

SUBSTANCE USE AND SEXUAL BEHAVIOR SURVEY: A VALIDATION STUDY

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ABSTRACT-Working with drug addicts we frequently face patients complains on sexual sphere .Literature doesn't elucidate about the impact of cognitive factors. Aiming to enable a better understanding of the relation between psychoactive substance use and sexuality we proposed to adapt and validate the Substance Use and Sexual Behavior Survey (SUSBS) questionnaire. We studied 488 drug addict subjects, outpatients of the public drug addiction Portuguese centers. Exploratory factor analysis indicated a four-component structure we termed: *Inhibitor impact of substance of abuse in sexuality, Indissociability of sexuality and substance use, Enhancer impact of substance in sexuality, Substance use favoring risky sexual behaviors*, explained approximately 65% of the total variance. The confirmatory factor analysis exhibited overall fits.

The results suggested that the Portuguese version of the SUSBS has adequate psychometric properties. We present a discussion in terms of the questionnaire utility, recommend its use for clinical and research purposes.

Key Words: Drug Addiction; Sexuality; Substance Use and Sexual Behavior Survey; Psychometric Properties.

QUESTIONÁRIO SOBRE O USO DE SUBSTÂNCIAS E COMPORTAMENTO SEXUAL: UM ESTUDO DE VALIDAÇÃO

RESUMO- Desenvolvendo prática clínica com toxicodependentes, frequentemente nos deparamos com queixas na esfera sexual. A literatura não elucida relativamente ao impacto dos factores cognitivos, nesta dinâmica. Procurando alcançar uma melhor compreensão acerca da relação entre o uso das substâncias psicoactivas e a sexualidade propusemo-nos a adaptar e validar o questionário: Substance Use and Sexual Behavior Survey (SUSBS). Estudamos 488 sujeitos toxicodependentes, utentes dos Centros de Resposta Integrada para a toxicodependência, da Administração Regional de Saúde de Portugal. A análise exploratória resultou na indicação de uma estrutura em quatro factores, que designamos: *Impacto do abuso de substâncias como inibidor da sexualidade, Indissociabilidade entre abuso de substâncias e sexualidade, Impacto do abuso de substâncias como potenciador da sexualidade e Uso de substâncias como favorecedor de comportamentos sexuais de risco*. Esta estrutura explica aproximadamente 65% da variância total.

A análise confirmatória exibiu valores estatísticos satisfatórios. Os resultados sugerem

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que a versão portuguesa do SUSBS possuiu adequadas propriedades psicométricas.

Apresentamos a discussão acerca da utilidade deste questionário, recomendando o seu uso na prática clínica e na investigação.

Palavras Chave: Toxicodependência; Sexualidade; Substance Use and Sexual Behavior Survey; Propriedades psicométricas.

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Drug addiction is a complex phenomena and a very important issue in public health. Nowadays there is no society without drugs, although the use patterns modified with organization, cultural heritage, social and economic context. A widespread of scientific publications for the last decades illustrates the need of further understanding this reality.

Human sexuality also received an increased enthusiasm among professional helpers and investigators, still the empirical bases of some areas are limited (Lankveld, Everaerd, & Grotjohann, 2001). Underling the investigation on drug-sexuality stands different methodologies and theoretical constructs, also the double complex nature of the object on analysis

The studies on this area seem to group on: 1) Drug use and sexuality risk taking behavior, specially related to HIV infection (e.g., Brajevic-Gizdic & Pletikosa, 2008; Darke et al, 1990; Gunsaulus, 2006; Meandzija et al, 1994); 2) Sexual dysfunctions and drug/medication use (e.g., Lorga, 2000; Mintz, O'Hare, O'Brien & Golschmidt, 1974; NCASA, 1999; Smith et al, 1982), and the effects on drug users on treatment, specially on maintenance therapy with methadone and buprenorphine (e.g., Giacomuzzi, Khreis, Riemer, Garber & Ertl, 2009); 3) Drug use to improve sexual performance, and more recently specifically in party contexts (e.g., Calafat, Juan, Becoña, & Montecón, 2008; Mattison, Ross, Wolfson, Franklin, & HNRC Group, 2001), few studies investigated the performance sexual expectations on drug users (Bellis et al., 2008; Rawson, Washton, Domier, & Reiber, 2002).

Conceptual proposals on sexuality present expectations as an important determinant of sexual experience (McCarthy & Fucito, 2005; Nobre, 2006; Weisberg, Wincze, Brown, & Barlow, 2001). For instance, they argued that positive results expectations of drug impact on sexuality (sexual improvement) is associated with increased risk of drug experience and abuse (Katz, Fromme, & D'Amico, 2000). Most present expectancies as "structures in long-term memory that have impact on cognitive processes governing current and future consumption" (Jones, Corbin, & Fromme, 2001, p. 59).

The studies on drug users sexuality show high incidence of sexual dysfunction or non satisfying sexual experience (Johnson, Phelps, & Cottler, 2004; Leon & Wexler, 1973; Mintz et al., 1974; Palha & Esteves, 2002). Some authors wonder if a previous clinical condition won't be behind this experience and have a stronger influence than the drug use contingences (La Pera, et al., 2008; Palha & Esteves, 2002). More recently, investigators try to understand to which point the drug use/abuse and sexuality associations are accidentals or the result of an intentional substance use in order to achieve some sexual goals (Bellis et al., 2008; Rawson et al., 2002).

In this article we present the adaptation and validation of the Sexual Behavior Survey (SUSBS) developed by Rawson, Washton, Domierand, and Reiber (2002). SUSBS in a Portuguese sample of heroin addicts, in maintenance therapy (methadone and buprenorphine). Two studies are presented:

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Study 1 presents an exploratory analysis determining the factor structure; Study 2 presents evidence of reliability and construct validity.

METHOD

Participants

Data collection involved a probabilistic sample. 488 participants (422 men – 86.5% and 66 women – 13.5%) completed a self-administered questionnaire after being informed about the aim of the study and their volunteer participation, assuring the anonymous and confidentiality of data. This subjects were recruited from outpatient drug addiction public clinics, aiming a representative sample of Portuguese drug addicts in maintenance treatment with methadone (379 subjects - 77.7%) and buprenorphine (109 subjects – 22.3%), ages from 20 to 69 years old. The sample was randomly divided into two groups with approximately 50% criteria for the validation analyses. The participants characterization and descriptive data is presented for each group.

Measures

The Substance Use and Sexual Behavior Survey (SUSBS) was developed by Rawson, Washton, Domierand, and Reiber (2002). It consists on a brief 25 questions self-report survey, assessing “the degree to which sexual thoughts, feelings and behaviors are associated with substance use among individuals who were diagnosed with (...) substance dependence disorders” (p. 104). “The questionnaire items were selected based on their clinical relevance and face validity but the psychometric properties of the instrument have not been formally established” (p.104). The SUSBS original version was translated and back-translated by two researches with high quality use of English and Portuguese (Vijver & Hambleton, 1996). We proceeded to an experimental administration in the Addiction Treatment Public Clinic - Porto Oriental, using a focus group and individual context with a psychologist. This discussion led to some corrections and the final version was obtained.

A demographics questionnaire regarding the participants' age, gender, school years, ethnicity, relationship status, professional status, habitation condition, children and pharmacological treatment program was added. Additionally, a group of questions regarding psychoactive substance use was recorded. One section about sexual history and activity, and a last group of questions regarding addiction treatment history.

Procedures

Researches solicited access to drug addicts in treatment to the Directive Board of Instituto da Droga e da Toxicodependência, Instituto Público (Drug and Addiction Public Institut). After obtaining official and informed agreement to collect data, the coordinators of each drug center, randomly selected, were contact to organize interviews. Researches provided information regarding the purpose of the study accordingly with Helsinki Declaration; each set of questionnaires had the respective instructions and the participants provided informed consent and demographic information; confidentiality of the interview data was repeatedly emphasized.

Information was collected nationally by one of the authors and by clinical psychologists that were trained in the administration criteria.

The factor structure model of the SUSBS Portuguese version was obtained, in the study 1, using exploratory factor analysis (PASW Statistics software, v. 20, SPSS) procedures and tested, in study 2, by using Confirmatory Factor Analysis (AMOS Version 16.0).

RESULTS

STUDY 1

Participants

Participants in this study were 242 opiate users enrolled in a treatment program. As shown in Table 1, participants are mostly masculine (90,5%), age ranging from 20 to 60 years old ($M = 42.71$; $SD = 8.18$), with an educational degree mainly at the six years of schoolarity (43.0%) and unemployed (75.2%). In regard to the marital status, 39.7% were single, 36.8 % were married/ fact union, 21.5% were separate and only 2.1% were widow.

Table 1.
Demographic Characteristics of the sample

	<i>n</i>	%
Age (in Years)		
Mean	42.71	
SD	8.18	
Range	20 - 60	
Gender		
Masculine	219	90.5
Feminine	23	9.5
Educational degree		
Illiterate	2	,8
4 years	35	14.5
6 years	104	43.0
9 years	68	28.1
12 years	27	11.2
University degree	6	2.5
Marital Status		
Single	96	39.7
Separate	52	21.5
Married/ Fact union	89	36.8
Widow	5	2.1
Professional situation		
Employed	51	21.1
Unemployed	182	75.2
Student	7	2.9
Retired	2	.8

Exploratory factor analysis

The factor structure of the Portuguese version of the SUSBS, was determined conducting a principal components analysis, with varimax orthogonal rotation. The Kaiser-Meyer-Olkin (*KMO*) measure indicated the sampling adequacy for the analysis, $KMO = 0.787$, and Bartlett's test of sphericity demonstrated the existence of large inter-items correlations, $\chi^2 = 1370.255$, $p < 0.001$.

Exploratory analysis was performed considering for each item the communality value and the factor loading. Items with lower communality values were removed until an acceptable and stable

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factorial structure was obtained that explained more than 60% of the total observed variance. Items that obtained high factor loadings in more than one factor were also removed. Theoretical appraisal of the latent constructs was also considered. The outcome of this analysis was a four-factor solution, which is presented in Table 2.

Table 2.
Exploratory factor analysis rotated component matrix.

Item	1	2	3	4
<i>Inhibitor impact of substance in sexuality</i>				
7. My sexual pleasure is reduced by the use of my primary substance of abuse.	0.83	0.02	-0.21	0.09
9. The use of my primary substance of abuse has reduced my interest in sex and/or made my sex drive abnormally low.	0.83	0.01	-0.09	-0.06
5. My sexual performance is impaired by the use of my primary substance of abuse.	0.76	0.12	-0.28	0.02
3. My sexual drive is decreased by the use of my primary substance of abuse.	0.74	-0.08	-0.16	0.07
<i>Indissociability of sexuality and substance use</i>				
23. Sexual thoughts and feelings almost always cause cravings for my primary substance of abuse.	-0.01	0.81	0.14	0.12
22. I believe I need treatment for my sexual behavior as it is linked to my primary substance of abuse.	0.09	0.79	-0.09	-0.02
17. My sexual fantasies or desires make it more difficult for me to stop using my primary substance of abuse.	-0.04	0.78	0.19	0.21
24. I often find myself preoccupied with sexual thoughts or romantic daydreams while under the influence of my primary substance of abuse.	0.01	0.66	0.10	0.37
<i>Enhancer impact of substance in sexuality</i>				
4. My sexual performance is improved by the use of my primary substance of abuse.	-0.22	-0.06	0.76	-0.11
6. My sexual pleasure is enhanced by the use of my primary substance of abuse.	-0.21	0.15	0.76	0.11
2. My sexual drive is increased by the use of my primary substance of abuse.	-0.16	0.09	0.73	0.02
8. The use of my primary substance of abuse has made me become obsessed with sex and/or made my sex drive abnormally high.	-0.19	0.29	0.47	0.30
<i>Substance use favoring risky sexual behaviors</i>				
11. I am more likely to have sex with a prostitute, pickup, other unknown partner, or someone other than my spouse or primary mate when using my primary substance of abuse.	-0.06	0.09	-0.01	0.84

(cont.)

12. I am more likely to practice “risky” sex under the influence of my primary drug of abuse (e.g., not use condoms, be less careful about who you choose as a sex partner, etc.).	0.16	0.10	0.22	0.79
13. I have become involved in sex acts that are unusual for me when I am under the influence of my primary substance of abuse (e.g., marathon masturbation, go to “peep” shows, cross-dress, voyeurism, expose yourself, etc.).	0.05	0.26	-0.09	0.65
Eigenvalue	3.89	3.26	1.37	1.17
Variance Explained (%)	25.96	21.74	9.15	7.82
Total Variance Explained				64.67

Due to the mentioned statistical criteria, 10 items (1, 10, 14, 15, 16, 18, 19, 20, 21, 25) were dropped from our version.

The first factor, presenting an eigenvalue of 3.89, contained four items that pertained to the ***Inhibitor impact of substance of abuse in sexuality***, explained 25.96% of the observed variance.

The second factor obtained an eigenvalue of 3.26 and contained four items that reflect ***Indissociability of sexuality and substance use***, explaining 21.74% of the of the observed variance.

The third factor, with an eigenvalue of 1.37, consisted of four items that reflect a ***Enhancer impact of substance in sexuality*** and explained 9.15% of the observed variance.

Finally, the fourth factor, presented an eigenvalue of 1.17, suggested the ***Substance use favoring risky sexual behaviors***, and explained 7.82% of the observed variance.

The four factors explain 64.67% of the total observed variance.

STUDY 2

Participants

Participants in this study were 246 opiate users enrolled in a treatment program. Accordingly to the Table 3, participants are mostly masculine (82.5%), with an age ranging to 23 to 69 years old ($M = 42.13$; $SD = 8.01$), with an educational degree mainly at the six years of schoolarity (35.5%) and unemployed (69.1%). In regard to the marital status, 45.1% were single, 32.1 % were married/fact union, 20.3% were separate and only 2.4% were widow.

Table 3.
Demographic Characteristics of the sample

	n	%
Age (in Years)		
Mean	42.13	
SD	8,01	
Range	23 - 69	
Gender		
Masculine	203	82.5
Feminine	43	17.5
Educational degree		
Illiterate	3	1,2
4 years	42	17,1

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(cont.)		
6 years	88	35,8
9 years	64	26,0
12 years	44	17,9
University degree	5	2,0
Marital Status		
Single	111	45,1
Separate	50	20,3
Married/ Fact union	79	32,1
widower	6	2,4
Professional situation		
Employed	68	27,6
Unemployed	170	69,1
Student	6	2,4
Retired	2	,8

Confirmatory Factor Analysis

Input and model specification. Confirmatory factor analysis (AMOS, Version 16.0) was used for testing the construct validity of the Portuguese version of the SUSBS, specifying the same factor structure obtained in the study of exploratory factor analysis. The parameters of the models were estimated using maximum likelihood procedures.

Criteria for evaluating the model. The model was evaluated considering the significance of the path coefficients and overall fit. To evaluate the appropriateness of the models to the data, we considered various fit indices: a) the chi-square, with associated degrees of freedom and *p* value; b) the root mean square residual (*RMR*) with smaller values being the better; c) the goodness of fit index (*GFI*) producing values ranging from 0 to 1, with values exceeding of 0.90 indicating good fit; d) the comparative fit index (*CFI*) produces values ranging from 0 to 1, with values larger than .90 indicating good fit; e) the root mean square error of approximation (*RMSEA*) in values of .08 or lower indicate reasonable fit, being preferred values of 0.06 or below.

Table 4 presents the fit indexes of the two factor structures models and Figure 1 gives the standardized path coefficients for the model.

All the factor loadings are reasonably high on the indicators and the substantive correlations among factors were designed according to the modification indices sustained by theoretical basis. All of the fit indexes suggested a reasonable adjustment of the models to the data.

Table 4.

Goodness-of-Fit Indices for the models of SUSBS model.

Model	χ^2/df	<i>p</i>	RMR	GFI	AGFI	CFI	RMSEA	AIC
Sex Survey	2,598	<0.0001	0.10	0.89	0.84	0.89	0.08	290.81

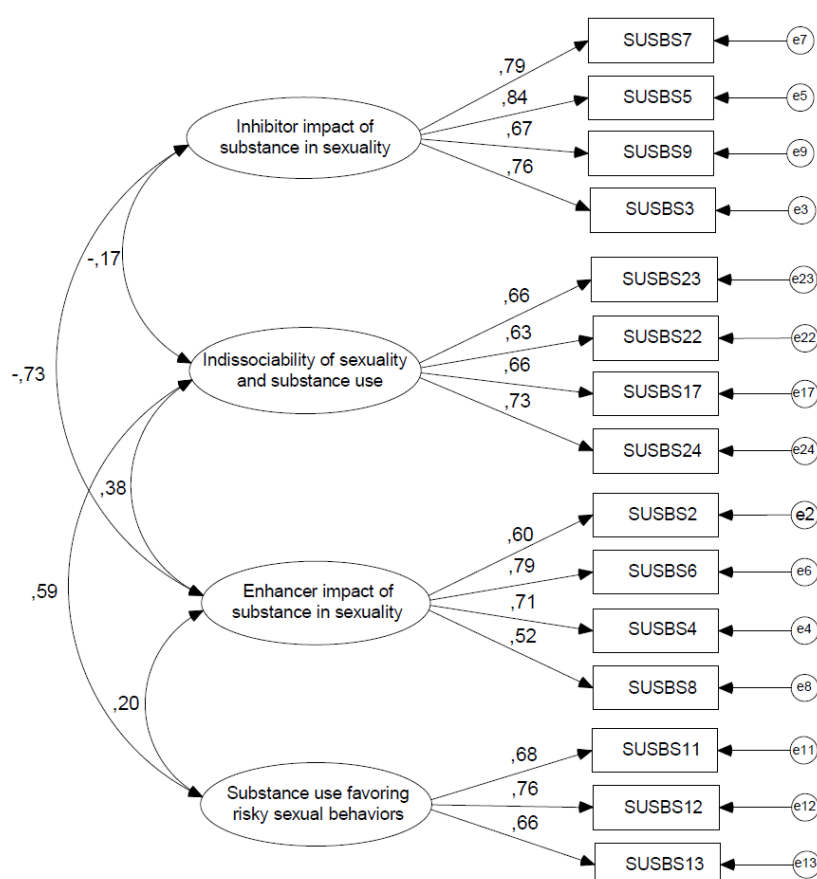


Figure 1.Standardized path coefficients for the dimensions of theSUSBS model.

Internal consistency

Cronbach's alfa statistics was conducted to determine the internal consistency of the dimensions, demonstrating good consistence in both samples (table 5)

Table 5.

Internal consistency of SUSBS dimensions

Dimensions	N of items	Study 1 Cronbach's alpha	Study 2 Cronbach's alpha
Factor 1	4	0.84	0.84
Factor 2	4	0.80	0.76
Factor 3	4	0.72	0.74
Factor 4	3	0.71	0.74

DISCUSSION

Self-report measures have been proved to be an appropriate and important technique to assess several areas of human sexuality (e.g., Cappelleri, Siegel, Osterloh& Rosen, 2000).

The objective of the present study was to adapt and validate the Portuguese version of the SUSBS. Overall findings supported the psychometric adequacy of the questionnaire. Evidence suggests that it is internally consistent for four factors. In addition, the SUSBS appears to possess construct validity, confirming the ability of all four factors to differentiate between *Inhibitor impact of substance in sexuality*, *Enhancer impact of substance in sexuality*, *Indissociability of sexuality and substance use* and *Substance use favoring risky sexual behaviors*.

We are unaware of other measures that assess the degree to which sexual thoughts, feelings and behaviors are associated with substance use among individuals who were diagnosed with substance dependence disorders. The results found in our study are suggestive of a coherent conceptualization of the association of drug abuse and sexuality experience, mainly based on three aspects: the perception and/or expectation of a specific kind of drug use impact on sexuality (inhibitor and/or enhancer); using psychoactive substances as a condition of higher probability of sexual risk taking; a indissociability of sexuality and drug use (involving in one is wishing the other), as the clinical practice frequently showed and some studies had suggested (Foxman, Aral & Holmes, 2006).

Clinicians often underestimate the prevalence of sexual dysfunction and the significance that sexual side effects of drug maintenance therapy and drug use may have on treatment compliance and outcomes. The SUSBS may be a useful tool for identifying those patients who are at greater risk of abandon treatment, enhance in sexual risk behavior, the individual with positive expectations about the impact of drug use in sexuality, and target them for a specific intervention and prevention programs. Therefore, the availability of a tool such as SUSBS will be very useful for surveying the degree of associating between sexuality and drug use, both in clinical practice and in research settings.

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