

*The following paper was completed by **Skye MacKay** for Professor Catherine Moran's Methods of Social Research class. Skye will be entering her Senior year in the fall of 2008 and is dual-majoring in Sociology and Justice Studies. She presented her research at the 2007 Undergraduate Research Conference at the University of New Hampshire and plans to continue this research for her Honors Thesis.*

### **College Students' Knowledge, Attitudes, and Behaviors Surrounding HIV/AIDS**

*This paper reports the results of a descriptive study looking at patterns among undergraduate college students' knowledge about HIV/AIDS, its transmission modes, and its preventative measures, their attitudes about HIV/AIDS, and their HIV testing behaviors in the United States. Students' knowledge does not have a relationship with their testing behavior, but age, year in school, number of vaginal/anal sexual partners, and whether they know someone with HIV predict 23% of the variability of the number of times the student gets tested. The relationship status of someone has an influence on whether a student believes that person should get tested for HIV. When given a scenario involving a student engaging in unprotected oral and vaginal intercourse with another person, more thought the student should get tested if they were not in a relationship with the person than if the student was in a relationship.*

#### **Introduction:**

This study intends to examine college students' knowledge, attitudes, and beliefs surrounding HIV/AIDS to further contribute to this previously researched field. Research can lead to the development of effective methods to combat the spread of HIV/AIDS in this population.

Half of all new Human Immunodeficiency Virus (HIV) infections occur in people between the ages of 15 and 24 years old (Youth Aids & Sig Ep). This age range includes the majority of college students. Also, about one in four of those infected does not know they have HIV/AIDS and remain undiagnosed (Centers for Disease Control and Prevention 2006). HIV and Acquired Immune Deficiency Syndrome (AIDS) are affecting this age group considerably. My research undertook to determine if there are patterns among American undergraduate college students' knowledge, attitudes, and testing behaviors surrounding HIV/AIDS.

Approximately 88 percent of high-school students have been taught about HIV and AIDS in school (Centers for Disease Control and Prevention 2006), yet some college students continue to answer questions regarding HIV/AIDS, its modes of transmission, and preventive measures incorrectly (Lance, Morgan & Columbus 1998, Polacek, Hicks & Oswalt 2007, Petro-Nustas, Kulwicki & Zumout 2002, Opt & Loffredo 2004). Of the sexually active students, many of them do not practice safe sex or other prevention techniques, such as getting tested (Dekin, Cabrera, Vogt & Volkwein 1995, The American College Health Association 2005), putting them and others at risk for HIV infection.

It is important to see if these patterns exist because they may be able to give an idea as to why HIV is spreading so rapidly in this population. This research is of sociological importance because our society is heavily relying on knowledge-based educational systems, which are major social institutions, to prevent and stop the spread of HIV. It is important to investigate whether or not knowledge has a relationship with preventative behaviors, including testing for HIV, and attitudes about HIV which may give us an idea if these knowledge-based educational programs are worth investing in. This study intends to look at general patterns among the three areas of knowledge, attitudes, and testing behaviors among the college student population to contribute to the previous research about this field.

## **Literature Review:**

### ***Knowledge***

There have been many studies that gauge college students' knowledge about various aspects of Human Immunodeficiency Virus (HIV)/ Acquired Immune Deficiency Syndrome (AIDS) including general facts about HIV/AIDS, transmission, and protection/preventative measures. Most researchers have found that college students are generally knowledgeable about

HIV/AIDS (Polacek, Hicks & Oswalt 2007, Dekin, Cabrera, Vogt & Volkwein 1995, Opt & Loffredo 2004), but there are still some discontinuities in what students know about HIV/AIDS.

In general studies have found that students have a basic knowledge of HIV/AIDS, but some still answer many questions about transmission and prevention incorrectly (Lance, Morgan & Columbus 1998, Polacek, Hicks & Oswalt 2007, Petro-Nustas, Kulwicki & Zumout 2002, Opt & Loffredo 2004). This is evident even in fourth-year students in Nursing, some of whom thought HIV could be transmitted through sharing utensils, sitting on a toilet, and working/going to school (Petro-Nustas, Kulwicki & Zumout 2002). One of the 63 students from this convenience sample thought that HIV could not be transmitted through sexual intercourse. Overall students were more aware of transmission through sex (Lance, Morgan & Columbus 1998, Petro-Nustas, Kulwicki & Zumout 2002, Opt & Loffredo 2004, Polacek, Hicks & Oswalt 2007) and it is speculated that their lack of understanding of the other transmission modes is because society and school education programs promote abstinence and emphasize sex as the main way HIV/AIDS is transmitted (Polacek, Hicks & Oswalt 2007).

### *Attitudes*

The research about college students' attitudes mostly investigates perceived risks of contraction. There has been a study that looked at attitudes towards those who initiate condom use in "exclusive relationships" not varying the type of relationship or length (Davidson-Harden, Fisher & Davidson 2000), but I did not discover any studies that looked at the influence of relationship status on attitudes towards testing behaviors. Therefore I will only address attitudes concerning contracting HIV.

The general consensus is that students perceive themselves to have a low risk of contracting HIV (Dekin, Cabrera, Vogt & Volkwein 1995, Polacek, Hicks & Oswalt 2007, Petro-

Nustas, Kulwicki & Zumout 2002). There was one study that found 46 percent of participants were worried about their own chances of infection, indicating a high level of perceived risk or concern (Opt & Loffredo 2004), but that result is abnormal. One explanation for this deviation from the norm is that this study was conducted at a private, church-affiliated institution that has liberal views about condom use, but “does not permit condom distribution or allow resident advisers to discuss protective methods other than abstinence” (Opt & Loffredo 2004); this is not generally the case in the college population. Most of the students felt the risks of HIV/AIDS did not either threaten or somewhat threaten them, whereas only about three percent felt they very threatened (Polacek, Hicks & Oswalt 2007).

It is encouraging to see students believe and recognize HIV/AIDS as a problem for other college students, but worrisome that such acknowledgement does not translate into students’ perceived risks of contracting the infection. Interestingly, students find themselves to be less at risk than they do their peers (Chapin 1999, Chapin & Chirico 2001, Polacek, Hicks & Oswalt 2007). In the same study in which only about three percent of participants felt they personally were very threatened by HIV/AIDS, 41 percent felt as though other college students were threatened or very threatened (Polacek, Hicks & Oswalt 2007). One study asked students how serious they thought the risk of HIV contraction was for college students. Students believed it was either a serious or very serious concern, the two highest options (Opt & Loffredo 2004). The pattern of perceived risks for other students was the opposite of their perceived personal risks.

There are many researchers who attribute this to something called optimistic bias (Chapin 1999, Chapin & Chirico 2001), which “suggests that individuals underestimate their personal risk to health hazards in relation to their peers” (Chapin 1999). This theory has been tested with the hazard of HIV/AIDS, and one study found that compared to their peers, eighty percent of

students said that contracting a STD was less likely to happen to them (Chapin 1999). This study, with 318 respondents, was conducted only in an introductory mass communications course. In another study using a number of hazards, including experiencing unplanned pregnancy and becoming a victim of violent crime, 92 percent of the students responded that they were less likely than their peers to contract AIDS later in life (Chapin & Chirico 2001). This was the number one hazard they were most optimistic about. As commentary on the study the authors say that a number of things can contribute to the optimistic bias, including social stigma (Chapin & Chirico 2001), which seems very associated with HIV/AIDS.

### ***Behaviors***

There is much information published regarding college students' behavior that puts them at risk for HIV/AIDS, though most of the research I looked at examined only condom use. It is accepted that college students in fact put themselves at risk of contraction (Dekin, Cabrera, Vogt & Volkwein 1995, The American College Health Association 2005). According to The American College Health Association, only about 26 percent of the students said they have been tested for HIV, but there was no indication about how many times they were tested or if they ever picked up the results (2005). To elaborate on how often students get tested, one study found that the majority (sixty percent) of those who responded as being tested were tested only once, and the percentages decreased as the number of times tested increased: two times, fifteen percent; three times, thirteen percent; four times, thirteen percent (Opt & Loffredo 2004).

The number of times a student had been tested had a statistically significant predictor of age. Also, knowing someone with HIV also influenced the number of times a student was tested (Opt & Loffredo 2004). Though college students are knowledgeable about HIV/AIDS (Polacek, Hicks & Oswalt 2007, Dekin, Cabrera, Vogt & Volkwein 1995, Opt & Loffredo 2004), it has

been concluded that their knowledge is not related to practicing preventive behaviors (Chapin 1999, Dekin, Cabrera, Vogt & Volkwein 1995, Opt & Loffredo 2004).

***Summary of the literature:***

Overall it has been concluded that college students generally know about HIV/AIDS (Polacek, Hicks & Oswalt 2007, Dekin, Cabrera, Vogt & Volkwein 1995, Opt & Loffredo 2004), but this does not have an effect on their behaviors in terms of adopting more preventative strategies (Chapin 1999, Dekin, Cabrera, Vogt & Volkwein 1995, Opt & Loffredo 2004). Despite their knowledge, there appears to be a sense of invincibility among students, in some cases described as the “it won’t happen to me” (Chapin 1999) phenomenon; the students perceive their own risk of contracting HIV as low, but perceive their peers’ risk as higher (Chapin 1999, Chapin & Chirico 2001). Testing behaviors are low among the college population, but age and knowing someone with HIV influence them positively (Opt & Loffredo 2004). The literature I reviewed mostly addressed condom use as preventative behaviors. My research will fill the gap in the literature by studying testing for HIV. The purpose of this study is to conduct a descriptive study on the knowledge, attitudes, and testing behaviors of college students in reference to HIV/AIDS with another sample to look for general patterns.

**Methods:**

Since this research was intended to be a descriptive study, no specific hypotheses were used. Instead I looked for general patterns among the three main variables: knowledge, attitudes, and testing behaviors. I developed a paper and pencil survey consisting of 63 questions. The questions were comprised of my original questions, questions fabricated exactly from other surveys, or questions from other surveys that I adapted to suit my own research. This survey touched upon many different subtopics of knowledge, attitudes, and testing behaviors. For

example, I asked questions about condom use as well as HIV testing, but I chose to only focus on testing behaviors. There were two versions of my survey (see Figure 4, footnote 2 on vignette prior to question 16; see page 22). These differed only in the vignette given before Question 16, which I will address later.

Using a survey was the best method for my research. I was not sure what I specifically wanted to focus on and I did this research to get a feel for the field. The survey allowed me to ask many different questions so I could find my focus later. Also, there was a time limitation as my research had to be done before the semester ended. Administering a survey was an excellent way to get information from many people in a short period of time. Another benefit of the survey was its ability to guarantee anonymity. This was extremely important because I asked many personal questions about the participants' sexual behaviors and I needed them to feel though they could be honest. Using a survey was however, restrictive. I found I wanted explanations and more information about my respondents' answers, but there was not a way to gather that information. Another weakness of the survey is that respondents sometimes skip questions, answer questions without fully reading the answers, or not answer honestly.

A cluster sampling method was used in order to gather participants. My clusters began with the general education requirement categories: Writing Skills, Quantitative Reasoning, Sciences, Historical Perspectives, Foreign Culture, Fine Arts, Social Science, and Philosophy, Literature and Ideas. I broke down the Science category into Biological, Physical, and Technological Sciences, totaling ten general education areas. I then listed all of the classes that were available in the spring 2007 semester under each category. I randomly selected two classes from each area. Out of the twenty classes, I administered surveys to thirteen. I administered my survey either at the beginning or end of the regular class time in the normal classroom; the

professor chose the time he/she wanted me to come to the class. Prior to administering the survey I stated that the survey was voluntary and questions could be skipped or the participants could stop at any time. In the survey directions I made special note that participation was taken as consent. A debriefing sheet (see Figure 5) with information about the project, Professor Moran's and my own contact information, as well as recommended sources for students to find more information about HIV/AIDS was provided.

I chose this method because I thought it the best method to get a representative sample of the undergraduate students at UNH. All students, no matter their college or major, have to fulfill the general education requirements. Since there is no available list of all of the students at UNH, this was my best option. There were limitations to this sampling method. Administering surveys during class time was very restrictive because professors were reluctant to forfeit class time. They either said they would give me ten minutes and actually gave me five or did not give me anytime at all. Also, one of the general education categories is Writing Skills, but this category only consists of First-Year Writing, which is a class that students are supposed to take in their first year. This may have resulted in a surplus of freshmen participants. Surveying these classes may have made my sample less representative of UNH and I should have accounted for that. Also, in general it seems that more freshmen and sophomores take general education courses than do juniors and seniors. This may also have had an impact on how representative my sample was.

The sample consisted of 579 participants after I removed two surveys because they were not completed by undergraduate students. The average age of the participant was 19.87 years with a standard deviation of 2.61. There were twelve outliers in the age distribution, all of which were greater than the mean. The largest outlier was 51 years old. Approximately 63 percent were

females and about 37 percent were males. The plurality of the participants, 47.72 percent, was freshmen, 24.09 percent were sophomores, 15.88 percent were juniors, and at 13.32 percent, the seniors were the least represented. These were the basic demographics of the sample. I chose not to ask many questions about the participants' demographic characteristics because I wanted them to feel as though this sample was completely anonymous. My actual sample differed from my ideal sample in that I would like to have been able to sample all twenty classes. However, I was satisfied with my moderate sample size. Another difference between my actual and ideal is that my actual sample was not representative of UNH either in terms of sex or class standing whereas my ideal sample would have been.

My survey addressed the three areas of knowledge, attitudes, and testing behaviors. To look at knowledge, I asked respondents a series of questions about common myths to see whether the respondents subscribed to them by answering with "Agree", "Disagree", or "Do not know". Attitudes were addressed through questions asking about views on the seriousness of HIV/AIDS for their peers as well as their own personal concern of infection by HIV. Also, attitudes about testing behaviors were addressed by asking their response ("Agree", "Disagree", "Do not know") to a statement asking about whether a person should get tested after various sexual engagements. I asked respondents how many times they had been tested for HIV, and this is how behaviors were measured.

### **Results:**

I found the students to be knowledgeable about HIV/AIDS overall. Figure 1 shows how the respondents answered the questions I used to test their knowledge. Less than one percent of the respondents subscribed to the four myths I presented: you can tell if someone has HIV/AIDS by looking at them, only homosexual males can contract HIV, everyone who has HIV/AIDS

knows it, one cannot contract HIV if she is using the birth control pill. In regard to preventative measures, 98.79 percent of the respondents knew a female is not protected if she only uses the birth control pill. When asked to respond to the statement that condoms are the best method to protect oneself from HIV when engaging in vaginal sexual intercourse, 91.36 percent agreed while 6.39 disagreed. These show that in general the students are knowledgeable about preventative measures, though a small minority is not. There was also variation in knowledge about transmission modes. Approximately 2 percent of the respondents did not think that one could contract HIV through vaginal sexual intercourse, while about 21 percent did not think one could contract it through oral sexual intercourse.

ANOVA tests were performed looking at the relationships between the individual measures of knowledge, all shown in Figure 1, with the number of times the students were tested. No significant relationships were found. Also, there was no statistically significant difference in the amount of times students get tested depending on their knowledge. Therefore, knowledge and testing behaviors are not related.

In order to look for patterns among the attitudes of students, I asked about their personal concern of infection of HIV. I then asked about their perceived seriousness of HIV/AIDS as a problem for their college peers. The answer categories were very serious/very concerned, somewhat serious/concerned, not too serious/concerned, and not at all serious/concerned. Only 7.8 percent of the sample felt that HIV infection was a serious concern for themselves. The plurality with 46.1 percent was not too concerned and 22 percent were not at all personally concerned. On the other hand, 20.1 percent of the students felt that HIV/AIDS was a very serious problem for their fellow peers. The majority of 46 percent felt as though it was a somewhat serious problem for their peers and only 2.8 percent thought it was not at all serious.

To see if there was a relationship between students' attitudes about their own concern of infection and their thoughts about the seriousness of HIV/AIDS for their peers, I ran a four-by-four chi-square test. As with all of my data analysis, I used the STATA program to perform this chi-square test. With nine degrees of freedom and a total of 576 observations, the calculated chi-square value was 70.67. The *p*-value was significant at the 0.001 alpha level. As personal concern increased, the perceived seriousness of HIV/AIDS for their peers increased as well.

Another aspect of attitudes investigated was whether someone being in a relationship had an influence on attitudes about whether that person should be tested for HIV. Two versions of the survey were administered. These versions differed in only one section; the vignettes and therein only in the type of relationship the woman and man had. In the first, Susie, who went to Cancun over spring break and engaged in unprotected oral and vaginal intercourse with another college student, John. In the second, Susie visits her boyfriend of six months, John, over spring break and engages unprotected oral and vaginal intercourse.

I asked questions regarding Susie's two sexual encounters separately. First I asked students about their attitudes about Susie getting tested after unprotected vaginal sexual intercourse and then after unprotected oral sexual intercourse. I asked students to respond to the statement "Susie should get tested for HIV/AIDS after this encounter", with the response categories of "Agree", "Disagree", and "Do not know". To see if relationship status was affecting attitudes, I first performed a chi-square test using the students' attitudes about testing after unprotected vaginal intercourse. About 93 percent in the non-relationship version and about 81 percent in the relationship version agreed that she should get tested. Five percent of the non-relationship version and eleven percent of the respondents in the relationship version disagreed. Approximately two percent in the non-relationship version and about seven percent in the

relationship version did not know. With 575 observations and two degrees of freedom, this was significant at the 0.001 alpha level and had a chi-square value of 18.21.

A chi-square test was performed looking at the two versions of the survey and the attitudes about testing after unprotected oral intercourse. This relationship was significant at the 0.001 alpha level with a chi-square value of 19.54. There were 575 observations and two degrees of freedom. Approximately 68 percent of the non-relationship version and 50 percent of the relationship version agreed that Susie should get tested after this encounter. About 21 percent of the non-relationship version and 32 percent of the relationship version disagreed with the statement that Susie should get tested. Only 11 percent of the non-relationship version did not know, while 19 percent of the relationship version did not know. This means that these two variables are not independent of one another.

Next I investigated actual testing behaviors of the students. Only 16.70 percent of the sample had ever been tested for HIV, while 83.30 percent had never been tested. The average amount of times tested was 0.272 with a standard deviation of 0.83. There was a minimum amount of zero times and a maximum of eleven. This distribution had eight upper outliers.

As years in school increased, the average times tested increased as well as noted in Figure 2. To see if these findings were statistically significant, I ran an ANOVA test. This test indicated significant differences in the number of times tested across the years in school ( $F=7.47$ ,  $df=3/535$ ,  $p<0.001$ ). Through performing a Bonferroni test, it was found that there was a difference between the times tested between freshmen and juniors ( $p<0.01$ ), between freshmen and seniors ( $p<0.001$ ), between sophomores and seniors ( $p<0.05$ ). There were not equal variances, which violates one of the assumptions of the test. In order to see if this would have much of an effect on the outcome of the ANOVA test, I ran a Kruskal-Wallis test. The

relationship was significant at the 0.05 alpha level, so I still have faith in the results of the ANOVA test. This means there is a significant difference in the amount of times tested depending on a students' year in school.

To see what other factors influenced the amount of times tested, I ran a regression analysis. As you can see on Figure 3, I looked at year in school, age, total sexual partners, and whether or not the participant knew someone with HIV. With an  $F$ -ratio of 37.58 ( $df=4, 502$ ), together these variables predicted 23 percent of the variability of the number of times a student was tested for HIV. This model was significant at the 0.001 alpha level. The strongest predicting factor was age, with a standardized regression coefficient of 0.45. In this model, as year in school increased, testing behaviors decreased. This change in pattern could be attributed to the fact that age was controlled for in this model. The total number of a participants' sexual partners also positively influenced the number of times tested. Also, if a student knows someone with HIV their testing behaviors increase<sup>1</sup>.

### **Discussion:**

This study looked for general patterns among college students' knowledge, attitudes, and testing behaviors surrounding HIV/AIDS. It was found that students are generally knowledgeable about HIV/AIDS, its transmission modes, and its preventative measures; their knowledge is not related to the amount of times they get tested. Age, year in school, number of vaginal/anal sexual partners, or whether the respondent knows someone with HIV predict 23 percent of the variability of the number of times the student gets tested. Regarding attitudes, the type of relationship a person was in did affect the attitudes towards whether or not that person should get tested after unprotected oral and vaginal sexual intercourse. Also, there is a positive

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<sup>1</sup> When inputting data into STATA I coded knowing someone with HIV as 1 and not knowing someone as 2.

relationship between a students' self concern of contracting HIV and their perceived seriousness of HIV/AIDS as a problem for their peers.

The results of this study reaffirmed and expanded on the previous research in this field. This study confirmed that students are knowledgeable about HIV/AIDS, but less so in the area of its transmission not through vaginal/anal sexual intercourse. This could be attributed to the focus in high school health education courses on vaginal/anal sexual intercourse. The level of knowledge amongst students resulting from these programs compared to that of other programs with other focuses should be investigated further.

The strongest predictor for the number of times a student was tested was age. As it was with previous research, my study found that knowing someone with HIV also positively influenced testing behaviors. Other predictors of the variability in testing behaviors were year in school and number of past vaginal/anal sexual partners. The studies I reviewed did not look at these variables. The relationship between year in school and amount of times tested changed when age was accounted for, which is logical as age can vary within year in school; age at which students begin varies. Knowledge was not significantly associated with testing behaviors; therefore knowing a lot about HIV/AIDS does not increase the amount of times one is tested.

When looking at attitudes about testing behaviors, it was found that relationship status did affect whether the student thought a person should get tested. When someone was in a relationship with their partner, fewer students thought that person should get tested for HIV after engaging in both unprotected vaginal and oral sexual intercourse. My survey only briefly touched upon each topic and did not explore the reasons students answered this way, though from reviewing answers to other questions I assume this could be due to the fact that people

believe that in a relationship the partners know each others HIV/AIDS status or sexual background.

Similar to previous research, attitudes about personal contraction risk and attitudes about the seriousness of HIV/AIDS for their peers differed. Only 7.8 percent of the students felt very concerned for their personal infection of HIV, while 20.1 percent of the students felt that HIV/AIDS was a very serious problem for their college peers. This opposite effect in the attitudes has been found in various studies, but none of the studies I reviewed looked at the relationship between the two attitudes. I found that as level of personal concern increases, so does the level of perceived seriousness for their peers. This contributes to previous research by looking at the direct relationship between perceived seriousness of HIV/AIDS for peers and self concern of infection.

Overall I have found that there are many patterns among the knowledge, attitudes, and testing behaviors of college students, and conducting this research allowed me to focus on specific patterns. In regards to larger implications, this does provide insight for knowledge-based educational systems; information is not enough to influence preventative behaviors such as HIV testing. In order to advance the understanding of this topic, I would suggest future researchers investigate the topic of HIV testing in general. I found few articles which solely focused on this preventative behavior. Also, it would be beneficial to research educational programs that emphasize HIV testing that do not solely focus on the communication of facts. Finally it would be interesting to further the research on how relationship status affects attitudes on testing behavior and other preventative behaviors.

My findings would have been improved if I had a more representative sample of the UNH undergraduate population to support the data. To accomplish that I would not to sample an

equal amount of First-Year Writing courses as the other general education requirements. Another option is to conduct a multi-stage cluster sample of general education courses, then randomly sample a certain amount of classes from 400 through 700 level courses. Although I have a moderate sample size, if I could have begun administering surveys earlier in the semester I would probably have a larger sample, which would have been beneficial as well.

Also, the survey I used could have been refined. Some of my questions may have benefited by having more answer options. For example, on question 27 (see Figure 4) when I asked “How long do two people need to be in a relationship for before they should discontinue using condoms?” I could have added an “After they are married” option to the answers. I was trying to avoid discriminating against homosexual couples, who in many states cannot marry, by not adding this. By not including this option I excluded those who thought marriage was the only time one could discontinue condom use. If my survey had focused on fewer topics with more in depth questions, it would also have benefited and chances are high that more people would have finished it.

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**Appendices:**

**Figure 1:**  
Responses to Questions Regarding Knowledge (Percentages)

	<b>Agree</b>	<b>Disagree</b>	<b>Do not know</b>	<b>Total</b>
You can tell if someone has HIV/AIDS by looking at them	98.96	0.69	0.35	100
Only homosexual males can contract HIV	98.96	0.87	0.35	100
Everyone who has HIV/AIDS knows it	0.35	99.48	0.17	100
Cannot contract HIV if on the birth control pill	0.52	98.79	0.69	100
Condoms are the best protection method for HIV when engaging in vaginal intercourse	91.36	6.39	2.25	100
Can contract HIV through vaginal sexual intercourse	97.92	1.73	0.35	100
Can contract HIV through oral sexual intercourse	63.78	20.97	15.25	100

**Figure 2:**  
Times Tested by Year in School

<b>Year in School</b>	<b>Mean</b>	<b>Standard Deviation</b>
Freshman	0.124	0.443
Sophomore	0.231	0.506
Junior	0.435	1.42
Senior	0.555	1.22

**Figure 3:**  
Regression Predicting Variability in Number of Times Tested

<b>Predictor Variables</b>	<b>b</b>	<b>β</b>	<b>t</b>
Year in School	-0.11	-0.14*	-2.65
Age	-0.18	0.45***	8.42
Total Sexual Partners (Vaginal/Anal)	0.03	0.18***	4.26
Knows Someone with HIV	-0.29	-0.011**	-2.91

Note:  $R^2 = 0.23$ .  $F(4, 502) = 37.58$ ,  $p < .001$ .

\* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$

**Figure 4:**  
Administered Survey

**Sexual Behaviors and Attitudes Surrounding HIV/AIDS**

This survey is part of a study I'm doing for my SOC 601 (Research Methods) class on college students' attitudes pertaining to various topics regarding Human Immunodeficiency Virus (HIV)/ Acquired Immune Deficiency Syndrome (AIDS) and their sexual behaviors and will help me address these topics and further my understanding of this area.

Your participation in this survey is completely voluntary. Your grade in your class will not be affected by your participation. It should take less than 15 minutes to complete. Do not write your name or initials anywhere but I would appreciate you answering all the questions as best you can. However, if you feel uncomfortable with any questions, you may skip them or just stop. After you have completed the survey please bring it to the front of the classroom and put it in the covered box.

The survey is anonymous so once again please do not write your name or initials anywhere on them. Your participation in this survey is taken as your consent regarding the stated items.

If you have any further questions about any part of my study, please do not hesitate to contact me, Skye MacKay, at [smn25@cisunix.unh.edu](mailto:smn25@cisunix.unh.edu), or Professor Moran at [clmoran@cisunix.unh.edu](mailto:clmoran@cisunix.unh.edu). Thank you and I appreciate your responses.

**This survey continues on the back of each page.**

**Please circle only one answer and/or fill in the blank, whichever is specified.**

**The following questions address where you may have received information about HIV/AIDS as well as your attitudes about topics pertaining HIV/AIDS.**

1. How would you rate your knowledge about HIV/AIDS?
  - a. Very knowledgeable
  - b. Knowledgeable
  - c. Somewhat knowledgeable
  - d. Not knowledgeable at all/never heard of it
  
2. How serious of a problem do you think HIV/AIDS is for the rest of *the world*?
  - a. Very serious
  - b. Somewhat serious
  - c. Not too serious
  - d. Not at all serious
  
3. How serious of a problem do you think HIV/AIDS is for *the United States*?
  - a. Very serious
  - b. Somewhat serious
  - c. Not too serious
  - d. Not at all serious

Please continue on to the next page...

4. How serious of a problem do you think HIV/AIDS is for your *college peers*?
  - a. Very serious
  - b. Somewhat serious
  - c. Not too serious
  - d. Not at all serious
  
5. How concerned are you *personally* about becoming infected with HIV/AIDS?
  - a. Very concerned
  - b. Somewhat concerned
  - c. Not too concerned
  - d. Not at all concerned
  
6. How do you feel about the statement “People do **not** need to worry about contracting HIV because there is a cure for it”?
  - a. Agree
  - b. Disagree
  
7. How do you feel about the following statement “People with HIV/AIDS deserve getting the illness/disease”?
  - a. Strongly Agree
  - b. Agree
  - c. Disagree
  - d. Strongly Disagree
  
8. From what *main* source, other than school educational programs, do you receive HIV/AIDS information?
  - a. Friends
  - b. Parents
  - c. Media (Television, Magazines, Movies)
  - d. Books
  - e. Doctor
  - f. UNH Health Services
  - g. Other (Please specify): \_\_\_\_\_
  - h. I have not received HIV/AIDS information outside of my school
  - i. I have never received HIV/AIDS information
  
9. Have you ever received HIV/AIDS information from the UNH Health Services?
  - a. Yes
  - b. No
  
10. Were you involved with an educational program in high school that described HIV/AIDS, its transmission modes, and its prevention?
  - a. Yes
  - b. No

Please continue on to the next page...

11. What was the main focus of your high school education program that described HIV/AIDS, its transmission modes, and its prevention?
  - a. Transmission through sex and prevention through contraceptives
  - b. Transmission through sex and prevention through abstinence
  - c. Transmission through blood transfusions
  - d. Transmission through drug use (e.g. sharing drug needles)
  - e. I have not participated in this type of high school education program
  
12. Have you been involved with a sexual education program at UNH that described HIV/AIDS, its transmission modes, and its prevention?
  - a. Yes
  - b. No
  
13. Do you think HIV/AIDS educational materials about transmission and prevention should be readily available to *high school* students through their schools?
  - a. Yes
  - b. No
  
14. Do you think HIV/AIDS educational materials about transmission and prevention should be readily available to *college* students through their colleges?
  - a. Yes
  - b. No
  
15. At what age do you think health education about HIV/AIDS should begin at?
  - a. 5 years of age
  - b. 6-9 years of age
  - c. 10-13 years of age
  - d. 14-16 years of age
  - e. 17 years of age
  - f. Other (Please specify): \_\_\_\_\_
  - g. There should be no HIV/AIDS education

**Please read the following vignettes and answer the corresponding questions. The following questions regard situations in which two people have various forms of sexual intercourse.**

**Susie went to Cancun during her spring break and met John, another college student. A few days into their vacation they engaged in oral sex without using a condom.<sup>2</sup>**

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<sup>2</sup> Version 2 differed only in this vignette. It stated: "Susie went to another college during her spring break to visit John, her boyfriend of 6 months who is also a college student. A few days into their vacation they engaged in oral sex without using a condom."

16. Susie can contract HIV/AIDS through oral sex.

- a. Agree
- b. Disagree
- c. Do not know

Please continue on to the next page...

17. Susie should get tested for HIV/AIDS after this encounter.

- a. Agree
- b. Disagree
- c. Do not know

**Susie and John engaged in vaginal sexual intercourse a week later. They did not use a condom. Susie was on the birth control pill.**

18. Susie should **not** worry about contracting HIV because she can tell if John had HIV/AIDS by looking at him.

- a. Agree
- b. Disagree
- c. Do not know

19. Susie can contract HIV/AIDS through vaginal sexual intercourse.

- a. Agree
- b. Disagree
- c. Do not know

20. Susie does **not** need to worry about contracting HIV because she was taking the birth control pill at the time.

- a. Agree
- b. Disagree
- c. Do not know

21. Susie does **not** need to worry about contracting HIV because everyone who has HIV/AIDS knows that they have it.

- a. Agree
- b. Disagree
- c. Do not know

22. Susie does **not** need to worry about contracting HIV because only homosexual males can get it.

- a. Agree
- b. Disagree
- c. Do not know

23. Susie should get tested for HIV/AIDS after this encounter.

- a. Agree
- b. Disagree

- c. Do not know

Please continue on to the next page...

24. The best method for Susie to protect herself from HIV/AIDS when engaging in vaginal sexual intercourse is the use of condoms.
- a. Agree
  - b. Disagree
  - c. Do not know

**The next set of questions is about couples and their condom use in relationships.**

25. Do you think couples in romantic relationships need to use condoms for oral sexual intercourse?
- a. Yes
  - b. No
26. Do you think couples in romantic relationships need to use condoms for vaginal or anal sexual intercourse?
- a. Yes
  - b. No
27. How long do two people need to be in a relationship for before they should discontinue using condoms?
- a. Couples do not need to use condoms at all
  - b. 1-3 months
  - c. 4-6 months
  - d. 7-12 months
  - e. 13 months or more
  - f. After both partners have had a negative HIV test
  - g. After both partners have had two negative HIV tests, at least six months apart
  - h. Couples should never stop using condoms
28. Do you think couples in romantic relationships should discuss HIV/AIDS and their HIV/AIDS status with each other?
- a. Yes
  - b. No

**The following questions regard *your own* personal sexual behaviors and HIV testing behaviors.**

29. How many times, if ever, have you been tested for HIV? **(Please specify, even if zero)**

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continue on to the next page...

Please

30. If you have been tested for HIV, did you return to get your results?
- a. I have never been tested
  - b. Yes
  - c. No
31. For what reasons did you get tested for HIV?
- a. My partner asked me to get tested
  - b. My partner got tested, so I thought I should
  - c. My partner tested positive for HIV
  - d. My partner has AIDS
  - e. I was exposed to HIV/AIDS (If so, please specify in what way, e.g., blood transfusion, unprotected sexual intercourse, etc.):  
\_\_\_\_\_
  - f. It was an option at my checkup with my doctor
  - g. Other (Please specify): \_\_\_\_\_
  - h. I have never been tested for HIV/AIDS
32. For what reasons have you **not** been tested for HIV/AIDS?
- a. I was not exposed to HIV/AIDS
  - b. My partner was tested and did not have HIV/AIDS
  - c. My partner told me he/she did not have HIV/AIDS
  - d. There is no chance I could contract HIV/AIDS
  - e. I just have not thought that I would be at risk, so I have not gotten tested
  - f. Other (Please specify): \_\_\_\_\_
  - g. I have been tested for HIV/AIDS
33. Have you ever had vaginal or anal sexual intercourse?
- a. Yes
  - b. No
34. How many vaginal or anal sexual partners have you had *in your lifetime*? **(Please specify, even if zero)**
- \_\_\_\_\_
35. How many vaginal or anal sexual partners have you had *in the past six months*? **(Please specify, even if zero)**
- \_\_\_\_\_
36. How many vaginal or anal sexual partners have you had *since you began college*? **(Please specify, even if zero)**
- \_\_\_\_\_

Please continue on to the next page...

37. Has your *most recent* vaginal or anal sexual partner ever been tested for HIV/AIDS?
- I have never had a vaginal or anal sexual partner
  - Yes
  - No
  - Do not know
38. Did you use condoms the *most recent time* you had vaginal or anal sexual intercourse?
- Yes
  - No
  - Do not know
  - I have never had vaginal or anal sexual intercourse
39. Approximately how frequently have you used condoms over the past 6 months during vaginal or anal sexual intercourse?
- 0% of the time
  - 25% of the time
  - 50% of the time
  - 75% of the time
  - 100% of the time
  - I have never had vaginal or anal sexual intercourse
  - I have not had sexual intercourse over the past 6 months
40. What form of protection do you use most frequently during vaginal or anal sexual intercourse?
- I do not use protection
  - Condoms
  - Oral contraceptives
  - I have never had vaginal or anal sexual intercourse
  - Other (Please specify): \_\_\_\_\_
41. For what reason do you use protection during vaginal or anal sexual intercourse?
- I have never had vaginal or anal sexual intercourse
  - To protect against unwanted pregnancy
  - To protect against Sexually Transmitted Illnesses/Diseases
  - To protect against *both* unwanted pregnancy and Sexually Transmitted Illnesses/Diseases
42. With approximately how many of your *total* vaginal or anal sexual partners have you discussed HIV/AIDS and your and your partner's HIV/AIDS status?
- 0%

- b. 25%
- c. 50%
- d. 75%
- e. 100%
- f. I have never had vaginal or anal sexual intercourse

Please continue on to the next page...

43. Have you discussed HIV/AIDS and your and your partner's HIV/AIDS status with your *most recent* vaginal or anal sexual partner?

- a. Yes
- b. No
- c. I have never had vaginal or anal sexual intercourse

44. Have you ever had **oral** sexual intercourse?

- a. Yes
- b. No

45. How many **oral** sexual partners have you had *in your lifetime*? (**Please specify, even if zero**)

\_\_\_\_\_

46. How many **oral** sexual partners have you had *in the past six months*? (**Please specify, even if zero**)

\_\_\_\_\_

47. How many **oral** sexual partners have you had *since you began college*? (**Please specify, even if zero**)

\_\_\_\_\_

48. Has your *most recent* **oral** sexual partner ever been tested for HIV/AIDS?

- a. I have never had an oral sexual partner
- b. Yes
- c. No
- d. Do not know

49. Did you use condoms the *most recent time* you had **oral** sexual intercourse?

- a. Yes
- b. No
- c. Do not know
- d. I have never had oral sexual intercourse

50. What form of protection do you use most frequently during **oral** sexual intercourse?

- a. I do not use protection
- b. I have never had oral sexual intercourse
- c. Condoms
- d. Other (Please specify): \_\_\_\_\_

51. For what reasons do you use protection during **oral** sexual intercourse?

- a. I do not use protection during oral sexual intercourse
- b. To protect against Sexually Transmitted Illnesses/Diseases
- c. Other (Please specify): \_\_\_\_\_

Please continue on to the next page...

52. How frequently have you used condoms over the past 6 months during **oral** sexual intercourse?

- a. 0% of the time
- b. 25% of the time
- c. 50% of the time
- d. 75% of the time
- e. 100% of the time
- f. I have never had oral sexual intercourse
- g. I have not had oral sexual intercourse over the past 6 months

53. With approximately how many of your *total* **oral** sexual partners have you discussed HIV/AIDS and your and your partner's HIV/AIDS status?

- a. 0%
- b. 25%
- c. 50%
- d. 75%
- e. 100%
- f. I have never had oral sexual intercourse

54. Have you discussed HIV/AIDS and your and your partner's HIV/AIDS status with your *most recent* **oral** sexual partner?

- a. Yes
- b. No
- c. I have never had oral sexual intercourse

**The following questions ask about your experiences with people who have HIV/AIDS.**

55. Do you know someone who is HIV positive?

- a. Yes
- b. No

56. Do you know someone who has AIDS?

- a. Yes
- b. No

57. Do you know someone who has died from AIDS?

- a. Yes
- b. No

58. Do you think you could know a person who is HIV positive or has AIDS, but just not realize it?

- a. Yes
- b. No

Please continue on to the next page...

59. Have you ever spoken with a person who is HIV positive or has AIDS about HIV/AIDS and/or their experiences with the illness/disease?

- a. Yes
- b. No

**Finally, I have a few questions about you.**

60. What is your sex?

- a. Male
- b. Female

61. What type of high school did you attend?

- a. Public
- b. Private
- c. Home School

62. What year in school are you?

- a. Freshman
- b. Sophomore
- c. Junior
- d. Senior
- e. Graduate student

63. What is your age?

\_\_\_\_\_

**Thank you for completing this survey. Please place it in the covered box at the front of the classroom.**

**Figure 5:**  
Debriefing Sheet

Sexual Behaviors and Attitudes surrounding HIV/AIDS

Thank you again for your participation in my survey. I appreciate your responses and they will be of great benefit to my research. To remind you, this survey is being used for a project I am conducting for SOC 601 on college students' attitudes and sexual behaviors pertaining to HIV/AIDS.

If you have any further questions about any part of my study, please do not hesitate to contact me, Skye MacKay, at [smn25@cisunix.unh.edu](mailto:smn25@cisunix.unh.edu), or Professor Moran at [clmoran@cisunix.unh.edu](mailto:clmoran@cisunix.unh.edu). If you want to learn more about HIV/AIDS, testing, transmission, or prevention I have listed the contact information for various places that could be of help to you either here on campus or in the Portsmouth area as well as some useful national contact information.

HIV/AIDS Information Sources:

- University of New Hampshire Health Services 862-1530
- SHARPP (Sexual Harassment And Rape Prevention Program) 603-862-3494
- AIDS Response Seacoast- Portsmouth, New Hampshire- For information about their program:  
[info@aidresponse.org](mailto:info@aidresponse.org), or to ask questions about HIV/AIDS:  
[msconception@aidresponse.org](mailto:msconception@aidresponse.org)
- Feminist Health Center - Greenland, New Hampshire 436-7588
- The New Hampshire AIDS Hotline:  
In New Hampshire: 1-800-752-2437  
National: 603-271-4502
- You can also contact the National AIDS Hotline at 1- 800- 342-2437 (1-800-342-AIDS) or go to the  
Centers for Disease Control and Prevention's HIV/AIDS website at  
<http://www.cdc.gov/hiv/>
- If you find that these sources are not enough, you can go onto  
<http://www.aidshotline.org/crm/asp/refer/>  
which will refer you to other helpful sources and their contact information.