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RESEARCH PAPER

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The Prevalence of Hepatitis (B) Among the Sudanese Street Children Volatile Substances Abuse (VSA)

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ABSTRACT

To estimate the relationship between volatile substances abuse (VSA) & prevalence of (HBV). Study was conducted in Om durman provinc Khartoum state Sudan during the period from (1/6/2013) and December 2013. A group of fifty Sudanese street children aged between (10 to 17 years) who are (VSA) in Khartoum state were assigned as cases. Control were fifty eight Sudanese individuals.(Non volatile substances abusers). A group comparison study was designed to collect data using a questionnaire. Blood samples from VSA, and control subjects from the community. The blood samples of both case and control were screened for HBV. The obtained results showed that there is a significant relationship between glue sniffing and the war, break of family link and other related reasons like, peer influence the statistical analysis of hepatitis B showed that the P value is 0.025 less than 0.05 which means that there is a significant relationship between VSA and HBV prevalence.

The trial revealed that there is a significant relationship between glue sniffing and the war, break of family link and other related reasons like .peer influence. Also statistical analysis revealed that the relationship between VSA and HBV is significant (P. value > 0.05).

Key words: Shamasa, Street children in Sudan and Solvent based adhesives.

INTRODUCTION

Volatile substance abuse (VSA) refers to: the *intentional inhalation* of substances which give off a vapor or gas at room temperature for their intoxicating effects. Other colloquial terms include: nanging, huffing (Rose, J. et al 2001.) VSA is still very much a problem of today, with a much wider variety of everyday products available for abuse. However, the effects of abusing these products are as dangerous as they ever were - messing about with them can mean instant death. (The Scottish Government publications 2008). the most commonly abused substances are: butane gas, solvents. (The Scottish Government publications 2008). A study done by the alliance of Sweden, British, American, Unicef, (Waxfam) of safe children& the Sudanese national council the child care, revealed that the number of homeless girls is about 15% ,10% of them are partially houseless .In addition to that the number of girls is ever increasing, but cannot be compared by the boys ,because of the Sudanese traditions that give more shelter to the girls. (Akhirlahza newspaper 2008 Sudan)

The causes of this problem are- growing of poor and poverty -break down of the family link by (wars. Divorce and multi marriages). All the above mentioned factors, especially the Shortage of money and loss of one of the parents or both leads the children to compensate for this by VSA (Akhirlahza newspaper 2008 Sudan) Some of the techniques used to inhale the substance is directly sprayed in the mouth or the nose bagging,huffing (Abinash, R. K et al 2002). Huffing is the technique of choice here in the Sudan.

Solvent-based adhesives; are the commonly used by shamasa here in the Sudan

Why do people abuse these products?

The psychological reasons for inhaling volatile substances can be many and complex. Most young people who experiment with volatile substances do so out of curiosity. Physically, the effects of VSA are similar to getting drunk (The Scottish Government publications 2008)

What is hepatitis?

Hepatitis B virus is a blood borne virus that can cause serious liver disease

Natural history of HBV

The natural history of HBV infection varies greatly with age of infection; individuals infected as children are more likely to progress to chronic infection and liver disease than are individuals infected later in life. (Action Plan for Wales 2009-2014.)

Transmission

Transmission of hepatitis B virus results from exposure to infectious blood or body fluids containing blood. Possible forms of transmission include sexual contact, blood transfusions, re-use of contaminated needles **and** syringes, and vertical transmission from mother to child during childbirth. (Connor .J.et al 2008)

Vaccination:-Is a safe and effective approach to HBV infection prevention. (Public Health Agency of Canada 1999-2005). Hepatitis virus infections are the most common cause of liver disease worldwide.

Sudan is classified among the countries with high hepatitis B virus seroprevalence. Exposure to the virus varied from 47%–78%, with a hepatitis B surface antigen prevalence ranging from 6.8% in central

Sudan to 26% in southern Sudan. Studies pointed to infection in early childhood in southern Sudan while there was a trend of increasing infection rate with increasing age in northern Sudan.(Hatim MY Mudawi 2008) .(The results of Iranian study for examining the prevalence of HIV, HBV, and HCV infections, as well as syphilis and the risk factors showed a higher prevalence for HBV infection. This discrepancy could be explained by Iran's location as an intermediate region for hepatitis B.(Parviz, V., et al 2009). Another study in Western Sudan found HCV infection rate of 1.5% among patients with liver cirrhosis. From the foregoing, HCV infection in patients with CLD (chronic liver disease) (Elfaki, A. M. 2008.).

MATERIALS AND METHODS

This study was conducted in Omdurman province ,Khartoum state Sudan during the period from (1/6/2013 and December 2013) A group of fifty Sudanese street children 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. A group comparison 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 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 HBV and also to investigate the possibility that VSA individuals revert to begin a new life. 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 All data were subjected to analysis by using chi square test, relative risk and / or odds ratio.

Sample analysis:

All samples, test and control were tested for HBsAg as directed by SD BIOLINE HBsAg (ONE STEP HBsAg 2007)

Table 1. Reasons for using glue (War).

	Other reasons			Total		Value	Df	Asymp. sig (2-sided)
	yes	No	N.A					
Glue sniffing	1	33	10	44	Pearson Chi-Square	14.489	2	.001
Not use	0	0	6	6				
Total	1	33	16	50				

Table 2. Reasons for using glue (Family).

	Other reasons			Total		Value	Df	Asymp. sig (2-sided)
	Yes	No	N.A					
Glue sniffing	19	15	10	44	Pearson Chi-Square	14.489	2	.001
Not use	0	0	6	6				
Total	19	15	16	50				

Table 3. Reasons for using glue (Other reasons).

	Other reasons			Total		Value	Df	Asymp. sig (2-sided)
	Yes	No	N.A					
Glue sniffing	23	11	10	44	Pearson Chi-Square	14.489	2	.001
Not use	0	0	6	6				
Total	23	11	16	50				

Table 4. The relationship between (VSA) and prevalence of hepatitis B.

Sample	HBV		Total		Value	Df	Asymp. sig (2-sided)
	Negative	Positive					
Case	42	8	50	Pearson Chi-Square	5.035	1	.025
Control	56	2	58				
Total	98	10	108				

RESULTS

According to statistical analysis they obtained results revealed the following, 1st 76% of the study group are males while only 24% are females versus the control where 79.3% are males & 20.7% are females. The study showed that the biggest group of VSA, which resembles 36% are from, Nuba tribe 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%, versus control group where 50% are from the centre. The recent residence for study

group is as follows, 86% in Omdurman, versus control group where 48.3% Omdurman. The obtained results of education level showed that 62% are from basic school, versus control where Khalwa 1.7%, Basic 34.5% and Secondary school 27.6%.

The frequencies of work table showed that 82% are working but 18% are not versus control where 74.1% are working & 26.9% are not. 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 sex films versus control 8.6% , of these 58% practices 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

Statistical analysis using chi square proved that, the reasons that make these children VSA addicts, are war (table 1), family break (table 2) & other reasons. Like peer influence (table 3), because the P value in all cases equal 0.001 which is highly significant HBV screening test for VSA group revealed 84% Negative results & 16% positive results . Infection with HBV among the case group (16%) more than in control group (3.45%) Statistical analysis using chi square test revealed that the probability value is .025 or less than 0.05 the significance value, and this means that there is a significant relationship between VSA and HBV prevalence.

DISCUSSION

This study addresses one of the important issues that have 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. 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. 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. If we look to the routes through which viral hepatitis generally, and HBV specifically are transmitted, we will find that most of the risk factor is incorporated in life Aspects of the VSA Shamasa in the Sudan. Specifically, sharing of rag, & practice of unsafe sex which agrees with Chang, M. (2007).

The statistical analysis of hepatitis B screening tests for both VSA group & non VSA group (control group), which revealed that the infection with HBV among the case group (16%) more than in control group (3.45%). Statistical analysis , revealed that there is a significant relationship between VSA and HBV prevalence. This result showed that the prevalence is more than general population according to the results of. (Hatim MY Mudawi 2008) who found that the .Sudan is classified among the countries with high hepatitis B virus seroprevalence. Exposure to the virus varied from 47%–78%, with a hepatitis B surface antigen prevalence ranging from 6.8% in central Sudan to 26% in southern Sudan. Studies pointed to infection in early childhood in southern Sudan while there was a trend of increasing infection rate with increasing age in northern Sudan .Our results also agreed with B.(Parviz ,V et al 2009) who examined the prevalence of HIV, HBV, and HCV infections, as well as syphilis and the risk factors among homeless men. Their results of study showed a noticeable prevalence for HCV Ab, HIV Ab, HBs Ag, and HBc Ab. Also they

found a higher prevalence for HBV infection.

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REFERENCES

Rose, J. (2001). Volatile Substance Abuse. WA Solvents Abuse Working Party Department of Health & Drug Alcohol Office. This publication is available online at <http://www.dao.health.wa.gov.au>

The Scottish Government publications Saturday, September 27, (2008). http://www.london.gov.uk/mayor/health/drugs_and_alcohol/docs/highs-lows2.pdf www.knowthescore.info October 23-2003.

Akhirlahza newspaper issue 848 Wednesday, 17-12-(2008). Page 11 Sudan

Prashad, G. P. and Shrestha, S. T. (2002). Glue Sniffing among street children In the Kathmandu valley, Child Workers in Nepal Concerned Centre.

Action Plan for Wales (2009-2014). A Consultation Document Proposed Blood Borne. *Viral Hepatitis*. ISBN 978 0 7504

4931 1. © Crown copyright March 2009 CMK-22-04-045(143)

Connor J. (2008). Hepatitis B from Wikipedia, the free encyclopedia (2008-10-03).

Public Health Agency of Canada Epi-Update. (2005). Vaccine-Induced Hepatitis B Immunity among Canadian Street Youth (1999-2005) .www.publichealth.gc.ca.

Hatim, M.Y. (1993). Epidemiology of viral hepatitis in Sudan Received 13 September 1993; received in revised form 20 December 1993; accepted 19 January 1994. Department of Internal Medicine, Faculty of Medicine, University of Khartoum, Khartoum, Sudan

Parviz, V., Seyed, M. H. Alireza and F. Ramin. (2009). Prevalence of HBV, HCV, HIV, and Syphilis among Homeless Subjects Older than Fifteen Years in Tehran, *Arch Iranian Med*; 12 (5): 483 – 487

Elfaki, A. M. (2008). Aetiology, complications, and preventive measures of Liver cirrhosis; Elobeid hospital; West Sudan. *Sudan Journal of Medical Sciences*; 3(1):25-28.

HBsAg (ONE STEP HBsAg. (SD STANDARD DIAGNOSTICS, INC. 156-68 Hagal-D, Giheung- D. Yongin K, Korea. (<http://www.standardia.com>).

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