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INFLUENCE OF SENSATION-SEEKING AND IMPULSIVITY ON DRUG USE AMONG YOUTHS IN IBADAN

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ABSTRACT

In this study, a cross-sectional approach was used to examine the relationships between sensation-seeking and impulsivity on drug misuse using 200 participants. The study was conducted within Ibadan among youths especially adolescence who completed questionnaires assessing the influence of sensation-seeking and impulsivity on drug misuse. Results indicated that sensation-seeking and impulsivity as predicted in the first hypothesis independently and jointly influenced drug misuse among youths $F(2, 197) = 22.9, p < .001$. The second hypothesis which predicted gender difference in drug misuse was confirmed with males misusing more drugs than females $t(198) = 1.929, p < .05$. Finally youths that scored high on both sensation seeking and impulsivity were more likely than low sensation seekers and impulsivity, to have misused drugs $F(1, 196) = 13.022, p < .001$. These findings were discussed in line with literature support and recommendations given to checkmate excessive drug misuse by youths.

KEY WORDS: Drug misuse, impulsivity, sensation-seeking and youths.

INTRODUCTION

The Americas-National Survey on Drug Use and Health (A-NSDUH, 2006) defined prescription drug misuse as use of the target medication (or class of medications) without a prescription or that was taken only for the experience or feeling the medication causes. The Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR: 2000) criteria for substance abuse and dependence are used to infer problematic use. Thus, the A-NSDUH criteria encompass the DSM-IV-TR criteria for substance use disorders

– abuse and dependence. The term “drug misuse” is more commonly used for prescription medications of known clinical efficacy and abuse potential which is linked to adverse effects due to improper use. It is the illegal, non-medical use of a limited number of medications (drugs) which have the properties of altering the mental state in ways that are considered (by social norms and defined by statute) to be inappropriate, undesirable, harmful, threatening, or, at minimum, culture-alien. It is an eclectic concept having only one uniform connotation: societal disapproval.

Psychological drug research field has currently proposed trait and cognitive explanations in the prediction of drug misuse (Jorge, 2006). Personality traits have long been known to be associated with drug use and/or misuse. From disinhibition personality models, impulsivity and sensation seeking personality variables were implicated. Sensation seeking (SS) and impulsivity, two highly similar indicators of the construct of disinhibition personality traits, could better predict drug misuse patterns, across different classes of drugs.

Sensation seeking trait refers to the general need for thrills or the willingness to take risks for excitement, a preference for unpredictable situations and a need for novelty. Youths relatively high in sensation seeking may have a biologically based need for stimulation, making them more vulnerable to substance abuse and more susceptible to the reinforcing effects of pleasurable stimuli, or risk behaviours including use or misuse of drugs use (Zuckerman, 2007). Many studies had demonstrated that individuals high in sensation seeking appear to be drawn to smoking, alcohol use and use/misuse of illicit drugs (Dom, Hulstijn & Sabbe, 2006; Stoops, Lile & Robbins, 2006).

Impulsivity, in contrast, refers to the lack of planning and a tendency to act quickly on impulse without thinking. Impulsivity can predispose to substance abuse, and can result from it. Impulsivity is related to increased stimulus orientation and disinhibited drive-related behaviour. In turn, abused drugs increase impulsivity by activating catecholaminergic systems related to stimulus-orientation and action. Impulsivity increased susceptibility and/or predisposed to self-administration of cocaine and other strongly reinforcing substances leading to abuse and predicted poor retention in treatment (Moeller, Dougherty, Barratt, Schmitz, Swann & Grabowski, 2001b). Studies have demonstrated that risk behaviours are significantly correlated with one another and often appear in clusters (Winters, Botzet, Fahnhorst, Baumel, & Lee, 2009). In adolescents as well as adults, individual differences in discounting have been

linked to risk taking tendencies (impulsivity), such as drug use (Verdejo-Garcia, Lawrence, & Clark, 2008). Furthermore, impulsivity has shown to be linked to the severity of drug use (Bornovalova, Daughters, Hernandez, Richards, & Lejuez, 2005; de Wit, 2009; Doran, Cook, McChargue & Spring, 2009; Gullo & Dawe, 2008; Moeller, Barratt, Dougherty, Schmitz & Swann, 2001; Mobini, Pearce, Grant, Mills, & Yeomans, 2005; Patkar, Murray, Manelli, Gottheil, Weinstein, & Vergare, 2004). Finally, animals models identified that highly impulsive rats (HI-5CSRT) showed higher break points under progressive ratio schedules for cocaine, and persistent responding for the drug even when doing so resulted in delivery of electric shocks (Belin, Mar, Dalley, Robbins, & Everitt, 2008).

Empirically, there is no universally-accepted standard definition of “drug misuse” or “what it constitutes”. With this, the concept of drug misuse remains poorly characterized and understood. Drug misuse has been variedly and inconsistently defined and classified into six main categories: (1) Prescription status (for example, any medication use that occurs without a prescription) (Kaloyanides, McCabe, Cranford & Teter, 2007; McCabe, Cranford, Boyd, & Teter, 2007; McCabe & Teter, 2007), (2) reasons for use (for instance, any intentional use to achieve intoxicating and/or euphoric effects) (Darredeau, Barrett, Jardin & Pihl, 2007; Wilens, Gignac, Swezey, Monuteaux & Biederman, 2007), (3) route of administration, (4) co-ingestion with alcohol, (5) the presence or absence of abuse or dependence symptoms (Blanco, Alderson, & Ogburn, 2007, O’Brien, 2005; Simoni-Wastila & Yang, 2006) and (6) some combination of these factors (Becker, Fiellin & Desai, 2007; Steinmiller & Greenwald, 2007). Emphasis is placed on the difficulties posed by various conceptualizations commonly found in literature which met diagnostic criteria for a “substance use disorder” according to the DSM-IV-TR. These definitions imply an irresponsible use of the drug misuse in question (compared with the term “responsible drug” use for alternative views).

Inherent in this study is the fact that some peculiar problems had been noted in literature about the concept of drug misuse. Psychiatric medications such as analgesic, anxiolytic, sedative or stimulant properties are most often misused. Psychoactive drugs, or performance enhancing drugs which include amphetamines, barbiturates, benzodiazepine, cocaine, cannabis, heroin, marijuana, methaqualone, and opium alkaloids are also misused for non-therapeutic or non-medical effect. Alcohol is also misused too. Misuse of drugs may lead to criminal penalty in addition to possible physical, social, and psychological harm, all strongly depending on local jurisdiction (Nutt, King, Saulsbury & Blakemore, 2002). Depending on the actual substance, drug misuse including alcohol may lead to health problems, social problems, morbidity, injuries, unprotected sex, rapes, violence, deaths, motor vehicle accidents, homicides, suicides, physical dependence or psychological addiction among youths (Burke, O'Sullivan & Vaughan, 2005).

Currently, the improper use of prescription medications is increasingly issues of global concern (Haydon, Monga, Rehm, Adlaf & Fischer, 2005; Hertz & Knight, 2006). Youths demand for, and the availability of, these medications have recently risen consistently over time without their sanctioned use (Kroutil, Van Brunt, Herman-Stahl, Heller, Bray & Penne, 2006). This is with emphasis on the role of society and culture in making the availability of these drugs of misuse scarce.

The primary purpose of this paper is to investigate the influence of impulsivity and sensation seeking on drug misuse among youths in Ibadan, Oyo state of Nigeria. This main purpose would be achieved through specific objectives:

- (a) To determine the independent and joint influence of impulsivity and sensation seeking on drug misuse among the youths.
- (b) To evaluate the impact of gender on drug misuse among the youths.
- (c) To evaluate the interactive impact of sensation seeking and impulsivity on drug misuse among the youths.

RESEARCH HYPOTHESES

- (1) Sensation seeking and impulsivity would independently and jointly predict drug misuse among youths.
- (2) Gender would significantly influence the misuse of drugs among youths.
- (3) High sensation seekers and impulsive youths would significantly misuse drugs more than low sensation seekers and impulsive youths.

METHOD

Research Design

The study used an ex-post facto design. The study was conducted as a cross-sectional survey research. The dependent variable was drug misuse which was dichotomized as high and low. The personality factors of sensation seeking and impulsivity were the main independent variables, which were also measured as high and low. Age, gender, religion, peer influence on the use of drug, family history and self/personal-control were included as secondary variables.

Research Setting/Participants

The research settings for the study were the five different motor parks (Ojoo, Iwo road, Beere/Idi-Arere junctions and Molete (under the bridge) within Ibadan metropolitan areas. Motor parks settings had been associated with known and proven history of drug misuse among the youths over the years (). During the pilot study, this was further strength by motor park workers that a particular type of youth frequent and visit the park. A total of 43 questionnaires (23 males and 20 females) were distributed and collected from Ojoo, Iwo road, and Molete (under the bridge) Motor Parks. From Beere and Idi-Arere junctions a total of 45 and 46 questionnaires were distributed while 43 questionnaires (35 males and 8 females) were collected respectively. The final sample was therefore made up of 200 youths – 128 (64%) were males while 72 (36%) were females. The

mean age of this final sample was 28.72 years with standard deviation of 7.19, ranging from 20 to 30 years. These were both students and school drop-outs within Ibadan. Data from five males and ten female were excluded from the analysis due to failure by the respondents to complete at least 80% of the items. In all a total of 215 youths comprising 132 males and 82 females participated in the study.

Instruments

The study used a standardized questionnaire booklet as the instrument for data collection among participants (youths) who misuse drugs. The instruments were arranged and divided into four sections: A, B, C and D. Section A, measured the respondents' demographics. Section B measured sensation seeking. Section C measured impulsivity and section D measured drug misuse.

Socio-demographic Variables

Section A measured the respondent's socio-demographic data or variable such as: age, gender, religiosity was measured by item 13, peer influence on drug misuse was measured by five items (3, 4, 5, 6 & 7) and family history was measured by three items (8, 9 & 12). Finally, self/personal-control was measured by three items (10, 11 & 14). These are seen as secondary variables in this study.

Sensation Seeking Scale (SSS)

An abbreviated 6-item sensation seeking Scale (SSS) developed by Michel, Mouren-Siméoni, & Perez-Diaz, (1999) was used. It has a 'Total Score' and 'three subscales scores' corresponding to the four subscales of the SSS-V: Thrill and Adventure Seeking (TAS), Experience Seeking (ES), and Disinhibition (DIS). Each items was rated on a 4-point Likert format response strongly disagree (1), disagree (2), neutral (3), agree (4) and strongly agree (5). This scale has proved to be a valid and reliable method for determining sensation seeking traits (Michel et al., 1999). Based on its total score, these traits can be computed as high or low. Therefore, a score above the mean

score denote high sensation seekers and score below the mean score indicates low sensation seeking. Cronbach alpha of 0.75, Spearman-Brown Test-Retest Coefficient of 0.79 and Guttman Split-Half Coefficient of 0.79 were reported in this study.

Barratt Impulsivity Scale-11 (BIS-11)

The Barratt Impulsiveness Scale (BIS-11) consists of 30 items developed by Patton, Stanford and Barratt, (1995). Respondents indicate the extent to which the statements apply to them using a four-point Likert-type scale ranging from rarely/never (1), occasionally (2), often (3) and almost always/always (4). The scoring on items 1, 5, 6, 7, 8, 10, 11, 13, 18, 19, and 30 were reversed 4 = (rarely/never) to 1 = (always/almost always) to determine impulsivity levels. The raw impulsiveness measure is the sum of the scores of these responses (the larger the sum, the more impulsive is the participant). In this study, the following items: 1, 3, 4, 6, 10, 11, 13, 14, 15, 16, 17, 18, 20, 21, 22, 23, and 27 did not meet 0.30 inclusion criteria and were removed from the study. The following thirteen items: 2, 5, 7, 8, 9, 12, 19, 24, 25, 26, 28, 29 and 30 were retained in the study. The BIS-11 has been used with a variety of populations and has demonstrated reliability and validity (Patton et al., 1995). Cronbach alpha of 0.53, Spearman-Brown Test-Retest Coefficient of 0.47 and Guttman Split-Half Coefficient of 0.45 were reported in this study.

The Drug Misuse Scale

A 9-item scale was however, developed and standardized for the purpose of measuring drug misuse among youths since none is in existence. None of the items were removed, because all of them met the inclusion criteria. The following psychometric properties were reported by the authors using 200 participants based on six items: Cronbach Alpha = 0.72, Spearman-Brown Test-Retest Coefficient = 0.67, Guttman Split-Half Coefficient = 0.65. In this sample a mean score of 3.70 was obtained with a standard deviation of 2.37 and variance of 5.60. Prior to the pilot study, a pre-pilot

study was carried out to validate the new drug misuse scale thereby arriving at its psychometric properties. A total of two hundred and fifty participants were used for the pre-pilot study. Prior to the main study, a pilot study was conducted to standardize the instrument used in the study. Two hundred and fifteen participants were used for pilot study. They questionnaire were administered on the participants within the study's frame.

Research Procedure

Main study: A total of 215 questionnaires were administered to participants. This research was supported by the motor park workers in conjunction with diploma students of the department of psychology, university of Ibadan who helped to administer the instruments to participants. These were distributed in the parks, open bar within the parks, junctions and road sides besides them.

Purposive sampling technique was employed in data collection. In using it motor park workers identifies and make the choice of who to approach or not approach for the diploma students who then administer the questionnaire instruments to the selected participants from the study frame. It was on this basis that they became participants in the study.

Results

The result from the table 1, shows that hypothesis one which predicted that sensation seeking and impulsivity would independently and jointly predict drug misuse among youths was supported, $F(2, 197) = 22.39, P < .001$. The linear multiple regression correlation

coefficient ($R = .43$) that is, the relationship between drug misuse and the predictor variables assessed together was moderately high as shown by the coefficient. The percentage variation that was accounted for by the joint predictor variables (sensation seeking and impulsivity on drug misuse) was 18% which is ($R^2 = .18$). All the predictor variables showed a significant relationship on drug misuse. Amidst the joint contributions of the predictor variables, sensation seeking contributed the most with a beta value of .36, $t = 5.66, P < .001$. This implies that sensation seeking was positively significant. Therefore as sensation seeking increases, drug misuse among the youth's increases and vice versa. Impulsivity had a beta value of .24, $t = 3.77, P < .001$. This implies that impulsivity was positively significant, and as impulsivity increases, drug misuse among the youths increases and vice versa. Hypothesis one which was upheld for all the predictor variables showed full support for the joint prediction.

The second hypothesis, which states that gender would significantly influence the misuse of drugs among youths, was tested using related-t-sample test and the result is presented in table 2.

From the table it was observed that there was a significant positive effect of gender on drug misuse among youths $t(198) = 1.929, P < .05$. Therefore the second hypothesis was supported. This shows that gender had a significant positive effect on youth drug misuse.

Observations have shown that male youth with mean score of 4.06 further scored higher than their female counterparts who had a mean score of (3.39). Male youths misuse drugs than

Table 1: Summary of multiple regression table showing the joint and independent predictions of impulsivity and sensation seeking on drug misuse among youths in Ibadan

VARIABLES	R	R ²	F	P	B	T	P
IMPULSIVITY	.43	.18	22.386	<.001	.244	3.786	<.001
SENSATION SEEKING					.364	5.660	<.001
(CONSTANT)						-3.088	<.001

Table 2: A table of summary resulting from related-*t*-sample test, a comparison of coefficients test of gender on drug misuse among youths in Ibadan

VARIABLES	N	DF	T	P	MS	SD
MALE	128	198	1.929	<.05	4.06	2.51
FEMALE	72				3.39	2.10
DRUG MISUSE						

female youths. This result further supported the second hypothesis.

The third hypothesis, which states that high sensation seekers and impulsive youths would significantly misuse drugs more than low high sensation seekers and impulsive youths, was tested using 2 x 2 ANOVA and the result was presented in table 4.

From the ANOVA table, It was observed that there was a significant main effect of sensation seeking $F(1, 196) = 10.734, <.05$ and impulsivity on drug misuse among youths $F(1, 196) = 4.280, <.05$. Mainly, it was observed that there were significant effects of sensation seeking and impulsivity on drug misuse among

youths $F(1, 196) = 13.022, <.001$. This implies the interaction effect of sensation seeking and impulsivity on drug misuse among youths thus, hypothesis three was confirmed. Due to the significance of the hypothesis and considering the fact that there are more than two groups, Multiple Comparison Test was used to specifically identify the direction of the significance. Protected T-test was used, because the numbers of the subjects in each of the cells were unequal and the table is shown on table 4.

From the given table, the difference between high-high and low-low sensation seekers and impulsive youths on drug misuse was

Table 3: Summary of 2 x 2 anova table showing the main and interaction effects of impulsivity and sensation seeking on drug misuse among youths in Ibadan

SOURCE	SS	DF	MS	F	P
IMPULSIVITY	22.039	1	22.039	4.280	<.05
SENSATION SEEKING	55.277	1	55.277	10.734	<.001
IMPULSIVITY * SENSATION SEEKING	67.063	1	67.063	13.022	<.001
ERROR	1009.382	196	5.150		
TOTAL	1133.520	199			

Table 4: A table of summary resulting from protected *t*-test, a multiple comparison test of impulsivity and sensation seeking on drug misuse among youths

	1	2	3	MEANS	SD	N
1. LOW*LOW	----			3.69	2.219	52
2. LOW *HIGH	-0.505	----		3.19	2.288	64
3. HIGH*LOW	-0.109	0.396	----	3.58	2.277	48
4. HIGH*HIGH	1.752*	2.257*	1.861*	4.38	2.298	36

Key
*P<.05

Table 5: Summary table of means showing the main and interaction effects of impulsivity and sensation seeking on drug misuse among youths

IMPULSIVITY	SENSATION SEEKING		
	LOW	HIGH	GRAND MEAN
LOW	3.69	3.58	3.64
HIGH	3.19	5.44	4.00
GRAND MEAN	3.41	4.38	3.82

significant (1.752), $P < .05$. Observations of the mean scores, shows that high sensation seekers and high impulsive youths with 4.38 scored higher than low sensation seekers and low impulsive youths with 3.69. Finally, the hypothesis was further supported. Hence, the need to further represents the result graphically.

From the means table, it was observed that there were significant means difference between high sensation seekers and high impulsive youths (5.44), and low sensation seekers and low impulsive youths (3.69).

From the graph, it was observed that among the low sensation seeking youths, low impulsivity youths were more favourable to drug misuse than high impulsivity youths.

In the same vein, the high sensation seeking youths, high impulsivity youths were more favourable to drug misuse than low impulsivity youths. This goes to show that the type of sensation seeking is what determines the change direction. Thus, this indicates that the level of drug misuse is a function of both sensation seeking and impulsivity among youths.

DISCUSSION

The first hypothesis which states that sensation seeking and impulsivity will jointly and independently predict drug misuse among

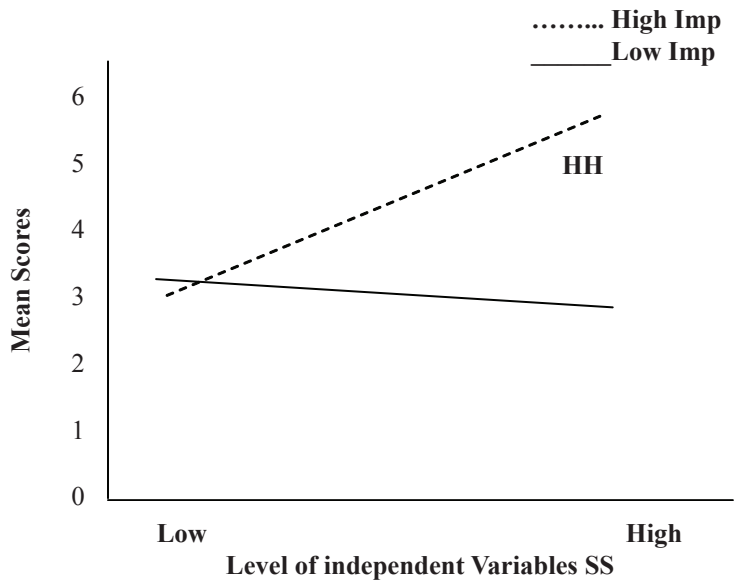


Figure 1. Graphical Representation Showing Interaction Effect of Sensation Seeking and Impulsivity.

youths was confirmed $F(2, 197) = 22.9, P < .001$. This is in line with de Wit, (2009); Dom et al., (2006); Mobini et al., (2005); Patkar et al., (2004); Stoops et al., (2006); Verdejo-Garcia et al., (2008); and Zuckerman, (2007).

At the level of independent prediction only, the result from Zero Order Correction matrix, shows that the first hypothesis predicting that sensation seeking will independently predict drug misuse among youths was partly supported ($r = .36, df = 200, P < .01$) with high sensation seekers being at increased risk.

The second hypothesis, which states that gender would significantly influence the misuse of drugs among youths, was also supported. From the results (Table 4.3) it was observed that there was a significant positive effect of gender on drug misuse among youths $t(198) = 1.929, P < .05$. Male youths were found to misuse more drug than their female counterparts. This study aligns with previous findings by Patkar et al., (2004); Stoops et al., (2006); Wilens et al., (2007).

The third hypothesis, which states that high sensation seekers and impulsive youths would significantly misuse drugs more than low high sensation seekers and impulsive youths, was supported $F(1, 196) = 13.022, < .001$. The external validity of this result is confirmed by findings from Belin et al., (2008); Bornovalova et al., (2005); de Wit, (2009); Dom et al., (2006); Doran et al., (2009); Gullo & Dawe, (2008); Mobini et al., (2005); Moeller et al., (2001); Moeller et al., (2001b); Patkar et al., (2004); Stoops et al., (2006); Verdejo-Garcia et al., (2008); Winters et al., (2009); and Zuckerman, (2007).

CONCLUSION

This study is a useful impetus to the understanding of the dynamic of drug use and misuse among youths. From the results, there is ample evidence that youths generally are inclined towards sensation seeking as is characteristic of that stage of human development. Moreover the support of impulsivity as a variable predicting drug use and/or misuse by youths

is an important finding to take more seriously by parents, teachers and government. Since it is known that most youths fall into the adolescent bracket, it is imperative for these stakeholders in youth development to join forces to provide a suitable environment for the proper directions of youthful energy. In line with what Freud suggested, we should help our youths redirect their destructive instincts into creative and beneficial undertakings to help solve progress meaningfully. In relation to the findings in this study, government and other relevant agencies should provide adequate recreation facilities that will motivate youths into positive sensation seeking activities rather than engage in drugs and related crimes such as prostitution, armed robbery and rape. Government can provide football and other sport pitches such as fitness centres, basket ball, billiards/snooker, golf, lawn and table tennis lawns and even swimming pools. These facilities will enable our youths to have a useful platform where they could interact positively with each other and cooperate meaningfully. This will check the impulsive tendency in them to always conform in order to impress their peers. This study is therefore calling for a national workshop to discuss the relevance of positive sensation seeking in the social, psychological and economic development of youths in Nigeria and how such colloquium could be packaged to achieve expected goals.

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