

# **HIV STIGMA AND KNOWLEDGE: WHAT'S THE CONNECTION?**

**Tammiann Searle and T. Antonio  
December 11, 2007**

<b>ABSTRACT .....</b>	<b>3</b>
<b>INTRODUCTION .....</b>	<b>3</b>
<b>REVIEW OF THE LITERATURE .....</b>	<b>4</b>
<i>STIGMA</i> .....	4
STIGMA DEFINED.....	7
<i>Symbolic Stigma</i> .....	7
<i>Instrumental Stigma</i> .....	7
<b>KNOWLEDGE</b> .....	8
KNOWLEDGE DEFINED.....	9
<b>SUMMARY OF THE LITERATURE</b> .....	9
<b>METHODS.....</b>	<b>10</b>
SAMPLE.....	11
VARIABLES .....	13
<b>FINDINGS .....</b>	<b>13</b>
<i>Stigma Findings</i> .....	14
<i>Table 1: Measures of stigma</i> .....	14
<i>Graph 1: Instrumental and Symbolic Stigma Comparison</i> .....	15
<i>Knowledge Findings</i> .....	16
<i>Graph 2: Response to Variable 69</i> .....	19
<b>DISCUSSION.....</b>	<b>20</b>
<b>REFERENCES .....</b>	<b>22</b>

# HIV Stigma and Knowledge: What's the Connection?

## ABSTRACT

*This paper reports the results of a study conducted for our Sociology Research Methods class on the link between HIV/AIDS knowledge and related stigma. This study assessed the levels of HIV knowledge and identified HIV related stigma attitudes among a sample of students at the University of New Hampshire. The sample consisted of 267 undergraduate students matriculated in a wide range of majors. The purpose of this project is to gain a better understanding of college students' knowledge of HIV/AIDS as well as attitudes towards HIV/AIDS and people affected by the virus.*

## INTRODUCTION

This study examined college students' knowledge and stigmatizing beliefs regarding HIV/AIDS<sup>1</sup> in an effort to further contribute to this previously researched field. Research can lead to the development of effective knowledge-based educational programs to help combat the spread of HIV/AIDS in this population and to decrease stigmatizing attitudes towards Persons Living With HIV/AIDS (PLWHA).

“Young people, under 25 years old, account for half of all new HIV infections worldwide” (UNAIDS 2007 AIDS Epidemic Update). This age range correlates with the traditional age range of 17 to 22 of college students (Mohsenin, 1983). Our research undertook to determine if there is a correlation between HIV-related stigma and the level of knowledge one possesses about HIV in American undergraduate college students.

“Nationally, approximately 88% of high school students have been taught about Acquired Immuno-Deficiency Syndrome (AIDS) and HIV infection in school” (Centers for Disease Control and Prevention, 2006). College students are generally knowledgeable about HIV/AIDS, however some college students answer HIV knowledge questions incorrectly or state that they

---

<sup>1</sup> Although HIV and AIDS are two separate medical conditions, this paper does not differentiate between stigma towards people living with HIV and stigma towards people living with AIDS.

“Don’t Know” about certain modes of transmission and preventative measures (Lance, Morgan & Columbus 1998; Opt & Loffredo 2004).

## REVIEW OF THE LITERATURE

Since the beginning of the AIDS pandemic, more than 25 years ago, HIV/AIDS has become an important piece of contemporary history in the United States and abroad. To this end there has been a plethora of studies regarding HIV-Related Stigma as well as numerous studies pertaining to college students’ basic knowledge on HIV/AIDS and various subtopics such as transmission, preventative measures, sexual behaviors, and testing practices. Previous research has indicated a direct relationship between an individual's knowledge of HIV/AIDS and their attitudes towards PLWHA (Le Poire, 1994; Herek & Capitano, 1994; Triplet & Sugarman, 1987). We hypothesize that similar results will be found from our research.

### ***STIGMA***

The existence of HIV/AIDS-related stigma has been widely studied and documented. “Stigma related to HIV/AIDS appears to be more severe than that associated with other life-threatening conditions.” People with low levels of HIV knowledge and “...less educated people may be more likely to harbor HIV/AIDS- related stigma” (Brimlow, Campbell, Charman & Fenton, 2003).

The “inclination to distance oneself from HIV/AIDS is similar to the response that has been associated with many diseases throughout history. HIV/AIDS is accordingly perceived as a disease of ‘outsiders’, which situates the ‘in group’ as safe from infection” (Maughan-Brown, 2006) and making the “out groups” or those infected or affected by HIV prone to stigma. Research has shown that “ever since it became known as a disease in the 1980’s it has been associated with fear, stigmatization and discrimination” (Visser, Makin, & Kopo, 2006). “HIV/AIDS related stigma can be damaging to an individual’s quality of life and have broader

consequences from a public health perspective” (Mann, 1996), such as lack of access to testing, which may lead to further spread of the disease as well as delays in care. “HIV/AIDS-related stigma affects self-esteem, mental health, access to care, providers’ willingness to treat people with HIV, violence, and HIV incidence. Interventions to reduce stigma are therefore crucial for improving care, quality of life, and emotional health for people living with HIV and AIDS. HIV/AIDS-related stigma has been specifically identified as a domestic policy challenge that must be addressed to reduce the number of new HIV infections, and eliminating stigma is a crucial element of global efforts” (Joint United Nations Programme on HIV/AIDS [UNAIDS], 2001).

There has been much research conducted on HIV-related stigma and a multitude of definitions have emerged. Numerous scales and subscales have been produced to measure because stigma is reacted to differently internationally because different communities attach their own meanings, explanations, and attitudes to the disease (Visser, Makin, & Lehobye, 2006). Because there is no standard measure it is extremely difficult to compare research side by side. It has been shown that specific stigma scales and their accompanying subscales are reliable tools for measuring what they are specifically intended for but that the subscales draw “...into question the distinctiveness of the constructs that the original version of the scale was meant to measure... in that the subscales are measuring the same aspects as the scale as a whole and therefore may be redundant” (Visser, Makin, & Lehobye, 2006). Secondary to the validity issues of the various stigma scales and the complexity of the subscales we choose to use the AIDS Attitude Scale for purposes of measuring the stigmatizing attitudes of our sample. Although missing certain aspects of stigma was a concern for our study, the benefits of using the already established AIDS Attitude Scale outweighed the limitations of its use.

The majority of reviewed studies regarding HIV and stigma find self-reporting to be the biggest limitation because the sensitive manner of the questions may affect the answers. Findings show substantial differences between personal stigma scores and perceived community stigma scores. In short, this means that participants perceived much more stigma than what was revealed in self-reporting. This brings to question whether the sample group was not representative of the population or if the self-reporting was not accurate. Additionally, the sensitive manner of the questions may influence participants to hide their true attitudes or behavioral intentions towards PLWHA and questioning participants about sexually explicit topics causes them to be less revealing (Visser, Makin, & Lehobye, 2006; Maughan-Brown, 2006; Herek & Capitanio, 1998; Jacobs, 1990; Stein, 2003, Triplet, 1987). We were aware of these possible complications and tried to overcome them in our study by assuring anonymity and trying to gather a representative sample of UNH students.

Brown and colleagues found previous studies that present hypothetical encounters with PLWHA have not ensured accuracy of results because respondents may not be aware of their stigmatizing attitudes and that "negative attitudes of PLWHA among the general population are one of the most common manifestations of AIDS stigma, which could potentially lead to discriminatory actions (e.g. exclusion)" (2003). Sample characteristics have been a major detriment to research on stigma causing data to not be representative of the population overall as many of the studies included student based samples (Brown *et al.*, 2003; Maughan-Brown, 2006). This is a limitation in the study we conducted as well, since our sample consists entirely of students at the University of New Hampshire. Random samples should result in less error and improve representativeness.

## STIGMA DEFINED

HIV related stigma: “stigma refers to all unfavorable attitudes, beliefs, and policies directed toward people perceived to have HIV/AIDS as well as toward their significant others and loved ones, close associates, social groups, and communities. Patterns of prejudice, which include devaluing, discounting, discrediting, and discriminating against these groups of people, play into and strengthen existing social inequalities—especially those of gender, sexuality, and race—that are at the root of HIV-related stigma.”

[http://hab.hrsa.gov/publications/stigma/stigma\\_defined.htm](http://hab.hrsa.gov/publications/stigma/stigma_defined.htm)

Stigma is “an attribute that is deeply discrediting” and results in the reduction of a person or group “from a whole and usual person to a tainted, discounted one” (Goffman, 1963). Thus, the ultimate effect of stigma, as noted by Goffman, is the reduction of the life chances of the stigmatized through discriminatory actions.

### ***Symbolic Stigma***

Symbolic stigma is based on “judgmental attitudes towards those perceived to have put themselves at risk of infection through immoral and/or irresponsible behaviors”(Stein, 2003: 8). Symbolic attitudes are informed by deeply held values “based on the metaphorical social meanings attached to AIDS, the people who get it, and the ways in which it is transmitted” (Herek, 2002). For many, HIV/AIDS is a 'moral' disease and HIV/AIDS related stigma stems from beliefs about the moral conduct of those infected (Fish & Rye, 1991; Crandall et al., 1997).

### ***Instrumental Stigma***

“Instrumental stigma also arises from a psychological need to protect oneself, but is based on the real physical risk posed by HIV/AIDS, an infectious disease which is potentially terminal in nature. It arises from the perception that interacting with PLWHA poses a direct threat to one's own physical well-being. This may well be an incorrect perception: for example, a

person might 'know' how HIV is transmitted and therefore be aware that one cannot become infected via casual contact, but yet might nevertheless refrain from hugging a PLWHA” (Herek & Capitanio, 1998). For the purposes of our research HIV Stigma was measured by the respondent’s answers to the AIDS Attitude Scale,<sup>2</sup> a fifty-four question, self-administered survey, which included measures of both types of stigma, related to this research.

### ***KNOWLEDGE***

There have been an increasing number of studies that have looked at the knowledge base of college students regarding HIV because the traditional college age range (17-22) is included in the group that accounts for 50% of all new infections per year. (UNAIDS/WHO 2007 AIDS Epidemic Update). Most research finds that while college students have a good grasp of the basic HIV/AIDS knowledge (Hays, 1992; Jacobs, 1993) there exist misconceptions of transmission from casual contact like hugging and about some prevention measures (Lance, Morgan & Columbus, 1998; Weinstein, 1991). Although fears of HIV is sometimes warranted, in many instances they are based in beliefs that are inaccurate to how HIV is transmitted (Brown *et al.* 2003) Major findings of the literature indicate that information together with skills building is an effective combination in raising knowledge levels and reducing stigmatizing beliefs and attitudes. There are less stigmatizing attitudes in intervention groups versus control groups and the general public (Brown *et al.* 2003; Maughan-Brown, 2006; and Herek & Capitanio, 2006). This remains true even though many of the interventions were not aimed at exclusively reducing AIDS stigma but were also attempting to increase awareness and HIV/AIDS knowledge (Brown *et al.* 2003).

These findings suggest that HIV Knowledge is the main factor in reducing stigma.

Research indicates that HIV prevention and education programs that highlight HIV Knowledge

---

<sup>2</sup> The full survey instrument can be found at “Development of an Instrument to Measure Attitudes Towards AIDS,” AIDS Education and Prevention, 1, 222-230.

are important means of alleviating inaccurate beliefs about HIV transmission which has been shown to be a primary cause of stigmatizing beliefs. Further research and the development of knowledge-based educational interventions are prudent. (Healthy People, 1991, Herek, Capitanio & Wideman, 2002; Brown, McIntyre & Trujillo, 2003; Maughan Brown, 2006)

## **KNOWLEDGE DEFINED**

Knowledge is defined variously as (i) expertise, and skills acquired by a person through experience or education; the theoretical or practical understanding of a subject, (ii) what is known in a particular field or in total; facts and information or (iii) awareness or familiarity gained by experience of a fact or situation. Philosophical debates in general start with Plato's formulation of knowledge as "justified true belief". There is however no single agreed definition of knowledge presently, nor any prospect of one, and there remain numerous competing theories.

The term *knowledge* is also used to mean the confident understanding of a subject with the ability to use it for a specific purpose. (Oxford English Dictionary)

For the purposes of this research knowledge was measured by the extent to which an individual was able to answer correctly questions regarding HIV/AIDS as measured by the AIDS Knowledge Questionnaire<sup>3</sup>.

## ***SUMMARY OF THE LITERATURE***

Previous literature has defined and measured stigma in many ways, however this research focuses on two types of stigma, instrumental and symbolic. Whether stigma is used to separate one's self from the disease or to condemn those with it, previous literature shows a strong connection between knowledge and stigma. Much fear of the disease has been attributed to misconceptions as to the means of transmission and an overall lack of general knowledge

---

<sup>3</sup> The full survey instrument can be found at "Development and psychometric evaluation of the brief HIV knowledge questionnaire (HIV-KQ-18)". AIDS Education and Prevention, 14, 174-184

regarding the disease. To this end knowledge is a very important, if not the most important factor, in the evaluation and reduction of HIV-Related stigma (Lance, Morgan & Columbus, 1998; Weinstein, 1991; Brown et al. 2003; Healthy People, 1991; Maughan-Brown, 2006). Our research expands the literature that evaluates the relationship between HIV knowledge and HIV stigma. The purpose of this study is to compare the difference between students' HIV/AIDS knowledge with HIV stigma levels using a True/False knowledge questionnaire combined with a Likert-type scale measuring stigma levels to determine if there is a correlation.

## **METHODS**

$H_0$ : There is no correlation between HIV related stigma and HIV knowledge.  $H_1$ : HIV related stigma decreases as HIV knowledge increases.

We utilized a self-administered pencil and paper survey comprised of 72 questions. The survey questionnaire constructed for this study consisted of three parts. Part I covered basic demographic information. Part II contained items dealing with knowledge about *HIV/AIDS*. Part III contained items dealing with students' attitudes about HIV/AIDS and Persons Living with HIV/AIDS (PLWHA). Using a survey allowed us to guarantee anonymity, which was extremely important as we were asking very personal questions regarding people's attitudes and beliefs about persons with HIV/AIDS, which we wanted to make sure that people answered honestly. Administering a survey was an excellent way of collecting data from many people in a short time frame. This was important because of the time limitations of this project. Our research instrument was approved through the Sociology Departmental Review prior to admission to sample. The survey was piloted on our classmates, a sample of 43, to assess the ease of completion, understandability of the questions and the time required to complete the survey. Based on the pilot we rearranged the survey, changed the layout and reworded our consent section and instructions. We then piloted the survey a second time with a sample of 11 students.

Because of the sensitive nature of the survey there were no unique identifiers on the surveys, and students were instructed not to put their names on them, this provided anonymity to the respondents.

There are several drawbacks to using the survey method. Firstly, respondents sometimes skipped questions, did not complete the survey, and answered some questions without fully reading the answers, this was especially important because we used both positively and negatively worded questions. Secondly, the very nature of the topic being so personal and sensitive created the possibility of “social desirability bias; in that, people may not want to fully disclose their true attitudes regarding PLWHA”. (Maughan-Brown, 2006) Lastly, since the questions regarding attitudes about HIV are hypothetical respondents may not know how they would respond in certain situations that they have no personal experience with and may be unaware that they hold certain stigmatizing attitudes.

### **SAMPLE**

A cluster sampling method was used in order to gather participants. Our clusters began with the University’s general education requirement categories: Writing Skills, Quantitative Reasoning, Sciences, Historical Perspectives, Foreign Culture, Fine Arts, Social Science, and Philosophy, Literature and Ideas. We excluded the Writing Skills component as we felt we might have an over representation of freshmen from those classes as it is a required course for all freshmen at the University. We further broke down the Science category into Biological, Physical, and Technological Sciences, totaling nine general education areas. We obtained a listing from the registrar’s office of all classes being offered in the Fall 2007 semester in each category. We used a random number generator to randomly select ten classes to sample. From these ten we administered the survey to two of the classes. In addition to the two classes that were randomly selected we administered the survey to one other class of approximately 50

students secondary to the professors request that if we surveyed one section of her class that we also do the other. We administered the survey to two classes at the beginning of the regularly scheduled class meeting and the third class at the end of the class meeting session. All surveys were conducted in the regular classroom. The professors choose the time to administer the survey.

Prior to administering the survey we informed participants that the survey was voluntary and questions could be skipped or the participants could stop at any time. In the Introduction to the survey we noted that participation in the survey was taken as consent. Additionally, the introduction included our contact information, as well as professor Catherine Moran's if participants wanted further information regarding the study and or had questions.

We choose this sampling method because we felt it would give us the most representative sample of UNH students in an easy to administer manner that was cost and time effective as the project had to be completed by semesters end. We choose General Education classes specifically because regardless of their major all UNH students must complete basic requirements.

Two limitations to this sampling method should be noted. First, administering surveys during class time was very difficult because professors were reluctant to give up class time, especially towards the end of the semester. Several professors that we approached would not allow us to survey their classes at all. One professor who had agreed to give us the last 15 minutes of his class time forgot and at 10 minutes he said we could hand out the surveys however he continued to lecture and use audio visual equipment throughout our survey session. We feel that this significantly hampered our effectiveness as a majority of students simply threw the surveys on the floor.

Second, although we tried to get a representative sample it seems that more freshmen and sophomores are enrolled in general education classes than juniors and seniors and therefore we do not believe that we have a true representative sample of the UNH student body.

## **VARIABLES**

Dependant Variable: HIV related stigma. We addressed HIV Stigma through a self administered, fifty-four question survey taken directly from AIDS ATTITUDE SCALE by Shrum, Turner, and Bruce, originally published in “Development of an Instrument to Measure Attitudes Towards AIDS,” The AIDS Attitude Scale asks participants to rate their attitudes on HIV/AIDS, PLWHA, and society’s response to the pandemic.

Independent Variable: HIV knowledge. For the purposes of this research knowledge was measured by the extent to which an individual was able to answer correctly eighteen questions regarding HIV/AIDS as measured by the AIDS Knowledge Questionare by Carey, Morrison-Beedy, and Johnson originally published in “The HIV-Knowledge Questionnaire,” We specified that if they did not know the answer to a question to not guess and to choose “Don’t Know” (DK) in order to get a valid percentage of correct answers and a fuller understanding of the true knowledge of our participants and lessen the chance of false positive responses by guessing correctly at the answers.

## **FINDINGS**

We used STATA to conduct all data analysis. An analysis of the data indicated that, with respect to a sociodemographic profile of the students sampled, approximately 60% were female and 40% male. Most students were in their freshman or sophomore year, approximately 44%, were freshmen, 33% sophomores, 12% juniors and 11 % seniors. The sample consisted of 267 participants. We had a non-response rate of approximately 42% and a responded to sampled rate of 58% for a total of 152 completed surveys to include in our data analysis. In response to the question “Have you ever received any HIV/AIDS education?” approximately 82% answered

“yes” and 18% “no” compared to the national level of approximately 88%. We choose to ask few demographic questions because we wanted participants to feel that the survey was completely anonymous and to feel free to express their true attitudes regarding PLWA’s.

***Stigma Findings***

The survey questions about stigma asks the level to which respondents subscribed to them by answering with SA: Strongly agree with the statement A: Agree with the statement; N: Neither agree nor disagree with the statement; D: Disagree with the statement; or SD: Strongly disagree with the statement. In analysis we assigned a response option coded as 5= Strongly Agree, 4 = agree, 3=Neutral, 2 = Disagree, and 1 = Strongly Disagree. Since our survey consisted of a Likert-type scale that contains both positively and negatively worded items within the same scale we had to reverse code 50% of the questions. The answers to each question were summed together using an additive scale to generate an overall stigma score. In addition we removed 13 questions prior data analysis secondary to them not measuring pertinent information. This research measured two types of stigma, symbolic and instrumental.

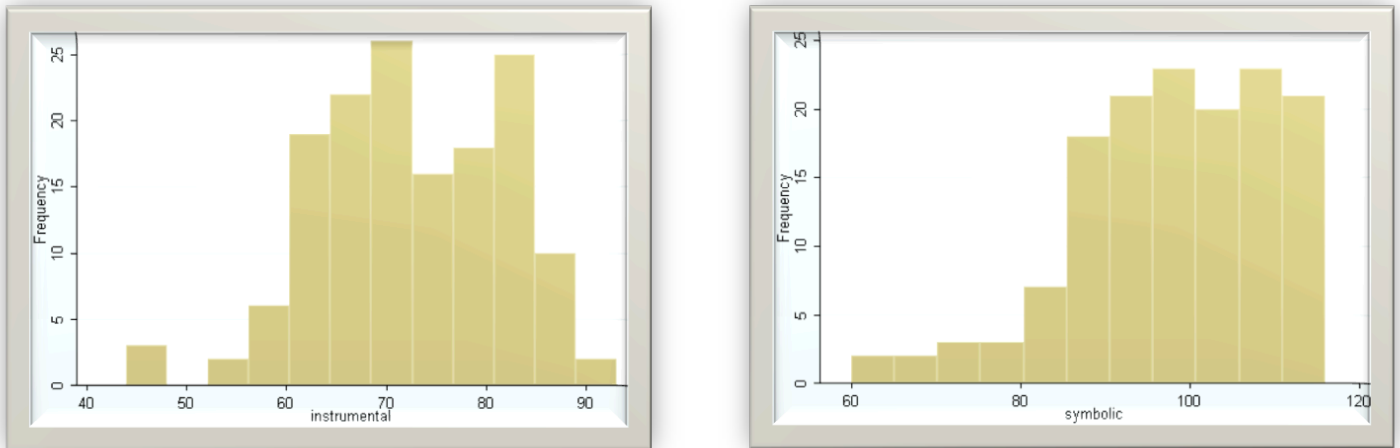
Table 1 displays the levels of stigma measured within both dimensions of this study. Four levels of stigma are shown in the table. “Low Levels” represents the percentage of participants that scored in lowest quarter of the scale. Moderate, High, and Very High levels of stigma represent participants that scored in the second, third, and fourth quarter of the scale.

Stigma Index	Low Levels	Moderate Levels	High Levels	Very High Levels
Symbolic	39%	40%	17%	4%
Instrumental	25%	40%	32%	3%

***Table 1: Measures of stigma***

This table shows that participants had more instrumental than symbolic stigma. Although moderate and very high levels of stigma remained similar, low levels and high levels vary significantly. We created this table based on a tabulation of both Instrumental and Symbolic stigma percentages.

**Graph 1: Instrumental and Symbolic Stigma Comparison**



On the preceding graph higher scores indicate lower levels of stigma. Through running a histogram graph tabulating the two types of stigma independently of each other we found instrumental scores to be more moderate and display a more normal curve whereas symbolic showed lower levels of stigma and a negatively skewed curve.

In a bivariate regression test relating stigma and knowledge we found that symbolic stigma had a significant difference at the .05 level. This means that as knowledge levels increased symbolic stigma levels decrease. For every one unit of knowledge increased, symbolic stigma scores increased by 0.8. These findings were not replicated in instrumental stigma. There was not a significant difference between knowledge scores and instrumental stigma levels.

In a two-sample t-test of equal variance relating symbolic stigma and sex, women show a mean score that was 6 points higher than males with a probability at 0.01 level. In analysis of

instrumental stigma there is no significant difference between the sexes. This test finds that overall women have less stigmatizing attitudes than men.

### ***Knowledge Findings***

These findings suggest that HIV knowledge can help reduce symbolic stigma but does not apparently reduce instrumental stigma. Even with higher levels of knowledge, respondents still feared transmission of the disease even though some of their fears may not be warranted. Their knowledge did, however, reduce levels of discriminatory attitudes towards PLWHA's.

The questions used in this paper regarding HIV Knowledge and the responses to them, are displayed in Figure 1. Analysis shows that respondents have a moderate to low HIV Knowledge base. Half of the respondents scored below 77% on the knowledge portion of the survey. Only 15% scored above 90% and only one respondent out of 152 answered all knowledge related questions correctly. There are four questions that need further review secondary to less than 90% valid correct answers.

1. All Pregnant women infected with HIV have babies born with HIV. The correct answer is False. Although the majority of respondents, 61% answered this correctly, 17% answered incorrectly and 21% stated that they "Don't Know". "Without preventive interventions, approximately 35 per cent of infants born to HIV-positive mothers contract the virus through mother-to-child transmission. In 2001, 800,000 children under the age of 15 contracted HIV, over 90 per cent of them through mother-to-child transmission" (UNICEF, 2002). The high percentage of respondents that are unfamiliar with this aspect of HIV transmission indicates that increased attention is needed in knowledge-based educational forums. Health educators at the high school level focus on unprotected sex and injection drug use as modes of transmission of HIV and rarely talk about

pregnancy issues relating to HIV and mother-to-child transmission. (Freudenberg and Radosh, 1998)

2. There is a female condom that can help decrease a woman's chance of getting HIV. The correct answer is true. Only 57% of respondents answered this correctly, 22% answered incorrectly and 20% of respondents answered they "Don't Know". "The female condom is a thin sheath or pouch worn by a woman during sex. It entirely lines the vagina and helps to prevent pregnancy and sexually transmitted diseases including HIV. Female condoms have been available in Europe since 1992 and were approved by the US Food and Drug Administration (FDA) in 1993. The female condom is available in at least limited quantities, throughout the world. The female condom has been distributed as part of HIV prevention efforts in South Africa since 2004" (Avert, 2007). Although the female condom has been available since 1993 it has not gained widespread acceptance in the United States, has not been featured in mainstream media and has therefore not become a widely used protective device in the United States which could explain the high incidence of respondents not knowing about it. The University of New Hampshire Health Services does offer the female condom for free to students in addition to the male condom.
3. Testing for HIV one week after having sex will tell a person if she or he has HIV. The correct answer is False. 58% of respondents answered this question correctly while 64% stated they "Don't Know". "Generally, it is recommended that you wait three months after possible exposure before being tested for HIV. Although HIV antibody tests are very sensitive, there is a 'window period' of 3 to 12 weeks, which is the period between infection with HIV and the appearance of detectable

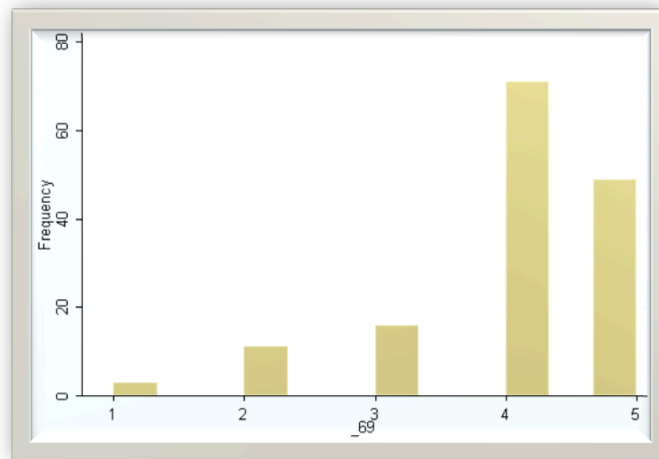
antibodies to the virus. In the case of the most sensitive anti-HIV tests currently recommended, the window period is about three weeks. This period may be longer if less sensitive tests are used” (UNAIDS, 2007). This finding indicates that while most respondent have a working knowledge of HIV the specifics of the disease progression is unknown, this is distrubing especially on a college campus where many students are experimenting sexually for the first time. This indicates a need for increased emphasis on this aspect of the disease in knowledge-based educational forums.

4. A person can get HIV from oral sex. The correct answer to this is true. 21% of respondents answered this incorrectly while 22% stated the “Don’t Know”. HIV can also be transmitted via oral sex in addition to the more commonly known modes of vaginal and anal intercourse and injection drug use. Recent research has shown that college students engage in oral sex as an alternative and as a precursor to intercourse. One study indicated that approximately 60% of undergraduates do not consider oral sex as sex in a sample of 599. (Sanders & Reinisch, 1999). Interestingly, students’ perceptions are that oral sex reduces risk of contracting STI/HIV as well as prevention of pregnancy and a means of maintaining virginity (Bartlett, 2004; Chambers, 2007).

One specific question on the stigma section of the survey spoke directly to our hypothesis. “People would NOT be so afraid of AIDS if they knew more about the disease.” Our findings show that the vast majority of respondents strongly agree or agree with this statement at a rate of 80%. This leads us to believe they would also agree with our hypothesis at a similar rate.

**Graph 2: Response to Variable 69**

1 = SD    2 = D    3 = N    4 = A    5 = SA



## DISCUSSION

This study shows that University of New Hampshire undergraduate students to have a low to moderate knowledge base regarding HIV. By examining two types of stigma respondents expressed both negative judgment (symbolic stigma) and fear of HIV infection (instrumental stigma). Symbolic stigma is expressed less often and to a lesser degree than is instrumental stigma. The analysis of symbolic and instrumental stigma found both to be more prevalent in males than females, however the difference in instrumental has a low level of significance.

It was found that there is a direct correlation between HIV-Related Stigma and HIV Knowledge. HIV Knowledge is a significant predictor of HIV-related stigma indicating the need for the educational programs that highlight HIV/AIDS. These findings emphasize the role education plays in reducing stigma and reiterate findings from previous research that that “overall, levels of HIV transmission knowledge are found to be an important determinant of all dimensions of stigma, and education in general an important determinant of stigma” (Maughan-Brown, 2006). Our findings indicate that although knowledge-based educational programs do help to reduce overall levels of stigma, and specifically symbolic stigma, they need to be put in place in conjunction with other interventions to influence instrumental stigma.

Our research could have been made better by the addition of more demographic indicators; however, in a small sample size such as ours it would have had a greater chance of losing anonymity. HIV-related stigma may differ by socio-economic status and might have been a good inclusion, however it may have been difficult to obtain accurate data from a student-based population. Additionally, whether or not a person has known anyone with HIV/AIDS may play a role in their attitudes. Goffman (1963) concluded that the more contact a person has with a disability, the more 'normalized' the disability becomes to the person. Ideally, we would have liked a larger and more representative sample. Time limitations played an important role in the study on many levels from sample size, to types of analysis, and preparation of this final document.

We conclude that further research is warranted and the application of knowledge-based education programs, in addition to interventions that include “the dissemination of information,



## REFERENCES

- AVERT. 2007. "What is the female condom?"  
<http://www.avert.org/femcond.htm> Retrieved: December 8, 2007
- Barrett, A. 2004. "Oral sex and teenagers: A sexual health educator's perspective."  
*Canadian Journal of Human Sexuality*, 13, 197–200.
- Brimlow, Alison, Geraldine Campbell, Howard Charman & Kevin Fenton. 2003. "Speaking Out, Changing Minds". *National AIDS Trust*. <http://www.nat.org.uk/document/202>  
Retrieved: December 14, 2007
- Brown, Lisanne; Kate Macintyre; and Lea Trujillo. 2003. "Interventions to Reduce HIV/AIDS Stigma: What Have We Learned." *AIDS Education and Preservation*. 15(1): 49-69.
- Bunn, Janice Yanushka; Sandra E. Solomon; Carol Miller; and Rex Forehand. 2007.  
"Measurement Of Stigma In People With HIV: A Reexamination Of The HIV Stigma Scale." *AIDS Education and Prevention*. 19(3): 198-208.
- Center for Disease Control and Prevention. 2006. "2006 School Health Profiles Questionnaire For Lead Health Education Teachers."  
<http://www.cdc.gov/healthyyouth/profiles/2006/ItemRationaleT.pdf>  
Retrieved: December 8, 2007
- Chambers, Wendy, C. 2007. "Oral Sex: Varied Behaviors and Perceptions in a College Population." *Journal Of Sex Research*. 44(1): 28–42
- Crandall, C.S., Glor, J. & Britt, T. 1997. "AIDS-Related Stigmatization: Instrumental and Symbolic Attitudes'." *Journal of Applied Social Psychology* 27(2); 95-123
- Fish, T. & Rye, B. 1991. "Attitudes Toward a Homosexual or Heterosexual Person with AIDS."  
*Journal of Applied Social Psychology*. 21(8): 651 -667.
- Freudenberg, N. & Radosh, A. 1998. "Protecting Youth, Preventing AIDS: A Guide for Effective High School HIV Prevention Programs." *New York City Board of Education*
- Goffman, E.1963. *Stigma: Notes on the Management of Spoilt Identity*. London: Penguin Books.
- Hays H.,1992. "Students' Knowledge Of AIDS And Sexual Risk Behavior." *Psychological Reports* 71: 649–650.
- Healthy People 2000. 1991. "National Health Promotion And Disease Prevention Objectives." Washington, D.C.: U.S. Department of Health and Human Services, Public Health Service. U.S. Government Printing Office.

- Herek, G. & Capitanio, J.R. 1998. "Symbolic Prejudice of Fear of Infection? A functional analysis of AIDS-related stigma among heterosexual adults." *Basic and Applied Social Psychology* 20 (3): 230-241.
- Herek, G.M. 2002. Thinking About AIDS And Stigma: A Psychologist's Perspective'. *Journal of Law. South African Review of Sociology* 37(2): 594-607.
- Herek, Gregory M.; John P. Capitanio; and Keith F. Widaman. (2002). "HIV-Related Stigma and Knowledge In the United States: Prevalence And Trends, 1991-1999." *American Journal of Public Health* 92(3): 371-377.
- HIV/AIDS: A Review of the Literature.  
[http://hab.hrsa.gov/publications/stigma/stigma\\_defined.htm](http://hab.hrsa.gov/publications/stigma/stigma_defined.htm).  
 Retrieved: October 17, 2007
- Jacobs, R. 1993. "AIDS Communication: College Students' AIDS Knowledge And Information Sources." *Health Values* 17(3): 32-47.
- Joint United Nations Programme on HIV/AIDS [UNAIDS]. 2001  
[http://www.unaids.org/en/Regions\\_Countries/Countries/nigeria.asp](http://www.unaids.org/en/Regions_Countries/Countries/nigeria.asp)  
 Retrieved: October 17, 2007
- Lance, Larry M. 2001. "HIV/AIDS Perceptions And Knowledge Heterosexual College Students Within The Context Of Sexual Activity: Suggestions For The Future." *College Student Journal*, 35(3): 112-132
- LePoire, B. 1994. Attraction Toward and Nonverbal Stigmatization of Gay Males and Persons with AIDS: Evidence of Symbolic Over Instrumental Attitudinal Structures. *Human Communication Research*, 21(20): 241-279.
- Mann, J. 1996. "Health and Human Rights: Protecting Human Rights Is Essential For Promoting Health (Editorial)." *British Medical Journal* 3, 924-925.
- Maughan-Brown, Brendan G. 2006. "Attitudes Towards People With HIV/AIDS: Stigma And Its Determinants Amongst Young Adults In Cape Town, South Africa." *South African Review of Sociology* 37(2): 165-188.
- Mohsenin, Iran. 1983. "Note on Age Structure of College Students." *History of Education Quarterly*, 23(4): 491-98
- Opt, Susan K. and Donald A. Loffredo. 2004. "College Students and HIV/AIDS: More Insights on Knowledge, Testing and Sexual Practices." *Journal of Psychology* 138(5): 389-403.
- Stein, J. 2003. "HIV/AIDS Stigma: The Latest Dirty Secret." CSSR Working Paper No. 46. AIDS and Society Research Unit. Centre for Social Science Research, University of Cape Town: Cape Town, South Africa. [http://www.csr.uct.ac.za/pubs\\_cssr.html](http://www.csr.uct.ac.za/pubs_cssr.html). Retrieved: October 12, 2007

Triplet, R. & Sugarman, D. 1987. "Reactions to AIDS Victims: Ambiguity Breeds Contempt". *Personality and Social Psychology Bulletin*, 13(2): 265-274.

UNAIDS. 2002. "Department of Health Action Plan: HIV related stigma and discrimination"  
[http://www.dh.gov.uk/prod\\_consum\\_dh/groups/dh\\_digitalassets/@dh/@en/documents/digitalasset/dh\\_4123993.pdf](http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/documents/digitalasset/dh_4123993.pdf)  
Retrieved: December 15, 2007

UNAIDS. 2007. "Uniting the world against AIDS- Fast facts about AIDS".  
<http://www.unaids.org/en/MediaCentre/References/default.asp#32>  
Retrieved: December 8, 2007

UNICEF. 2002. "Mother-To-Child Transmission of HIV-A Fact Sheet"  
[http://www.unicef.org/publications/files/pub\\_factsheet\\_mtct\\_en.pdf](http://www.unicef.org/publications/files/pub_factsheet_mtct_en.pdf)  
Retrieved: December 8, 2007

Visser, Maretha J.; Makin, Jennifer D. Makin; and Lehobye, Kopo. 2006. "Stigmatizing Attitudes of the Community Towards People Living With HIV/AIDS." *Journal of Community & Applied Social Psychology* 16:42-58.

<http://web.ebscohost.com.libproxy.unh.edu/ehost/ - bib30up>Weinstein, E., 1991. "Adolescents' Knowledge of AIDS And Behavior Change: Implications For Education. *Journal of Health Education*. 22: 3

