

Using SAS® to Examine Health Effects of Intimate Partner Violence among HIV+ Women

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Abstract

Intimate partner violence (IPV) is a recognized national public health issue that includes physical abuse and unwanted or forced sexual contact by a partner. Numerous studies have documented the negative health consequences of IPV. There is evidence that IPV has a negative effect on the self-management of HIV, which is now a chronic disease. The purpose of this study was to use descriptive statistics and correlations to measure the prevalence of IPV and the possible effects of IPV among HIV+ women. A convenience sample of 200 HIV+ women recruited at a Ryan White-funded clinic in Columbia, SC. The prevalence of IPV was assessed using the Severity of Violence Against Women Scale (SVAWS). The SVAWS is a 46-item Likert scale that assesses experiences with IPV over the last 12 months. In addition to a summary score of total IPV, the SVAWS also contains subcategories of types of IPV. Participants were also asked to report their most recent HIV viral load in order to gauge the management of their HIV. Statistical analysis included descriptive statistics and correlation procedures. SAS 9.4 used to analyze the data. The Spearman correlation was used to examine the association between total levels of IPV, each subcategory of IPV, and viral load. There were no significant positive linear relationships between viral load and violence subscales. The Pearson correlation for different subscales of violence and the HIV viral load ranged from -0.01 to 0.1.

Keywords: SAS, Cyclic Resistance Ratio, Source sand layer.

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Background

Intimate partner violence (IPV) is a national public health issue. Physical abuse and unwanted or forced sexual contact by a partner are both considered forms of IPV¹. A national 2006 study found that 30% of women reported some type of IPV in their lifetime². The 2011 SC Crime Book from the South Carolina Law Enforcement Division recorded almost 30,000 assaults by intimate partners for that year³. Numerous studies over the past twenty years have documented the negative health consequences of IPV. HIV and STDs are recognized risks/outcomes of IPV, both as direct results of sexual IPV or due to behaviors resulting from the mental-health impacts of IPV^{4, 5}. Among women who are HIV+, continued exposure to IPV likely impacts both their overall health and ability to manage their HIV disease. Although HIV has become a chronic disease, very high adherence to sometimes complicated medication regimens is necessary to prevent immune system damage and progression to AIDS. A search of the current literature on both IPV and HIV found approximately six articles similar to the proposed study. The current similar studies generally find correlations between high rates of IPV and worse HIV-related health outcomes.

Methodology

Severity of Violence Against Women Scale (SVAWS) has been used by other studies as a measure of IPV since the mid-1990s⁶. This 46-item severity scale assesses frequency of both threats of and actual violent acts within the past year from a partner. The 46 items on the SVAWS load onto nine factors: symbolic violence, mild/moderate/serious threats of violence, minor/mild/moderate/serious actual violence, and sexual violence. Each item on the SVAWS is ranked by the woman on a frequency of 1-4. In addition to conducting the SVAWS, we also collected basic demographics and asked women to report their most recent HIV viral load. Before recruitment of participants began, IRB approval was obtained. A convenience sample of 200 HIV+ women at the USC Immunology Center, a Ryan-White funded clinic in Columbia, SC is the target group for completion of the SVAWS. Nurses and the female peer counselor at the clinic offered the survey to patients while they were at clinic appointments or other meetings at the clinic offered the survey to patients while they were at clinic appointments or other meetings at the clinic. Participants were given a \$5 cash incentive upon completion of the survey.

Data Analysis

Proc MEAN and FREQ used to describe the data. PROC CORR used to examine the linear relationship of Intimate partner violence (IPV) with selected variables. All data analyses were performed using SAS/STAT® statistical software, version 9.4 (SAS, 2013).

Results

Table1 showed the frequency distribution of ethnicity and partnership. About 83 percent of sample was African-American. The percentage of single was 43.5.

Table1. Frequency distribution of ethnicity and Partnership

ethnicity				
race	Frequency	Percent	Cumulative Frequency	Cumulative Percent
African-American	165	82.50	165	82.50
Caucasian	26	13.00	191	95.50
Hispanic	1	0.50	192	96.00
Other	8	4.00	200	100.00

partnership status				
parts	Frequency	Percent	Cumulative Frequency	Cumulative Percent
single	87	43.50	87	43.50
separated	23	11.50	110	55.00
divorced	25	12.50	135	67.50
married	31	15.50	166	83.00
partnered	34	17.00	200	100.00

Table 2 showed means, standard deviation, minimum, and maximum of variables. The results showed the average of age was 43.95 years old with standard deviation of 9.81. The average of viral load and total violence score were 11427.28 and 57.39; respectively.

Table2, N, means, standard deviation, minimum, and maximum for variables.

Variable	N	Mean	Std Dev	Minimum	Maximum
age	200	43.95	9.81	19.00	65.00
how many adults living in the house besides yourself	200	1.61	1.17	0.00	6.00
how many children living in the house	200	0.92	1.20	0.00	6.00
viral load	200	11427.28	50524.21	20.00	476300.00
Total violence load	200	57.39	23.37	46.00	181.00
symbolic violence	200	5.08	2.34	4.00	15.00
threats of mild violence	200	5.88	3.05	4.00	16.00
threats of moderate violence	200	5.31	2.89	4.00	16.00
threats of serious violence	200	8.72	4.06	7.00	28.00
mild violence	200	5.58	3.01	4.00	16.00
minor violence	200	5.75	2.33	5.00	20.00
moderate violence	200	3.60	1.83	3.00	12.00
serious violence	200	10.30	4.03	9.00	36.00
sexual violence	200	7.20	3.10	6.00	24.00

Table 3 indicated Spearman correlation among variables. The results show there is no linear relationship between total viral load and total violence and its subscales. The result indicated that there was weak negative correlation between total violence and its subscales with age. However, the result did not indicate any relationship between number of adults and children living with total violence.

Table3. Spearman Correlation

Spearman Correlation Coefficients, N = 200 Prob > r under H0: Rho=0				
	age	nalive	nclive	vload
Tv Total violence load	-0.21558 0.0022	-0.12598 0.0755	0.06804 0.3384	0.00476 0.9467
sv symbolic violence	-0.15854 0.0249	-0.06820 0.3372	-0.01019 0.8861	0.06001 0.3986
tmilv threats of mild violence	-0.14738 0.0373	-0.10973 0.1219	0.05007 0.4814	-0.00525 0.9412
tmodv threats of moderate violence	-0.19255 0.0063	-0.06857 0.3346	0.03270 0.6458	-0.04088 0.5655
tsv threats of serious violence	-0.12852 0.0697	-0.05536 0.4362	-0.01275 0.8578	-0.00756 0.9153
milv mild violence	-0.15653 0.0269	-0.11477 0.1056	0.01882 0.7914	0.02677 0.7067
minv minor violence	-0.07917 0.2651	-0.06068 0.3933	-0.00092 0.9897	0.02326 0.7437
modv moderate violence	-0.12504 0.0777	-0.11681 0.0995	0.08774 0.2167	0.06050 0.3947
sev serious violence	-0.16191 0.0220	-0.02718 0.7024	0.02915 0.6820	0.05009 0.4812
sexv sexual violence	-0.11400 0.1080	-0.08117 0.2532	0.05221 0.4628	0.06801 0.3386

Conclusion

SAS is power tool to assist clinician to analysis data in any levels. In this study simple procedure in SAS help clinician to examine and evaluate her/his question. The finding showed that symbolic violence and threats of violence were the subscales with highest mean results. There were no significant correlations between viral load and violence subscales in this population. The most direct clinical predictor of viral load is adherence to the antiretroviral regimen. The possible negative effects of IPV on ability to adhere to antiretroviral may be mitigated in our sample by positive effects of available support groups and positive relationships with their providers.

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SAS Syntax

```
proc format;
  value racef 1="African-American"
            2="Caucasian"
            3="Hispanic"
            4="Other" ;
  value partsf 1="single"
              2="separated"
              3="divorced"
              4="married"
              5="partnered" ;
  value anthivf 1="yes"
               0="no";
  value often1f 1="never"
               2="once"
               3="a few times"
               4="many times";
data one;
set hiv.hivdata;
Tv = sum (of often1 - often46);
sv = sum (of often1-often4);
tmilv = sum (of often5-often8);
```

```
tmodv = sum (of often9-often12);
tsv = sum (of often13-often19);
milv = sum (of often20-often23);
minv = sum (of often24-often28);
modv = sum (of often29-often31);
sev = sum (of often32-often40);
sexv = sum (of often41-often46);
```

```
if race=1 then raceg=1;
  else if race =2 then raceg=2;
```

LABEL

```
id="Id Number"
age="age"
race="ethnicity"
Raceg ="Race"
parts="partnership status"
nalive="how many adults living in the house besides yourself"
nclive="how many children living in the house"
anthiv="are you currently taking antiretrovirals"
mvload="month of most recent viral load taken"
yvload="year of most recent viral load taken"
Tv ="Total violence load"
vload="viral load"
sv="symbolic violence"
tmlv="threats of mild violence"
tmodv="threats of moderate violence"
tsv="threats of serious violence"
milv="mild violence"
minv="minor violence"
modv="moderate violence"
sev="serious violence"
sexv="sexual violence"
often1="hit or kicked a wall, door or furniture"
often2="threw, smash or broke an object"
often3="driven dangerously with you in the car"
often4="threw an object at you"
often5="shook a finger at you"
often6="made threatening gestures or faces at you"
often7="shook a fist at you"
often8="acted like a bully toward you"
often9="destroyed something belonging to you"
often10="threatened to harm or damage things you care about"
often11="threatened to destroy property"
often12="threatened someone you care about"
often13="threatened to hurt you"
often14="threatened to kill himself"
often15="threatened to kill you"
often16="threatened you with a weapon"
often17="threatened you with a club-like object"
often18="acted like he wanted to kill you"
often19="threatened you with a knife or gun"
often20="held you down, pinning you in place"
often21="pushed or shoved you"
often22="grabbed you suddenly or forcefully"
often23="shook or roughly handled you"
often24="scratched you"
often25="pulled your hair"
often26="twisted your arm"
often27="spanked you"
often28="bit you"
```

```
often29="slapped you with the palm of his hand"
often30="slapped you with the back of his hand"
often31="slapped you around your face and head"
often32="hit you with an object"
often33="punched you"
often34="kicked you"
often35="stomped on you"
often36="choked you"
often37="burned you with something"
often38="used a club-like object on you"
often39="beat you up"
often40="used a knife or gun on you"
often41="demanded sex whether you wanted to or not"
often42="made you have oral sex against your will"
often43="made you have sexual intercourse against your will"
often44="physically forced you to have sex"
often45="made you have anal sex against your will"
often46="used an object on you in a sexual way"
;
format race raceg racef. parts partsf. anthiv anthivf. often1-often46 often1f.;
Run;

ods rtf;
ods listing close;
proc freq data =ONE;
tables id -- often46;
title ' Frequency tables / ' ;
      title2 ' Hiv project ' ;run;
proc means data=one maxdec=2;
  var age nalive nclive vload tv -- sexv ;
  TITLE1 'Mean';
title2 ' Hiv project ' ;
run;

proc CORR spearman Data=one ;
  var age nalive nclive vload;
  with tv -- sexv ;
  TITLE1 'CORREALTION';
  title2 ' Hiv project ' ;
run;
ods rtf close;
ods listing;
quit;
run;
```