

The Impact of an interventional follow-up study on smoking and alcohol cessation of people living with HIV/AIDS

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Abstract:

Background: As HIV is the world's leading infectious killer and Andhra Pradesh is recognized as one of the high risk state in India, basing on the high antenatal prevalence for the by NACO (National Aids Control Organization), India, has to be given priority to know the impact of Health education intervention on cessation of smoking and alcohol practices and improvement of other healthy practices of people living with HIV/AIDS. The setting of the study was at Government General Hospital (Anatapuramu, Andhra Pradesh). A Health education based interventional follow up study was conducted during the period from July, 2015 to June, 2016 on 200 HIV positive persons attending the hospital targeting their behavior, habits of smoking & alcohol and other healthy practices expecting the achievement of positive results. **Results:** In the study group, about 61% are males & 39% are females and are all heterosexuals. Maximum about 88% of study group belongs to 15-44 years and 33% belongs to 15-29 years of age group with the mean 32 & $M \pm 2SE = 30.16 - 33.34$ at 95% CI. As the impact of the intervention, the habit of smoking & consuming alcohol were declined drastically. At the same time sexual and healthy practices were significantly improved to a significant extent positively among 184 study subjects (PLWHA) with the $p < 0.05$.

Keywords: Impact, Health education, Counseling, People living with HIV/AIDS (PLWHA).

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I. Introduction

According to the current estimates from UNAIDS & WHO there are approximately 36.7 million people worldwide living with HIV in 2016. Of these 2.1 million are children (< 5years) and an estimated 1.8 million persons worldwide were newly infected with HIV in 2016 which is the world's leading infectious killer. According to WHO, an estimated 35 million people have died since its first cases were reported in 1981 and 1 million people died of AIDS-related causes in 2016¹.

Cigarette smoking among people living with HIV/AIDS (PLWHA) represents a significant public health hazard. Numerous reports indicate that the prevalence of cigarette smoking among PLWHA is two to three times higher than that of the general population (Burkhalter et al., 2005²; Gritz et al., 2004³; Mamary et al., 2002⁴; Webb et al., 2007⁵) and is associated with reduced antiretroviral treatment response and an increased risk of numerous AIDS and non- AIDS – related diseases (Cockerham et al., 2010⁶, Crothers et al., 2009⁷ Feldman et al., 2006⁸). In fact, recent evidence to state that smoking cessation among PLWHA could reduce the risk of overall mortality by almost 16%, reduces the risk of a major cardiovascular disease event by 20%, and reduce the risk of non-AIDS malignancy by 34% (Lifson et al, 2010⁹) and the other successful smoking cessation treatment studies appear in literature are Reynolds 2009¹⁰, Vidrine 2009¹¹.

Alcohols immunomodulatory properties can affect both the primary and secondary lymphoid organs, the innate and adoptive immune systems, as well as the immune barriers of specific organs (ex: liver, pancreas, vaginal mucosa) (Ben- Eliyahu et al¹² 1996, Berretta et al:¹³ 1990: Gomaa AI et al:¹⁴ 2008, Kanagasundram & Leavy 1981¹⁵, Molina PE et al:¹⁶ 2002; Neuman 2003¹⁷ & 2008; Stickel F et al;¹⁸ 2002, Trifonova RT et al 2007¹⁹). Brodie C et al 1994²⁰ showed that alcohol inhibits early events in T-lymphocyte activation, suggestions a pathway of greater susceptibility to HIV infection. Alcohol has been demonstrated to depress levels of CD4 count (Pol S et al 1996²¹).

II. Material & Methodology:

Description of study setting: The setting of the study was at the Government General Hospital (GGH) STD OP, Anantapuramu, Andhra Pradesh, India. The GGH is a tertiary level teaching hospital maintained by the state government for the care and management of all kinds of patients including PLWHA. Presently, the institution is involved in intervention programmes such as Voluntary Counseling and Testing Center (VCTC),

Prevention of Parent to Child Transmission of HIV (PPTCT), Paediatric Antiretroviral Treatment and Adult Antiretroviral Treatment, CD4 count, viral load assessments and clinical trials have been undertaken at the Department of Venereal diseases of this hospital. National Aids Control Organization has recognized this hospital as one of the centers in the country for the care and management of HIV/AIDS patients.

The study was conducted during the period from July, 2015 to June, 2016. According to hospital census the prevalence of HIV cases attending STD O.P was found to be 35.5%. The sample size was calculated by using the formula $N = \frac{4PQ}{L^2}$ Where $P=35.5$, $Q= 100-P$ i.e. 64.5, $L= 20\%$ allowable error in P i.e. 7.1, so $N= 182$ and assuming there may be 10% attrition, additional 10% was taken which was calculated to be 200. And all the HIV positives (both male & female) attending STD O.P during the first 3 months period of the study up to the required sample, were selected as study subjects in this matter after received the informed consent. They were interviewed by using a pre-tested pro-forma including information about their profiles, habits, other healthy practices, etc as the study variables.

The aim of this study is to find out the effect of smoking & alcohol cessation counseling and monitoring on the study subjects. After completion of this pre-test interview, these persons were given health education intervention by means of counseling and demonstration methods regarding the above study variables and facilitated them to get treatment for their health problems. Further these patients were followed up to 6 months and monitored by means of home visits paid by community link workers who work for PLWHA and regular contact by mobile phone etc. And again they were interviewed by using the same pro-forma after the due period. Since the topic is about sensitive and personal health issues, ethical issues were taken into consideration and consent was sought from individual participants there by only those who were willing to take part in the research were involved. The participants were assured of confidentiality in terms of name and HIV status etc.

The collected data was analysed by using appropriate statistical techniques like measures of dispersion, central tendency, percentages, proportions and tests of significance like chi-square test and standard error of mean etc with the help of computer software. The observations were discussed in the light of published material of various authors. The conclusions and recommendations were made on the synthesis of medical, social, economical and statistical angles of the observation with justified differences with the published work of previous authors.

Originality/value: The Health education (counseling) - based approach in HIV management is universally accepted, culturally relevant, reliable and appropriate technology in order to assure adherence to study, sustainability and cost effectiveness.

As far as the limitations of study includes it was a single hospital based study though the hospital is a biggest and prestigious one covering the largest extent of the population and it is well recognized that PLWHA from socially & economically disadvantaged sections of the society face significant barriers like decreased purchasing capacity, lack of resources including telephones, low literacy levels, transportation difficulties, competing medical and social needs and high frequency of household moves are all associated with limited access to intervention programmes.

III. Results:

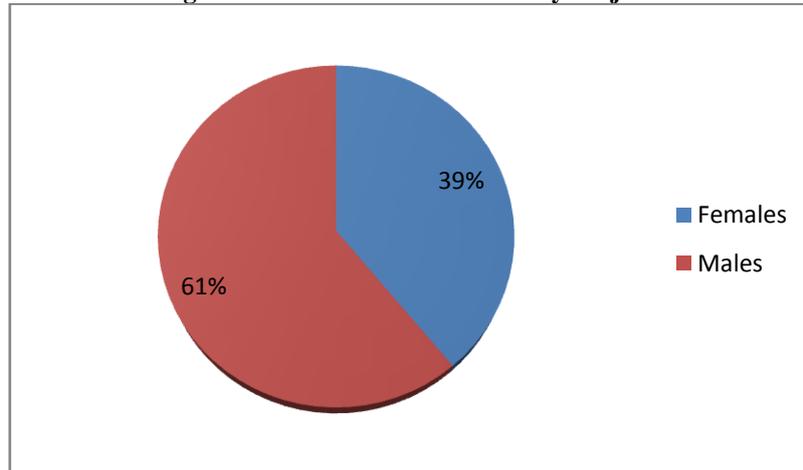
Table-1: Age Distribution

Sl.No.	Age	Persons	
		No.	%
1.	15-29 years	66	(33%)
2.	30-39 years	88	(44%)
3.	40-44 years	22	(11%)
4.	45 & Above	24	(12%)

Mean = 32, SD=9.59, M± 2SE= 30.16 to 33.34 at 95% CI

- Maximum 88% of the study group belongs to 15-44 years and out of this, 33% belongs to 15-29 years of age group & 55% belongs to 30-44 years of age.

Figure-1 : Sex Distribution of study subjects



- In the study group about 61 % were males and 39% were female

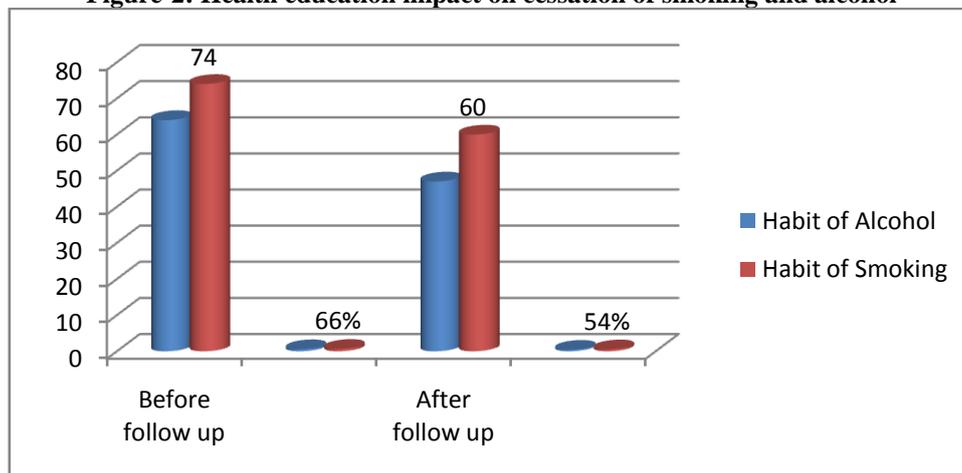
Table 2: Impact of study intervention on cessation of smoking and alcohol

SLNo.	Practice	Before follow up (n=184)		After follow up (n=184)		P Value
		Number	%	Number	%	
1.	Habit of Alcohol	64 (n=112)	57%	47 (n=112)	42%	P<0.05
2.	Habit of Smoking	74 (n=112)	66%	60 (n=112)	54%	P<0.05

Smoking population proportion is 74 ± 8.2 , Alcohol population proportion is 64 ± 9

(Smoking and alcohol study subjects were 112 (Males) and no female study subjects were identified habituated to smoking and alcohol)

Figure-2: Health education impact on cessation of smoking and alcohol



- As the impact of health education there was a significant improvement observed among the PLWHA pertaining to adoption & improvement of healthy practices like maintenance of personal hygiene, food hygiene, taking nutritious diet, self shaving practice etc.

Table-3: Impact of Health education related to other healthy Practices

Sl. No.	Practice	Before follow up (n=184)		After follow up (n=184)		P Value
		Number	%	Number	%	
1.	History of wears foot wear	167	91%	180	98%	P<0.01
2.	Maintaining personal Hygiene	145	79%	171	93%	P<0.01
3.	Habit of hand washing practice with soap after visiting toilet	103	56%	162	88%	P<0.001
4.	Habit of hand washing practice before eating	132	72%	173	94%	P<0.001
5.	History of maintaining food hygiene	155	84%	169	92%	P<0.001
6.	History of taking Nutritious Diet	77	42%	153	83%	P<0.001
7.	Shaving practice by self	20 (n=112)	18%	86 (n=112)	77%	P<0.001
8.	Usage of safe sexual practices with spouse	66	36%	132	72%	P<0.001

t=5, at df =7, P<0.001

- As the impact of health education there was a significant improvement observed among the PLWHA pertaining to adoption & improvement of healthy practices like maintenance of personal hygiene, food hygiene, taking nutritious diet, self shaving practice, cessation of smoking & alcohol and safe sexual practices etc.

IV. Discussion:

The total study group was followed up to six months with the help of the community link workers who are working specifically for PLWHA by means of repeated health checkups, clearing their doubts & giving health advice, contacting by mobile phone and facilitating them to seek treatment for their health problems etc. And at the end of six months among the 200 study subjects, four persons died (one female & three males) and 12 persons (5females &7males) were dropped from the study due to non- cooperation. So after completion of 6 months follow up, these 184 patients were again interviewed with the same Pro - forma which was used previously designed to collect the information pertaining to shaving practice, cessation of smoking and alcohol and other healthy practices etc. The collected data was analysed while comparing with the previous information along with the help of computer software by using appropriate statistical techniques.

It is observed that in this study about 61% constituted by males and 39% by females which correlates with the figures of studies conducted by A. Shobhana et.al²² in 2004 in Kolkota (72% males & 28% females) & Pedram Sendi et.al²³ in 2004 in USA (69% males and 31% females), Taneja G et al in 2013²⁴ (males 69% & females 31%). In an another study conducted at Nagpur by Sanjay Sangole et.al²⁵ in 2003, it was observed that 87% males and 13% females present in the study group. And among most of the countries in the world 75% of infection is seen in males and 25% in females. And in our study no homosexual histories present among the study subjects. In our study maximum 88% of study group belongs to 15-44 years of age with the mean 35 years which correlates with our national figure 87.7%²⁶ which is also comparable to the findings of the study of Bhagyabati Devi et.al²⁷ (93%), Sanjay Sangole et.al²⁵ (80%) and Sing A. et.al²⁸ in Manipal in 2003 (80%) respectively. This shows that most cases have been occurred among sexually active and economically productive persons who are the important source for the growth & development of family as well as the country.

In this study as the impact of our study intervention related to healthy practices, it is observed that regarding practice of wearing foot ware was improved from 91% to 98%., personal hygiene from 79% to 93%., habit of hand washing practice with soap from 56% to 88%., food hygiene from 84% to 92 and history of taking nutritious diet significantly from 42% to 83% respectively. And also among the male participants with reference to shaving practice by self from 18% to 77% and towards cessation of smoking & alcohol significant reduction from 66% to 54%, & 57% to 42% was observed respectively. And also significant improvement was observed among the study group regarding the safe sexual practices like condom usage & avoiding of multiple sexual partners from 39% to 72%.

In Ciara E.O Reilly et al study²⁹ 40% improvement of hand washing practice using soap in Amhara, Ethiopia was observed as against 32% in our study.

The higher smoking cessation rates observed in vidrine et al study¹¹ and that could be explained by the greater contact time between study staff and participants rather than the counselling content. And lower quit rates are observed in (Blalock JA et al, Centre for diseases control & Prevention³⁰) because of the substantial burden of mental illness (Depression) among the study subjects and the presence of barriers was also associated with limited access to intervention programmes (Honjo K et al³¹).

In other smoking cessation intervention trails for smokers of PLWHA the percentage of outcome quite observed were 42% in Cui et al 2011 study³², 38% in ELZi et al 2006³³, 22% in Ingersoll (2009) et al³⁴, 24% in Tornero C et al (2009)⁷⁵ study, 38% in drop- clotet et al (2006)³⁶ study, 19.2% in Moadel AB et al (2012)³⁷ Study, 10% in Liloyd Richardson et al (2009)³⁸ study, 8.9% in Vidrine et al (2011)³⁹ study respectively.

It is observed that harmful alcohol use in community & in PLWHA in Kariobangi, Kenya⁴⁰ was significantly decreased with **vigorous health education intervention** by Health workers. Alcohol abuse & alcohol consumption have been identified as potential behavioral risk factors for the transmission of HIV/AIDS in the form of drinking before risky sexual events (or) frequent brinze drinking as associated significantly with HIV incidence.

According to Kalichman et al 2007 b, 2008⁴¹ study, the intervention showed mixed results, with more behavioral changes in the short term (3 month follow-up) versus (6-months follow-up) medium term.

V. Conclusions & Recommendations

- Based on the efficacious findings of our study regarding cessation of smoking & alcohol among the study subjects indicate that Strengthening of counseling process with an extended health education routed interventional approaches by involving workers specifically working for PLWHA, health care staff, volunteers, youth clubs, NGOs, village level workers, opinion leaders and adequate funding etc with regular prolonged contact, definitely beneficial to improve and maintenance of overall health status of the PLWHA which facilitates them to lead a productive later life in the society.
- As the HIV seropositivity is more in 20-40 years of age which is economically productive age group in the family & country, the youth should be targeted & sensitized with health education including sex education regarding safe sexual practices like use of condoms, avoidance of extra marital sexual life etc, is to help the person understand, accept and cope up with the diagnosis and prevent serious reactions such as suicide (or) long-term intractable depressions (Psychiatric co- morbidity) etc. This education must be continuous and ongoing process along with the improvement of general literacy status.

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