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GAVIN PUBLISHERS

Journal of Addictions and Therapies

Curtis SV and Wodarski JS. J Addict Ther: JATP-121.

DOI: 10.29011/2577-1507/100021

Research Article

# HIV/AIDS and Substance Abuse Primary Prevention in at Risk Adolescents: A Program Analysis

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**Citation:** Curtis SV, Wodarski JS (2018) HIV/AIDS and Substance Abuse Primary Prevention in at Risk Adolescents: A Program Analysis. J Addict Ther: JATP-121. DOI: 10.29011/2577-1507/100021

**Received Date:** 01 May, 2018; **Accepted Date:** 21 May, 2018; **Published Date:** 28 May, 2018

## Abstract

The HIV/AIDS and Substance Abuse Primary Prevention in at Risk Adolescents project targeted male and female adolescents 12-17 years old. The program implemented small group educational techniques based on the Teams-Games-Tournaments (TGT) Alcohol Prevention curriculum and the Reducing the Risk (RTR) curriculum. Our program served a total of 580 participants in East Tennessee; 45.5% identified as male and 53.6% identified as female (Figure 1). Participants' knowledge of risky behaviors increased as evidenced by the initial data analysis. The number of participants who believed there was great risk in drinking five or more drinks of alcohol once or twice a week increased from 60.7% at baseline to 66.6% at follow-up. (Figure 2) When asked how likely are you to be sexually active in the next three months, 71.7% of participants responded "not at all likely" at baseline, which increased to 79.6% at the three-month follow-up (Figure 2.1). Participants' knowledge of HIV/AIDS greatly improved over the course of the program. After the educational intervention was provided, a greater number of participants correctly answered the true/false questions regarding HIV/AIDS such as "only people who look sick can spread the HIV/AIDS virus," (Figure 2.3) and "birth control pills protect women from getting the HIV/AIDS virus" (Figure 2.4).

## Introduction

Knoxville is the county seat of Knox County and is the third largest city in the state. Knoxville is home to approximately 448,644 people, and of this population, 48,005 (10.7%) are minorities [1]. Currently, 26,136 people, 10,004 of whom are minorities, live in the inner city of Knoxville, which consists of a collection of urban housing that was primarily a black community from the beginning. Many housing opportunities were developed, but due to lack of economic development, the urban neighborhoods began to decline. In general, housing project communities have the lowest per capita income in the nation and report some of the highest nationwide numbers of drug and child abuse [2].

According to the National Household Survey on Drug Use and Health, an estimated 9.6 million people have tried methamphetamine at some point in their lives [3]. In recent years, Tennessee in particular has seen a dramatic increase in methamphetamine abusers. In 2010, Tennessee led the country in meth lab seizures [4]. The Tennessee Bureau of Investigation reports that East Tennessee is part of the Appalachia High Intensity Drug Trafficking area. With rural geography and proximity to I-40, East Tennessee is a prime location for the production and distribution of illegal drugs [5].

In 2013, the Knox County Health Department released the results of the 2013 Youth Risk Behavior Survey (YRBS). In Knoxville, 23% of Knox County high school students admitted to using marijuana one or more times during their life. Of that 23%, 7% disclosed that they had tried marijuana for the first time before the age of 13. Other popular drugs used by Tennessee adolescents were cocaine (5%), inhalants (8.4%), ecstasy (7.1%), and prescription drugs (16%).

Underage drinking is also significantly prevalent in Knoxville adolescents. According to the Knox County Youth Risk Behavior Survey (2013), 60% of high school students had ever had at least one drink of alcohol during their life. Of that percentage, nearly 28% drank alcohol for the first time before the age of 13. A third of participants responded as having at least one drink of alcohol during the 30 days prior to the survey [6].

In 2011, Tennessee ranked 15th in the number of new HIV diagnoses. There were a total of 921 individuals diagnosed that year across the state [7]. In East Tennessee, there are currently 93 cases of individuals living with HIV. Of those 93 individuals, 17 are under the age of 25 [8]. In East Tennessee, risky sexual behaviors are prevalent. Nearly 40% of Knox County high school student

reported ever having sexual intercourse. Of that percentage, only half of the students reported that they used a condom the last time that they had sexual intercourse [6].

The ultimate goal of the program was to provide a coordinated continuum of culturally competent HIV/AIDS preventive services for adolescents and those linked to them, in order to reduce their use of substances and help prevent transmission of HIV/AIDS and ultimately improve their lives and ability to function. In order to achieve the primary goal of the project, eleven process goals were identified:

1. Intervene effectively to provide culturally competent HIV/AIDS-related substance abuse prevention services for adolescents and to others linked to the client in both traditional and non-traditional settings;
2. Help adolescents abstain from or reduce their use of alcohol and/or drugs;
3. Reduce adolescents' involvement in illegal activities and thereby reduce criminal justice expenditures;
4. Increase adolescents' academic involvement and productivity;
5. Improve adolescents' family and community lives;
6. Enhance adolescents' relationships with others;
7. Facilitate adolescents living in a stable environment;
8. Improve adolescents' mental and physical health;
9. Expand adolescents' life management skills to improve their quality of life;
10. Decrease substance abuse-related costs to society; and
11. Reduce the health and social costs of substance abuse and dependence to the public and increase the safety of America's citizens by reducing substance abuse related crime and violence.

## Method

This project targeted male and female adolescents 12-17 years old. The program implemented small group educational techniques based on the Teams-Games-Tournaments (TGT) Alcohol Prevention curriculum, cited as a Model Program in SAMHSA's National Registry of Effective Programs and Practices (NREP) and as a Model Program by the Office of Juvenile Justice and Delinquency Prevention, and the Reducing the Risk (RTR) curriculum, both of which have been empirically evaluated as effective methods of teaching adolescent skills development in the areas of substance abuse and high-risk sexuality prevention.

This program was originally conducted in conjunction with The Boys and Girls Clubs of the Tennessee Valley. While working with The Boys and Girls Clubs, the participants would attend a total of twenty sessions over the course of school year. With the twenty-session format it was difficult to recruit adolescents who were willing to commit to the twenty sessions and it was also difficult to retain the participants who were recruited. We decided to shorten the program to five sessions. This method proved to be much more efficient and we were able to reach more adolescents. Eventually we had to discontinue our partnership with The Boys and Girls Clubs because of an abstinence-only initiative they began implementing in the Clubs. We began outreach in other venues and found that advertising in the local newspaper was very effective for recruitment. We used our community connections and found several churches in East Tennessee that allowed us to use their space to hold our classes. We changed the format for these classes to an all-day seminar. The all-day seminars allowed us to reach a large number of adolescents while still maintaining the integrity of the program. Our program gained strong notoriety and we had an extensive waitlist for the final two years of the project.

Participants completed a baseline survey before the session began and an exit survey at the end of the session. This exit (follow-up) survey was completed between three and six months after the intervention. The survey tool used was the National Minority SA/HIV Prevention Initiative Youth Questionnaire (OMB No.: 0930-0298). Participants were given a $20.00 gift card to WalMart for each survey completed for a possible total of $60.00 in gift cards. The individuals who led the sessions were graduate students in the MSSW program at the University of Tennessee College of Social Work. Sarah Curtis, L.M.S.W., developed a curriculum guide that each facilitator used during the sessions.

### Sessions

#### 20-Session Format

Session 1: Introduction and Initial Survey

Session 2: Ice Breakers/Ground Rules

Session 3: Introduction to Major Classifications of Substances

Session 4: Tournament

Session 5: Physical Effects of Psychoactive Substances

Session 6: Tournament

Session 7: Exploring Attitudes about Drugs and Sex in the Media

Session 8: Tournament

Session 9: Peer Pressure, Psychoactive Substance Use and Sexual Activity

Session 10: Tournament

Session 11: Values

Session 12: Tournament

Session 13: Sexually Transmitted Infections

Session 14: Tournament

Session 15: Facts and Myths about HIV/AIDS

Session 16: Tournament

Session 17: How HIV/AIDS is transmitted

Session 18: Final Tournament

Session 19: Final Tournament

Session 20: Final Survey

**5-Session Format**

Prior to Class: Introductions and Initial Survey

Session 1: Icebreakers, Values/Ethics, Peer Pressure, and the Media; Tournament

Session 2: Introduction to Major Classifications of Substances; Physical Effects of Psychoactive Substances; Tournament

Session 3: Sexually Transmitted Infections; Facts/Myths about HIV/AIDS; How HIV/AIDS is transmitted

Session 4: STI/HIV/AIDS Tournament

Session 5: Final Tournament; Final Survey

**All-Day Format**

9:45am-10:00am: Registration

10:00am-10:45am: Baseline Survey

10:45am-11:40am: Introduction to Major Classifications of Substances; Physical Effects of Psychoactive Substances; Tournament

11:40am-12:00pm: Sex and Drugs in the Media

12:00pm-12:45pm: Lunch

12:45pm-1:30pm: Sexually Transmitted Infections

1:30pm-2:30pm: Facts/Myths about HIV/AIDS; How HIV/AIDS is transmitted; Tournament

2:30pm-3:15pm: Peer Pressure, Values/Ethics

3:15pm-4:00pm: Final Tournament/Activity; Exit Survey

# Results

## Participant Demographics

| **Figure 1** | |
|---|---|
| **Gender** | |
| Male | 45.5% |
| Female | 53.6% |

**Figure 1:** Participant Demographics.

| **Figure 1.1** | |
|---|---|
| **Race/Ethnicity (Participants were allowed to select multiple categories)** | |
| Hispanic | 5% |
| White | 55.3% |
| Black or African American | 42.9% |
| American Indian | 2.1% |
| Native Hawaiian or Other Pacific Islander | 0.2% |
| Asian | 1.2% |
| Alaskan Native | 0.3% |
| Other | 5% |

**Figure 1.1:** Race/Ethnicity.

## Survey Results

| **Figure 2: RSKALC** | | |
|---|---|---|
| **How much do people risk harming themselves when they have 5 or more drinks of alcohol once or twice a week?** | | |
| | **Baseline** | **Follow-up** |
| No risk | 7.0% | 4.5% |
| Slight risk | 8.3% | 5.5% |
| Moderate risk | 24.0% | 23.4% |
| Great risk | 60.7% | 66.6% |

**Figure 2:** RSKALC.

| **Figure 2.1: SEX_ACTIVE_3MOS** | | |
|---|---|---|
| **How likely are you to be sexually active in the next 3 months?** | | |
| | **Baseline** | **Follow-up** |
| Not at all likely | 71.7% | 79.6% |
| A little likely | 14.5% | 7.3% |

| | | |
|---|---|---|
| Somewhat likely | 6.5% | 6.8% |
| Very likely | 7.3% | 6.4% |

**Figure 2.1:** SEX-Active-3Mos.

| Figure 2.2: HIV_SICK | | |
|---|---|---|
| Only people who look sick can spread the HIV/AIDS virus | | |
| | **Baseline** | **Follow-up** |
| False | 73% | 89% |

| Figure 2.3: HIV_GAYSEX | | |
|---|---|---|
| Only people who have sex with gay people get HIV/AIDS | | |
| | **Baseline** | **Follow-up** |
| False | 73% | 89% |

**Figure 2.3:** HIV-Gay Sex.

| Figure 2.4: HIV_BCPILL | | |
|---|---|---|
| Birth Control pills protect women from getting the HIV/AIDS virus | | |
| | **Baseline** | **Follow-up** |
| False | 63% | 81% |

**Figure 2.4:** HIV-BC Pill.

| Figure 2.5: HIV_CURE | | |
|---|---|---|
| There is no cure for AIDS | | |
| | **Baseline** | **Follow-up** |
| True | 50% | 66% |

**Figure 2.5:** HIV-Cure.

| Figure 2.6: HIV_18TEST | | |
|---|---|---|
| Young people under the age of 18 need their parents' permission to get an HIV test | | |
| | **Baseline** | **Follow-up** |
| False | 29% | 49% |

**Figure 2.6:** HIV-18 Test.

| Figure 2.7: HIV_STD | | |
|---|---|---|
| Having another STD increases a person's risk of becoming infected with HIV | | |
| | **Baseline** | **Follow-up** |
| True | 35% | 48% |

**Figure 2.7:** HIV-STD.

| Figure 2.8: HIV_DRGS | | |
|---|---|---|
| There are drugs available to treat HIV that can lengthen the life of a person infected with the virus | | |
| | **Baseline** | **Follow-up** |
| True | 37% | 55% |

**Figure 2.8:** HIV-DRGS.

| Figure 2.9: HIV_IVDRG | | |
|---|---|---|
| Sharing intravenous needles increases a person's risk of becoming infected with HIV | | |
| | **Baseline** | **Follow-up** |
| True | 58% | 80% |

**Figure 2.9:** HIV-IV-DRG.

| Figure 3.0: HIV_ORAL | | |
|---|---|---|
| You can become infected with HIV by having unprotected oral sex | | |
| | **Baseline** | **Follow-up** |
| True | 59% | 82% |

**Figure 3.0:** HIV-Oral.

| Figure 3.1: HIV_TESTED | | |
|---|---|---|
| Have you ever been tested for HIV? | | |
| | **Baseline** | **Follow-up** |
| Yes | 8% | 9% |

**Figure 3.1:** HIV-Tested.

| Figure 3.2: HIV_OP2TEST | | |
|---|---|---|
| If you had the opportunity to be tested for HIV, would you? | | |
| | **Baseline** | **Follow-up** |
| Yes | 36% | 45% |

**Figure 3.2:** HIV-OP2 Test.

| Statistical Significance: ANOVA | |
|---|---|
| **Variable Name** | **Significance (* denotes significance)** |
| **RSKALC** | **.027*** |
| **SEX_ACTIVE_3MOS** | **.175** |
| **HIV_SICK** | **.252** |
| **HIV_GAYSEX** | **.376** |
| **HIV_BCPILL** | **.587** |

| | |
|---|---|
| **HIV_CURE** | **.048*** |
| **HIV_18TEST** | **.000*** |
| **HIV_STD** | **.006*** |
| **HIV_DRGS** | **.002*** |
| **HIV_IVDRG** | **.345** |
| **HIV_ORAL** | **.002*** |
| **HIV_TESTED** | **.761** |
| **HIV_OP2TEST** | **.000*** |

**Statistical Significance: ANOVA.**

## Discussion

The program was adapted several times in order to meet the needs of the population. The program was originally designed as a twenty-session format but was reduced to a five-session format and then reduced again to an all-day workshop. We found that this not only aided in the retention of our participants but also allowed us to reach more adolescents.

Capacity building was vital during the course of the program. We fostered relationships with many community agencies including The Boys and Girls Clubs, various mental health agencies, local churches, local news outlets, and the Knox County School System. These relationships aided in building a sustainability plan. Helen Ross McNabb, a local mental health services agency, has assumed responsibility in continuing to offer these services to East Tennessee adolescents.

Our program served a total of 580 participants in East Tennessee; 45.5% identified as male and 53.6% identified as female (Figure 1). Participants' knowledge of risky behaviors increased as evidenced by the initial data analysis. The number of participants who believed there was great risk in drinking five or more drinks of alcohol once or twice a week increased from 60.7% at baseline to 66.6% at follow-up. (Figure 2) When asked how likely are you to be sexually active in the next three months, 71.7% of participants responded "not at all likely" at baseline, which increased to 79.6% at the three-month follow-up (Figure 2.1). Participants' knowledge of HIV/AIDS greatly improved over the course of the program. After the educational intervention provided, a greater number of participants correctly answered the true/false questions regarding HIV/AIDS such as "only people who look sick can spread the HIV/AIDS virus," (Figure 2.3) and "birth control pills protect women from getting the HIV/AIDS virus" (Figure 2.4). The number of participants who reported being tested for HIV increased from 7.8% at baseline to 9.1% at the follow-up (Figure 2.9). After the intervention, 45% of participants stated that they would be willing to be tested for HIV if given the opportunity (Figure 3). The participants who expressed interest in being tested for HIV were referred to the Knox County Health Department.

## Limitations

It was difficult to recruit the number of adolescents needed while also trying to solely focus on targeting minority adolescents. Because of the predominantly white demographic in East Tennessee, it was difficult to obtain a large number of participants who identified in a minority group. We did end up with a sizeable sample size over the course of the project. Some of the data may have been skewed due to adolescents not completely understanding the survey instrument that was used. Also, because this program was an optional program for adolescents to participate in, it is difficult to monitor how our selection process may have biased the data.

Throughout the study, we also found that many of the participants were confused with several of the survey questions leading to them either not respond, or incorrectly answer the questions. For example, questions 47 and 48 ask participants "I can get my boyfriend or girlfriend to use a condom, even if he or she does not want to," and "I would be able to say to my boyfriend or girlfriend that we should use a condom." These questions are hypothetical when a respondent does not have a boyfriend or girlfriend. Many participants selected "strongly disagree" to these two items which might seem to indicate that they would be inclined to practice unsafe sex. In reality, those participant's responses were due to sexual abstinence. Another question that was confusing for participants was "describe where you live." If they lived in a home with their parents, they should have selected "in my own home or apartment." However, many of the participants interpreted that as meaning they owned or rented the home themselves and thus the participants indicated they lived "in a relative's home." Several participants also brought it to our attention that questions 36 through 40, which addressed the approval of risky behaviors, should have included answers indicating approval. For example, one question stated, "How do you feel about someone your age trying marijuana or hashish once or twice?" The answer options include: neither approve nor disapprove, somewhat disapprove, strongly disapprove, don't know or can't say.

## Recommendations

Future sustainability of the program presented here is hopeful with the cooperation of the Helen Ross McNabb Center guided by the Principal Investigator of this project. Helen Ross McNabb has repeatedly shown great enthusiasm for incorporating new ideas and programs to better serve at-risk populations in East Tennessee. They have a wonderful track record of developing new ideas stemming from research projects into real world programs. They will hopefully continue the work presented in this study by constantly updating their procedures and refining the survey

presented here to be more concise and easy to understand while maintaining the validity of the items as they relate to this at-risk group of adolescents.

## Funding

The research work for the Substance Abuse and Mental Health Services Administration has got Grant # SP14989 support.

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