

THE PREVALENCE OF HIV AMONG SUDANESE VOLATILE SUBSTANCE ABUSE (VSA)

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Abstract

The hypothesis: To find that the prevalence is more than in non VSA children

Objectives: To estimate if there is any relationship between volatile substances abuse (VSA) & prevalence of (HIV) among the Sudanese VSA children

Methods : A case control study was conducted in Omdurman province ,Khartoum state Sudan during the period from (1/6/2013) and December 2013

A group of fifty Sudanese individuals aged between (10 to 17 years) who are volatile substances abuser (VSA) in Khartoum state were assigned as cases

Control group were fifty eight Sudanese individuals matched with the cases in terms of age, socioeconomic status and ethnic background, but they were not volatile substances abuse (VSA) in Khartoum state.76% of the study group are males while versus the control where 79.3% are males.

All participants were informed about the purpose and willingly agreed to participate The blood samples of both case and control were screened for HIV

. Both questionnaire data and screening results were subjected to statistical analysis,

Results : Statistical analysis revealed that the relationship between VSA and HIV is insignificant (P. value < 0.05) the trial revealed that there is a significant relationship between glue sniffing & the war, break of family link and other related reasons like .peer influence. But statistical analysis revealed that the relationship between VSA and HIV is insignificant (P. value < 0.05)

Conclusion: We concluded that ,there is no relationship between VSA and HIV

Keywords—*Shamasa street children in Sudan; VSA volatile substances abuse; HIV human immune deficiency virus*

Introduction:- The term volatile substance abuse (VSA) refers to: the *intentional inhalation* of substances which of a *vapor or gas* at room temperature for their *intoxicating effects*.

The term 'abuse' helps to distinguish accidental inhalation of fumes by legitimate users such as in industrial settings.

While the terms 'solvent abuse' or 'inhalant abuse' are widely used, they tend to narrow the range of substances commonly abused.

Other colloquial terms include: '*chroming*' (abuse of aerosol paints, particularly chrome paints), '*nanging*' (abuse of nitrous oxide from whipping cream bulbs),

'*huffing*' (from the USA, abuse of volatile substances using a bag).¹

The most commonly abused substances are: butane gas, solvents. Over 30 products that can be abused could be found in the house, all readily available, with legitimate use

According to the dialogue that held between Akhir lahza newspaper & Mr ;Khalafalla the executive manager of sabah society for children care & development, Mr. Khalafalla ensured that the homeless children in the Sudan are about one hundred twenty one thousands ,42% of them are girls ,also Mr. Khalafalla ensured that the study done by the alliance of Swedian , British ,American ,Unicef,(Waxfam) of safe children& the Sudanese national council for the child care, revealed that the number of homeless girls is about 15% ,10% of them are partially houseless .Also Mr. Khalafalla insisted that the number of girls is ever increasing, but can not be compared by the boys,because of the Sudanese

traditions that give more shelter to the girls .Mr. Khalafalla summarized the causes of the problem in the followings

A-ever growing of poor &poverty

B-break down of the family link by(wars. divorce& multi marriages). All the above mentioned factors, especially the Shortage of money &loss of one of the parents or both leads the children to compensate for this by VSA₂

HIV :- (human immunodeficiency virus) is the virus that causes AIDS. This virus is passed from one person to another through blood-to-blood and sexual contact. In addition, infected pregnant women can pass HIV to their baby during pregnancy or delivery, as well as through breast-feeding. People with HIV have what is called HIV infection. Most of these people will develop AIDS as a result of their HIV infection.⁽³⁾

According to the national survey conducted by the Sudan National AIDS Programme SNAP in 2002, Sudan is the most severely affected country in North Africa and the Middle East with an estimated 500,000 people living with HIV/AIDS, and mostly in need of antiretroviral therapy (ART). Despite the fact that the epidemiological data is limited, it is believed that the country is in the early stages of a generalized HIV/AIDS epidemic, with an almost exclusively heterosexual transmission pattern. The adult prevalence rate of HIV/AIDS has been estimated at 1.6%, with specific population group prevalence rates ranging from 0.5% to 2.5% in the northern part of the country. The 2002 survey showed a low awareness of HIV/AIDS, with only 53% of the population being aware of the sexual transmission risk of HIV/AIDS, and a total of 640,000 individuals being infected with HIV. It has been reported that 0.5% limited sentinel surveillance testing during 2004 yielded prevalence rates of 0.95% (18/1900) among pregnant women, 1.9% (9/465) among symptomatic STD patients, and 2.3% (33/1436) among TB patients. False beliefs about HIV transmission were common as were indicators of strong stigma. In fact 44% of respondents said that they would not share a meal with an infected individual, 31% would not nurse a patient, and 30% would not allow an infected child or teacher to attend school. To address the HIV/AIDS situation in Sudan, UNDP, with the support of the Global Fund to Fight AIDS Tuberculosis and Malaria (GFATM), launched in April 2005 Fighting HIV/AIDS in Sudan project₄

MATERIALS AND METHODS

Area of the study: This study was conducted in Omdurman province ,Khartoum state Sudan during the period from (1/6/2013 and December 2013

Study Group:

A group of fifty Sudanese individuals aged between (10 to 17years) who are volatile substances

abuser (VSA) in Khartoum state were assigned as cases.

Control group were fifty eight Sudanese individuals matched with the cases in terms of age, socioeconomic status and ethnic background, but they were not volatile substances abuse (VSA) in Khartoum state.

Case control study was designed to collect data using a questionnaire. Blood samples from VSA, and control from community and the blood bank of Khartoum hospital.(volunteers)

The data of questionnaire and blood samples of the cases included in this study were officially collected with the help of the government and health authorities , all partners of this study (case and control). All participants were informed about the purpose and willingly agreed to participate

The questionnaire:

The data was collected in a questionnaire designed to obtain general information about the VSA and the control (name, age, race, etc), the substances abused and the reasons that lead to be VSA, the others substances used by VSA and control subjects (cigarette, tobacco, etc), the habits that leads to transmission of HIV and also to investigate the possibility that VSA individuals revert to begin a new life.

Sample Collection:

Using 5ml syringes, cotton soaked in 70% alcohol, and a tourniquet the samples of blood (3cc or more) were collected from VSA, and control subjects in a plain container for later separation of serum, serum samples are kept deeply frozen until the moment of the analysis.

All data were subjected to analysis by using chi square test, relative risk and / or odds ratio

Methods:

All samples , test and control were tested for HIV-1/2 as directed by SD BIOLINE HIV-1/2 3.0(The third generation of ONE STEP antibodies to HIV-1/HIV-2 Test.(SD STANDARD DIAGNOSTICS,INC.156-68 Hagal-dong, Giheung-du, Yongin-si,Kyonggi do,Korea

.(<http://www.standardia.com>) .

Date issued:2008.05 .

The positive results are further more confirmed by using KHB- HIV(1+2)

[Http://www.skhb.com](http://www.skhb.com) also the positive results by KHB are again examined by Uni- Gold HIV www.trintybiotech.com

Table 1 :Reasons for using glue (War)

	Value	Df	Asymp. sig (2-sided)
Pearson Chi-Square	14.489	2	.001

Table 2:Reasons for using glue (Family)

	Other reasons			Total
	Yes	No	N.A	
Glue sniffing	19	15	10	44
Not use	0	0	6	6
Total	19	15	16	50

	Value	Df	Asymp. sig (2-sided)
Pearson Chi-Square	14.489	2	.001

Table3:Reasons for using glue (Other reasons)

	Other reasons			Total
	Yes	No	N.A	
Glue sniffing	23	11	10	44
Not use	0	0	6	6
Total	23	11	16	50

	Value	Df	Asymp. sig (2-sided)
Pearson Chi-Square	14.489	2	.001

The screening test for HIV is as follows ,3 persons out of 50 VSA group are positive ,which equals 6% , while the control group results showed no positive results.0%

According to the reasons that make these children VSA addicts ,war, family break &other reasons proved to be highly significant causes according to statistical analysis using chi square as p value in all cases equal 0.001 ,a highly significant value

Crosstabs

Table 4.:The relationship between VSA and the prevalence of HIV

Sample	HIV		Total
	Negative	Positive	
Case	47	3	50
Control	58	0	58
Total	105	3	108

	Value	Df	Asymp. sig (2-sided)
Pearson Chi-Square	3.579	1	.058

According to statistical analysis the obtained results revealed the following , 76% of the study group are males versus the control where 79.3% are males .The study showed that the biggest group of VSA ,which resembles 36% are from ,Nubba versus control group the biggest group are Galien 13.8%

The classification according to the regions showed that the biggest group is from the centre of Sudan 46%,

82% of study group agreed that they are VSA while 12% denied that they are VSA.

Also the study showed that 52% of study group smoke cigarettes , 50% of them use snuff, 38% use alcohol, 6% use other narcotics. Versus control group where percentages are as follows 36.2% cigarettes 20.7% snuff 6.9% alcohol 1.7 narcotics 60% of them see dissoluteness videos versus control 8.6% , of these 58% imitate what they see versus control 8.6%.16% of them share shaving tool versus control 3.4%.,64% do some sort of surgery versus control 19%, 66% agreed that VSA is a bad habit 60% of them said that they will stop this habit ,if they find steady life .6% refused to stop and 34% did not response.

The general health of the study group is as follows .78% general good health ,20% moderate health , 0.2% with bad health.

Psychological health ,80% good ,14% moderate ,6% bad health .

28% has good response to the questions,64% with moderate response ,8% with bad response.

According to the reasons that make these children VSA addicts ,war, family break &other reasons proved to be highly significant causes according to statistical analysis using chi square as p value in all cases equal 0.001 ,a highly significant value

The infection with HIV among the case group (6%) more than in control group(0.0%)

DISCUSSION

This study addresses one of the important issues that has both health and social impacts among vital sectors of the community .the findings obtained from the questionnaire targeted fifty Sudanese street children who are (VSA) &fifty eight normal Sudanese individuals .The obtained results showed that there is a significant relationship between glue sniffing & the war, break of family link and other related reasons like .peer influence which agrees with Rai et al findings in Nepal (2002) where they found that, about 51.7% of street children are using dendrites, also about 36% of

street children left home due to domestic violence, 14% due to peer pressure.)⁵

Also the obtained results agreed with the study done by (USAID) which revealed that street children in Egypt are more vulnerable to violence, exploitation and substance abuse ⁶.

Also the results agreed with the results of the United States Agency for International Development (USAID) funded Biological-Behavioral Surveillance Survey, conducted by the Ministry of Health and Population (MOHP), were disseminated in December 2006. which identified a concentrated epidemic among MSM in Alexandria, with a seroprevalence of 6.2 percent and other people likely to be exposed to HIV in Egypt include street children, prisoners, and refugees.⁶

Also the obtained results agreed with the A Rapid Situation Assessment initiated by UNODC and conducted in cooperation with UNICEF and the World Food Programme (WFP), which highlighted that almost 66 per cent of a sample of street children consume substances of abuse on a habitual basis, from cigarettes, glue, Bango (cannabis herb) and hashish, to solvents and tablets ⁷

The results of this study also agrees with a non-governmental organization in Morocco says substance abuse among children has reached alarming levels. The Baiti association says 98% of children living on the streets in Morocco are now addicted to sniffing glue and the number is growing and a government survey that said; more than 5,000 children are living on the streets of Casablanca alone. Almost all of them are glue addicts ⁸

Also the study agrees with the study done in Morocco ,which revealed that, the threat of HIV is ever present for the street children of Morocco. But the actual number of reported HIV/AIDS cases (809) is low in comparison to the Health Ministry's total estimate of 400,000 sexually transmitted disease cases running through the country ⁹

This study covered VSA individuals in the age group 10 to 17 years. 76% of VSA are males. This agrees with (Rai A *et al*, 2002) where they found that, about 88.2% of glue sniffing individuals belong to 10-16 age group ⁵

The study found that about 66% of glue sniffing individuals agreed that, this is bad habit, about 60% of glue sniffing individuals showed readiness to quit back from glue sniffing habit. 6% refused to quit.

although of the above mentioned risk factors of HIV prevalence , the statistical analysis results of HIV screening tests for both VSA group & non VSA group (control group), does not agree with the above mentioned factors because the obtained results showed that The infection with HIV among the case group (6%) is not more than in control group (0.0%) Statistical analysis revealed that the relationship between VSA and HIV is insignificant (P.value < 0.05)

but this does not deny that the prevalence among the case (6%) is high when it is compared with the national survey conducted by the Sudan National AIDS Programme SNAP in 2002, which revealed that the adult prevalence rate of HIV/AIDS has been estimated at 1.6%, with specific population group prevalence rates ranging from 0.5% to 2.5% in the northern part of the country.

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