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Research Article

Self-Reported Influence and Usefulness of Screening, Brief Intervention and Referral to Treatment (SBIRT) for Drug Use Among University Students-a Descriptive Survey

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Abstract

Background: Substance use disorders are associated with high burden of illness across the globe. A cost-effective intervention to address it is the Screening Brief Intervention and Referral to Treatment (SBIRT). The aim of this study was to evaluate the effectiveness and usefulness of the intervention from the client's perspective.

Methods: The study was a single group, cross-sectional survey of post intervention self-reported outcome among university students. A sample of 195 students from a larger sample that earlier received SBIRT were given single-item, substance-specific Patient Reported Outcome Measures (PROM) and were required to rank the perceived association of different elements of SBIRT on their drug use level.

Results: About a third perceived that the SBIRT had desired influence on their drug use or information about drugs. The form of influence was mostly in maintaining abstinence, followed by stopping of psychoactive substance use. The most frequently ranked number one element of SBIRT was the pamphlet on self-help strategy given to participants for keep.

Conclusions: The SBIRT intervention, from the recipients' perspective is associated with cutting down or quitting drug use and maintaining abstinence from drug use.

Keywords: Screening; Brief intervention; Patient Reported Outcome Measure; Psychoactive substance; Drugs

Introduction

About 247 million people aged 15-64 years in the world used drugs in 2014. Of this population, 29.5 million had drug use disorders and 11.7 million used drugs by injection. About 1.6 million of injection drug users had the burden of living with HIV and 6 million of them with hepatitis C [1]. Globally, in the year 2015, Alcohol and drug use disorders contributed an estimated value of 164 thousand deaths and 21 million Disability-Adjusted Life Years among people aged 15-49 years which is 'believed' to be the age bracket in the prime of life [2]. The economic loss due to substance use is therefore enormous and cannot be over emphasized. In the United States alone among adults 35-79 years, the estimated average annual smoking-attributable productivity loss to mortality between 2005 and 2009 was $150.7 billion. The value of lost productivity due to premature deaths caused by exposure to secondhand smoke was estimated to be $5.7 billion. The smoking-attributable health care expenditure was estimated to be $132.5 billion in adults 19 years of age and older were attributable to smoking in 2009 [3]. The cost of excessive alcohol consumption was $223.5 billion in 2006, largely resulting from losses in workplace productivity, health care expenses, law enforcement and other criminal justice

expenses, motor vehicle crash costs from impaired driving among others related to excessive alcohol consumption [4]. In 2007, the estimated cost of illicit drug use to society was $193 billion, including direct and indirect public costs related to crime ($61.4 billion), health ($11.4 billion), and lost productivity ($120.3 billion) [5].

Just like non-treatment, treatment of substance use disorder attracts cost. Evidence shows that cost of treatment today lowers cost tomorrow; however, a question since the 90's was about the cost-effectiveness of alternative forms of treatment. Based on available evidence, the Committee on Treatment of Alcohol Problems, Institute of Medicine, concluded that Brief Interventions can be quite effective compared with no treatment and can be quite cost-effective compared with more intensive treatment [6]. The recommendation from this conclusion resulted in the model of Screening, brief intervention, and referral to treatment (SBIRT) used in this study [7].

SBIRT is a succession of interventions beginning with screening for indicators of risk for substance use disorders and ending with referral to more intensive interventions for those who require it. It is a framework that has been implemented with different screening instruments, like ACCRAT, AUDIT and ASSIST; in different setting like emergency units, primary health care, and schools; also in different age groups like adolescent and adults. While some randomized controlled trials support its effectiveness, some do not [8]. Since no single intervention is appropriate for all patients with substance use disorder [9] and treatment is only one of many factors that contribute to outcome in addition to the characteristics of the patient, of the problem itself, of the patient's post-treatment experiences, the right question is not about the effectiveness of SBRIT but about what kind of individuals, with what kinds of substance use problems are likely to respond to what kinds of SBIRT by achieving what kinds of goals when delivered by which kinds of practitioners [6]. Each element of SBIRT has specific goal to achieve, which contributes to the overall goal of SBIRT.

The outcome of screening is the identification of indicators of risk of having substance use disorders. The more /indicators identified, the greater the risk of having the disorder or suffering from the negative consequences of substance used. This outcome is evaluated with psychometric properties, such as sensitivity, specificity and predictive values, of the screening instrument [10]. Provided the psychometric properties are within acceptable range, the screening component is effective at achieving its intended outcome even if the overall SBIRT does not result in significant decrease in drug use.

The intended outcomes of Brief Intervention are increasing insight and awareness regarding problems with substance use and motivation toward behavioral change by creating a connection, for the client, between their current pattern of use and the associated risks and harms [10,11]. Both insight and motivation can be evaluated through patient's self-report using such instrument as SOCRATES. The enhanced motivation can also be evaluated with post intervention level of drug use. In evaluating Brief intervention, therefore, the outcome measures should be insight, motivation to cut down or cut-off (or where acceptable, maintain responsible) level of drug us and the actual change in level of drug use.

Referral to treatment is to link those identified as needing more extensive treatment with access to specialty care [10]. Many of these people would not otherwise have sought access for treatment. If significant proportion of the people referred access the treatment, this component of SIBRT should be considered effective. However the outcome of the subsequent treatment is outside the scope of the referral component of SBIRT.

The aims of this study were to determine the self-reported influence of SBIRT on the readiness to change drug use behavior and pattern of drug use and to determine the perceived usefulness of the intervention.

Materials and Methods

Design and participants:

The study was a single group cross-sectional survey of post intervention self-reported influence of SBIRT. It was part of a larger study reported elsewhere [12,13].The participants in this study were a sub sample of the students who participated in the pre-SBIRT data collection, in which the respondents who consented to follow-up survey were requested to volunteer their email addresses.

Variables

The variables assessed included socio-demographic data, life-time and 3-month prevalence rates of 10 classes of psychoactive substances, age at first time of drug use, self-report benefits and perceived usefulness of the SBIRT.

Data sources/ measurement

The socio-demographic questionnaire: The socio-demographic question naire consisted of items on age, sex, academic level and ethnicity.

WHO Alcohol, Smoking and Substance Involvement Screening Test(ASSIST, version 3): The World Health Organization's Alcohol, Smoking and Substance Involvement Screening Test (ASSIST) version3 was used to elicit data on substance use in lifetime and in the past three months. ASSIST is an interviewer-

administered, paper and pencil self-report screening instrument designed by the World Health Organization for use across countries and cultures. It is an 8 item questionnaire used for tobacco products, alcohol, cannabis, cocaine, amphetamine-type stimulants, sedatives and sleeping pills, hallucinogens, inhalants, Opioid and 'other' drugs [14,15].The internal consistency is over 0.80 for the majority of domains and ASSIST items correlates well with similarly worded items of other questionnaires. Lifetime substance use was significantly and positively correlated with lifetime use as recorded by the MINI Plus($r=0.93$, $p<0.01$).The global continuum of substance use risk had a high internal consistency (alpha=0.89) and was significantly and positively correlated with the MINI Plus derived score of severity of abuse and dependence ($r=0.76$, $p<0.01$) [14]. In this study population, the Cronbach's alpha for Global continuum of substance risk scale was0.812 while specific substance involvement scale ranged between 0.63 and 0.85 (except for Hallucinogens) [12].

The ASSIST-linked Brief Intervention (BI) is a short intervention lasting 3 to 15 minutes given to clients who have been administered the ASSIST by a health worker. The ASSIST screens for use of substances and determines a risk score ('lower', 'moderate' or 'high') for each substance. The risk scores are recorded on the ASSIST feedback report card which is used to give personalized feedback to clients by presenting them with the scores that they have obtained, and the associated health problems related to their level of risk. Asking clients if They are interested in viewing their scores allows the health worker to commence a Brief Intervention [11]. Twenty people designated as counselor, with background in psychiatry, community medicine, psychiatric nursing, social works and psychology, were trained to use the ASSIST and administer ASSIST-linked brief intervention via didactic lectures and role plays based on WHO manuals [11,15]. An abridged version of the WHO self-help strategy for cutting down or stopping substance use [16] was given to every participant irrespective of their ASSIST score (See supplementary file 1).

Benefits of SBIRT

The instrument used for assessing self-perceived benefits of SBIRT contains 6 items. Questions 1 and 2 asked about the perceived influence and the degree of influence of the SBIRT. If the participants admitted to being influenced, question 3 asked to rank the components of SBIRT according to their degree of influence on them. (The Urine Drug Test done alongside [12] the SBIRT was included in the ranking list). Questions 4 to 6 assessed perceived usefulness of the exercise by eliciting how the participants used the self-help guide given to them and their opinions regarding repeating the exercise at the beginning of every academic session.

Data collection

Data was collected online six (6) months after the SBIRT was administered. The electronic version of ASSIST was designed with Lime Survey [17].The tool is a free open-source software which allows users to quickly create intuitive, powerful, online question-and-answer surveys that can work for tens to thousands of participants without much effort. The e-version contains the exact content of paper and pencil version and implements all the administration and scoring algorithm of the paper version. Its Cronbach's alpha for Global continuum of illicit drug risk was 0.798 while for specific substance ranged from 0.58 to 0.73.

Statistical methods

Descriptive statistics were used to explore the data.

Results

One hundred and ninety five (78%) out of the 250 randomly selected students submitted analyzable data; 17 (6.8%) opted out while 38 (15.2%) started but did not complete at least 75 % of the survey. The mean age of the participants was 19.7 years (sd 2.3, range 16 – 29 years). Most of them were in 300 (30.8%) and 400 (33.8%) levels and were of Yoruba ethnic group (Table 1).

Total=195			
Variable		**N**	**%**
Sex			
	Female	126	64.6
	Male	69	35.4
Academic level			
	100 level	9	4.6
	200 level	41	21.0
	300 level	60	30.8
	400 level	66	33.8
	500 level	19	9.7
Ethnicity			
	Yoruba	111	56.9
	Ibo	47	24.1
	Others	37	19.0

Table 1: Socio demographic variables.

As depicted in (Table 2) 109 (55.9%) had ever used any substance. Rate of ever used was highest with alcohol (47.7%) followed by sedatives (12.8%) and cannabis (11.8%). Sixty-six (33.8%) used at least one drug in the past 3 months. Alcohol had the highest 3-month prevalence rate, (28.2%) followed by cannabis (3.6%) and sedatives (3.6%)

Total=195							
		N	%	Mean age at			
First use (sd)	Any drug	109	55.9				
	Tobacco products	17	8.7	17.11 (2.64)	21.62 (3.25)	-3.192	0.001
	Alcoholic beverages	93	47.7	15.56 (3.18)	20.13 (2.26)	-8.166	000
	Cannabis	11	5.6	18.09 (0.70)	21.73 (3.41)	-2.814	0.005
	Cocaine	1	.5				
	Amphetamine type stimulants	4	2.1	18.25(1.89)	19.75 (1.50)	-1.604	0.11
	Inhalants	8	4.1	16.88 (3.87)	22.38 (3.34)	-2.524	0.012
	Sedatives or Sleeping Pills	25	12.8	16.68 (3.12)	20.80 (2.78)	-4.385	<0.001
	Hallucinogens	1	.5				
	Opioids	23	11.8	15.09 (3.18)	20.39 (2.38)	4.207	<0.001
	other drugs	11	5.6	15.19 (4.77)	19.27 (2.68)	-2.731	0.006
	Any drug	66	33.8				
	Tobacco products	3	1.5				
	Alcoholic beverages	55	28.2				
	Cannabis	7	3.6				
	Crack	0	0.0				
	Amphetamine type stimulants	1	.5				
	Inhalants	4	2.1				
	sedatives or Sleeping Pills	7	3.6				
	Hallucinogens	0	0.0				
	Opioids	5	2.6				
	other drug	5	2.6				

Table 2: Drug use profile.

About a third agreed that the SBIRT intervention had some influence on their drug use or information about drugs (Table 3); 75 (38%) perceived that the influence was a lot. One hundred and ten (56.4%) perceived that it influenced them to maintain their abstinence from substance use while 12 (6.2%) attributed their stopping drug use to the influence of the SBIRT.

Total = 195			
Perceived influence of the exercise		**N**	**%**
No, it had no influence on my use of drugs or my information about it		36	18.5
Yes		128	65.6
	Yes, a Little	26	13.3
	Yes, Moderately	27	13.8
	Yes, a lot	75	38.5
	Yes, it influenced me to reduce my substance use	6	3.1
	Yes, it influenced me to stop substance use completely	12	6.2
	Yes, it influenced me to maintain my abstinence from substance use	110	56.4
No response		31	15.9

Table 3: Self-report influence of the drug screening, feedback and take-home self-help information exercise.

(Table 4) shows the ranked elements of SBIRT in order of their perceived influence. The most frequently ranked number one was the pamphlet on self-help strategy (21.9%), followed by the feedback plus advice or brief intervention (14.8%) and the mandatory Urine Drug Test (14.8%). The most frequently ranked number two was the ASSIST screening (20.3%), followed by the feedback plus advice or brief intervention (15.6%). The most frequently ranked number three and four was the mandatory Urine Drug Test, 14.8% and 18.0% respectively.

Total = 128			
		N	**%**
Ranked number 1	A*	22	17.2
	B**	18	14.1
	C***	28	21.9
	D****	19	14.8
	No response	41	32.0
Ranked number 2	A*	26	20.3
	B**	20	15.6
	C***	15	11.7
	D****	7	5.5
	No response	60	46.9
Ranked number 3	A*	14	10.9
	B**	14	10.9
	C***	13	10.2
	D****	19	14.8
	No response	68	53.1
Ranked number 4	A*	8	6.2
	B**	11	8.6
	C***	16	12.5
	D****	23	18.0
	No response	70	54.7

Table 4: Ranked influence of different components of the exercise.

*The ASSIST screening part

**The feedback plus advice or brief intervention

***The pamphlet on self-help strategy

****The mandatory Urine Drug Test

Most (44.1%) of the participants read through the abridged WHO self-help strategy at least once (Table 5). About 44% recommended that the urine drug screen be done for all undergraduates as part of every academic registration; and 59% recommended screening interview, feedback, advice/counseling and take-home self-help guide for all under graduates as part of every academic registration.

Total = 195			
		n	**%**
Did you read the take-home pamphlet on self-help strategy for cutting down or stopping drug use?			
	I was not given such a pamphlet	20	10.3
	I was given but I have not yet read it	15	7.7
	I read it but not completely	41	21.0
	I read it completely once	66	33.8
	I read it completely more than once	20	10.3
	No response	33	16.9
Would you recommend that the urine drug screen be done for all undergraduates as part of EVERY academic registration?			
	No, definitely not	29	14.9
	No, I don't think so	36	18.5
	Yes, I think so	48	24.6

	Yes, definitely	47	24.1
	No response	35	17.9
Would you recommend that the screening interview, feedback, advice/counseling and take-home self-help guide for all undergraduates as part of EVERY academic registration?			
	No, definitely not	19	9.7
	No, I don't think so	21	10.8
	Yes, I think so	64	32.8
	Yes, definitely	55	28.2
	No response	36	18.5

Table 5: Perceived usefulness of the exercise.

Discussion

Some studies have focused on the drug use related outcomes of SBIRT among students [18] and readiness for change associated with SBRIT [19].This study evaluated the perceived usefulness and client's self-reported outcome measure of the intervention. Majority reported that the intervention influenced them in maintaining their abstinence, stopping drug use or reducing the use. The information of self-help strategy for stopping or reducing drug use was ranked highest in term of influence, followed by feedback and motivation interview element of the intervention. There is dearth of information on the perception of SBIRT recipients about the intervention and its association with drug use outcomes. Patient reported outcome measures (PROMs) have been used extensively in other areas of healthcare [20,21]. They seek to ascertain patients' views of their symptoms and may be multi-item or single-item, generic or disorder specific [20]. In this study the single PROM question was specific to level of involvement with substance use. To complement other methods of outcome evaluation, including Randomized Controlled Trials [6], this may be found useful.

As an illustration of how the PROM evaluated in this study could complement the primary outcome measure of changes in the frequency of substance use in the past three months which is assessed by ASSIST, consider two experimental groups, each having a thousand participants who individually consumed 10 units of alcohol 4 times per week. According to ASSIST, each person would be scored 4 on the past-three-month item for alcohol. If a group had SBIRT and all the members reduced their drinking to 5 units of alcohol 2 time per week while the second group did not have the intervention and maintained their level of drug use. According to ASSIST, each member of each group would still be scored 4 and this would result in no statistical difference in the two groups. However, everything being equal, the members of SBIRT group would report reduction in drug use while the controlled group would report no change. This would likely result in significant difference between the two groups, using appropriate statistic.

Conclusions and Recommendations

The ASSIST-based SBIRT was perceived by the study population as associated with desirable changes in pattern of substance use. Some elements of the intervention were ranked as more influential than other. As this form of intervention is agreeable to most of the participants, the SBIRT exercise is recommended as a sustained intervention in the university campus.

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