A Systematic Review of the Effectiveness of HIV and IPV Intervention Programs on HIV Rates, Condom Use, IPV Rates, and Abstinence in Adolescents in Low Resource Countries

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Abstract

There are high rates of HIV in adolescent girls in low resource countries due to the high incidence and prevalence of sexual violence. The purpose of this project is to collect the data of educational programs that aim to decrease rates of HIV and describe their characteristics, specifically, the rates of HIV, the rate of sexual violence, condom use, and sexual practices before and after intervention by education programs. The data shows that none of the studied measures changed after educational programs.

Introduction

HIV:
• Economic: extremely expensive to treat and in order to control the virus, there needs to continuous lifelong management.
• Cultural: Eg In Swaziland, where the HIV rates are amongst the highest in the world, there are superstitions that if men have sex with virgins, they can cure themselves of HIV.
• Social: Girls who are HIV positive, shunned and forced to work in prostitution.
• Epidemiology of HIV infections in low resource countries, adolescent girls and young women (ages 15-24) account for 60% of people newly affected with the disease every year.
  • Due to high rates of sexual violence against adolescent girls in these low resource countries.
  • Sexual violence has an increased chance of transmitting HIV from person to person because of the violent nature of the act, the lack of contraception in most cases, and the inability of the victim to negotiate.

Our goal: To study programs that target adolescent population and see if educating them about safe sex, HIV, intimate partner violence, and condom use will decrease the chances of misinformation being spread and increase the chances of people taking measures to prevent contracting HIV.

Materials and Methods

Inclusion criteria: Randomized control trials for educational programs on HIV.
Exclusion criteria: Studies that don’t discuss HIV rates and non-English articles.
I looked at HIV incidence, condom use, abstinence and sexual practices as my primary outcomes. Some of my secondary outcomes included HIV testing rates and overall STD rates to assess how well the education programs objectively helped decrease the incidence of diseases.
We analyzed the data using incidence rate ratios and odd ratios over six studies. I was unable to find sufficient data on intimate partner violence.

Results

The analysis showed that there was no statistically significant difference between the incidence rate ratios of HIV incidence between the intervention and control groups. Both articles included in the analysis showed no difference and the confidence interval for the meta-analysis was small.

Meta-analysis of condom use between the intervention group and the control group:
• No statistically significant difference between the groups.
  • Burnett at al and Martinez-Donate et al showed statistically significant differences but Mathews et al did not.
  • However, in the Martinez-Donate et al study, the intervention group increased their condom use by twice the amount after the intervention while the control group had not changed in condom use, so the odds ratio for that study was extremely high. Therefore, in the meta-analysis, the confidence interval was wide, making it statistically insignificant.

The meta-analysis of the five studies showed:
• a decrease in abstinence in the intervention group compared to the control group, though this was not statistically significant.
• 3/5 studies showed a statistically significant difference with small confidence intervals, showing that there’s decreased abstinence in the intervention groups. The study by Erulkar et al showed no difference between the intervention group and control with a wide confidence interval, which contributed the most to the lack of significant difference in the meta-analysis.

The educational programs in the interventions did not decrease HIV incidences, increase condom use, and decrease abstinence or sexual practices. Possible reasons for this could include the fact that none of the articles I looked at used the same educational intervention, so there was no standardized program that was analyzed across several trials. Another reason could be that most of the articles had several participants that they had lost in follow up, which could have decreased the power of their studies. Ultimately however, meta-analysis of several randomized control trials of education programs in low resource countries on HIV showed that these programs did not have a significant effect in decreasing HIV incidence, increasing condom use, and decreasing sexual practices.

Discussion and Conclusion

I wish to thank my mentor Dr. Lara Yoblonski and Paul Kang for the help in synthesizing my project and interpreting the data.