on 32 participants, all of whom were former drug users who matched the research sample's characteristics. The reliability test for the SBPS measurement resulted in a Cronbach's α value of 0.741 for the entire measurement scale. According to Kerlinger and Lee (2000), a measurement scale is reliable when the α coefficient value is

above 0.5 or 0.6. Thus, it can be concluded that the SBPS measurement is reliable, which indicates that the items in the measurement are homogenous and provide consistent results. Furthermore, according to Anastasi and Urbina (1997), a measurement is valid when the coefficient of correlation shows a significant result with $p < 0.05$.

A validity test of the SBPS measurement was conducted using contrasted group validity, involving 32 participants who were former drug users and 32 participants who were non-drug users who matched the research sample's characteristics. The result was a significance score of 0.011 ($p < 0.05$), indicating that SBPS is a valid measurement for boredom proneness. In this research, SBPS was adapted into a Bahasa Indonesia version through a process of expert judgment, legibility testing, reliability and validity testing, and trial of the measuring instrument. The measuring instrument adapted into Bahasa Indonesia used a six-point Likert scale (ranging from "strongly disagree" to "strongly agree") with steps taken to decrease the number of participants who answered in the neutral range of the scale which was in the middle. Boredom proneness scores were then obtained by summing scores in each item, from item number 1 to 8 (total 8 items).

The validity test and reliability test for AISS measurement were conducted using SPSS software on 32 participants, all of whom were former drug users matching the research sample's characteristic. The reliability test for AISS measurement resulted in a Cronbach's α value of 0.654 for the entire measurement scale. According to Kerlinger and Lee (2000), a measurement scale is reliable when the α coefficient value is above 0.5 or 0.6. Thus, it can be concluded that the AISS measurement is reliable, which indicates that the items in the measurement are homogenous and provide consistent results.

The validity test for AISS measurement was then conducted using the corrected item-total correlation method in SPSS. According to Aiken and Groth-Marnat (2006), an item is valid when it has a minimum correlation index of ≥ 0.2, whereas an item with $r < 0.2$ is not valid and should be excluded when collecting the data. The validity test of the AISS using the corrected item-total correlation method showed that seven items in the measurement tool were not valid as their correlation index scores were < 0.2. The non-valid items were items number 2, 3, 5, 10, 13, 14, and 17. As the test showed that some items in the measurement tool were not valid, revisions of the items that scored <0.2 were made as follows:

Table. Revised Item

Item Number	Correlation Index	Item	Revised Item
2	−0.243	*Pada saat air kolam sangat dingin, saya memilih untuk tidak berenang meskipun hari itu panas. (Intensity)* When the water is very cold, I prefer not to swim even if it is a hot day	*Saya memilih untuk tidak berenang di kolam yang airnya sangat dingin meskipun hari itu panas* I prefer not to swim when the water is very cold, even if it is a hot day

3	0.138	*Jika saya harus mengantre di antrean yang panjang, saya cenderung sabar untuk mengantre (Novelty)* If I have to wait in a long line, I'm usually patient about it	*Saya cenderung sabar menunggu di antrean yang panjang* I'm usually patient if I have to wait in a long line
5	−0.03	*Saat berpergian, saya fikir lebih baik untuk membuat sedikit rencana dan membiarkan hal apapun yang akan terjadi (Novelty)* When taking a trip, I think it is best to make as few plans as possible and just take it as it comes	*Saat berpergian, saya fikir lebih baik untuk tidak membuat banyak rencana dan membiarkan segala suatu terjadi secara spontan* When taking a trip, I think it's better not to make many plans and let things happen spontaneously
10	0.178	*Saya tidak akan pernah mau untuk berjudi dengan uang walaupun saya mampu. (Intensity)* I would never like to gamble with money, even if I could afford it	*Saya tidak akan pernah mau untuk berjudi dengan uang, walaupun saya mampu.* I would never like to gamble sith money, even if I could afford it
13	0.113	*Saya tidak suka makanan yang sangat panas dan pedas (Novelty)* I don’t like extremely hot and spicy foods	*Saya tidak suka makanan yang pedas pada "level" yang sangat tinggi* I don't like spicy food at very high "levels"
14	0.057	*Pada umumnya, saya bekerja lebih baik saat di bawah tekanan. (Intensity)* In general, I work better when I’m under pressure	*Pada umumnya, saya bekerja lebih baik pada saat berada dibawah tekanan* In general, I work better when I’m under pressure

17	−0.111	Saya pikir lebih baik memesan makanan yang saya kenali saat makan di restoran *(Novelty)* I think it's best to order something familiar when eating in a restaurant	*Saya pikir lebih baik memesan makanan yang sering saya makan di restoran.* I think it's better to order food that I often eat in restaurants.

In this research, AISS was also adapted into a Bahasa version through an expert judgment process, legibility testing, reliability and validity testing, and measuring instrument trials. This measuring instrument used a four-point Likert scale (ranging from "describes me very well" to "does not describe me well at all") modeled after the AISS measuring instrument in English (Arnett, 1994). A sensation-seeking score was then obtained by summing the scores of each item, from item number 1 to 20 (total 20 items). After the adaptation process, the measuring instrument was translated into Bahasa, and after conducting legibility, reliability and validation tests on the measuring instrument, the researcher printed the measuring instrument in the form of a questionnaire. The researcher then conducted quantitative data collecting by deploying the questionnaire directly to participants.

Procedure

The research was started by giving the measuring instrument of SBPS and the measuring instrument of AISS together in one questionnaire in the form of a booklet. The researcher informed each participant that this research was going to observe "adolescents" and adults' behavior' and asked participants to sign informed consent if they were willing to become participants. Furthermore, the researcher instructed the participants to fill in their personal data and to answer each item on the questionnaire. After the questionnaire was complete, the researcher conducted a de-briefing with each participant and told them about the real objective of the research. Next, the data obtained from the questionnaires were processed statistically to examine the hypotheses. Processing the data included scoring each questionnaire, then coding the data according to type of item (favorable/unfavorable) and analyzing the data using *SPSS*. The data processing methods used in this research were descriptive statistics, Pearson correlation to assess the relations between pairs of variables, and independent sample t-testing to find the significance of the mean difference in each measured variable between the two groups. This method was used to find the mean differences between adolescents and adults. Comparisons among more than two groups were performed using one-way analysis of variance (ANOVA).

Results

Participants' Demographics

The participants' demographic information was obtained from the personal data attached on the front page of the research questionnaire. Obtained personal data included gender, age and last occupation before entering the rehabilitation program. The results of the frequency measurement are shown in Table I.

Table I. Description of Participants' Demographics

Demographic Aspects		Number of Participants	(%)
Age	16–25	32	47.06
	30–59	36	52.94
	Total	68	100
Last Occupation	Student/College	10	14.71
	Working	47	69.11
	No occupation	11	16.18
	Total	68	100

It is known that the youngest participant was 17 years old and the oldest was 45 years old.

A. General Description of Participants Based on Duration of Drug Use

Table II. General Participants' Description Based on Duration of Drug Use

Demographic Aspects		Number of Participants	(%)
Duration of Drug Use	<1 year	3	4.41
	1–5 years	37	54.41
	6–10 years	14	20.59
	11–15 years	5	7.35
	16–20 years	6	8.82
	>20 years	3	4.41
	Total	68	100

The shortest duration of drug use was about four months and the longest was about 24 years. From the data, it can be concluded that almost all participants in this research were long-term drug users and that many might have undergone therapy more than once.

Data Analysis

This section presents the main result of the present research about the relation between boredom proneness and sensation seeking among adolescent and adult former drug users. We also provide a comparison of total scores for boredom proneness and sensation-seeking in certain groups categorized according to demographic data and narcotic use history which were obtained from the participants. Comparisons between the two groups were performed by independent sample t-test and comparisons between more than two groups used one-way ANOVA.

A. General Description of Boredom Proneness in Participants

Table III. General Description of Boredom Proneness Score in Participants

Score for Boredom Proneness	
N	68
Mean	24.79
Median	25.00

Mode	33
Standard Deviation	9.068
Skewness	−0.074

The lowest total score for boredom proneness among the participants was 8, while the highest was 42.

Table III A. Distribution of Total Score Boredom Proneness in Participants

Total Score	**Category**	**Number of Participants**	**(%)**
< 25	Low	32	47,1
≥ 25	High	36	52,9
Total		68	100

B. General Description of Sensation Seeking in Participants

Table IV. General Description of Sensation-Seeking Score in Participants

Score for Sensation Seeking	
N	68
Mean	51.57
Median	52.00
Mode	55
Standard Deviation	7.156
Skewness	0.142

The lowest total score for sensation seeking among the participants was 35 and the highest was 68.

Table IV A. Distribution of Total Score Sensation-Seeking in Participants

Total Score	**Category**	**Number of Participants**	**(%)**
< 52	Low	33	48,52
≥ 52	High	35	51,48
Total			100

C. General Description of Boredom Proneness and Sensation Seeking in Participants Based on Age Group Category

Table V. General Description of Boredom Proneness Based on Age Group Category

Dimension	**Mean Score Based on Age Group Category**		**F**	**Explanation**
	Adolescent	Adult		
Boredom Proneness	24.00	25.50	P = 0.500	Not Significant
			T = −0.678	

Table VI. General Description of Sensation-Seeking Based on Age Group Category

Dimension	**Mean Score Based on Age Group Category**		**F**	**Explanation**
	Adolescent	Adult		
1. Intensity	27.28	25.02	P = 0.054	Not Significant
			t = 1.966	
2. Novelty	25.84	25.16	P = 0.495	Not Significant
			T = 0.686	
Sensation-seeking (Total Mean)	53.12	50.19	P = 0.092	Not Significant
			t = 1.710	

Based on Tables V and VI, we can see that, in general, there are no significant differences in mean score for boredom proneness and either component of sensation seeking between adolescent and adult former drug users. In addition, the mean scores for total sensation seeking demonstrate that there is no significant difference in mean score for sensation seeking between adolescent and adult former drug users. The mean score for boredom proneness is lower in adolescents than in adults. The mean score for sensation seeking, on the other hand, is higher in adolescents and lower in adults.

D. The Relation Between Proneness and Sensation Seeking

The relation between boredom proneness and sensation seeking in participants was examined using a correlation strategy between total score for boredom proneness and total score for sensation seeking using the Pearson correlation method.

Table VII. Correlation Between Boredom Proneness and Sensation-Seeking in All Participants

			Sensation-Seeking		
			Total	**Intensity**	**Novelty**
Boredom Proneness		**Total**	0.248*	0.154	0.254*

* Significant at N=68 and p<0.05 (*one-tailed*)

As Table VII shows, the total correlation coefficient value (r) is 0.248 with p value = 0.021. That correlation value is significant with significance level set to 0.05 (one-tailed) with a positive correlation, hence $H_0$1 is rejected and H_a1 is accepted. Therefore, it can be concluded that there is a positive and significant relationship between boredom proneness and sensation seeking among former drug users. Higher boredom proneness is associated with higher sensation seeking, and vice versa.

Table VIII. Correlation Between Boredom Proneness and Sensation-Seeking in Adolescent Participants

			Sensation Seeking
			Total
Boredom Proneness		**Total**	0.371*

* Significant at N=68 and p<0.05 (*one-tailed*)

As Table VIII shows, adolescent participants have a correlation coefficient value (r) of 0.371 with p value = 0.018. That correlation value is significant with significance level set to 0.05 (one-tailed) and has a positive correlation, hence $H_0 2$ is rejected and $H_a 2$ is accepted. Thus it can be concluded that there is a positive and significant relationship between boredom proneness and sensation seeking among adolescent former drug users. This means that adolescent participants with high boredom proneness are more likely to engage in high sensation seeking, and vice versa.

Table IX. Correlation Between Boredom Proneness and Sensation-Seeking in Adult Participants

			Sensation Seeking
			Total
Boredom Proneness		**Total**	0.177

* Significant at N=68 and p<0.05 (*one tailed*)

As Table IX shows, adult participants have a correlation coefficient value (r) of 0.177 with p value = 0.151. That coefficient value is not significant with significant level set to 0.05 (one-tailed) even though it has a positive direction of correlation, hence $H_0 3$ cannot be rejected. Therefore, it can be concluded that there is no significant relation between boredom proneness and sensation seeking in adult former drug users.

Conclusion

Among former drug users, higher boredom proneness scores are associated with higher sensation seeking scores, and vice versa. This conclusion applies in adolescent participants, although among adult participants it appears that boredom proneness is not associated with sensation seeking or vice versa. Furthermore, we have observed that adolescent participants have lower levels of boredom proneness while adults have higher levels of boredom proneness. We have also concluded that adolescent participants have higher levels of sensation seeking while adults have lower levels of sensation seeking.

Added-Value

Among our participants, whom we categorized into adolescents and adults, a significant correlation was found only among adolescent participants and not among adults. Based on the results of our analysis, that probability is affected by the differences in development between adolescents and adults, such as those explained in the development theory of Arnett (2000), i.e., that between 18 and 25 years of age is the emerging adulthood period in which various exploration behaviors appear with regard to love, occupation, perspective and learning about life. In addition, Caldwell (1999, in Biolcati, 2017) also explains that, during development, adolescents tend to experience boredom, especially in their spare time, and that there is a complex relation between boredom and involvement in risky behavior, meaning that they tend to have high levels of sensation-seeking behavior. Thus, given the finding of this research that there is no significant relationship between boredom proneness and sensation-seeking in adult participants, we propose that sensation seeking is not a general characteristic of adults.

We also found no significant difference in the mean score for boredom proneness or sensation seeking between adolescents and adults. Based on our analysis, this could be because, even though participants were categorized into adults and adolescents, they actually represent the same characteristic in that they were all former drug users. Thus the difference between their mean scores is not significant owing to the age factor which is not affected, but there might be other factors that more strongly encourage individuals to use drugs and to consume them over long periods of time. This is in keeping with the theory proposed by Zuckerman (2007) that other kinds of sensation-seeking activities probably stimulate the same "pathways to pleasure," although drugs provide a fast and intense sensation in their initial effects on the brain. The need for such pleasure encourages users to consume drugs over a long period. Hence one might say that the addict starts using drugs for pleasure but ends up using them to avoid pain or to feel normal. Sensation seekers are likely to start using drugs in the initial phase due to their tendency toward seeking novel experiences, and some, but not all of them, will progress to abuse or dependence. As Zuckerman (2007) has shown, drug users will try to fulfill their need for pleasure by increasing the dose until they finally fall victim to drug addiction, at which point drugs are used to relieve pain and to feel normal. This pattern may apply regardless of age.

There were some limitations of this research. First, the measuring instrument for sensation-seeking, the AISS Bahasa Indonesia Version, contained seven invalid items among the original 20 items. Those items were numbers 2, 3, 5, 10, 13, 14, and 17. We think that those items were invalid because of cultural differences between Indonesia and the countries in which the assessment was originally developed. We also acknowledge that the AISS may be too simple and specific, hence it might not be able to describe sensation-seeking well. Additionally, this research was conducted among former drug users. In measuring both variables, participants have to recall their past experiences prior to rehabilitation, and there is a possibility that their memories might have been inaccurate. Another limitation was the fact that the responses from the participants might not provide a thorough insight into their experiences owing to the fact that the study design was non-experimental and based on a questionnaire.

Therefore, we suggest that, in adapting and translating the AISS for other cultures, researchers must be concerned not only with the meaning of the questions but also with the culture of the target population. Based on the present research, which was a retrospective study or observation of phenomena, situations, conditions and issues in the past, further research might be made more accurate by applying an experimental research design. By using an experimental research design it is expected that the measured variables would be more accurately depicted in the present situation. Additionally, an experimental research design may resolve the issue of the simplicity of the AISS.

Finally, we offer some practical suggestions for the benefit of society. First, parents should be able to recognize the behavior of children who begin to exhibit the trait of boredom, in order to anticipate possible maladaptive sensation-seeking behavior. Second, this research can be a reference for practical intervention such as that by the officials at the Drug Rehabilitation

Center. Intervention programs could be held in which former residents join current drug users residing in the rehabilitation center for activities that are challenging but still safe and positive. Such an intervention program should exist in order to satisfy the sensation-seeking needs of the residents and also to train current drug users to know how to fulfill this need through positive activities. Furthermore, this study is useful not only for drug users but also for the whole community, especially community members with high levels of boredom proneness and sensation-seeking behavior. Interventions aimed at teaching people how to satisfy these needs in a non- maladaptive manner can be useful for the general population as well. Counselors and psychologists who work on similar topics can also use this information in creating seminars or activities with materials on how to recognize early boredom proneness, tips and advice on preventing and overcoming boredom, tips and advice on overcoming the drive toward maladaptive sensation-seeking behavior and activities that can train individuals to adapt and channel their sensation-seeking impulses toward more positive activities.

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APPENDIX A

A.1. Reliability and Validity Test (SBPS)

A.1.1. Reliability Test Results from SBPS

Case Processing Summary

		N	%
Cases	Valid	32	50,0
	Excluded[a]	32	50,0
	Total	64	100,0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
,741	9

Item Statistics

	Mean	Std. Deviation	N
BPS1	4,3125	1,40132	32
BPS2	4,0000	1,45912	32
BPS3	4,3125	1,40132	32
BPS4	3,7188	1,46429	32
BPS5	3,8438	1,39375	32
BPS6	3,8125	1,35450	32
BPS7	3,0000	1,52400	32
BPS8	3,7500	1,48106	32
TOTAL1	30,7500	6,72981	32

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
BPS1	57,1875	157,899	,605	,710
BPS2	57,5000	161,742	,466	,721
BPS3	57,1875	169,770	,258	,740
BPS4	57,7813	157,531	,585	,710
BPS5	57,6563	155,781	,674	,704
BPS6	57,6875	155,190	,715	,701
BPS7	58,5000	163,226	,401	,727
BPS8	57,7500	163,484	,409	,726
TOTAL1	30,7500	45,290	1,000	,727

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
61,5000	181,161	13,45962	9

A.1.2. Validity Test Results from SBPS

Group Statistics

	Kelompok	N	Mean	Std. Deviation	Std. Error Mean
TOTAL1	Pengguna	32	30,7500	6,72981	1,18967
	Non Pengguna	32	25,8750	8,06326	1,42540

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
TOTAL1	Equal variances assumed	,948	,334	2,626	62	,011	4,87500	1,85663	1,16365	8,58635
	Equal variances not assumed			2,626	60,079	,011	4,87500	1,85663	1,16129	8,58871

A.2. Reliability and Validity Test (AISS)

A.2.1. Reliability Test Results from AISS

Case Processing Summary

		N	%
Cases	Valid	32	50,0
	Excluded[a]	32	50,0
	Total	64	100,0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
,654	21

Item Statistics

	Mean	Std. Deviation	N
SSnov1	3,0938	1,08834	32
SSnov3	3,0625	1,04534	32
SSnov5	2,5313	1,01550	32
SSnov7	2,3750	1,18458	32
SSnov9	1,5625	,87759	32
SSnov11	1,8125	,93109	32
SSnov13	2,1250	1,15703	32
SSnov15	2,1250	1,18458	32
SSnov17	3,4063	,94560	32
SSnov19	2,4375	1,34254	32
SSint2	2,0625	1,16224	32
SSint4	1,8438	1,11034	32
SSint6	2,0000	1,04727	32
SSint8	2,3438	1,15310	32
SSint10	2,0313	1,20441	32
SSint12	1,4063	,87471	32
SSint14	2,6250	1,15703	32
SSint16	3,1250	1,03954	32
SSint18	3,0625	1,07576	32
SSint20	2,9375	1,10534	32
TOTAL2	47,9688	6,84145	32

A.2.2. Validity Test Results from AISS

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
ss1	92,8438	177,297	,302	,640
ss3	92,8750	182,242	,138	,651
ss5	93,4063	187,023	-,030	,661
ss7	93,5625	178,641	,227	,645
ss9	94,3750	176,306	,435	,636
ss11	94,1250	174,306	,490	,631
ss13	93,8125	182,351	,113	,653
ss15	93,8125	178,931	,217	,645
ss17	92,5313	189,225	-,111	,665
ss19	93,5000	166,774	,538	,618
ss2	93,8750	193,726	-,243	,676
ss4	94,0938	172,991	,445	,630
ss6	93,9375	178,254	,281	,642
ss8	93,5938	174,314	,380	,634
ss10	93,9063	180,023	,178	,648
ss12	94,5313	175,934	,453	,635
ss14	93,3125	184,093	,057	,657
ss16	92,8125	173,060	,478	,630
ss18	92,8750	177,790	,288	,641
ss20	93,0000	177,742	,280	,642
Total2	47,9688	46,805	1,000	,517

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
95,9375	187,222	13,68290	21

APPENDIX B
General Description of Boredom Proneness and Sensation Seeking

B.1. General Description of Boredom Proneness

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
total skor BP	68	8	42	24,79	9,068
valid N	68				

BPrecode

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	rendah	32	47,1	47,1	47,1
	tinggi	36	52,9	52,9	100,0
	total	68	100,0	100,0	

B.2. General Description of Sensation Seeking

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
total skor SS	68	32	65	48,43	7,156
valid N	68				

SSrecode

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	rendah	31	45,6	45,6	45,6
	tinggi	37	54,4	54,4	100,0
	total	68	100,0	100,0	

APPENDIX C
Main Result of the Research

C.1. *Pearson* correlation between boredom proneness and sensation seeking

Correlations

		BP	SS
BP	Pearson Correlation	1	-,248*
	Sig. (1-tailed)		,021
	N	68	68
SS	Pearson Correlation	-,248*	1
	Sig. (1-tailed)	,021	
	N	68	68

*. Correlation is significant at the 0.05 level (1-tailed).

C.2. *Pearson* correlation between boredom proneness and sensation seeking (Adolescent)

Correlations

		BP	SS
BP	Pearson Correlation	1	-,371*
	Sig. (1-tailed)		,018
	N	32	32
SS	Pearson Correlation	-,371*	1
	Sig. (1-tailed)	,018	
	N	32	32

*. Correlation is significant at the 0.05 level (1-tailed).

C.3. *Pearson* correlation between boredom proneness and sensation seeking (Adult)

Correlations

		BP	SS
BP	Pearson Correlation	1	-,177
	Sig. (1-tailed)		,151
	N	36	36
SS	Pearson Correlation	-,177	1
	Sig. (1-tailed)	,151	
	N	36	36

C.4. *Pearson* correlation between boredom proneness and sensation seeking (Intensity Component)

Correlations

		BP	Intensity
BP	Pearson Correlation	1	-,154
	Sig. (1-tailed)		,104
	N	68	68
Intensity	Pearson Correlation	-,154	1
	Sig. (1-tailed)	,104	
	N	68	68

C.5. *Pearson* correlation between boredom proneness and sensation seeking (Novelty Component)

Correlations

		BP	Novelty
BP	Pearson Correlation	1	-,254*
	Sig. (1-tailed)		,018
	N	68	68
Novelty	Pearson Correlation	-,254*	1
	Sig. (1-tailed)	,018	
	N	68	68

*. Correlation is significant at the 0.05 level (1-tailed).

C.6. Mean score of boredom proneness based on age group

Group Statistics

	Kelompok	N	Mean	Std. Deviation	Std. Error Mean
BP	remaja	32	24,0000	9,42885	1,66680
	dewasa	36	25,5000	8,80746	1,46791

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
BP	Equal variances assumed	,047	,829	-,678	66	,500	-1,50000	2,21202	-5,91645	2,91645
	Equal variances not assumed			-,675	63,762	,502	-1,50000	2,22103	-5,93734	2,93734

C.7. Mean score of sensation seeking based on age group

Group Statistics

	Kelompok	N	Mean	Std. Deviation	Std. Error Mean
SS	remaja	32	46,8750	7,06993	1,24980
	dewasa	36	49,8056	7,04199	1,17367

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
SS	Equal variances assumed	,062	,803	-1,710	66	,092	-2,93056	1,71409	-6,35284	,49173
	Equal variances not assumed			-1,709	65,007	,092	-2,93056	1,71449	-6,35463	,49352

C.8. Mean score of all sensation seeking component based on age group

Group Statistics

	Kelompok	N	Mean	Std. Deviation	Std. Error Mean
Intensity	remaja	32	22,7188	5,05604	,89379
	dewasa	36	24,9722	4,39796	,73299
Novelty	remaja	32	24,1563	3,12234	,55196
	dewasa	36	24,8333	4,74191	,79032

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Intensity	Equal variances assumed	1,816	,182	-1,966	66	,054	-2,25347	1,14639	-4,54231	,03537
	Equal variances not assumed			-1,950	61,915	,056	-2,25347	1,15591	-4,56418	,05723
Novelty	Equal variances assumed	4,684	,034	-,686	66	,495	-,67708	,98699	-2,64768	1,29351
	Equal variances not assumed			-,702	61,067	,485	-,67708	,96398	-2,60464	1,25047