To the Graduate Council:

I am submitting herewith a dissertation written by Elizabeth Anne Boyd Tuning entitled "Sexual Risk Behaviors and Knowledge of STDs/AIDS Reported by Tractor-Trailer Drivers: A Baseline for Education." I have examined the final copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Education, with a major in Education.

James Neutens, Major Professor

We have read this dissertation
and recommend its acceptance:

Accepted for the Council:

Associate Vice Chancellor and
Dean of The Graduate School

SEXUAL RISK BEHAVIORS AND KNOWLEDGE OF STDs/AIDS REPORTED BY TRACTOR-TRAILER DRIVERS: A BASELINE FOR EDUCATION

A Dissertation
Presented for the
Doctor of Education Degree
The University of Tennessee, Knoxville

Elizabeth Anne Boyd Tuning
May 1998

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DEDICATION

This dissertation is dedicated to the loving memory of

Jaymi Alynne Tuning (1971-1990)

"Jaymi...This one's for you."

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Saying thank you to my family and friends for putting up with my "search" for knowledge these many years seems a pittance when compared to the amount of time they have endured through this whole process. A special tribute to Rob Collignon and family, Dr. Carol Parks, Dr. Scott Snyder, and Kim Franz for their support... Pat Wrinkle, Karen Waller, and Ed Deep for their patience, expertise and encouragement.

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Lastly, I would like to thank the members of my family who helped make this dream a reality...My parents, Sara and Jay Brown who have given me the gift of their love and support no matter how rough the road...My daughter's family and wonderful grandchildren for their unconditional love...And finally, but not leastly,...Thank God,...

Abstract

The purpose of this study was to gather baseline data from tractor-trailer drivers about their sexual behavior and knowledge of the acquired immune deficiency syndrome (AIDS) and other sexually transmitted diseases(STDs). A convenience sample of 100 men and 15 women was obtained from patrons in the restaurant, store, and fuel desk areas of a Truck Stop in Gallup, New Mexico. Subjects were given a pencil and paper questionnaire consisting of fifty-five questions incorporating 17 True/False Knowledge, 26 behavioral and 12 demographic questions.

Based on the data the following was found relative to the research questions: (1)Non-condom use was reported by 62.6% of the drivers with over 58% reporting being married or in a monogamous relationship as the reason for non-use. Only 13% of the respondents use condoms all the time with the single most given reason for condom use being to prevent/decrease the chance for AIDS. No significant relationships were found for condom use. (2)Significant inverse relationships were found between monogamy and casual sex and between marital status and casual sex. However, 21.7% of the drivers engaged in casual sex; 12.2% reported more than one sexual partner in the last six months with 61% not responding to this question, therefore, the percentage is likely to be higher. (3)Of the drivers surveyed, 36.6% use the services of prostitutes 25-75% of the time. (4)In this study 50.4% of the driver used drugs in the last year(including alcohol). (5)Drivers have a knowledge deficit about HIV/STDs safe sex

practices ranging from 1.7-96.5%. No significant relationships were found for knowledge level. (6)The extent of ambisexual behavior in this population is not known at this time.

More information is clearly needed to establish the true extent of risk behaviors in this population. Educational programs specific to the culture of the driver are needed and must be easily available to the drivers, both male and female. It must also be emphasized that using alcohol and drugs has been associated with unsafe sexual behaviors and the decreased use of condoms.

Preface

I have undertaken this study because I feel very strongly about the AIDS issue and feel it is the number one health issue of our time. Perhaps, had it not been for ignorance, greed, and politics, HIV would not be the continuing threat that it is today. The sad thing about AIDS is that, in the majority of cases, it is a preventable disease. HIV continues to spread because some people give it unknowingly to others; some pass the virus knowing they are HIV positive, but, refuse to acknowledge the responsibilities inherent in a positive diagnosis. There remains a third group of individuals who continue to deny they are at risk for HIV, and in doing so, refuse to take responsibility for their own protection by allowing themselves to be put at risk, either by their own behavior or the behavior of others The only way to stop the devastation of this disease is through education and personal responsibility.

When describing a teacher, the Prophet Gibran[1] taught:

"If he is indeed wise, he (she) does not bid you enter the house of his wisdom, but rather leads you to the threshold of your own mind."

If this study causes one person to change their behavior so that they are not infected or do not infect someone else, then the time invested has indeed been worthwhile.

---

[1]Gibran, Kahlil (1976). The Prophet. New York: Alfred A. Knopf, 56.

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CHAPTER I

INTRODUCTION

An expansion in the Acquired Immunodeficiency Syndrome(AIDS) case definition in 1993 to include a measure of severe immunosuppression and the addition of three clinical conditions (pulmonary TB, recurrent pneumonia, and invasive cervical cancer) resulted in a dramatic increase from 46,637(1992) to 104,616 reported cases. Mortality data for 1993 and 1994 indicated a continuing increase in HIV infections as the leading cause of death in the U.S. for persons 25-44 years of age(Center for Disease Control(CDC), 1996b). This remained true in 1996 with this same group comprising the majority of those living with AIDS(Epi-News, 1997). A decline in reported cases was seen 1994 through 1996 (76,560; 72,967; 68,473 respectively). While the decrease in AIDS deaths reflects improved survival among persons with AIDS, increased survival reflects improved medical care and access to care, the increased use of prophylactic drugs to prevent opportunistic infections, and the use of combination therapy with antiviral agents and protease inhibitors(Carpenter et al., 1996; Jones et al., 1996). There is no evidence that these new drug therapies offer any protection against the transmission of HIV(Epi-News, 1997). AIDS continues to disproportionatly affect minority groups with blacks(41% of adult/adolescent cases) now exceeding proportions of whites in AIDS

cases for the first time in history(CDC, 1996a, Epi-News, 1997). After almost 20 years there still is no cure and people continue to succumb to this prolific virus.

The dynamics for the spread of HIV, the causative agent for AIDS, vary widely in different parts of the world and individual societies among different subpopulations. Until recently, little research had been conducted on the health status of the professional truck driver, therefore, little was known about the health behaviors, or attitudes, knowledge and belief perceptions about sexually transmitted disease(STDs), which includes AIDS. Risk groups for HIV infection have long been recognized and accepted. However, truck drivers were not immediately seen as one of those risk groups. It was not until data began to appear from outside the U.S.(Bwayo et al., 1991a, 1991b, 1994; George et al., 1997; Irshad et al., 1994; Mbugua et al., 1995; McCarthy et al.,1989; Orubuloye, 1992; Outreach, 1993; Pais, 1996; Podhisita et al., 1996; Tsega, 1990; Singh et al., 1993; Singh & Malaviya, 1994) that truckers were seen as an at risk groups. Since the inception of the idea for this research in 1989 this researcher has long recognized this unique subpopulation for the potential spread of HIV. Whereas this population has special needs due to its diversity, mobility and work lifestyle and because little information is available on this unique group, a baseline is needed to adequately assess this population and its health needs. This study focuses on the sexual risk behaviors and knowledge of HIV/AIDS reported by tractor-trailer drivers.

Significance of the Problem

Scope of the Epidemic

A total of 573,800 cases of AIDS in persons ages ≥13 years of age were reported to CDC 1981 through 1996 (CDC 1997). Reported cases per 100,000 for 1996 were 89.7, 41.3 and 13.5 for blacks, Hispanics and whites respectively. Low rates were found among American Indians/ Alaska Natives(10.7) and Asians/Pacific Islanders(12.3). In 1996 women represented greater proportions of adult/adolescent cases than any previous year(20%). Men who have sex with men(MSM) decreased to 50 percent of the 54,653 of men reported in 1996, however MSM continues to account for the largest proportion of reported AIDS cases. Heterosexual contact accounted for 40 percent of reported cases and IV drug use(IVDU) accounted for 34 percent.

In 1995 STDs accounted for 87 percent of all notifiable infectious diseases in the U.S.(CDC, 1996a). Eight new STD organisms, including HIV, have been identified since 1980(Eng & Butler, 1997). STDs excluding AIDS, are the second leading cause of death in women ages 15-44(Over & Piot, 1993). The World Health Organization(WHO) Global Program on AIDS (1996) reports there were 3 million new cases of STDs World wide 1995 in adults 15-49 years of age. Ebrahim et al.,(1995) reported that in 1973-1992 American women 15 years or older accounted for 150,000 deaths directly attributed to STDs, including AIDS. In 1992 the percentage of cases of early syphilis in women age 15 to 44 steadily increased to account for almost 52 percent of reported cases. The three leading causes of death in 1992,

Cervical Cancer, AIDS, and Hepatitis B infection all related to viral STDs(Eng & Butler, 1997). There is a strong association between STDs and HIV infection with the implication that syphilis, hepatitis and other STDs may be cofactors for HIV, both increasing risk for acquiring HIV while facilitating heterosexual transmission(CDC, 1992a; Eng & Butler, 1997; McCarthy et al.,1989; Wasserheit, 1992; WHO 1989). Before 1981 and through 1991, gonorrhea was the most frequently reported STD in the U.S.(CDC, 1993b). In 1994, chlamydia became a reportable STD with reported cases 1995(477,637) exceeding those for gonorrhea(392,848) for the second year(CDC, 1995). As with gonorrhea, chlamydia rates are highest among adolescent women 15-19 years old. Chlamydia is the most prevalent reported STD, furthermore, chlamydia facilitates the transmission of HIV(CDC, 1995).

The term STD is a general term for 25 sexually transmitted infectious organisms and the Syndromes they cause. STDs are most often transmitted by oral, anal, or vaginal intercourse, however, some (Hepatitis B, and HIV) are transmitted by parenteral routes (especially by intravenous drug use(IVDU)). Pregnant women with STDs can also transmitted the disease to the fetus in utero, during birth or through breast milk when nursing.

After launching an accelerated prevention campaign 1990-1992, CDC attributes a decrease in infectious syphilis among MSM due to changes in behavior. However, it attributes the second highest increase in AIDS cases among heterosexual populations (9.8% since 1990) due to use of IV drugs, especially cocaine and the exchange of sex for drugs or the money to buy them. Nearly one-fourth of all

persons with AIDS in the U.S. were infected through IVDU(CDC, 1993a). Almost half (44%) of cases reported in women were attributed to IVDU(CDC, 1992a). Of the 8,093 heterosexual AIDS cases in 1995, 5,253(65%) were female(CDC 1996a).

As early as 1990 testimony presented to The National Commission on AIDS recognized twin epidemics of substance use and HIV infection with testimony revealing that 32% of all adult/adolescent AIDS cases were related to IVDU(Schmoke, 1991; Report Number One, 1989).

Statement of the Problem

The purpose of this study was to gather baseline data about sexual risk behaviors and knowledge of STDs and AIDS from tractor-trailer drivers stopping at the TA Truck Stop at Exit 16 of I-40 in Gallup, NM.

Research Questions

(1) Are drivers using condoms? Why/Why not? Is there a relationship between condom use and other study factors?

(2) Are drivers having sexual intercourse with multiple partners?

(3) Are drivers choosing partners from high risk groups (same sex as driver, homosexual, prostitute, persons with multiple partners, drug users)?

(4) Are drivers putting themselves at risk for STDs by using drugs?

(5) What is the knowledge level of drivers about the spread of STDs and/or AIDS. How does knowledge level relate to their general education level, age, and marital status.

(6) Is ambisexual behavior practiced in this population? If so, to what extent and how does it relate to the above problems.

Limitations

1. Selection of a research site is limited to the truck stop that agreed to participate in the study.

2. The availability of drivers was limited to those drivers stopping at the TA Truck Stop at the time of the survey and to those agreeing to participate in the study.

Delimitations

This study only dealt with drivers in the truck stop restaurant, store, and/or fuel desk areas of the TA Truck Stop in Gallup, NM. Subjects were delimited to a minimum of 100 self-report drivers. Analyses of data were limited to the number of questionnaires returned to the researcher and delimited to the fact that in order to maintain a sense of anonymity, reminder cards were omitted from this study.

Assumptions

The researcher assumed that since the self report responses were given anonymously, the drivers reported honestly.

Definition of Terms

Terms used throughout this study commonly used by truckers and defined by this researcher are as follows:

(1) A truck driver, trucker, tractor-trailer driver, "18 wheeler" is defined as any driver who answers positively when asked "Do you drive an 18 wheeler?"

(2) A truck stop is any area designated as having diesel fuel with parking areas suitable for large trucks and being called/named a "truck stop."

(3) A reported variable is any factor, real or imagined, which affects behavior or knowledge in either a positive or negative manner.

(4) An Independent is a driver who is not affiliated with any one company.

(5) An Owner Operator owns his own truck but may be leased to a company.

(6) Ambisexual behavior is when one sex partner, after performing sexual acts with a partner of the same sex, does not view him/herself as being homosexual but views the practice as a convenient sexual outlet which does not interfere with his/her heterosexual lifestyle.

(7) A "Lot Lizard" is a prostitute who hangs out around truck stop parking lots and frequents many trucks.

Summary

Tractor-trailer drivers have a potential for covering a great many miles and contacting a large number of people within the time taken to deliver a load and complete any given trip. A promiscuous driver has the potential for contact or spread of STDs and/or the AIDS virus through his/her contact with numerous people. Many drivers live away from their families for extended periods of time. For some drivers this has the potential for an increased sense of freedom and decreased sense of responsibility. The very nature of the long hours on the job without a significant other creates a situation conducive to multiple short term relationships(Corzine & Kirby, 1977).

In an article in the April(1988) issue of the American Journal of Public Health, devoted entirely to AIDS, Brandt (1988) concludes that "to be effective, AIDS education must be explicit, focused, and appropriately targeted to a range of at risk social groups"(p. 369). Truck drivers are members of an at risk social group with a diverse cultural system all its own. Becker(1988) emphasized that the question is no longer "how an individual avoids risk but how a population might avoid further transmission of an infectious agent (p. 408)."

A minimal amount of baseline information about a target population is needed in order for teaching-learning to be effective.

There is a scarcity of reported data on tractor-trailer drivers specific to knowledge or health behaviors for the trucker. Little was found on sexual practices of tractor-trailer drivers. A behavior change for one driver has the potential for providing benefits to the nation as a whole by decreasing the spread of STDs and AIDS. Successful HIV/STD prevention efforts in the future will rely on the ability to change specific behaviors and accurately assess those behavior changes. Therefore, a teaching/learning baseline is needed to develop effective strategies for teaching this ethnographic population.

CHAPTER II

REVIEW OF THE LITERATURE

The nature of this study indicated a review of the literature in four primary areas: trucks/truckers; homosexuals, prostitutes and drugs; AIDS and STDs; and condom use. The purpose of this review was to outline previous studies to provide a better understanding of the relationships between factors which are ultimately reflected in the behavior of drivers.

Studies indicating long distance truck drivers are at high risk for HIV have come from Africa(Ethiopia) and from the countries of India, Thailand, and Sudan. While they can not be generalized to U.S. drivers due to continental differences, they are nonetheless important. Variations among transmission rates among studies in different countries may be due, in part, to differences in the stage of the epidemic and in the proportions of people with an advanced infection. Several such studies have focused on truck drivers serving as vehicles for HIV spread(George et al., 1997; Orubuloye. 1992; Pais, 1996; Singh & Malaviya, 1994; Singh et al., 1993); HIV/TB in Ethiopia(Tsega, 1990); STD knowledge and attitudes(Bwano, Mutere et al., 1991); correlates for HIV seropositivity: with circumcision and past history of STDs(Bwano, Omari et al.,; 1991; Bwano, Plummer et al.,1994); with lack of circumcision, driving more than 11 years and more than a secondary education(Mbugia et a;., 1995); Hepatitis B in

India (Irshad, Joshi, Acharya, & Tandon, 1994); Hepatitis B and HIV in Sudan(McCarthy et al., 1989); condom use in Thailand(Morris, Pramialratana, Podhisita & Warver, 1995); and HIV risk and socio-economic/gender carriers(Karim, Karim, Soldan & Zondi, 1995).

One such study was broadcast On February 18, 1994 by The National Public Radio(NPR) Station and focused on AIDS in India. In the interview on the program titled All Things Considered, Dr. S. Solomon, Speaker, revealed that in India, the second most densely populated country in the world, AIDS is the fastest spreading disease due to truck driver mobility. She attributed this spread from urban to rural smaller areas, at the rate of 2,000/5 mil./year, to a network of truckers and prostitutes. She stated that in a survey taken two years ago seven percent of the drivers(N=700) were HIV positive. Now the rate has increased to 50% being HIV positive. The condom usage rates were also stated as being "very low."

At any one time as many as 70% of the workers had STDs. Through the use of sexy videos and music "laced" with messages, health workers hand out condoms and pamphlets at truck stops with portable tent testing. The drivers got lonely and on long trips had sex as often as twice daily, once every 250 miles. The behavior, a part of the trucking culture, stemmed from a belief by the truckers that the heat from the engine of the truck enters their body and makes them sick. The sickness is released through sex.

The web of infection especially involved the wives of the truckers (and probably husbands of the prostitutes.) Wives reported

not to be afraid of AIDS because they trust their husbands. During a recent AIDS conference at Meharry Medical College, October 21-22, 1997, in Nashville, TN, Dr. Molly Chatterjee, an Obstritian at Meharry, spoke on the topic of Reducing Perinatal Transmission of HIV. The Dr. is a native of Calcutta, India and visits frequently to share information with Indian physicians and health care workers. She revealed that as many as three percent of all housewives in Calcutta are HIV positive from working as prostitutes to support the family income. Dr. Chatterjee explained that "there is mass poverty, illiteracy, and medical resources in the area, contributing to the problem. Often there are not enough kits to test everyone for HIV."

The information from DR. Chaterjee supports the radio broadcast (and present research articles discussed in the review of the literature involving homosexuals, prostitutes and drugs, Chapter III). The 1994 NPR broadcast revealed that many husbands allowed their wives to work as prostitutes two days a week. They stated that even though they knew it was wrong, "they must have money for food."

After hearing the broadcast and reviewing the tape of the broadcast, I was unable to trace any journalistic reports. Neither was I able to locate information about a PBS broadcast focusing on AIDS in Thailand. In October of 1996 in a phone conversation with Ms. Cheryl Zemo, CDC National AIDS Clearing House, AIDS Reference Specialist related that CDC also had no information in their database related to truck drivers, either foreign or domestic, and AIDS/HIV.

Literature Involving Trucks/Truckers

Until recently most studies on truckers have concentrated on: (1) the truck itself or accidents involving trucks(Robertson, 1988; Stein and Associates, 1988, 1989); (2)need for airbags (Kisiel, 1995); (3)training simulators(Bierck, 1996); (4)worker fatality rates(Jack & Zak, 1995). With respect to the drivers themselves, the majority of studies focus on: (1)occupational exposure to diesel exhaust and cancer(Boffetta, Harris & Wynder, 1990; Boffetta, Stellman & Garfinkel, 1988; Brownson, 1988; Claude, Frentzel & Kunze, 1988; Falk et al., 1990; Finkelstein, 1995; Hansen, 1993; Hayes et al., 1989; Mellengaard, Engholm, McLaughlin & Olsen; 1994; Muscat & Wynder 1995; Rafnsson & Gunnersdotter, 1991; Schnatter, Katz, Nicholick & Theriault, 1993; Silverman et al., 1989; Steinland, Silverman & Horning, 1990; Steinland, Silverman & Zaebst, 1992); (2)sleep disorders(Aps, 1997; Bonnett & Arsnd, 1995; Kirkland & Akerstedt, 1993; Stoohs, 1995; Stoohs, Bingham, Itoi, Guilleminault & Dement, 1994; Stoohs, Guilleminault & Dement, 1993; Stoohs, Guilleminault, Itoi & Dement, 1994); (3)noise exposure(Van den Heever & Roets, 1996); (4)musculoskeletal disorders(Magnusson, Pope, Welder & Areskoug, 1996); (5)Crash severity and binocular vision(Laberge-Madeau et al., 1996); (6)Career stage, time on the road and driver attitudes(McElroy et al., 1993); (7)fatigue(Beilock, 1995; Summala, 1994, Williamson, Feyer & Friswell, 1996); (8)need for health education programs(Koreletz et al., 1993); (9)need for wellness programs(Holmes, Power & Walter-Clyde, 1996).

Since there is a lack of journalistic material about the trucking culture, it is necessary that the researcher contribute information from personal experience, the use of the CB radio, and direct observations of this population. However, I feel a statement is called for. While on the way to Gallup, MN to gather data for this study a trucker remarked on the CB radio that "you're just gonna ask a bunch of personal questions about sex and them make us all look bad." As I explained to him: My purpose in doing this study is not to bash the truck driver. I want to do this study because I know drivers are putting themselves, and their loved ones, at risk for HIV. I hear them every time I turn on my radio talking about their wives, their girlfriends, and prostitutes they pick up. One must keep in mind several important factors before making the assumption that tractor-trailer drivers in general are at risk for HIV/STDs. The population surveyed is not a random sample, therefore, the findings can not be generalized to all truckers, only to those who participated in the study.

This researcher has a great respect for truck drivers in general. It was never expected by the researcher that there would be a problem getting the drivers themselves to participate in the study because they have always been a very giving and helpful population.

For almost ten years the researcher was the wife of a trucker who began his truck driving career as a training instructor for one of the first truck driving school located in Phoenix, Arizona. Drivers would enter the school at Phoenix for experiential training.

Driving experience took place on a produce run from Phoenix to Los Angeles, California(CA). Students would them train while driving on a subcontract for the U.S. Postal Service. The mail route ran from Los Angeles to San Francisco with a turn-around point in the center at San Luis Obispo, CA where we were based.

Many of the trainees had left family and resources behind in order to gain this practical experience. It was not unusual for a trainee to eat with the family or sleep on the couch while they waited to go out on another run. For the most part, observed drivers did not fit the public stereotypical truck driver image of the grubby, macho, dirty-mouthed, uneducated (and incapable of other work) driver. The researcher found them to be friendly, polite, and eager to change into clean clothes and bathe. The majority of the drivers had at least a high school education, many had some college with one driver having a degree in biochemistry and another a degree in marine biology. During this time they interacted with the researcher and her family in a courteous, respectful manner. Many became family friends sharing information about family, friends, children. Driving was expressed as a means to move ahead financially.

During this time I observe instructors and student drivers using uppers in conjunction with their driving. The schedule was such that the men were pushed to work six and a half days a week. By the time they refueled the truck and ate, there were only four to five hours remaining for sleep. In order for them to function on this level, month after month, drivers took stimulants to remain awake. Most of

the drivers took "black beauties", "New York turn-arounds". In actuality these were a biphetamine twenty, prescription drugs, which the wives could get as diet pills or the drivers purchased on the street, along with other uppers known as "reds', "yellow jackets", and "white crosses."

More recently, like anyone with a CB radio who passes a major truck stop, the researcher has heard blatant advertisements to truckers for marijuana and crack cocaine. The extent of the sale or use of these drugs to truckers is not known. She has also heard prostitutes looking for "anyone who wants some company", and likewise the truckers calling for "a working girl." The extent to which prostitutes are use by this population is not known. As an aside to the topic of prostitutes, in 1986 I traveled to Nevada. While listening to the CB I heard a young male voice talking to another male. From the conversation they both appeared to be drivers. The younger male stated he had been to one of the local "cat houses." The researcher said to him "Have you not heard of AIDS?" His reply was "Yes Mam, but these girls are safe because they are tested regularly and I was assured that they are clean." The window of conversion was explained to him and the fact that sex with persons with multiple partners increases your chance of exposure to the virus. He continued to argue his point. It is not known how many other drivers have this same belief.

The researcher has also observed an overcrowding of drinking drivers in the bar/dance area of truck stops. Drivers were seen

frequently entering and leaving the parking area before and after drinking in the bar. The extent of drinking and driving is not known.

What the researcher has observed is consistent with observations reported by Oullet(1994). Oullet applies his pre-1980 experience to divide truckers into three categories: (1)"the supertrucker who lives for his job and his truck, who values time with his truck (and with the audiences who admire it and its driver) over his family" (p. 751). This description can be applied to 75-80 % of the drivers observed by the researcher and is the driver who derives his self-image and identity from his truck. Over time truck driving gives his life meaning and value.

The second type of driver Oullet describes is (2)"the trucker who balances his life and identity between his truck and his personal life. This is hard to achieve, particularly for the driver who is seldom home. Many drivers speak of being divorced and of how hard it is to maintain a relationship while on the road. Spouses frequently travel with drivers and those without children frequently become driving teams.

The last driver described by Oullet is (3)the worker who truly works for the money and considers the truck little more than a workplace on wheels"(p. 751). From the researcher's perspective this type of driver is found working for local companies or those companies maintaining regular routes where the driver is on some type of schedule(e.g., dump truck, Unites Parcel Service).

What this researcher sees as all three types of drivers having in common, is that driving allows them to live a dream of independence and autonomy outside their family roles and responsibilities.

Local drivers are usually paid by the hour. Long distance drivers are paid by the load or by the mile, therefore, the paycheck depends on the number of loads dropped and miles covered in the shortest amount of time. I you intend to make money, then you must stay on the road and moving forward toward the next load. Most dispatchers promise to reroute a driver home about every seven to ten days. However, it is not uncommon to hear drivers talking on the CB about not being home for three weeks to a month. From my experience, the longer a driver is away from the significant other, the greater the chances that he/she will yield to the temptation of casual sex outside a monogamous relationship. This researcher does not presume to judge this to be the case with all drivers, however, sex outside of marriage and monogamy has been observed by the researcher.

If a driver chooses, he/she can literally live out of the truck. Many of the newer models($95-$110,000 plus insurance) are equipped with double bunk beds, hot and cold running water, portable toilets, telephone/ fax and microwave ovens. Under these circum-stances a driver could essentially become a free-roaming agent with no permanent ties, therefore, free to have sex with anyone he/she chooses building a network of sexual contacts across the country.

This lifestyle increases a drivers chance for contracting and spreading STDs.

Literature Involving Homosexuals, Prostitutes and Drugs

Early studies focusing on homosexual or prostitute behaviors have indirectly pertained to the trucker. One such ethnographic study by Corzine & Kirby(1977) studied a homosexual's activity in "sexual marketplaces" described as places where bargaining takes place for the purpose of exchange of sexual service "without obligation or commitment, `the one night stand'." (p 171). These marketplaces were restaurants, rest rooms, truck stops, parking lots or road side rest areas. The authors described two groups participating in homosexual behaviors, the gay who is unmarried and rooted in the homosexual community and the ambisexual who is outside the gay subculture and enters strictly for sex without commitment. Ambisexual behavior was believed by the authors to be common among truckers. Behaviors reported as frequent in highway rest stop areas are those of fellatio, anal intercourse, mutual masturbation. All except mutual masturbation put the driver at risk for AIDS or other STDs. An increased number of sexual contacts and anal/genital receptive intercourse were reported by Winkelstein et al.(1987) as the most suspect risk factors for homosexuals for the AIDS virus. Drivers who experienced ambisexual behavior view themselves as not being

homosexual but viewed the practice as a convenient sexual outlet which does not interfere with their heterosexual lifestyle. The ambisexual behavior is comparable to behaviors described by Kinsey(1948) as occurring in the explorer or pioneer era. The authors made the statement that the "need to remain with the truck and meeting deadlines make it hardly likely that heterosexual male truckers will be able to attend bars where they would be able to meet females who are looking for sexual companionship (either paid for or for free)"(p. 171). The significance of this study in relation to the present study is: 1)This study confirms gay and ambisexual behaviors by truckers. (2)The data in this study were valid in 1977 before the onset of AIDS. (3)Ambisexual behaviors would increase the spread of AIDS and other STDs to the significant other of the driver. (4)Many major truck stops have motel/bar/restaurant facilities which have a great number of female customers making it possible for the trucker to meet females while fueling, eating, and/or laying over while waiting to deliver. (5)While the CB radio can be and is used to meet females on the road, it was not mentioned in this study. (6)It is not known if truckers continue to practice the same ambisexual behaviors.

Luxenburg & Klein(1984) set out to study male homosexual activity in roadside areas through the taping of conversations over the CB radio. They found that "a displaced form of prostitution" (from streets to highways) actually resulted in displacing "male homosexual cruising" from the Oklahoma "Good Buddy Park" which became "Dolly Park" (p 73). The discovery, while taping CB conversations,

that a female student helping conduct the study was herself a prostitute allowed the authors to study modifications of methods used by prostitutes and pimps. A subsequent second female, a graduate student, also made the same disclosure which led to a snowball sampling of truckers who were interviewed about their sexual contacts along the highway. The study revealed information about prostitutes (and inadvertently about truckers) from 1979-1982. The study showed that the initiation of an encounter is made by either trucker or prostitute on Channel 19 in explicit language and then moved to another channel for completion of the transaction. The truckers paid $20 to $30 for ten to fifteen minutes in the sleeper with the prostitute and neither the prostitute or the driver were selective. This was evidenced by the fact that negotiations were made without seeing the other party. Most prostitutes worked without a pimp. In the authors' discussion of the roles of the pimp, one is relevant to the present study, "procurer" of drugs (mostly "speed" and marijuana). The authors did not give any information as to how much he sold or the number of drivers using the drugs. The significance of this study in relation to the present study is: (1)This article documents the use of prostitutes and drugs by truckers. (2)Observations for this study were made 1979-1982 which ended about the same time as AIDS became public. (3)It is not known if truckers have changed or modified behavior due to AIDS.

Rosenberg & Weiner(1988, p 418) suggested that "HIV infection in prostitutes follows a different pattern than that for STDs" with

"data from heterosexual groups similarly suggesting a low rate of heterosexual transmission, particularly from women to men". They conclude that male to female transmission is .001 per contact or the equivalent of "sex with nearly 700 infected partners to have a 50 percent chance of infection" (p 421). The number of sexual partners, the most frequently cited risk factor for AIDS and other STDs(Billy, Tanfer, Grady, & Klepinger 1993; Winkelstein et al., 1987), played a significant role in risk for infection and probability of spread of STDs(Seidman, Mosher & Aral, 1992; Winkelstein et al., 1987). CDC (1987b), Darrow(1990) and Rosenberg & associate(1988) indicated that since boyfriends and husbands (of prostitutes) seldom used condoms (because they believed the prostitutes always used condoms with their johns) and were usually involved in the drug culture they placed the prostitute at increased risk for AIDS. The significance of this is that through these behaviors the prostitute contributes to the spread of STDs by placing her contacts at increasing risk due to the increased probability of exposure to pathogens through multiple contacts.

Several authors indicated an increase in cases of STDs among prostitutes with the "single most important risk factor for HIV infection being intravenous drug use(IVDU)(CDC 1987b; Petrakis, 1988; Rosenberg et al., 1988). Syphilis and herpes are cofactors for AIDS(CDC, 1993b; Rosenberg et al., 1988; Wasserheit, 1992) with chancroid rates increasing rapidly(CDC, 1987b; 1988b). The significance of this is that (1)Prostitutes have higher incidence of

STDs (penicillin-resistant gonorrhea, congenital syphilis, chancroid, genital herpes, genital warts) than women in the general public (Rosenberg et al., 1988). (2)Exposure to STDs makes it easier for the AIDS virus to be transmitted and absorbed (Church, 1986; Brandt, 1988; Schmid 1986). (3)Male truckers engaging in high risk behavior outside a monogamous relationship not only put themselves at risk for infection, but also their female partners to whom chance of HIV transmission is at least 20 times greater(Padian, Shiboski & Jewell, 1991). It is not known if the AIDS issue has made a difference in behaviors among truckers in the U.S.

Korelitz et al.,(1993) surveyed 2,945 male drivers at a trade show at one of 65 truck stops with an estimated two-thirds participation. He reported that 32 percent of the drivers had at least one measure for alcoholism. Crouch et al.,(1993) examined the prevalence of drugs and alcohol in blood samples taken from 168 fatally injured truck drivers in eight states, representing 25 percent of the traffic fatalities over one year. He reported 15 different drugs were detected with more than one drug detected in 67 percent(112 drivers). Thirty-three percent, 56 of the drivers, had detectable blood alcohol concentrations of psychoactive drugs or alcohol with cannabinoid and ethanol being most prevalent and each found in 13 percent of the drivers. The significance of this is: (1)Only those who died within four hours of the crash and those with minimal medical care were examined. (2)Only eight states were considered. (3)Study by Lund & Associates(1988,1989) had similar

findings with one percent of randomly sampled paid volunteer drivers selected at weigh stations positive for ethanol and 29 percent positive for other drugs. Campbell(1989) found in a random sample study at weigh stations in British Columbia that two percent of the drivers admitted to alcohol use and 9.6 percent tested positive for drugs.

Mandell et al.(1992) reviewed and analyzed 104 occupations from the Epidemiologic Catchment Area(ECA) Study in the early 1980s of an 18,000 person household survey for clinical diagnosis of alcohol disorders. Data were gathered from five major cities in the U.S. of employed and unemployed workers to estimate the prevalence and incidence of specific categories of mental disorders including Alcohol Abuse Disorder and Alcohol Dependence Disorder according to the standards of the American Psychiatric Association Diagnostic and Statistical Manual-III(DSM-III). Findings revealed that one in six heavy truck drivers received an alcoholic diagnosis. The significance of this study to the present is: (1)the data were gathered in the early 1980s and analyzed in 1992, some ten plus years later. Behavior in the 1980s may no longer be valid in the 90s. (2)Definitions for diagnosis in the 1980s are no longer valid and the DSM-III has been replaced with the DSM-VI.

Guinn(1983) examined drug use motivated by occupational circumstance rather than for recreation and cites two separate government studies, in 1967 and 1979, as reporting "no evidence of a causal relationship between amphetamine use and accidents"(p 185). Guinn's

study was a five-point Likert pencil and paper questionnaire using on-the-job-site haulers of produce in Lower Rio Grande, Texas. The focus of this study was motivated drug use related to counter-productive behavior and job satisfaction. Counterproductive behavior was defined as (1)spreading rumors to cause trouble, (2)did work badly or incorrectly on purpose, (3)stole merchandise or equipment from shipper, or (4)damaged shipper's property, equipment or product accidentally, but did not report it. Job satisfaction was measured by one question: "All in all, how satisfied would you say you are with your job?" Drug use was determined by response to "How often in the past year have you used drugs (except vitamins, aspirin, No-Doz, and similar over-the-counter preparations) for the purpose of remaining awake and alert while trucking?" The sample of 112 was divided into two sub groups by years of experience (15 and under/16 and over). Analysis indicated that drivers with lesser experience had a higher incidence of counterproductive behavior and drug use. No significant relationship was found between drug use and counter-productive behavior. Guinn(1983) depicted this as contrary to previous results. The significance of this study in relation to the present study is: (1)The drivers were asked to complete the instrument at their place of employment. The researcher states that the response rate was 87.5 percent "with five refusing, five were not returned and six were incomplete" (p 186). There should be some question concerning the reliability of the answers given on the completed surveys in view of the "fear of recognition and retaliation factor" especially since the

results were contrary to previous literature. (2)The variables used to define measures of counterproductivity were vague and ambiguous (trouble, damaged property, worked badly). (3)The job satisfaction question was vague and ambiguous (how satisfied are you with your job). As compared to what? (4)Evaluation of drug use and job satisfaction were both made on the basis of one ambiguous question each. While 62 percent reported drug use ranging from sometimes to all the time, further research is needed in this area.

Federal regulations requiring drug testing expanded in 1996 to include companies with less than 50 drivers. Regulations now require that any driver suspected of abuse be tested, likewise, any driver involved in an accident. Twenty-five percent of the drivers should also be randomly tested yearly(Candler, 1996).

Literature Involving AIDS and STDs

The Normal Immune System

In order to understand the significance of the impact of HIV on the immune system one must have a basic understanding of the normal immune system as well as HIV/AIDS.

The healthy immune system controls the intrusion of pathogens into the body. The successful functioning of the immune system is based on its ability to recognize self from non-self. Failure to recognize cells as self results in an autoimmune disease such as

Diabetes, Lupus and Arthritis. HIV, the AIDS virus, kills because it invades the major fighting cells of the immune system rendering it incapable of controlling the invasion, therefore, the body becomes immunosuppressed and death is due to opportunist diseases normally found in the body.

Two major white blood cells are the B cell(CD19) and T Cells originating from bone marrow as undifferentiated stem cells. B cells migrate to the spleen and the lymph where they lie dormant until signaled by specific antigens at which time they proliferate and produce antibodies against the invaders. An antigen is any of a number of substances including toxins, foreign proteins, and microorganisms which, when introduced to the body, cause antibody formation. An antibody is a specialized protein produced by the B cell that combines with a specific antigen to make them harmless; antibodies play the central role in immunity to specific pathogens. T-cells migrate to the thymus for maturation to become helper T, killer T, or suppressor T cells. AIDS primarily attacks lymphocytic cells involved in cellular immunity: CD14 phagocytes(macrophages, monocytes and neutrophils), CD4+ T lymphocytes (Helper T), CD8 Suppressor T and Killer T(cytotoxic T cell), and CD16 natural killer cells(NK)(Mizel & Jaret, 1985; Weber & Weiss, 1988).

Mononuclear phagocytes, also known as monocytes, the body's main defense against bacterial infection are scavenger cells and have the ability to ingest and digest cells recognized as foreign. Phagocytes in tissue are called macrophages or monocytes, in blood they are

called neutrophils. Macrophages play a direct roll in both cellular and humoral immunity. They are non-specific, most active in the lungs and they are the one essential component of the immune system (Mizel & Jaret, 1985). The sequence is as follows: (1)Macrophages recognize a specific antigen as foreign, concentrate the antigen and present it to the helper T cells for identification, stimulating the T cells to reproduce on site. (2)Macrophages release tumor necrosis factor which destroys cancer cells and interleukin 1, an endogenous pyrogen, in response to bacterial endotoxins. (3)Macrophages release chemotactic factors(lymphokines) which direct the action of T cells, B cells, basophils, phagocytes, and mast cells and send communications throughout the body.

Helper T cells(CD-4) mature in the Thymus and migrate through the blood to the nearest lymph nodes, spleen and thymus where they are antigen specific. The sequence is as follows: (1)Helper T cells reproduce on the infection site in response to a specific antigen displayed by the macrophages causing more T cells and macrophages to come to the site. (2)Helper T cells produce Migratory Inhibiting Factor(MIF) preventing macrophages from leaving the infection site. (3)Helper T cells stimulate the production of Interleukin 2 which stimulates NKC and Helper T lymphokines which stimulate B cell production. (3)Helper T cells stimulate production of Gamma Interferon, the only true lymphokine, which stimulate Killer T development and NK attack, protects against viruses, precedes antibody activity, works inside the cell, stimulates Interleukin 1

and activates phagocytic mechanisms(Eissenberg, 1989). (4)Helper T cells stimulate Suppressor T (T-8) lymphokines which decrease the production of T cells when the healthy immune system has destroyed the invader or has it under control. (5)Helper T cells stimulate maturation of Memory T and B cells which provide delayed type hypersensitivity(DTH) which provides immunity after a single exposure. The next time the memory CD4+ T cells come into contact with the foreign protein they "remember" the previous experience and launch an attack. CD4+ T memory cells are preferential targets for HIV(Report of the NIH, 1997).

Killer T cells (Cytotoxic cells) require Gamma Interferon for activation to seek and destroy virus infected cells and cancer cells. Natural Killer cells(NKC) are non-T cells which do not require a state of prior sensitization to attack and destroy virus infected cells and cancer cells in response to Interferon and Interleukin 2(Borysenko, 1987; Mizel & Jaret, 1985).

In the healthy person CD4+ helper T cells out number CD8 suppressor cells two to one. A steady drop in the number of CD4+ cells typically accompanies the progression of AIDS. Without the CD4+ T helper cells to initiate a strong immune response, the CD8 suppressor and CD19 B cells are not stimulated effectively causing antibody production to decline and the immune system becomes compromised leaving the body vulnerable to opportunistic diseases(Schnittman, 1991).

HIV is a Lentivirus

AIDS is a specific group of diseases indicative of severe immunodepression related to infection with HIV. The human immunodeficiency virus(HIV) is a member of a subfamily of retroviruses called Lentiviruses which include some animal viruses; Simian immunodeficiency virus, Visna virus of sheep, feline immunodeficiency virus and equine infectious anemia virus. All Lentiviruses have three things in common. First, all have long latency periods, hence the name, Lentivirus. Research indicates that HIV infected persons develop AIDS at variable rates, commonly between five to ten years(Colletti, 1990; Embertson et al.,1993). Seventy-five percent show symptoms seven years after infection with two of every three HIV infected persons progressing to full-blown AIDS(Colletti, 1990).

Secondly all Lentivirus have an innate proclivity for blood and blood cells and for nervous system tissues. Research indicated that HIV is transmitted by one of three major routes: sexually(oral, anal, vaginal intercourse), perinatal(during pregnancy, during labor and delivery, or postnatally through breast feeding), or parenterally (exposure to infected blood, blood products or transplants). Lastly all Lentiviruses have an association with immune suppression. The number one principle of therapy of HIV infection states:

"Ongoing HIV replication leads to immune system damage and progression to AIDS. HIV infection is always harmful, and true long-term survival free of clinically significant immune dysfunction is

unusual"(Report of the National Institutes of Health(NIH), 1996, p. 4).

Levy(1990) reports as many as 1,000 multiple strains within each subgroup of HIV. The fact that AIDS is a multi complex disease adds to the increased difficulty of finding a cure. The problem lies in finding a solution that will not harm healthy cells. The first isolated virus related to the HIV epidemic(1978) was called by various names in 1980 including the lymphadenopathy associated virus(LAV) and the Human T Lymphotropic Virus Type 1(HTLV-I),(CDC, 1988c). Evidence from stored samples of blood suggests that the virus entered the U.S. as early as the 1970s(Staff, 1996). HTLV-I is one of five Lentiviruses in the category of viruses called retroviruses. HTLV-I, II, and V cause prolific growth of lymphocytes while HTLV-III and IV destroy and damage lymphocytes causing immunodeficiency(Global Disease Surveillance Report, 1987).

HTLV-I is not closely related to HIV; it is not AIDS, nor is it HIV-1. It is most prevalent in the Philippine Islands where as many as 40 percent are infected. It is etiologically related to adult T-cell leukemia/lymphoma(ATL) in Japan, Africa and the Caribbean, Tropical Spastic Paralysis(TSP) in the Caribbean and HTLV-I-Associated Myelopathy(HAM) in Japan.

HTLV-I prevalence in the U.S. is reported to be 2-5/100,000. HTLV-II has a structure similar to HTLV-I. It is not HIV-2, is extremely rare, and is associated with Hairy Cell Leukemia. HTLV-I and II have antibody cross reactivity to the ELISA test and may cause

false-positive results. Since 1992 blood has been tested for both HIV-1 and 2, however, ten percent of HIV-2 cases may be missed(Levy, 1990).

HTLV-III, the most common HTLV, was isolated in 1986 from AIDS patients in Central Africa. Renamed Human immunodeficiency virus-1(HIV-1), it has a great genetic diversity, is highly unstable and mutates rapidly.

HTLV-IV, isolated in West Africa in 1986 was first found in the U.S. in 1987 It is Human Immunodeficiency Virus-2, HIV-2. Through December of 1996, CDC reports 67 cases of HIV-2 in the U.S. It causes symptoms similar to HIV-1 with similar viral structure and antibody development, but, is less virulent resulting in lower incidences and severity of clinical illness(Global Disease Surveillance Report, 1987). HIV-2 may have a longer incubation period than HIV-1(CDCNAC, 1997b). Little is known of HTLV-V.

HIV is a Retrovirus

HIV, like other viruses, can not reproduce by itself. The usual process of reproduction is from genes composed of deoxyribonucleic acid (DNA) to ribonucleic(RNA). DNA contains the genetic "blueprint" which directs the formation of new cellular proteins to produce new cells. Retroviruses like HIV contain only RNA and must make DNA before replication can occur. To do this, HIV uses the enzyme reverse transcriptase to convert its RNA to DNA, thereby, commandeering the new cell machinery to form new, identical HIV virus copies within the

host cell. The retrovirus targets T-cells and reverse transcribes its genomes into a DNA copy of the viral RNA of CD4+ and CD8 lymph cells. Seven of the reverse transcriptase inhibitor(NNRTIs) drugs approved for treatment in the U.S.(AZT, ddC, ddI, d4T, 3TC, nevirapine, and delavirdine) work by interfering with reverse transcription(Report of NIH, 1996). Once the HIV enters the new cell's genes the virus becomes a provirus which then integrates into the DNA of the target cell. When the target cell multiplies it produces HIV along with its own encoding which means that coding differs with each individual. The new RNA copies of the virus, are called messenger RNA(mRNA), must be identifiable and read by any new host cell as self, thereby, preventing an immune reaction and cell death from occurring. The production of mRNA is called transcription. Cytokines, tumor necrosis factor(TNF), alpha and interleukin(IL)-6, and Mycobacterium tuberculosis may also initiate transcription, thereby, increasing the amount of genetic material available for replication(Staff, 1996).

Structure of HIV

Once the HIV enters and infects a healthy cell the envelope surface of an HIV, composed of two layers of fatty molecules called lipids, sprouts spikes or stems(gp41) with knobs of glycoprotein molecules(gp120). As many as 72 copies of a complex HIV protein may protrude from the surface. Gp120 has an affinity for CD4+ receptors, also called cluster designation 4, a marker found on the surface of T-cells, B-cells and macrophage, all of which are lymphocytes

involved in immune protection. Much of the research to develop a vaccine has focused on a disruption of the bonding of these surface proteins by the use of receptor decoys. CD4+ T cell receptors may not be the only site of infection. Monocytes and macrophage cells are long-lived cells and are thought to act as reservoirs for the HIV without being killed. This could account for the proficiency with which the virus affects the Central Nervous System(CNS) in most AIDS cases since the monocytes and macrophages can cross the brain-blood barrier(Greene, 1991).

A mature HIV has within its envelope a cylindrical core, or capsid, which contains 2,000 copies of the viral protein nucleocapsid p24 (Greene, 1991), two single strands of HIV RNA, each of which contains a copy of the virus's nine RNA genome. Lentiviruses have a complexity of viral genomes(Greene, 1991; Levy, 1990). Most viruses contain only three genomes which are all that a simple retrovirus needs to replicate: (1)The group specific antigen (*gag*) sequence, one of the first to be transcribed, codes for proteins forming the core(nucleus) of the virus; (2)the *pol* sequence codes for the reverse transcriptase, polymerase, which enables transcription of RNA into a DNA copy , as well as *integrase* which helps integrate viral DNA into host DNA and protease which cuts immature, non-infectious virus proteins coded by *gag* and *pol* into active forms. Four Protease Inhibitor drugs have been approved for U.S. use; Indinavir, Ritonavir, Saquinar, and Nelfinavir(Report: Guidelines, 1996). The

(3)*env* gene codes for the glycoprotein gp160 that form the viral envelope producing gp41 and gp120.

Lentiviruses such as HIV have at least six other genomes; three regulatory genes, *tat*, *rev*, *nef* and three auxiliary genes, *vif*, *vpu*, *vpr*. (4)*Tat* is a transactivator gene which enhances replication. (5)*Rev* regulates the expression of the virus, and (6)*nef* expresses a negative function, to suppress viral replication. (7)Viral infectivity factor, *vif* is responsible for the maturation at the time of budding from the host cell. Budding, the forming of immature particles and then pinching off and clumping(syncytia), the formation of giant cells by fusion of other cells, are two ways in which the virus replicates to infect new cells. (8)*vpu*, unique to HIV-1, influences the release of new virus particles from infected cells, and (9)*vpr*, unique to HIV-2, is a weak transcription activator. It is thought that these additional genes underlie the significant degree to which HIV has spread and that this complexity may be an avenue for its destruction(Greene, 1991).

Course of the HIV Infection

Further complicating the AIDS issue, and contributing to its spread, is the fact that exposure to HIV does not mean that a person is immediately seropositive. Bacchetti & Moss (1989) estimate an incubation period of 9.8 years for the virus, while Imagawa et al., (1989) found in a prospective study that HIV was present up to 36 months in the blood before seroconversion(detection of antibodies).

The person is usually asymptomatic during the interim between the presence of HIV formation and seroconversion and highly infectious (Redfield & Burke, 1988). HIV infected persons do not necessarily have AIDS. They may be healthy, asymptomatic persons with the HIV virus. Levy (1990) reported and the Report of the NIH(1996) reiterated that most infected people continue to make HIV antibodies even if asymptomatic. AIDS is the end results of infection by HIV.

Symptoms for HIV/AIDS may vary from acute, flu-like symptoms to full blown AIDS Wasting Syndrome. Even though some people experience no symptoms after infection, the virus is never truly latent even when viral load levels become undetectable(Staff, 1996). HIV replicates in the lymph nodes and related organs where large amounts of virus become entangled in networks of long tentacle-like cells called follicular dendritic cells(FDCs). These specialized patrolling immune system cells are found in skin, gut, lungs and reproductive tract tissues. They normally bind to invading pathogens, carry them to the lymph nodes forming a web like network where B cells make antibodies and signal T cells to launch the immune response against them. Dendrite cells also bind to CD4+ T cells, thereby allowing HIV to infect CD4 cells, the primary target of HIV. The FDCs network eventually becomes overwhelmed by the accumulated HIV, the trapping capacity is decreased, large amounts of the virus are then released into the blood stream and opportunistic diseases and cancers thrive designating the onset of AIDS.

Factors influencing the rate and severity of AIDS progression are age, individual genetic differences, the virulence of the infecting strain and co-infection with other microbes(Staff 1996). Young children and the elderly, respectively, are susceptible to HIV because the immune system is either immature or has diminished function. Individual genetic differences occur in each of us, however, CDCNAC(1997a) reports the discovery of a new variant gene, chemokine receptor 5(CKR5) now called CCR5. CCR5 is believed to be one of the proteins to which HIV can attach and enter a cell of persons with Western European heritage. One percent of this population has one CCR5 variant gene(homozygotes) while 15-20 percent have two CCR5 variant genes(heterozygotes). Persons who are homozygotes have normal and defective proteins allowing the HIV to enter the cells through the normal proteins but expressing a slower rate of disease progression. However, heterozygotes with two variant genes appear to be resistant to HIV by virtue of the fact that the "protein is always defective and does not appear at the cell surface, apparently preventing most strains of HIV from entering the cell,"(CDCNAC, 1997a).

An important factor influencing the rate and severity of AIDS progression is virulence of the infecting strains. Viral load is a measure of the quantity of HIV-RNA, HIV virus, in one millimeter(ml) of blood measured consistently by one of three tests: polymerase chain reaction(PCR), the most common; branched chain DNA assay(bDNA); or nucleic acid sequence-based amplification(NASBA). Once a baseline

measurement is established, the same test is repeated every three to six weeks, two to three months apart. The CD4+ T cell counts are used to assess for the extent of damage already occurred to the immune system, risk for specific opportunistic diseases, and to determine what prophylaxic therapy is needed. By the same token, when CD4+ counts are used in conjunction with viral load a more accurate assessment can be made for the rate of disease progression since high levels of virus are more likely to indicate a rapid disease progression. The data indicate that the stage of HIV infection in the positive partner is a strong risk factor for transmission(Vincenzi, 1994). Regular, periodic measurements of both counts have also become necessary tools to determine when to initiate or modify antiretroviral treatments. "Undetectable levels of virus do not mean that a person is cured,"(CDCNAC, 1997c; Report of the NIH, 1997). Nor does it mean he/she can not infect others.

The last factor influencing rate and severity of AIDS progression is co-infection with other microbes. Donovan(1993) reported that 25 percent of the population will experience at least one STD in their lifetime. The relationship between HIV infection and other STDS may be different for different STDs. STDs that cause breaks in the skin, such as herpes, syphilis or chancroid, and HIV reinforce each other(Aral, 1993; Wasserheit, 1992). AIDS is classified as a systemic STD since evidence points to its being transmitted like other sexually transmitted diseases(Barnes, 1987; Brandt, 1988; CDC, 1992c; Cutler & Arnold, 1988; Mann et al., 1986;

Smilgis, 1987). As a result, coinfection with more than one STD is frequent and also contributes to heterosexual transmission(Aral. 1993). Other cofactors, such as lack of male circumcision(Mbugua, 1995; Moses, et al., 1994), dry sex or the use of drying agents (desiccants), sexual intercourse during menses(Aral, 1993), and insertive anal intercourse effect the probability of HIV transmission.

Several studies link herpes and syphilis to the increased risk for spread of HIV(Eng, 1997; Hook, 1989; Minkoff & DeHovitz, 1991). STD News(1997) reports that syphilis rates of blacks are 60 times those of whites. AIDS continues to disproportionatly affect minority groups with blacks(41% of adult/adolescent cases) now exceeding proportions of whites in AIDS cases for the first time in history(CDC, 1996a, Epi-News, 1997). In 1995 blacks and Hispanics accounted for 91 percent of all reported syphilis cases(CDC, 1995). Studies by European Study Group(1992) and Vincenza(1994) support the fact that genital infections, especially those with ulcerations (herpes, candida), facilitate the transmission of HIV. STD News(1997) states that a University of Washington study supports the fact that "herpes sores exude a large amount of HIV," while, a study at Johns Hopkins "suggests that HIV-infected blood cells are attracted to herpes sores"(p 13). The study also stated that two-thirds of HIV positive people are also infected with genital herpes.

Women and infants disproportionately bear the long term consequences of STDs. On January 1 1993, the AIDS surveillance case

definition for adolescents and adults was expanded beyond the 1987 surveillance definition to include all HIV infected persons with a CD4+ T-cell count of <200 or a percentage <14, pulmonary tuberculosis(TB), recurrent pneumonia, or invasive cervical cancer (CDC, 1992b; 1993a). This revision, while causing a 204% increase over the same period in 1992, gave a more realistic picture of the number affected. Although one in every four cases(25%) of AIDS due to heterosexual transmission or IV drug use occurs in women and gynecological symptoms can oftentimes be the first sign of AIDS in women, these symptoms were not among the CDC criteria (Smeltzer & Whipple, 1991) until the third expanded surveillance case definition in 1993(CDC, 1992b; CDC, 1996b). For the first time definitions reflected the needs of women with HIV. The results of this were twofold: The number of women with AIDS/HIV was underestimated, women seeking treatment for gynecologic infections often did not qualify for HIV services and there is a great likelihood that diagnosis of AIDS/HIV was delayed or missed because HIV infection may not have been suspect(Hankins, 1990). CDC(1995) reported that 85 percent of women with chlamydia and gonococcal pelvic inflammatory disease(PID) delay seeking treatment due to the vague symptoms exhibited by both of these serious diseases resulting in increased risk for ectopic pregnancies, and/or possible infertility. The STD, human papilloma-virus(HPV) has been associated with cervical dysplasia and cervical cancer(Eng & Butler, 1997). The 16,000 new cases/year of cervical cancer, reported by Ebrahim(1995) as one of the three major causes of

female deaths related to viral STDs, was reported by Eng & Butler (1997) as contributing to 80 percent of all cases of cervical cancers. Eng & Butler(1997) also reported other STDs associated with cancer: Hepatitis B(liver cancer), HTLV-1(Adult T-cell leukemia and lymphoma), Human Herpes Virus Type-8(HHV-8)(Kaposi's sarcoma), and Epstein Barr Virus(EBV)(lymphoma, nasopharyngeal carcinoma). Minkoff & DeHovitz(1991) reported HIV modification of STD disease courses: With PID there were more abscesses and more surgical interventions; With vaginal candidiasis there were increases in recurrent moniliasis; Syphilis exhibited a more aggressive course; Genital Ulcer Disease exhibited more unique manifestations; and Herpes displayed more frequent shedding translating to increased risk of HIV, (and herpes) transmission to partners.

Relevance to the Truck Driver

HIV infection was the second leading cause of death in young adult men and the sixth leading cause of death in young women in the U.S. 1990-1991 (CDC, 1993a). The cumulative total U.S. cases/100,000 reported by CDC as of June 1996 were as follows: HIV(not AIDS), 80,489; AIDS(not HIV), 548,102; Deaths, 343,000 (CDC, 1996b).

AIDS is spread by behaviors which put you at risk for contracting the disease; unprotected oral, anal or vaginal intercourse with unknown and/or multiple partners; and drug use(Eng & Butler, 1997), particularly from the sharing of needles and other drug paraphernalia (Allen & Curran, 1988).

Several studies report strong associations between drug/alcohol use and high risk sexual behaviors(Anderson & Dahlberg, 1992; Caetano & Hines, 1995; Hingson et al., 1990; Koopman et al., 1994; Lowry et al., 1994; Shafer et al., 1993; Siegel et al., 1989; Stall et al., 1986). In fact, substance users are more likely to acquire STDs than non-substance users(Marx et al., 1991; Anderson & Dahlberg, 1992; Shafer et al., 1993). The fact that drugs are a problem in the trucking community is supported by the U S Transportation Secretary, Jim Burnley, who cited two reports in a 1988 Associated Press news release. The first for testing of 317 drivers in Tennessee with 29% testing positive for marijuana, cocaine, alcohol, non-prescription and/or prescription stimulates (Lund, Preusser & Williams, 1988); The second, a Florida survey of 1,300 drivers in which 36% report driving under the influence of drugs ("Truckers drug test proposed," 1988). While there is some question as to the quality of this research, the extent of this problem, particularly IV use, is not known.

Corzine and Kirby (1977) describe the "sexual marketplace" to include parking lots such as highway rest areas or truck stop areas. The main way that truckers communicate is through the use of C B radios. Monitoring "the truckers channel (19)" will enable you to observe or overhear certain behaviors which warrant the need for STD education as reported by Luxenburg & Klein (1984). There are over 3 million trucks (tractor-trailer vehicles) in the U.S. according to Vernon McDougall, Representative of Safety and Health at the International Brotherhood of Teamsters (IBT), Washington, DC. In a

1990 telephone interview, McDougall reported that there are at least 150,000 to 300,000 independent (gypsy) drivers in the U S. Due to frequency and the vast area of travel of the average driver there is potential for contracting and spreading AIDS and other STDs.

Studies indicate that modifying behavior to include reducing the number of sexual partners, avoiding high risk sexual practices and the use of condom and spermicidal agents will decrease the risk of contracting and spreading STDs (CDC, 1988a, b, d); Conant et al., 1986; Goldsmith, 1987a, 1987b; Remis, 1987; Stone et al., 1986). Condom use is essential to STD prevention outside a monogamous, long-term, one-person relationship. The extent of risk behaviors including the percent of condom nonuse is unknown for this population.

The World Health Organization(1995) reported that more than 18 million persons world-wide are infected with HIV. The largest impact is on developing countries with 10's of millions deaths projected. CDC reported that through June 1996 73,217 persons were living with HIV, not AIDS, and 202,535 persons were living with AIDS. HIV in the U.S. is found disproportionately in racial and ethnic minorities (CDC, 1992c). The majority of HIV infections in the U.S. and throughout the world are transmitted sexually with three HIV exposure categories representing nearly all cases of AIDS: MSM(51 percent), injecting drug use(25 percent), and heterosexual contact with a person who is in a high-risk group or has HIV/AIDS(8 percent)(CDC 1996b).

Klovdahl(1985) looks at the spread of AIDS in terms of a social network which he describes as the interrelated group of persons in a particular population and the links connecting them. The basic premise of social networks is that the "structure of a network has consequences for its individual members and for the network as a whole over and above characteristics and behaviors of the individuals involved"(p 1204). This structure is demonstrated by CDC cluster studies of AIDS patients with the average number of contacts for the group being 227 per year with some individuals having 10-1560 contacts per year(Klovdahl, 1985). The structure of a social network can change over time as society changes and this has definite implications for the epidemiology of a disease. With the increase in technology and increased mobility of our society there has been a move from social isolation to social spontaneity. This makes personal contacts a more valid measure of disease spread, especially for AIDS and STDs, than that of physical proximity measured in past epidemics (plague, smallpox). "Network dissemination of a disease is a function of the number of bridges (connections/contacts) between subpopulations and the likely rate of transmission across the bridge"(p 1211). Klovdahl emphasizes that the elements of large social networks are the personal networks of individuals. Soldiers, prostitutes, and long distance truck drivers provide "cross-sex" bridges (d'Cruz-Grote, 1996; Outreach, 1993). These bridges were seen in the spread of AIDS infection particularly in anonymous relationships and IVDU which created non-sex pathways.

This study relates to the present study as follows: (1)Persons who are asymptomatic for AIDS, and other STDs, may infect others (Allen & Curran 1988; Brandt, 1988; Byer et al., 1985; Church, 1986; Levy, 1990; Liskin et al., 1986; Report of the NIH, 1996; Stone, Grimes & Magder, 1986). (2)The number of AIDS cases in the trucking community is not known, nor is the number of those asymptomatic persons already exposed and spreading the disease. (3)Allen & Curran(1988), Aral(1993), Brandt(1988), Eng(1997),Hook(1989), Minkoff & DeHovitz(1991), Rowe & Ryan(1988) and Wasserheit(1992) concluded that persons with a history of STDs are at increased risk for AIDS. (4)According to Plummer & Ngugi(1990) and Rosenblum et al.,(1992) STD disproportionately affect disenfranchised groups including prostitutes which are readily available to truckers through the radio and at truck stops and rest areas. (5)Social network patterns of truckers can be numerous due to the distance and frequency of travel.

A thorough historical discussion of Venereal Disease(VD) control and AIDS parallels were given by Cutler & Arnold(1988) and Brandt(1988). Both articles pointed to the fact that the decrease in rates of syphilis and gonorrhea began as public awareness and interest due to concerns over the war efforts of WWI and WWII; and the discovery and subsequent mass production of penicillin. This concern produced a federal, state, and local cooperative effort (Grants-in-Aid VD Programs, legislation, research). After the discovery of a diagnostic test(VDRL) and treatment(penicillin), congressional and public interest and support began to dwindle and by

1958-1960 the rates of syphilis began to once again rise. A study by Schmid and associates(1986) indicated that some health departments were shifting funds from existing STD programs in order to have funds for new AIDS programs. Some fear that targeting high risk groups with STD funds may prevent information and services from reaching the remaining population(Outreach, 1993). The significance of this is that (1)Targeting high risk groups can slow the spread of STDs to secondary risk groups. (2)The data indicates that even though the public is aware of the AIDS problem and the STD rates are the lowest in a decade, the U.S. has the highest rates among industrialized countries(STD News, 1997). (3)The public can no longer be allowed to see the two as separate entities. AIDS is a STD, the two are entwined. Monies and efforts should be combined for an effective national system to control STDs. (4)Cutler & Arnold(1988) concluded that "fluctuating rates of syphilis and gonorrhea "reflect public attitudes and control programs." (5)The past offers established theories, policies and solutions to how "AIDS is like past epidemics," but, we must also consider variables such as social, cultural, religious, biological and political influences to discover ways in which AIDS is different from past epidemics. (6) CDC(1987b) reported the largest increase for primary syphilis in ten years of 10.9 to 13.3 per 100,000. A decrease in syphilis control programs were responsible for increasing national syphilis rates until 1990(STD News, 1997). Although declines have been seen since 1990, "the rate of syphilis in recent years has been as high as it was

before the advent of penicillin as a cure for syphilis in the 1940s"(p.13). (7)While there was a decrease in the rate of HIV for homosexual/bisexual men, the heterosexual increase of rates was attributed to prostitution (not necessarily female) for nonintravenous drug use, especially "crack"(cocaine). (8)Syphilis (and AIDS) can be asymptomatic, therefore, go untreated. (9)Increased numbers of females with untreated syphilis can mean increased risk of spread in the heterosexual population. (10)STD rates are not known for the trucking population.

A study conducted by Lange et al.,(1988) indicated "wide disparities in HIV seroprevalence in drug using behaviors"(p 343) for HIV exposure and needle sharing (from 70 to 90 percent), however the subjects were not from a random sample. This finding was contrary to previously found data by Des Jarlais & Freidman(1988) which indicated a relationship between HIV exposure and needle sharing. Des Jarlais and associate(1988) indicated that a 1986 study revealed that "essentially all IVDU in New York used someone else's equipment when they were initiated into the drug injection" culture(p 1498) or when testing prior to purchase(Lange & Snyder, 1988). Des Jarlais et al.(1988) questioned the reliability of Lange's questionnaire and sub-responses due to cognitive and psychological aspects of the drug user. He pointed out that addicts often do not interpret certain behaviors as "sharing" equipment (when used by close friends, sex partners). Lange & Snyder's response(1988) was that the disparity may be due to several factors: (1)Difficulty in proving cause/effect due

to increased prevalence for both groups, (2)sero-positivity may not, as yet, have developed due to the window factor, (3)seropositivity may be "dose-response" related (frequency of injections and number of needle sharing episodes, and (4)under reporting is part of psychic denial. The significance of this is that we do not at this time know how many persons are seropositive for HIV in the drug culture nor do we know the extent of IVDU in the trucking population.

Studies by Petrakis(1988) on homosexual men in San Francisco indicate the increased use of drugs and alcohol. More subjects used "pot" than tobacco and 95 percent of subjects used alcohol. Petrakis found that needle sharing was traditionally part of the drug "ritual". Addicts will alter techniques to eliminate risk behaviors rather than alter behavior to eliminate drugs. Data indicates that the reasons for using drugs are (1)disinhibition (alcohol, pot, volatile nitrate "poppers", cocaine), (2)aphrodisiac (pot, cocaine, poppers), (3)social personality, and (4) multi-factional. Subjects often combined drugs for the co-factor effect (alcohol, PCP, Quaaludes) to produce a "disinhibiting effect and increase sexual enhancement", therefore, drugs are not only significant as immuno-suppressants, but are also involved in disinhibition and lifestyle issues as well. Data indicate that alcohol interferes with normal immune mechanisms to decrease phagocytic lymphocytes (WBC, T-cells, granulocyte). This decreases cell-mediated immunity (B-cells and antibodies), the primary defense against tuberculosis(TB). For this reason there is increased incidence of TB, head/neck cancer, Epstein-

Barr associated viruses, seen in alcoholics and AIDS seropositive persons. The significance of this is that (1)alcohol is sometimes used with other drugs. Twenty-nine percent of HIV seropositive persons are IVDU and 33 percent of gay men with AIDS are alcoholic (Petrakis, 1988). (2)Alcohol and drugs have a disinhibiting effect on behavior. Data indicates a high correlation between alcohol/drugs and unsafe sex practices(Stall, 1988), persistence of high-risk sexual behavior(Ostrow et al., 1986, 1987; Stall et al., 1986). (3)Ostrow(1990) reported that both the San Francisco Gay Men's Health Study and Multicenter AIDS Cohort Study(MACS) found that the "determining factor (for high risk behavior) was not the absolute number of the subject's sex partners but rather the number with whom the subject had shared drugs and alcohol"(p. 17). (4)AIDS attacks the immune system. "All substances of abuse so far tested have shown some kind of immunosuppression"(Petrakis, 1988, p. 57), therefore substance abusers are at increased risk for opportunistic diseases associated with the AIDS virus. (5)The full extent of drug use in the trucking population is not known.

Literature Involving Condom Use

The majority of studies on condoms indicated a positive relationship between their use and prevention of AIDS and/or STDs(CDC, 1987b; 1988a; 1993d; Conant, Hardy, De Vincenzi, 1994; Dirubbo et al., 1986; Fischl et al., 1987; Roper, Peters & Curran, 1993; Schechter et al., 1988; STD News, 1997; Stone, Grimes & Magder,

1986). Saracco & Associates(1993) reported consistent condom use in couples where the male was HIV positive was associated with a 90 percent risk reduction. Most cases of transmission of couples using condoms is related to inconsistent use of condoms rather that a failure of the barrier(condoms breakage 1%)(Weller, 1993).

A critical analysis of nine studies led Feldblum & Fortney(1988) to conclude that even though the data indicated that condoms protect against STDs, the evidence "is not strong that condoms or spermicide effectively prevent HIV infection"(p 52). The authors argue that Stone and colleagues(1986) "failed to control for sociodemographic factors, sexual activity, and regularity of condom use was unknown"(p 52). Barlow(1977) found evidence that while there was a decrease in rates of herpes, there was an increase in venereal warts with condom use. Fischl et al.(1987) in a 1-3 year study of household members and AIDS seropositive spouses produced 12 of 14 couples infected with no condom use, one of ten infected with use of condoms, and no HIV transmission with casual contact. Two studies with comparison groups by Krogsgaard et al.(1986) and Smith & Smith(1986) gave a narrative account of condom prevention. Mann, Quinn & Piot(1986) indicated that decreased incidence of infection rates for STDs followed increased incidence of condom use. CDC(1987b, 1993d) reported no seropositive cases with consistent condom use. Feldblum & Fortney (1988) and Feldblum & Rosenberg(1986), indicated that spermicide with at least 1% nonoxynol-9 will inactivate STDs. CDC(1993d) and Judson, Ehret, Bodin, Levin & Rietmeyer(1988) found evidence that condoms

with spermicidal agents (nonoxynol-9) inactivated STD virus even when the condom ruptured. Henry & Crossley(1986) criticized an article by Conant et al.(1986) for failing to recognize that condoms are not 100 percent safe because human factors and mechanical failure always come into play when condoms are used. He points out that there is a 10 percent failure rate/year for pregnancy. He failed to recognize that this failure rate may be related to pre-ejaculatory fluids. The significance of these articles is that (1)Abstinence is the only foolproof protection from STDs and AIDS. It is not logical to conclude that all persons will abstain. (2)Latex condoms and spermicide have been shown to decrease incidence of both STDs and AIDS (CDC, 1987b, 1993d). However, no reports indicate that nonoxynol-9, used alone without condoms, is effective for prevention of HIV. The effectiveness of spermicides in preventing HIV is unknown; no data exists that condoms with spermicide are more effective than condoms without spermicides, therefore, latex condoms with or without spermicide are recommended(CDC, 1993d). (3)The incidence of condom and spermicide use is unknown in the trucking population.

Summary

Behavior changes have occurred with AIDS and STD education (Becker & Joseph, 1988; Ostroe, 1990; Rosenberg & Weiner, 1988; Stone et al., 1986; Winkelstein et al., 1987). The significance of this is that little current data is available specific to behaviors of

truckers, therefore, a baseline is needed to develop effective educational strategies.

CHAPTER III

METHODS AND PROCEDURES

The questions proposed in Chapter I were addressed through the use of a survey instrument to determine which factors are associated with behaviors and knowledge of sexually transmitted diseases (STDs), the acquired immune deficiency syndrome (AIDS). When this study was conducted in July of 1993 there was little differentiation between the terms HIV and AIDS. Public understanding was that if you were HIV positive, you had AIDS, therefore, the terms were used synonymously. The survey instrument used in this study reflects this understanding. The findings of the study were based on the analysis of the data gathered through the use of this instrument. All randomization was by use of a table of random numbers.

Research Design

Subjects

Subjects were both male and female tractor-trailer drivers stopping and entering the restaurant/store/fuel desk areas of The Truck Stops of America (TA) Truck Stop located at Exit 16 of I-40 in Gallup, New Mexico. Subjects were delimited to a minimum of 115 self-report "tractor-trailer" drivers. Subjects were chosen by means of

convenience sampling techniques at varied hours throughout the day and night. Those persons approaching the restaurant, fuel desk or store area were asked "Are you a tractor-trailer driver?" Those persons answering "Yes", were then asked to participate.

Those who stated they did not wish to participate were excluded. A total of five males declined to participate. Reasons given for non-participation were (1)don't want to(1 driver), (2)don't have time(4 drivers). One female driver in the store area agreed to participate, however, did not because her husband stated they would like to but just didn't have the time(male driver previously counted).

Eligibility for driver's license and Department of Transportation (DOT) Medical Card excludes anyone less than 21 years of age. No identities were solicited due to the nature of the questions. Questionnaires were identifiable by site name only. Confidentiality and anonymity were maintained throughout the project. When not in use by the researcher, questionnaires remained in a locked file inside the locked office of the researcher. Details of the research were explained in the questionnaire and return of the questionnaire was considered to be consent. Subjects were instructed to place the completed questionnaires into a sealed box which was placed away from the immediate proximity of the researcher.

Research Site

Interstate 40 was chosen because it is the shortest East/West interstate, therefore, due to mileage economy receives heavy truck

traffic. Previous permission had been given from Burns Brothers Truck Stops for a grant study several years prior to this time. The main office consented to give permission to use their facility in Gallup, however, the Gallup facility suddenly went out of business. The TA facility across the street was contacted and open to the idea of a study. Previous problems, time and money constraints were explained to the manager and after negotiations about wording in the questionnaire,(use of Lot Lizard and cum),permission was given. The restaurant, fuel desk and store areas were chosen because of the number of truckers which frequent both areas and because these are "safe" areas for the researcher to frequent at varied hours.

Instrument

The following steps were initiated in preparing the survey instrument:

(1) A fifty-five (55) question questionnaire consisting of 17 True/False Knowledge, 26 Behavioral and 12 Demographic questions was constructed by the researcher and upon approval was sent to a panel of experts for validation (Appendix D).

(2) Corrections and adjustment for clarity, singleness of purpose, freedom from suggestion, linguistic completeness, and grammatical consistency were made to correspond with suggestions from the panel.

(3) The completed questionnaire was sent to The Committee For Human Subject Research and the Doctoral Committee for approval.

Sampling Techniques

The survey was conducted at varying hours using convenience sampling of tractor-trailer drivers approaching restaurant, store, fuel desk areas of the TA Truck Stop at Exit 16 of I-40, Gallup, New Mexico. After the researcher verified subjects to be tractor-trailer drivers, they were asked to participate in a pencil and paper questionnaire (Appendix C). Details of the study were explained in the questionnaire and return of the questionnaire to a sealed, locked box was accepted as implied consent.

Data Analysis

Data were analyzed using a computer package SPSS for Windows at the .05 level of significance. The data were prepared for analysis in the following ways:

a. data were translated for coding
b. data were verified and edited
c. data were coded and verified
d. Data were tabulated.
e. Factors were compared and analyzed.

Summary

Permission was granted by The Committee For Human Subjects for the study. The questionnaire was developed, approved and sent to a panel of four experts to evaluate the appropriateness (face validity) and construction format of the questionnaire. A pilot study was conducted using subjects from Werner Enterprises (N=20). SAS computer package was used to analyze content validity (α=0.5459). The research study was conducted in Gallup, NM in August of 1993 at the TA Truck Stop (N=115). Data were analyzed using SPSS for Windows.

CHAPTER IV

ANALYSIS OF DATA

This chapter presents the analysis of data collected in the pilot and research study.

The Pilot Study

The questionnaire was taken to truck stops along I-40 in the Knoxville area and several major (Safeway, Averett, Steel Hauler) and minor carriers(MFG Coffee). Truck Stops of America(TA) and Pilot Truck Stops in NW Atlanta were also approached for the pilot study. After reading the questionnaire none would give consent for either pilot or major studies to be conducted. As a solution to this problem Werner Trucking in Lithia Springs, GA (an Atlanta suburb) was chosen for its convenience. Consent was given to have drivers participating in their safety training over a period of two days to participate in the pilot study.

Drivers were approached in the lounge area and asked to participate. They were told that this was a pilot study to gain information about the questionnaire, not the questions themselves. Participants were told that upon completion of the questionnaire they would be interviewed about "any difficulties you might have when

answering the questions...Are the instructions clear...Things like that...I am not going to look at your answers, I am only concerned with what you think about how the questions were presented. I will not look at your answers." Participants were instructed to place the questionnaire in a container when the interview was completed. Thirty-two drivers, both male and female, were asked to participate. Twenty (N=20) gave consent and completed the questionnaire. Two refused to take the questionnaire. One driver began, appeared to be embarrassed stating to his wife "I don't have to answer questions like this" and left the room.

Questions asked of the subjects during the interview:

a. Were the instructions clear?

b. Were there any words or terms you did not completely understand or might have questions about?

c. Is there anything you think I need to simplify to make it easier to understand? Any terms which need to be clarified?

d. Were you offended by any of the words used?

e. With your understanding of the study, is there anything you think I should add, delete, or change?

f. Any suggestions?

Only first names were used for the purpose of establishing a rapport with the subject for communication. No names were attached in any way to the questionnaires. Time and adjustments were then made on

the questionnaires as a group. The questionnaires for the pilot study were the same as described in Chapter III.

Internal consistency (content validity) of the pilot study's 16 true/false questions was measured by the use of SAS *Cronbach's alpha* (α=0.55). It is assumed that the items on a scale are positively correlated (ranging in value from 0 to 1) with each other because they are measuring a common entity. Cronbach depends on both the length of the test (k in the formula) and the correlation of the items on the test. A low α would be expected in the early stages of test construction. A positive α=0.55 was obtained in this study and reflects the small number of items and subjects. A second trial run was not completed due to the time frame and the previous difficulties finding subjects.

Correction and adjustments were made so that no ambiguities and inconsistencies existed. The format was changed to correspond to suggestions made by one of the expert committee members to allow for flow and readability. The questionnaire time frame was approximately thirty (30) minutes.

The Research Study

The following sections describe the sample population characteristics, and descriptive statistics of the questionnaire data in relation to the research questions.

Sample Characteristics

One hundred-fifteen drivers, 100(87%) males and 15(13%) females participated in the study with a mean average age of 40.36. Forty-nine drivers (42.6%) were 21-37 years, fifty-three(46.1%) were 38-54 and twelve (10.4%) were 55-72 years of age. Demographic data obtained in the study can be seen in Table 1.

Sixty-seven(58.3%) were married. The majority of drivers(83, 72.2%) reported being in a one-person monogamous relationship with six respondents reporting in months and 79 reporting in years. Fifteen (13.9%) drivers reported never being married, forty-five(39.1%) married only once, thirty-four(29.6%) married twice, fifteen(13.0%) married three times, one(.9%) married four times, and four(3.5%) married five or more times(1, .9% missing).

Seventy-two(62.6%) were company drivers, thirty(26.1%) were Leased Owner/Operators and thirteen(11.3%) were Independents. Independent driver tend to roam more freely than company tied drivers since independents are able to choose any load instead of the usual company tied products. Driving experience ranged from less than six months to 21 or more years with 50.4%(58)of the drivers covering all Continental States, 22.6%(26) covering all Continental States plus Canada, 3.5%(4) covering all Continental States plus Alaska, and 20.0%(23) covering limited States, (2.6%,three missing).

Over half the respondents (63, 54.8%) reported less than or equal to a high school education with 50(43.5%) reporting some technical or college education,(2, 1.7% missing).

Table 1. Demographic Data		Freq.	Percent
Gender	Male	100	87
	Female	15	13
Marital Status	Single	24	20.9
	Married	67	58.3
	Divorce	23	20.0
Sexual Preference	Lesbian	1	0.9
	Homosexual	0	0
	Heterosexual/ Straight	107	93
	Bisexual	0	0
	None of above (Missing)	7	6.1
Number of Times Married	Never	15	13
	Once	45	39.1
	2 Times	34	29.6
	3 Times	15	13
	4 Times	1	0.9
	5 or More	4	3.5
	Missing Values	1	0.9
Religious Preference	Baptist	32	27.8
	Catholic	15	13
	Lutheran	9	7.8
	Methodist	11	9.6
	Mormon	2	1.7
	Presbyterian	9	7.8
	Other	35	30.4

Table 1.Demographic Data	Continued	Freq.	Percent
Ethnicity	White (not Hispanic)	101	87.8
	Black	6	5.2
	Native American	5	4.3
	Hispanic	2	1.7
	Native American/ Hispanic	1	0.9
Education Levels	< 8th grade	1	0.9
	8-12th grade	24	20.9
	Grad. H.S.	29	25.2
	GED	11	9.6
	Some College/ Technical	50	43.5
	Assoc.	8	7.1
	Bach.	3	2.6
	Master	1	0.9
	4 yrs of Law	1	0.9
Driver Licenses by Time Zones	Pacific	12	10.5
	Mountain	17	14.8
	Central	39	34.8
	Eastern	41	35.6

Instrumentation

A valid (per a panel of judges) and culturally appropriate instrument was developed to measure knowledge and behaviors of tractor-trailer drivers related to STD and AIDS. A pilot study was conducted(alpha = 0.55)(N = 20). Due to the time restraints and availability of test subjects, the pilot was not repeated.

Problems were encountered in the questionnaire related to the concept of monogamy and how long monogamous. The questions were asked to see if there was a basic understanding of the term to determine the driver's perception of monogamy and if it was perceived to mean one person for a long time. Selection choices needed to be better defined if this term is to be useful.

Throughout the questionnaire problems also occurred with the option "Other", as it was often chosen with no notation in the blank line, therefore, no information was gained.

Subject participation in answering questions was very good. Since the topic of discussion pertained to sex matters and some questions in the questionnaire were personal and about topics not openly discussed by some in our society (e.g., sexual preference, number of sexual partners, condom use), it is understandable that some participants might be distrustful, embarrassed, or afraid to answer certain questions(Table 2).

Table 2. Missing data ≥ three responses and possible explanations for not responding.

Question	Non-response Freq.	Non-response%
Since learning about AIDS have you altered or changed: a. drug use b. sleep patterns c. # of sexual partners d. condom use Possible reason(s) for not answering: a/b unknown c/d distrustful, embarrassed, or afraid	17 14 7 8	14.4 12.2 6.1 7.0
Based on past behavior your risk for AIDS 1-10. Possible reason(s) for not answering: distrust, embarrassed, fear, denial	3	2.6
# of different partners in last 6 mos. Possible reason(s) for not answering: distrust, embarrassed, fear, denial	71	61.7
While under the influence...Sex with anyone you might not have chosen had you not used this drug. Possible reason(s) for not answering: distrust, embarrassed, fear, denial, may have never been under the influence	17	14.7
Sexual preference Possible reason(s) for not answering: distrust, embarrassed, fear, denial, misunderstanding question(3 wrote none, counted as missing) 4 missing	7	1.6
Same sex partner Possible reason(s) for not answering: distrust, embarrassed, fear, denial, confusing question	3	2.6

Administration

The respondents sat in the restaurant area which could be distracting due to the conversations at the adjoining tables. Subjects were asked to place the completed questionnaire in a large blue locked container which stood some distance from the surveyor.

Subjects were told that the researcher was available to give them the correct true/false answers should they wish them. The researcher felt that this was a way to correct any misconceptions and false information that the drivers might have. Twenty of the drivers took advantage of the opportunity to discuss the correct answers.

Data and Research Questions

The purpose of this study was to gather baseline data about sexual risk behavior and knowledge of STDs and AIDS from tractor-trailer drivers stopping at the TA Truck Stop at Exit 16 of I-40 in Gallup, NM. The subsequent analysis is based on research questions to determine if Tractor-trailer drivers are putting themselves at risk for STDs which includes AIDS.

Research Question 1:

Are drivers using condoms? Why/Why not? Is there a relationship between condom use and other study factors?

Drivers were asked if they carried a condom (rubber) for use if they should decide to have sexual intercourse with a casual sexual

partner. Sixty seven (58.3%) reported yes, they carry a condom. When asked if they would refuse sexual intercourse with a casual sexual partner who would not accept the use of a condom, ninety-two(80%) responded yes, they would refuse sex while twenty-three(20%) said no, they would not refuse sex with a casual partner.

When subjects were asked how often they used a condom in the last year, fifteen (13.0%) said all the time and seventy-two(62.6%) said never (Figure 1). The relationship between carrying a condom for casual use by the percent of condom use in the last year was not found to be significant due to small chi square cells.

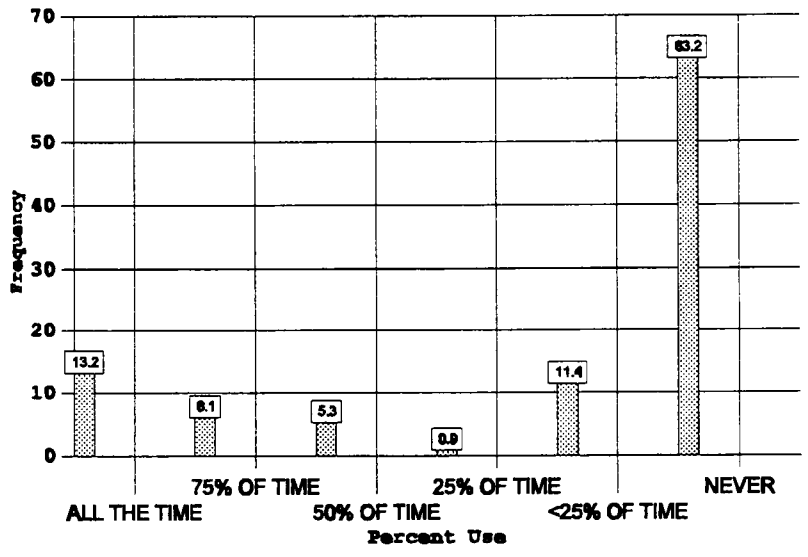


Figure 1. Percent condom use in the last year.

One hundred-ten(95.7%) answered correctly when asked if a condom should be used for protection from all STDs when engaging in anal or vaginal intercourse, however, only 103(89.6%) answered correctly when asked if a condom should be used for protection against STDs with oral stimulation of the penis. A nonsignificant correlation was found between these two factors.

Fifty-nine drivers(51.3%) altered or changed condom use since learning about AIDS. Seventy-two drivers(62.6%) do not use condoms, thirty-one(27.0%) use condoms to prevent/decrease their chance for AIDS, Twenty nine(25.5%) use condoms to prevent/decrease their chance for STDs.

The most frequently given reason for using condoms was to prevent/decrease the chance of AIDS(31, 27%) and STDs(29, 25.2%) (Figure 2). The most frequently given reason for non-use was a long-term one person relationship(70, 60.9%) followed by partner doesn't like as second(14, 12.2%)(Figure 3).

Of the fifteen females in the study, thirteen never used condoms and two used them less than twenty-five percent of the time. Fifty-nine males never used condoms, fifteen used them all the time and eleven used them less than twenty-five percent of the time. A nonsignificant relationship was found between condom use and gender.

Condom use was examined in relation to age and found to be statistically nonsignificant. Forty-nine (42.6%) of the subjects were in the 21 to 37 year group, fifty-three(46.1) were in the 38 to 54

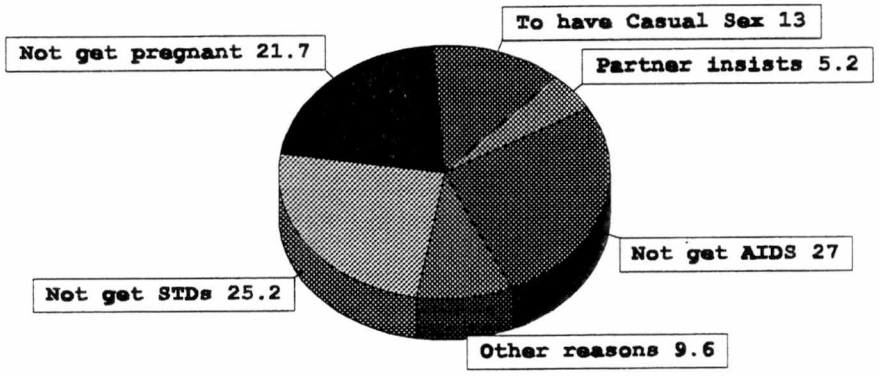


Figure 2. Reason for condom use by percent

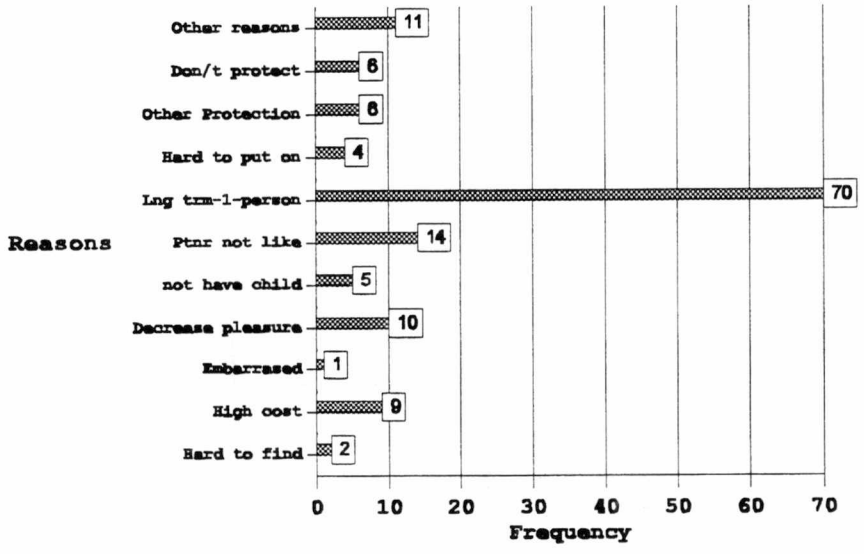


Figure 3. Reasons for condom non-use

year group, and twelve(10.4%) were in the 55 to 72 year group. This relationship was also found to be non significant.

Twenty-five(21.7%) of drivers engage in casual sex. However, 67(58.3%) admitted to carrying condoms for casual sex. Condom use and casual sex also yielded an nonsignificant relationship, as did condom use and monogamous relationships (83, 72.2%).

Research Question 2:

Are drivers having sexual intercourse with multiple partners?

Sixty-four(55.7%) subjects responded positively to altering their number of sexual partners since learning about AIDS with forty-four subjects(38.3%) saying they had not made changes. The number of sexual partners in the last six months is expressed in Figure 4. Five(4.3%) subjects reported having no sex in the last six months.

Monogamous is a relative term. A person who changes partners every week can consider themselves to be in a monogamous relationship and be at risk for STDs. When subjects were asked if they were in a monogamous-one-person relationship, 83(72.28%) said yes and 28(24.38%) said no with three answering to both yes and no(counted as four missing). A significant correlation was found between monogamy by casual sex(.000, -6.54275 t). Seventy-five(65.2%) drivers who reported monogamy reported not participating in casual sex(Figure 5).

Sixty-seven(58.3%) of the subjects(N=115) reported being married. A total of 78 percent denied having casual sex. A significant inverse relationship was found between marital status and casual sex

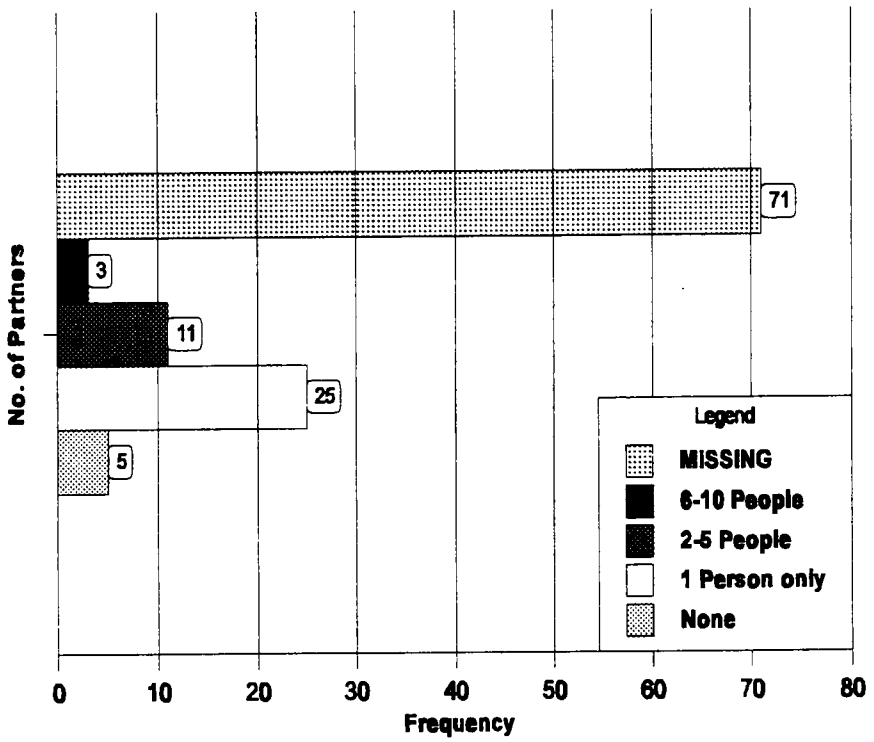


Figure 4. Number of different partners in last 6 months.

		Casual Sex		
Monogamy		No	Yes	Row Total
	No	11	17	28 25.2
	Yes	75	8	83 74.8
Column Total		86 77.5	25 22.5	111 100.0

Spearman Cor.	Value	ASEO	Sig.
	-.531	.094	.0000*

* VAL/ASEO -6.54275 t

Figure 5. Monogamy by Casual Sex.

(t=3.06380, SL=.00274) supporting the data that married drivers are not having casual sex(Figure 6). No significance was found between the number of sexual partners in the last six months and monogamous relationships. A nonsignificant relationship was found between monogamous relationships and the use of male or female prostitutes. Twenty-five(21.7%) drivers engage in casual sex while ninety(78.3%) do not. A nonsignificant relationship was found between both Casual Sex by Paid-For Services Male or Female Prostitute and Casual Sex Compared to the Number of Sex Partners in the Last Six Months.

		Marital Status			
Casual Sex		M	S	D	Row Total
	No	59	17	14	90 78.9
	Yes	8	7	9	24 21.1
Column Total		67 58.8	24 21.1	23 20.2	114 100.0

Spearman Cor.	Value	ASE1	t	Sig.
	.27808	.09393	3.0638	.00274

Figure 6. Marital Status By Casual Sex

Research Question 3:

Are drivers choosing partners from high risk groups (same sex as driver, homosexual, prostitute, persons with multiple partners, drug users)?

Subjects were asked to choose into which of the HIV risk groups they belonged (Table 3). An overwhelming 97(84.3%) of the 115 subjects felt they should be in none of the risk categories. Eleven reported having multiple partners, five had partners with multiple partners, one was a partner of someone who was either gay/lesbian, an IVDU, a hemophiliac or bisexual. No subjects belonged to the bisexual, IVDU, hemophiliac, or gay/lesbian subject-designated risk groups. A nonsignificant relationship was found with the comparison of risk groups and monogamous relationship

Subjects were then asked on a scale of one to ten to rate their risk for getting AIDS based on their behavior(Figure 7). Ninety-six subjects felt they belonged in the one to three Low Risk category (83,5%). Eleven were in the four to six Medium category(9.6%). Three chose the seven to nine High category(2.6%). Two chose the Very High category(1.7%) feeling they were at high risk for HIV due to their behavior and three (2.6%) did not respond. A nonsignificant relationship was found with the comparison of perceived risk groups to subject chosen categories of risk.

When asked to select who they most often chose for a sexual partner (Table 4) four subjects(3.5%) selected paid-for-service male or female; eight(7.0%) chose casual traveler or someone picked up

Table 3. Subject designated high risk behavior groups.

Risk Group	Frequency	Percent
Sexual Preference		
Gay/Lesbian	1	.9
Straight/Heterosexual	107	93.0
None	3	2.6
Gay/Lesbian/Bisexual		
Selected	0	0
Not selected	109	94.8
IVDU		
Selected	0	0
Not selected	109	94.8
Use Any IVD Last Year		
Selected	1	.9
Not selected	111	96.5
Hemophiliac		
Selected	0	0
Not selected	109	94.8
Multiple Partners (Past/Present)		
Selected	11	9.6
Not selected	98	85.2
Partner has Multiple Partners		
Selected	5	4.3
Not selected	104	90.4
Avoid Sex With Partner of Multi Partner		
Yes	100	87.0
No	15	13.0
Not Belong to Any of Groups		
Selected	97	84.3
Not selected	12	10.4
Casual Sex		
Yes	25	21.7
No	90	78.3
Carry Condom for Casual Sex		
Yes	67	58.3
No	48	41.7

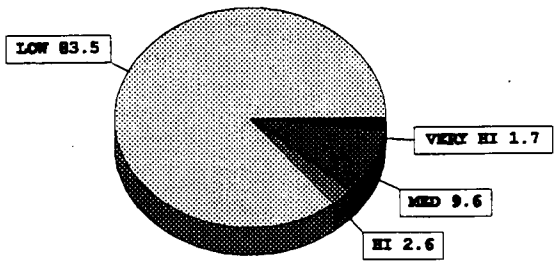


Figure 7. Percent of Perceived risk for HIV based on past behavior.

Table 4. Sexual Partners					
Choice of Partners			Where Partners Are Found		
	#	%		#	%
Paid for service	4	3.5	CB radio	3	2.6
Casual traveler	8	7.0	Bars/restaurants	5	4.3
Legal wife/husband	21	18.3	Give rides in exchange	5	4.3
Live-in roommate	8	7.0	Truck stops	4	3.5
Other: girl/boyfriend	9	7.8	Rest areas	3	2.6

where ever they happened to be driving; 21(18.3%) chose legal wife/husband; eight(7.0%) chose live in roommate; nine(7.8%) reported other (girlfriends). Subjects reported their use of the services ofmale or female prostitutes 75% of the time(1,.9%); 50% of the time(1, .9%); 25% of the time(1, .9%); less than 25% of the time(11, 9.6%); and never(28, 24.3%); missing (63.5, 73).

Subjects reported most frequently finding a sexual partner (Table 4) using the CB Radio(3, 2.6%), pick-up in bars(5, 4.3%), giving rides in exchange for sex(5, 4.3%), finding in truck stops(4, 3.5%), finding in rest areas or parks(3, 2.6%) and other-not defined(23, 20.0%).

When comparing both Most Often Chosen Sexual Partner and Number of Different Sex Partners in the Last six Months by How Partners Were Chosen a nonsignificant relationship was found for both.

Research Question 4:

Are drivers putting themselves at risk by using drugs?

When drivers were asked if they had altered or changed drug use since learning about AIDS, 66(57.4%) said no, 32(27.8%) said yes and 17(14.8%) failed to respond. Drivers were given a list of drugs (Figure 8) and asked to choose which drugs they had used within the last year. Of the drugs listed, Morphine, Heroine, Barbiturates, Quaaludes, PCP, and LSD were not chosen by any of the subjects.

Fifty seven drivers(49.6%) said they had not used drugs within the last year. Drivers were also asked, while under the influence of

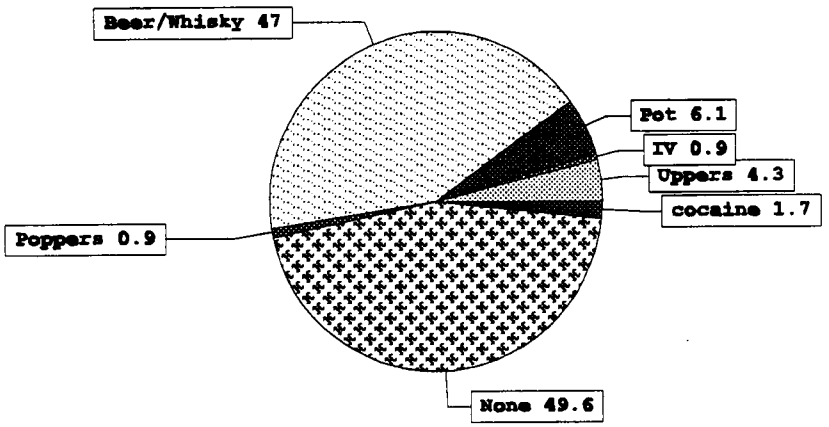


Figure 8. Percent drug use in last year.

any of the above (listed) drugs have you participated in oral, anal, vaginal or rectal sex with anyone that you might not have chosen if you had not used this drug? Eighty nine(77.4%) reported "No", nine (7.8%) reported "Yes", and 17(14.8%) were missing. When asked to select self-descriptive categories from the list of known risk categories for HIV (Table 3) none of the drivers selected the IV Drug User Category.

Research Question 5:

What is the knowledge level of drivers about the spread of STDs and/or AIDS? How does their knowledge level relate to general education level, age, and marital status?

Questions 1-16 and 24 were specified as Knowledge Questions and scored as true or false(Table 5). Questions 17-23, and 25-43 were designated to be Behavior Questions. By default, no significant

Table 5 Survey Knowledge Questions and Response Frequencies

QUESTION	TRUE Freq.	%	FALSE Freq.	%
1. Pass virus and not look sick	* 111	96.5	4	3.5
2. Not get AIDS from oral sex	106	92.2	9	7.8
3. Partner has no sores, therefore, not get AIDS	112	97.4	3	2.6
4. Catch HIV from sex with female during Menses.	94	81.7	21	18.3
5. With correct use sheep/latex condoms equally safe	74	64.3	41	35.7
6. Can get AIDS from mosquitos	74	64.3	41	35.7
7. AIDS passes to others through semen	101	87.8	14	12.2
8. Having other STDs can increase chance of AIDS	68	59.1	47	40.9
9. Catch AIDS from shaking hands	110	95.7	5	4.3
10. Monogamous relationships decrease your risk	97	84.3	18	15.7
11. The Pill prevents transmission of STDs	113	98.3	2	1.7
12. Cannot get STDs (again) after treatment	113	98.3	2	1.7
13. Can have both gonorrhea and syphilis	104	90.4	11	9.6
14. Use condom for protection against all STDs in anal and vaginal sex	110	95.7	5	4.3
15. Use condom for protection against STDs with oral stimulation of penis	103	89.6	12	10.4
16. Petroleum jelly can safely be used when using condoms	43	37.4	72	62.6
24. AIDS is fatal	105	92.9	8	7.1

* Dark block = Correct answer

statistical data were found between Knowledge and Behavior factors due to cell counts less than five.

Research Question 6:

Is ambisexual behavior practiced in this population? If so, to what extent and how does it relate to the above subproblems?

Question 43 asked subjects if they had ever engaged in oral, vaginal, rectal/anal sex with a member of the same sex. One hundred-nine(97.3%) answered no; three(2.7%) answered yes; three were missing. No ssignificant relationships were found between sex with a Same Sex partner(ambisexual behavior) and any other study factor.

Interpretation of Data

Research Question 1:

Are drivers using condoms? Why/Why not? Is there a relationship between condom use and other study factors? While over ninety-five percent of the respondents knew that a condom should be used for the protection from all STDs for anal or vaginal sex, over sixty-two percent do not use condoms. Fifteen drivers(13%) reported using condoms for the freedom of casual sex. However, over fifty eight percent reported being married and a one-person monogamous relationship as the single most reported reason for non-condom use.

Age is an important determinant of risky behavior. The surveyed population had a mean average age of 40.36 years with over 56% of the

group falling into the over thirty-seven year age group. Marriage also would have an effect on risk behavior for HIV/STDs because it would reduce the odds for having multiple partners. Fifty-eight percent of our population was married with 18.3% reporting their choice of sexual partner in the last six months was their legal wife/husband. However, extramarital affairs was not addressed by the survey. People limit their number of sexual partners as they grow older, consequently reducing their risk for STD infection. Marriage significantly reduces the odds of having multiple partners, as well as casual sex. Ninety drivers(78.3%) do not engage in casual sex. One factor that could possibly account for this is the increased number of subjects who are married, in long-term relationships or in an older age group.

Eventhough over seventy-eight percent of the drivers denied engaging in casual sex, fifty-one percent reported changing their condom use since learning about AIDS. Only thirteen percent of respondents use condoms all the time and eleven percent use condoms less than 25% of the time. The most frequent reason for using condoms was to prevent/decrease the chance of AIDS. A little over twenty-five percent use latex condoms, sixteen and one-half percent of which use latex with Nonoxonyl (56.6% missing). No significant correlations were found regarding condom use. It may be that subjects perceive that it is unnecessary to use a condom if they believe that their relationship is monogamous, that their partner is mutually monogamous or previously has not had sex.

Research Question 2:

Are drivers having sexual intercourse with multiple partners? Eleven drivers(9.6%) reported having sex with multiple partners. Over twenty-one percent of the drivers reported engaging in casual sex. More than one sexual partner was reported by 14(12.2%) drivers with 71(61%) not responding. It is impossible to say, for certain, the reason for 61% of the driver not responding to this question, but, the reason was possibly due to one or more of the following: 1)distrust of the investigator, 2)fear or embarrassment of others finding out the total number, 3)denial of the total number, or 4)simply not knowing the total number.

Research Question 3:

Are drivers choosing partners from high risk groups (same sex, homosexual, prostitutes, persons with multiple partners, drug users)? It has long been accepted that there are standard high risk groups for HIV (being Gay/Lesbian/Bisexual, IVD use, hemophilia, multiple partners, casual unprotected sex, being a partner of any of the above groups). Drivers were asked to designate which of the groups they belonged, however these were not labeled as being high risk or risk groups for AIDS to relieve the stigma associated with AIDS/HIV in answering the question.

When asked which of the High Risk Groups they belonged (Table 2), ninety-three percent selected the Straight/Heterosexual group, almost

ten percent(9.6) reported having multiple partners and four percent reported being a partner of someone with multiple partners. Significant inverse relationships were found between Marital Status by Casual Sex(.00274, 3.0638 t) and Monogamy by Casual Sex(.000000, -6.54275 t) and can be seen in Figures 5 and 6.

When this data were gathered AIDS was predominately associated with gay men and IV drug users, it may be that the male heterosexuals, females and non-IV drug users surveyed did not identify with the image of those at risk for AIDS/STDs, therefore, they did not feel at risk. This could account for the fact that 97(84.3%) did not see themselves as a member of any of the at risk groups with 96 drivers(83.5%) perceiving they belonged in the low risk category for AIDS based on past behaviors.

One hundred-five drivers(91.3%) believed that AIDS is fatal with eight(7.0%) believing it is not fatal and two(1.7%) missing. This finding was consistent with the National Health Interview Survey (NCHS, 1988) which indicated that 90% of those interviewed were aware that "AIDS leads to death." Readers should be aware that when these studies were conducted few, if any, prophylactic drugs were available for wide use and certainly practitioners did not have the success of multiple drug therapy used today, therefore, AIDS was generally thought to be fatal.

Present actions and knowledge are based on past experience. Thus, knowledge of disease prevalence by group membership or social proximity is likely to affect perceived risk. Eight-six(74.8%) of the

115 have not known anyone who was HIV positive. Fifty three(46.1%) had an HIV Test with all 53 stating they were negative. However, 61 respondents(53.0%) have not had the test for HIV, one(.9%) was missing. No reliable correlations were found between perceived level of risk for HIV and the variables AIDS is fatal, Knowing someone with AIDS, Having an AIDS test, or Engaging in casual sex.

Research Question 4:

Are drivers putting themselves at risk for STDs by using drugs? Nearly one-half of the drivers surveyed(49.6%) reported using no drugs in the past year, however, forty-seven percent then said they had used either beer or whisky. One driver selected the IV Drug category and seven(6.1%) Hashish/Marijuana. This finding indicates that drivers are using drugs and clearly do not see beer or whisky as drugs. Crouch and Associates(1993) found that drugs were in one of every three trucks. The finding of the present study indicate that drug use was substantially higher, one of every two trucks.

When asked while under the influence of any drugs(including alcohol) have you ever had oral, anal, vaginal or rectal sex with anyone that you might not have chosen if you had not used this drug? Eighty-nine(77.4) said no with only 9(7.8%) saying yes. Seventeen (14.8%) did not respond to this question, either due to denial, fear of embarrassment/others finding out, or distrust of the researcher.

The use of alcohol and drugs during sex has been found to be associated with unsafe sex. Alcohol and other drugs during sexual

activity by heterosexual men is associated with a decreased use of condoms and certainly raised the issue of interference with effective condom use or judgement concerning other safe sex practices. This study supports findings from previous research and direct observations of the researcher which indicates that the use of drugs, high-risk sexual behavior, and other risk behaviors occur together.

Research Question 5:

What is the knowledge level of drivers about the spread of STDs and/or AIDS? How does knowledge level relate to general education level, age, and marital status? Many of the respondents were very knowledgeable about AIDS and STDs (Table 5). However, there were several disconcerting responses. As many as one hundred-six(92.2%) did not know you can get the HIV virus through oral sex; one hundred-twelve(97.4%) believed that if no sores are visible the person does not have AIDS; twenty-one(18.3%) did not know they were at risk for female to male transmission through menses fluids (Edwards, 1992); fourteen(12.2% did not know AIDS could be passed through semen; eighteen(15.7%) did not know that a monogamous relationship decreases their chance of getting AIDS; eleven(9.6%) did not know you can have more than one STD at a time; and almost 41%(47, 40.9%) did not know that having other STDs could increase their chance for AIDS.

Findings indications that seventy-four(64.3%) believed that sheepskin and latex condoms gave equal protection; and petroleum jelly can safely be used with condoms(72, 62.6%).

Most surprising was the response by 74 respondents(64.3%) indicating their belief that AIDS is transmitted through mosquito bites and 110(95.7%) believed by shaking hands.

Drivers were told that the surveyor would be available, after the completed questionnaire was placed into the box, if they wished to know the answers to the true-false questions. If a driver responded that AIDS was transmitted by mosquito, the overwhelming response when questioned was that they "had heard that mosquitos could not transmit the virus, but, they did not believe what the government was saying."

Research Question 6:

Is ambisexual behavior practiced in this population? If so, to what extent and how does it relate to the above questions? Only one question was related to ambisexual behavior. Three respondents(2.7%) reported having engaged in vaginal, or rectal/ anal sex with a member of the same sex. No significant relationships were found for this variable. It is not known is this reported behavior meets the criteria for ambisexual sex, therefore, more information is needed to determine if the surveyed population participates in ambisexual behavior.

Discussion

High numbers of sexual partners, both recently and in the past is associated with increased risk for a number of bacterial infections, especially gonorrhea, syphilis, and chlamydia. These factors pose a

greater cumulative risk for acquiring viral infections such as genital herpes, human papillomavirus, hepatitis B, and HIV. Sex with a stranger is associated with increased risk of acquiring STDs and HIV.

Summary

A pilot study was conducted using subjects from Werner Enterprises (N=20) in Lithia Springs, GA. SAS computer package was used to analyze content validity (α=0.5459). The research study was conducted in Gallup, NM in August of 1993 at the TA Truck Stop (N=115). Data were analyzed using SPSS for Windows.

CHAPTER V

SUMMARY, FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

Summary

The purpose of this study was to delineate the process of gathering baseline data to investigate the sexual risk behavior and knowledge of STDs and AIDS for tractor-trailer drivers to verify or refute the Research Statement that "Tractor-trailer drivers are putting themselves at risk for STDs which includes AIDS." The following questions basic to this purpose were addressed:

(1) Are drivers using condoms? Why/Why not? Is there a relationship between condom use and other study factors?

(2) Are drivers having sexual intercourse with multiple partners?

(3) Are drivers choosing partners from high risk groups (same sex as driver, homosexual, prostitute, persons with multiple partners, drug users)?

(4) Are drivers putting themselves at risk for STDs by using drugs?

(5) What is the knowledge level of drivers about the spread of STDs and/or AIDS. How does knowledge level relate to general education level, age, and marital status.

(6) Is ambisexual behavior practiced in this population? If so, to what extent and how does it relate to the above questions.

An instrument was developed to assess study factors. Judges in the fields of trucking, education and AIDS research were used to establish appropriateness and construction format of (1)content, (2)cultural and linguistic validity of the knowledge and (3)behavior sections of the instrument. The instrument was pilot-tested in the study population, and revised on judges' evaluations, suggestions from the pilot population, researcher judgements, problems experienced in the field and statistical analysis using the Kuder Richardson-21 formula (knowledge questions).

A convenience sample of 115 men and women was obtained for the study from a sampling frame consisting of patrons in the restaurant, store, and fuel desk areas of the TA Truck Stop at Exit 16 of I-40, Gallup, New Mexico. Criteria for participation were: 1) being 21 years of age; and 2) driving an eighteen-wheeler.

Subjects were given a pencil and paper questionnaire consisting of fifty-five questions incorporating 17 True/False Knowledge, 26 behavioral and 12 demographic questions.

Findings

The various procedures described and results generated produced the following findings relative to the research questions:

(1) Are drivers using condoms? Why/Why not? Is there a relationship between condom use and other study factors? Non-condom use was reported by 62.6% of the drivers with over 58% reporting being married or in a monogamous relationship as the reason for non-use. Only 13% of the respondents use condoms all the time with the single most given reason for

condom use being to prevent/decrease the chance for AIDS. No significant relationships were found for condom use.

(2) Are drivers having sexual intercourse with multiple partners? Significant inverse relationships were found between monogamy and casual sex and between marital status and casual sex. However, 21.7% of the drivers engaged in casual sex; 12.2% reported more than one sexual partner in the last six months with 61% not responding to this question, therefore, the percentage is likely to be higher.

(3) Are drivers choosing partners from high risk groups (same sex as driver, homosexual, prostitute, persons with multiple partners, drug users)? Of the drivers surveyed, 36.6% use the services of prostitutes 25-75% of the time.

(4) Are drivers putting themselves at risk for STDs by using drugs? In this study 50.4% of the driver used drugs in the last year(including alcohol).

(5) What is the knowledge level of drivers about the spread of STDs and/or AIDS. How does knowledge level relate to general education level, age, and marital status. Drivers have a knowledge deficit about HIV/STDs safe sex practices ranging from 1.7-96.5%. No significant relationships were found for knowledge level.

(6) Is ambisexual behavior practiced in this population? If so, to what extent and how does it relate to the above questions. The extent of ambisexual behavior in this population is not known at this time.

Conclusions

Based on the data the following conclusions are made: (1)surveyed drivers are putting themselves at risk for acquiring an STD, including HIV, due to a)unprotected casual sex, b)multiple partners, c)partners from high risk groups and d)drug use. (2)Drivers are also at risk due to a knowledge deficit concerning safe sex practices related to the spread of STDs. (3)More information is needed to determine if ambisexual behavior is occurring in this population.

Recommendations

High-risk behaviors are well documented in "core groups," for HIV and STDs (CDC, 1988d; Padian, Hitchcock, Fillilove, Kohlstadt, & Brunham, 1990; Brunham, 1991; Rothenberg, 1983a). More studies are needed to focus on the American truck driver in terms of his/her risk behaviors to empirically compare them to the recently acknowledged core population of drivers at risk for HIV/STDs from outside the United States.

More information is clearly needed to establish the true extent of risk behaviors in this population. Educational programs specific to the culture of the driver are needed and must be easily available to the drivers, both male and female. It must also be emphasized that using alcohol and drugs has been associated with unsafe sexual behaviors and the decreased use of condoms.

Drivers must be able to access condoms in truck stop areas where they most frequently stop. In their effort to portray an image of a

"family center" many truck stops refuse to have condoms available, either in the store areas or by dispenser in the rest rooms. More work is needed to encourage truck stops to take responsibility for educating their customers and making condoms available for the drivers. Educational programs must focus on the drivers taking the responsibility for using condoms and emphasis should be on the fact that drivers and partners who have multiple partners are at risk even in their primary relationships and that using condoms need not be consistent with feelings of love and intimacy. Emphasis must also focus on condom use, discrimination in selection of sex partners, and decreased number of sex partners as complementary methods and not as mutually exclusive alternatives. Five percent of the drivers in this study said they would not tell their partner if they had a STD. Drivers must be reminded that they must take responsibility for their partners who may not know or even suspect that they are being put at risk or being exposed to the virus.

Future research should use several survey sites to ensure a more diverse mixture of ages, cultures, genders, sexual preferences and marital statuses.

LIST OF REFERENCES

REFERENCES

Allen, James R. & Curran, James W.(1988). Prevention of AIDS and HIV infection: Needs and priorities for epidemiologic research. American Journal of Public Health, 78(4), 381-385.

Anderson, J.E. & Dahlberg, L.L.(1992). High risk sexual behavior in the general population. Results from a national survey, 1988-1990. Sexually Transmitted Disease, 17, 320-25.

Aps, D.S.(1997). Conducting truck drivers' physical exams. The high prevalence of sleep apnea. Minnesota Medicine, 80(1), 29-30

Aral, Sevgi Okten(1993). Heterosexual transmission of HIV: The role of other sexually transmitted infections and behavior in its epidemiology prevention and control. Annual Review of Public Health, 14, 451-467.

Barlow D.(1977). The condom and gonorrhea. Lancet, 2, 811-812.

Barnes, Deborah M.(1987). AIDS research in new phase. Science, 233(4761), 282-3.

Beilock, R.(1995). Schedule-induced hours-of-service and speed limit violations among tractor-trailer drivers. Accident Anal Prevention, 27(1), 33-42.

Bierck, R.(1996). Steering clear of danger. U.S. News and World Report, 121(8), 40(2).

Billy, John O.G.; Tanfer, Koray; Grady, William R.; & Klepinger, Daniel H.(1993). The sexual behavior of men in the United States. Family Planning Perspectives, 25(2), 52-60.

Boffetta, P.; Harris, R.E.; & Wynder, E.L.(1990). Case-control study on occupational exposure to diesel exhaust and lung cancer risk. American Journal of Industrial Medicine, 17(5), 577-91.

Boffetta, P.; Stellman, S.D.; & Garfinkel, L.(1988). Diesel exhaust exposure and mortality among males in the American Cancer Society prospective study. American Journal of Industrial Medicine, 14(4), 403-15.

Bonnet, B.H. & Arand, D.L.(1995). We are chronically sleep deprived. Sleep, 18(10), 908-11.

Borysenko, Myrin(1987). The immune system: An overview. Annals of Behavioral Medicine, 9(2), 3-10.

Brandt, Allen M.(1988). AIDS in historical perspective: Four lessons from the history of sexually transmitted diseases. American Journal of Public Health, 78(4), 367-371.

Brownson, R.C.(1988). A Case-control study of renal cell carcinoma in relation to occupation, smoking, and alcohol consumption. Archives of Environmental Health, 43(3), 238-41.

Brunham, R.C.(1991). The concept of core and its relevance to the epidemiology and control of sexually transmitted diseases. Journal of Sexually Transmitted Disease, 18, 67-68.

Bwayo, J.J.; Mutere, A.N.; Omari, M.A.; Kreiss, J.K.; Jaoko, W.; Sekkade-Kigondu, C.; & Plummer, F.A.(1991a). Long distance truck drivers. 2: Knowledge and altitudes concerning sexually transmitted diseases and sexual behavior. East African Medical Journal, 68(9), 714-9.

Bwayo, J.J.; Omari, M.A.; Mutere, A.N.; Jaoko, W.; Sekkade-Kigondu, C.; Kreiss, J.K.; & Plummer, F.A.(1991b). Long distance truck drivers. 1: Prevalence of sexually transmitted diseases (STDs). East African Medical Journal, 68(6), 425-9.

Bwayo, J.J.; Plummer, F.A.; Omari, M.A.; Mutere, A.N.; Moses, S.; Ndinya,-Achola, J.; Velentgas, P.; & Kreiss, J.K.(1991b). Archives of Internal Medicine, 154(12), 1391-6.

Byers, Curtis O.; Shainberg, Louis W. & Jones, Kenneth L.(1985). Dimensions of Human Sexuality. Dubuque: W.C. Brown, p.148.

Caetano, R. & Hines, A.M.(1995). Alcohol, sexual practices, and risk of AIDS among blacks, Hispanics, and whites. Journal of Acquired Immune Deficiency Syndrome, 10, 554-61.

Cambell, B.A.; Goodell, R.F. & Linfield, J.M.(1989). A survey of truckers in British Columbia, Canada. British Columbia Trucking Association, 1, 1-48.

Carpenter, C.C.J; Fischl, M.A.; & Hammer, S.M.(1996). Antiretroviral therapy for HIV infection in 1996: Recommendations of an International panel. Journal of American Medical Association; 276, 146-54.

Chatterjee, Molly, MD (Speaker). Reducing parenteral transmission of HIV. TN AIDS Education and Training Center(TAETC), Center for AIDS Training, Two Day Clinical Management Course, October 21-22, 1997 at Meharry Medical College, Nashville, TN.

Center For Disease Control(1987a). Antibody to human immunodeficiency virus in female prostitutes. MMWR, 36, 157-51.

Center For Disease Control(1987b). Division of Sexually Transmitted Diseases and STD Lab Program, Annual report Fiscal year 1986. Atlanta, GA.

Center For Disease Control(1988a). Condoms for prevention of sexually transmitted diseases. MMWR, 37(9), 133-137.

Center For Disease Control(1988b). Continuing increase in infectious Syphilis-United States. MMWR, 37(3), 35-38.

Center For Disease Control(1988c). Human T lymphotropic Virus Type 1 (HTLV-I). MMWR, 37(48), 736-747.

Center For Disease Control(1988d). Number of sex partners and potential risk of exposure to human immunodeficiency virus. MMWR, 37, 565-568.

Center For Disease Control(1988e). Quarterly report to the domestic policy council on the prevalence and rate of spread of HIV and AIDS in the United States. MMWR, 37(14), 223-226.

Center For Disease Control(1988f). Understanding AIDS: An information brochure being mailed to all U S households. MMWR, 37(17), 261-269. Center for Disease Control (1989). Division of Sexually Transmitted Diseases, Annual Report 1989. Atlanta, GA.

Center for Disease Control(1992a). Division of Sexually Transmitted Diseases, Annual Report 1992. Atlanta, GA.

Center For Disease Control(1992b). 1993 revised classification system for HIV infection and expanded surveillance case definition for AIDS among adolescents and adults. MMWR, 41(RR17), 1-19.

Center For Disease Control(1992c). Update: Acquired Immunodeficiency Syndrome-United States, 1991. MMWR, 41, 463-468.

Center For Disease Control(1993a). Impact of the expanded AIDS surveillance case definition and AIDS case reporting-United States, first Quarter, 1993. MMWR, 42(16), 301-310.

Center For Disease Control(1993b). Special focus: Surveillance for sexually transmitted diseases. MMWR, 42(SS-3), 1-39.

Center For Disease Control(1993c). Update: Mortality attributable to HIV infection/AIDS among persons 25-44 years, United States, 1990 and 1991. MMWR, 42, 481-485.

Center For Disease Control(1993d). Update: The effectiveness of condoms. MMWR, 42(30), 589-597.

Center For Disease Control(1995). National overview of sexually transmitted diseases, 1995. STD Surveillance Report 1995. National Center for NIV, STD, and TB Prevention, Division of STD Prevention, Atlanta, GA 30333.

Center For Disease Control(1996a). Ten leading nationally notifiable infectious diseases-US 1995. MMWR, 45(6), 883-4.

Center For Disease Control(1996b). Update: HIV and AIDS mid-year surveillance report June 1996. MMWR, 8(1), 1-36.

Center For Disease Control(1997). Update: Trends in AIDS incidence, deaths, and prevalence United States 1996. MMWR, 46(8), 165-173.

Center For Disease Control National AIDS Clearinghouse(NAC)(1996). Youth & HIV: An American Agenda (Summary.) NAC FAX Doc # 4005, P. O. Box 6003 Rockville, MD 20849-6003.

Center For Disease Control National AIDS Clearinghouse(NAC)(1997a). CCR5 and protection against HIV-1 infection. NAC FAX Doc # 496, P. O. Box 6003 Rockville, MD 20849-6003.

Center for Disease Control National AIDS Clearinghouse(NAC)(1997b). Human Immunodeficiency Virus-2. NAC FAX Doc # 513, P. O. Box 6003 Rockville, MD 20849-6003.

Center for Disease Control National AIDS Clearinghouse(NAC)(1997c). Understanding viral load. NAC FAX Doc # 4017, P. O. Box 6003 Rockville, MD 20849-6003.

Chandler, J.(1996). A sobering law for truckers. Nation's Business, 84(1), 26-3.

Church, George J.(1986). Call to battle. Time, 128(19).

Claude, J.C.; Frentzel-Beyme, R.R; & Kunze, E.(1988). Occupation and risk of cancer of the lower urinary tract among men. International Journal of Cancer, 41(3), 371-9.

Colletti, M.A.(1990). Acquired immunodeficiency Symptoms: Nursing challenge, in Nursing Review: Immunologic Problems. Springhouse: Springhouse, PA, pg. 69, 74.

Conant, Marcus; Hardy, Denise; Sernathinger, Judith; Spicer, D., & Levy, J. A.(1986). Condoms prevent transmission of AIDS associated retrovirus. Journal of the American Medical Association, 255(13), 1706.

Corzine, Jay, & Kirby, Richard(1977). Cruising the truckers. Urban Life, 6(2), 171-193.

Crouch, D.J.; Birky, M.M.; Gust, S.W.; Rollins, D.E.; Walsh, J.M.; Moulden, J.V.; Quinlan, K.L. & Beckel, R.W.(1993). The prevalence of drugs and alcohol in fatally injured truck drivers. Journal of Forensic Sciences, 38(6), 1342-53.

Cutler, John C., & Arnold, R.C.(1988). Venereal disease control by health departments in the past: Lessons for the present. American Journal of Public Health, (4), 372-376.

Darrow, William & the CDC Collaborative Group For the Study of HIV-1 in Selected Women(1990). Prostitution, Intravenous drug use, and HIV-1 in the United States. In AIDS, Drugs, and Prostitution, CDC: Atlanta, GA.

d'Cruz-Grote, Doris(1996). Prevention of HIV infection in developing countries. The Lancet, 347(9034), 1071-4.

Des Jarlais, Don C., & Freidman, Samuel R.(1988). Needle sharing among intravenous drug users at risk for AIDS. American Journal of Public Health, 78(11), 1498.

De Vincenzi(1994). A longitudinal study of human immunodeficiency virus transmission by heterosexual partners. New England Journal of Medicine, 331(6), 341-346.

Donivan, P.(1993). Testing positive: Sexually transmitted diseases and the Public Health response. New York: Alan Guttmacher Institute.

Ebrahim, S.H., Peterman T A., Zaidi, A.A. & Kamb, M.L.(1995). Mortality related to sexually transmitted diseases in women, U.S.-1973-1992. The Eleventh Meeting of The International Society for STD Research-August 27-30, 1995, New Orleans (abstract #343).

Edwards, S.(1992). Heterosexual transmission of HIV facilitated by anal sex and sex during menses. Family Planning Perspectives, 24(5), 237-238.

Eissenberg, Ethel (1989). Psychology 482 Psychoneuroimmunology. Knoxville, TN: Kinko Professional Publishing.

Embertson, J.; Zupanic, M.& Ribas, J.(1993). Massive covert infection of helper T lymphocytes and macrophages by HIV during the incubation period of AIDS. Nature, 362, 359-62.

Eng, Thomas & Butler, William (eds.)(1997). Summary: The Hidden Epidemic. Committee on Prevention and control of STDs, Institute of Medicine, Division of Health Promotion and Disease Prevention. National Academy Press: Washington, DC.

Epi-News(1997). AIDS/HIV Update. HIV/AIDS Surveillance Report: An overview of HIV disease in Tennessee through 1996. Tennessee Department of Health, 3(3), 3-7.

Executive Summary Report Number One(1991). Testimony before the National Commission on AIDS November 2 & 3, 1990. National Commission on AIDS, Washington. DC.

Falk, R.T.; Pickle, L.W.; Fontham, E.T.; Correa, P.; Morse, A.; Chen, V.; & Fraumeni, J.J., Jr.(1990). Occupation and pancreatic cancer risk in Louisiana. American Journal of Industrial Medicine, 18(5), 565-76.

Feldblum, Paul J., & Fortney, Judith A.(1988). Condoms, spermicide, and the transmission of human immunodeficiency virus: A review of the literature. American Journal of Public Health, 78(1).52-53.

Feldblum, Paul J., & Rosenberg, J.M.(1986). Spermicide and sexually transmitted disease: New perspectives. North Carolina Medical Journal, 47(1),569-572.

Finkelstein, M.M.(1995). Occupational associations with lung cancer in two Ontario cities. American Journal of Industrial Medicine, 27(1), 127-36.

Fischl, Margaret A.; Dickinson, Gordon M.; Scott, Guendolyn B.; Klimas, Nancy; Fletcher, Mary Ann & Parks, Wade(1987). Evaluation of heterosexual patterns, children, and household contacts of adults with AIDS. Journal of the American Medical Association, 257(5), 640-644.

George, S.; Jacob, M.; John, T.J.; Jain, M.K.; Nathan, N.; Rao, P.S.; Richard, J.; & Antonisamy, B.(1997). A case-control analysis of risk factors in HIV transmission in South India. Journal of Acquired Immune Deficiency Syndromes and Human Retrovirology, 14(3), 290-3.

Global Disease Surveillance Report 12(1987). GRDR, Dec. 1987.

Goldsmith, Marsha F.(1987a). Sex in the age of AIDS calls for common sense and "condom sense." Journal of the American Medical Association, 257(17), 2261-2264.

Goldsmith, Marsha F.(1987b). Some advice on using condoms against STDs: What every man (and woman) should know. Journal of the American Medical Association, 257(17), 2266.

Greene, Warner C.(1991). The molecular biology of human immunodeficiency virus type 1 infection. The New England Journal of Medicine, 324(5),308-317.

Guinn, Bobby(1983). Job satisfaction, counterproductive behavior and circumstantial drug use among long-distance truck drivers. Journal of Psychoactive Drugs, 15(3), 185-188.

Hansen, E.S.(1993). A follow-up study on the mortality of truck drivers. American Journal of Industrial Medicine, 23(5), 811-21.

Hankins C. A.(1990). Issues involving women, children, and AIDS primarily in the developed world. Journal of Acquired Immune Deficiency Syndromes, 3, 443-448.

Hayes, R.B.; Thomas, T.; Silverman, D.T.; Vineis, P.; Blot, W.J.; Mason, T.J.; Pickle, L.W.; Correa, P.; Fontham, E.T.; & Schoenberg, J.B.(1989). Lung cancer in motor exhaust related occupations published erratum appears in Am J Ind Med 1991 Jan; 19(1); 135. American Journal of Industrial Medicine, 16(6), 685-95.

Henry, Keith & Crossley, Kent(1986). Condoms and the prevention of AIDS. Journal of the American Medical Association, 256(11),1442.

Hingson, R.W.; Strunin, L.; Berlin, B.M.; & Hereen, T.(1990). Beliefs about AIDS, use of alcohol and drugs, and unprotected sex among Massachusetts adolescents. American Journal of Public Health, 80, 295-9.

Holmes, S.M.; Power, M.L, & Walter, C.K.(1996). A motor carrier wellness program: development and testing. Transportation Journal, 35(3), 33(16).

Hook, Edward W.,III(1989). Aids Commentary: Syphilis and HIV infection. Journal of Infectious Diseases, 160(3), 530-534.

Irshad, M.; Joshi, Y.K.; Acharya, S.K.; & Tandon, B.N.(1994). Prevalence of hepatitis B virus infection in healthy persons in North India. National Medical Journal of India, 7(5), 210-2.

Jack, Tracy & Zak, M.J.(1993). Results from the Census of Fatal Occupational Injuries, national and state data, 1993. Compensation and Working Conditions, 47(2), 1(13).

Jaffe, Harold W., & Lifson, Alan R.(1988). Acquisition and transmission of HIV. Infectious Disease Clinics of North America, 2(2), 299-306.

Janz, Nancy K., & Becker, Marshall H.(1984). The Health Belief Model: A decade later. Health Education Quarterly, 11(1), 1-47.

Jones, J. L.; Hanson, D. I.; Ward, J.W.;& Kaplan, J.E.(1996). Incidence trends in AIDS-related opportunistic illnesses in injecting drug users and men who have sex with men(Abstract). Vancouver British Columbia: XI International Conference on AIDS.

Judson, F.N.; Ehret, J.M.; Bodin, G.M.; Levin, M.J.; & Rietmeyer, Cam (1988). In vitro evaluations of condoms with and without nonoxynol-9 as physical and chemical barriers against Chlamydia trachomatous, herpes simplex virus type 2, and human immunodeficiency virus. Sexually Transmitted Disease (Supplement).

Karim, Q.A.; Karim, S.S.A.; Soldan, K. & Zondi, M.(1995). Reducing the risk of HIV infection among South African sex workers: socioeconomic and gender barriers. The American Journal of Public Health, 85(11), 1521(5).

Kecklund, G. & Akerstedt, T.(1993). Sleepiness in long distance truck driving: an ambulatory EEG study of night driving. Ergonomics, 36(9), 1007(11).

Kinsey, A.C.; Pomeroy, W.B.; & Gebhard, C.E.(1948). Sexual Behavior in the Human Male. Philadelphia: Saunders.

Kisiel, R.(1995). Volvo GM believes trucks need airbags, too. Automotive News, 5604, 20H(1).

Klovdahl, Alden S.(1985). Social networks and the spread of infectious diseases: The AIDS example. Social Science Medicine, 21(11), 1203-1216.

Koopman, C.; Rosario, M.; & Rotheram-Borus, M.J.(1994). Alcohol and drug use and sexual behaviors placing runaways at risk for HIV infection. Addictive Behavior, 19, 95-103.

Korelitz, J.J.; Fernandez, A.A.; Uyeda, V.J.; Spivey, G.H.; Browdy, B.L.; & Schmidt, R.T.(1993). Health habits and risk factors among truck drivers visiting a health booth during a trucker trade show. American Journal of Health Promotion, 8(2), 117-23.

Krogsgaard, K.; Lurid C.; Pederson C.; Nielson, Jo; Juhl, E.; Gerstoft J.; & Neilson CM.(1986). Widespread use of condoms and low prevalence of sexually transmitted diseases in Danish non-drug addict prostitutes. British Medical Journal, 293, 1473-1474.

Laberge, N.C.; Dionne, G.; Maag, U.; Desjardins, D.; Vanasse, C. & Ekoe, J.M.(1996). Medical conditions and the severity of commercial motor vehicle drivers' road accidents. Accident Analysis and Prevention, 28(1), 43-51.

Lange, W. Robert & Snyder, Frederick R.(1988). Response from Drs Lang and Snyder. American Journal of Public Health, 78(11),1498-1499.

Lange, W. Robert; Snyder, Frederick R.; Lozovsky, David; Karstha, Verek; Kacqaniuk, Mary; Jaffe, Jerome H. & The ARC Epidemiological Collaborating Group(1988). Geographic distribution of human immunodeficient virus markers in parenteral drug abusers. American Journal of Public Health, 78(4), 443-446.

Levey, Jay A.(1990). The pathogenesis of the HIV infection. Hospital Practice, 2(2), 31-30.

Liskin, Laurie, & Blackburn, Richard (1986). Population Reports: AIDS-A Public Health Issue, (Series L(6)). Johns Hopkins University, School of Hygiene and Public Health.

Lowery, R.; Holtzman D.; Truman, B.I.; Kann, L.; Collins, J.L.; & Kolbe, L.J.(1994). Substance use and HIV-related sexual behaviors among U.S. high school students: are they related? American Journal of Public Health, 84, 1116-20.

Lund, Adrian K., Preusser, David F., & Williams, Allan F.(1988). Drug use by tractor-trailer drivers. Journal of Forensic Sciences, 33(3), 648-661.

Lund, Adrian K., Preusser, David F., & Williams, Allan F.(1989). Drug use by tractor-trailer drivers. National Institute on Drug Abuse Research Monograph Series, 91, 47-67.

Luxenburg, Joan, & Klein, Lloyd(1984). CB radio prostitution: Technology and the displacement of deviance. Gender Issues, Sex Offenses, And Criminal Justice, 9(1/2), 71-87.

Magnusson, M.L.; Pope, M.H.; Wilder, D.G.; & Areskoug, B.(1996). Are occupational drivers at an increased risk for developing musculoskeletal disorders? Spine, 21(6), 710-7.

Mandell, W.; Eaton, W.W.; Anthony, J.C.; & Garrison, R.(1992). Alcoholism and occupations: a review and analysis of 104 occupations. Alcoholism , Clinical and Experimental Research, 16(4), 734-46.

Mann, J.; Quinn, T.C.; & Piot, P.(1986). Condom use and HIV infection among prostitutes in Zaire. (Letter) Lancet, 316-345.

Mann, Jonathan M.; Quinn, Thomas C.; Francis, Henry; Nzilambi, Nzila; Bosenge, Ngaly; Bila, Kapita; McCormick, Joseph B.; Ruti, Kalisa; Asila, Pangu Kaza, & Curran, James W.(1986). Prevalence of HTLV-III/LAV in household contacts of patients with confirmed AIDS and controls in Kinshasa, Zaire. The Journal of the American Medical Association, 256(6), 721-724.

Marx, R.; Aral, S.O.; Rolfs, R.T.; Sterk, C.E.; & Kahn, J.G.(1991). Crack, sex, and STDs. Sexually Transmitted Disease, 18, 92-101.

Mbugua, G.G.; Muthami, L.N.; Mutura, C.W,; Ooga, S.A.; Waiyaki, P.G.; Lindan, C.P.; & Hearst, N.(1995). Epidemiology of HIV infection among long distance truck drivers in Kenya. East African Medical Journal, 72(8), 515-8.

McCarthy, M.C.; Burans, J.P.; Constantine, N.T.; Hag, A.A.; Tayeb, M.E.; Dabi, M.A.; Fahkry, J.G.; Woody, J.N.; & Hyams, K.C.(1989). Hepatitis B and HIV in Sudan: a serosurvey for hepatitis B and human immunodeficiency virus antibodies among sexually active heterosexuals. American Journal of Tropical Medicine and Hygiene, 41(6), 726-31.

McElroy, J.C.; Rodreguez, J.M.; Griffin, G.C.; Morroe, P.C.; & Wilson, M.G.(1993). Career Stage, time spent on the road, and truckload driver attitudes. Transportation Journal, 33(1), 5(10).

Mellemgaard, A.; Engholm, G.; McLaughlin, J.K.; & Olsen, J.H.(1994). Occupational risk factors for renal-cell carcinoma in Denmark. Scandinavian Journal of Work, Environment and Health, 20(3), 160-5.

Minkoff, H.L. & DeHovitz, J.A.(1991). Care of women infected with the HIV. Journal of the American Medical Association, 266(16), 2253-2258.

Mizel, Steven B. & Jaret, Peter(1985). In Self Defense. New York: Harcourt Brace Jovanovich.

Morris, M.; Pramulratana. A.; Podhisita, C. & Wawer, M.J.(1995). The relational determinants of condom use with commercial sex partners in Thailand. AIDS, 9(5), 507-15.

Moses, S.; Plummer, F.A.; Bradley, J.E.; Ndinya,-Achola, J.O.; Nagelkerke, N.J.; Ronald, A.R.(1994). The association between lack of male circumcision and risk for HIV infection: A review of the epidemiological data. Sexually Transmitted Disease, 21(4), 201-10.

Muscat, J.E. & Wynder, E.L.(1995). Diesel exhaust, diesel fumes, and laryngeal cancer. Otolaryngology Head and Neck Surgery, 112(3), 437-40.

National Center for Health Statistics(NCHS)(1988). AIDS Knowledge and Attitudes for December 1987. Hyattsville, MD: Public Health Service.

Orubuloye, I.O.(1992). The role of high-risk occupations in the spread of AIDS: Truck drivers and itinerant market women in Nigeria. Australian National University.

Ostrow, D.G.(1990). Psychiatric Aspects of Human Immunodeficiency Virus Infection. Upjohn: Kalamazoo, MI

Ostrow, D.G.; Kaslow, R.A.; Fox, R.; Kingsley, L.; & Dudley, J.; (1986). Sexual and drug-use behavior in men at risk of AIDS. Program and Abstracts of the 114th Annual Meeting of the American Public Health Association; September 28-October 2, 1986, Las Vegas, Nev: 1986:96. Abstract.

Ostrow, D.G.; Van Raden, M.; Kingsley, L.; Fox, R.; Dudley, J.; & Kaslow, R.A.(1987). Drug use and sexual behavioral change in a cohort of homosexual men. International Conference on Acquired Immunodeficiency Syndrome (AIDS), June 1-5, 1987, Washington, DC. Washington, DC: Bio-DATA Publishers; 1987:157. Abstract.

Ouellet, Lawrence J.(1994). Pedal to the Metal: The Work Lives of Truckers, Philadelphia: Temple University Express.

_____ Outreach to high risk populations...(STD control). Population-Reports-June 1993, 21(1), 22(2).

Over M, & Piot P.(1993). HIV Infection and sexually transmitted diseases. In Jamison D.T., Mosley W.H., Measham A.R., Bobadilla J.L., eds. Disease Control Properties in Developing Countries. New York: Oxford University Press, 455-557.

Padian N., Hitchcock P.J., Fillilove, R.E., Kohlstadt, V., & Brunham, R.(1990). Report of the NIAID study group on integrated behavioral research for prevention and control of sexually transmitted diseases. Journal of Sexually Transmitted Disease, 17, 200-204.

Padian N., Shiboski, S.C., Jewell, N.P.(1990). The effect of number of exposures on the risk of heterosexual transmission. Journal of Infectious Disease, 161(5), 883-87.

Pais, P.(1996). HIV and India: Looking at the abyss. Tropical Medicine and International Health, 1(3), 295-304.

Petrakis, Peter L.(1988). Acquired immune deficiency syndrome and chemical dependency. (DHHS Pub #(ADM)88-1513). National Institute on Alcohol Abuse and Alcoholism. Rockville, MD.

Plummer, F.A. & Ngugi, E.N.(1990). Prostitutes and their clients in the epidemiology and control of sexually transmitted diseases. In: Holmes, K.K.; March, P-A; Sparling, P.F.; Wiesner, P.J.; Cates, W., Jr.; Lemon, S.M.,et al., eds. Sexually Transmitted Diseases. 2nd ed. New York: McGraw-Hill, Inc., 71-6.

Podhisita, C.; Wawer, M.J.; Pramualratana, A.; Kanungsukkasem, U.; & McNamara, R.(1996). Multiple sexual partners and condom use among long-distance truck drivers in Thailand. AIDS Education and Prevention, 8(6), 490-8.

Rafnsson, V. & Gunnarsdottir, H.(1991). Mortality among professional drivers. Scandinavian Journal of Work, Environment and Health, 17(5), 312-7.

Remis Robert S.(1987). When may a couple stop using condoms? Journal of the American Medical Association, 257(17), 2289.

Report: Guidelines for the use of Antiretroviral Agents in HIV-infected adults and adolescents. National Institutes of Health, Draft Document, Washington, DC, June 19, 1996.

Report of the NIH Panel To Define Principles of Therapy of HIV Infection. National Institutes of Health, Draft Document, Washington, DC, June 19, 1996.

Report Number One: Failure of U.S. Health Care System to Deal with HIV Epidemic. National Commission On AIDS Hearing, November 2nd and 3rd, 1989, Washington DC.

Robertson, L.S.(1988). Editorial: (Weight x Speed) + Instability = Hazardous Trucks. American Journal of Public Health, 78(5), 486-7.

Roper, W.; Peterson, H.B. & Curran. J.W.(1993). Commentary: Condoms and HIV/STD Prevention--Clarifying the Message. American Journal of Public Health, 83(4), 501-503.

Rosenberg, Michael J., & Weiner, Jodie M.(1988). Prostitutes and AIDS: A health department priority. American Journal of Public Health, 78(4), 418-423.

Rosenblum, L.; Darrow, W.; Witte, J.; Cohen, J.; French, J. & Gills, P.S.(1992). Sexual practices in the transmission of hepatitis B

virus and prevalence of hepatitis delta virus infection in female prostitutes in the United States. Journal of the American Medical Association, 267, 2477-81.

Rothenberg, R.R.(1983). The geography of gonorrhea: Emperical demonstration of core group transmission. American Journal of Epidemiology, 117, 688-694.

Rowe, Mona J., & Ryan, Cortlin C.(1988). Comparing state-only expenditures for AIDS. American Journal of Public Health, 78(4), 424-429.

Saracco, A; Musicco, M.& Nicolosi, A.(1993). Man-to-Woman sexual transmission of HIV: longitudinal study of 343 steady partners of infected men. Journal of Acquired Immune Deficiency Syndrome, 6, 1635-44.

Schechter, Martin T.; Craib, Kevin J.P.; Willoughby, Brian; Douglas, Bruce; McLeod, W. Alastair; Maynard, Micheal; Constance, Peter & O'Shaughnessy, Micheal(1988). Patterns of sexual behavior and condom use in a cohort of homosexual men. American Journal of Public Health, 78(12), 1535-1538.

Schmid, G.P.; Sanders L.L., Jr.; Bloust J.H., & Alexander E.R.(1986). Chancroid in the United States-reestablishment of an old disease. Journal of the American Medical Association, 258, 3265-3268.

Schmoke, Kurt(1991). Testimony before the National Commission on AIDS December 18, 1990. Executive Summary Report Number Five, National Commission on AIDS, Washington. DC.

Schnatter, A.R; Katz, A.M.; Nicolich, M.J., & Theriault, G.(1993). A retrospective mortality study among Canadian Petroleum marketing and distribution workers. Environmental Health Perspectives, 101(6), 85-99.

Schnittman, S.M.(1991). Viral burden in human immunodeficiency virus type 1(HIV-1) infection. In Fauci, A.S., moderator. Immunopathogenic mechanisms in human immunodeficiency virus(HIV-1) infection. Annals of Internal Medicine, 114(8), 678-693.

Seidman, S.N.; Mosher, W.D. & Aral, S.O.(1988). Women with multiple sexual partners: United States. American Journal of Public Health, 161, 883-887, 1990.

Shafer, M.A.; Hilton, J.F.; Ekstrand, M.; Keogh, J.; Gee, L.; & Digiorgio-Haag, L.(1993). Relationship between drug use and sexual behaviors and the occurrence of sexually transmitted diseases among high-risk male youth. Sexually Transmitted Disease, 20, 307-13.

Siegel, K.; Mesango, F.P.; Chen, J.; & Christ, G.(1989). Factors distinguishing homosexual males practicing risky and safer sex. Social Science Medicine, 28, 561-9.

Silverman, D.T.; Levin, L.I.; Hoover, R.N.; & Hartge, P.(1989). Occupational risks of bladder cancer in the United States: I. White men. Journal of The National Cancer Institute, 81(19), 1472-80.

Simon, Kenneth J., & Das, Anima(1984). An application of the Health Belief Model toward educational diagnosis for VD education. Health Education Quarterly, 11(4), 403-418.

Singh, Y.N.; Singh, K.; Joshi, R.; Rustagi, G.K.; & Malaviya, A.N.(1993). HIV infection among long-distance truck drivers in Delhi, India. Journal of Acquired Immune Deficiency Syndromes, 6(3), 323.

Singh, Y.N.; & Malaviya, A.N.(1994). Long distance truck drivers in India: HIV infection and their possible role in disseminating HIV into rural areas. International Journal of STD and AIDS, 5(2), 137-8.

Smeltzer, Suzanne C. & Whipple, Beverly(1991). Women with HIV infection: The unrecognized population. Health Values, 15(6), 41-48.

Smilgis, Martha(1987). The big chill: Fear of AIDS. Time, 129(7), 50-53.

Smith, G.L.,& Smith, K.F.(1986). Lack of HIV infection and condom use in licensed prostitutes (letter). Lancet, 2, 1393.

Solomon, S.(Speaker)(1994). AIDS in India (Cassette Recording No. CRO2 broadcast on All Things Considered 2-18-1994). National Public Radio, 635 Massachusetts Ave. NW, Washington, DC 20001-3753, 202-414-2323 ($12.50).

Staff(1996). How HIV causes AIDS. Office of Communications, National Institute of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, MD 20892.

Stall, R.(1988). The prevention of HIV infection associated with drug and alcohol use during sexual activity. Advances In Alcohol and Substance Abuse, 7(26), 73-88.

Stall, R.; McKusick, L.; Wiley, J.; Coates, T.J.; & Ostro, D.G.(1986). Alcohol and drug use during sexual activities and compliance with safe sex guidelines for AIDS. Health Education Quarterly, 13, 359-71.

STD News(1997). STDs in the news. Quarterly Newsletter of the American Social Health Association, 4(4), 13.

Steenland, N.K.; Silverman, D.T. & Hornung, R.W.(1990). Case-control study of lung cancer and truck driving in the Teamsters Union. American Journal of Public Health, 80(6), 670-4.

Steenland, N.K.; Silverman, D.T. & Zaebst, D.(1992). Exposure to diesel exhaust in the trucking industry and possible relationships with lung cancer. American Journal of Industrial Medicine, 21(6), 887-90.

Stein, Howard S., & Jones, Ian S.(1988). Crash involvement of trucks by configuration: A case-control study. American Journal of Public Health, 78(5), 491-498.

Stone, Katherine M.; Grimes, David A., & Magder, Laurence S.(1986). Primary prevention of sexually transmitted diseases. Journal of the American Medical Association, 257(17), 1763-1766.

Stoohs, R.(1995). Sleeping at the wheel...an assessment of commercial truck drivers. RT: The Journal for Respiratory Care Practitioners, 8(6), 35-6(11).

Stoohs, R.; Bingham, L.A.; Itoi, A.; Guilleminault, C. & Derment, W.C.(1995). Sleep and sleep-disordered breathing in commercial long-haul truck drivers. Chest, 107(5), 1275-82.

Stoohs, R.; Guilleminault, C. & Derment, W.C.(1993). Sleep apnea and hypertension in commercial truck drivers. Sleep, 16(8 Supp), S11-3, discussion 13-4.

Stoohs, R.; Guilleminault, C.; Itoi, A.; & Derment, W.C.(1994). Traffic accidents in commercial long-haul truck drivers: The influence of sleep disordered breathing and obesity. Sleep, 17(7), 619-23.

Summala, H. & Mikkola, T.(1994). Fatal accidents among car and truck drivers: effects of fatigue, age, and alcohol consumption. Human Factors, 36(2), 315-26.

Temoshok, Lydia, Sweet, David M., & Zich Jane(1987). A three city comparison of the public's knowledge and attitudes about AIDS. Psychology and Health, 1(1),43-60.

Troiden RR.(1974). Homosexual encounters in a highway rest stop. In E. Goode & RR. Troiden(eds.) Sexual Deviance and Sexual Deviants. New York: William Moore, 211-228.

Trucker drug tests proposed(1988, June 11). The Leaf-Chronicle, Clarksville, TN. 37040.

Tsega, E.(1990). The demographic, social and clinical presentations of one hundred Ethiopian patients with HIV infection. Ethiopian Medical Journal, 28(2), 81-8.

van den Heever, D.J. & Roets, F.J.(1996). Noise exposure of trucks: a comparison study. American Industrial Hygiene Association Journal, 57(6), 564-6.

Wasserheit, J. N.(1992). Epidemiological synergy. Interrelation-ships between human immunodeficiency virus infection and other sexually transmitted diseases. Journal of Sexually Transmitted Disease, 19, 61-77).

Weber, Jonathan N. & Weiss, Robin A.(1988). HIV infection: The cellular picture. Scientific American, 259(4), 81-87.

Weller, S.C.(1993). A meta-analysis of condom effectiveness in reducing sexually transmitted HIV. Social Science Medicine, 36, 1635-44.

Williamson, A.M.; Feyer, A.M.; & Friswell, R.(1996). The impact of work practices on fatigue in long distance truck drivers. Accident Anal Prevention, 28(6), 709-19.

Winkelstein, Warren Jr.; Lyman, David; Padian, Nancy; Grant, Robert; Samuel, Micheal; Wiley, James A.; Anderson, Robert & Lange, William (1987). Sexual practices and risk of infection by the human immunodeficiency virus: The San Francisco Men's Health Study. Journal of the American Medical Association, 257(3), 321-325.

World Health Organization(WHO)(1988). The global AIDS situation: WHO update. Journal of Public Health, 78(4), 410.

World Health Organization(WHO) Consensus Statement(1989). Sexually transmitted diseases as a risk factor for HIV transmission. The Journal of Sex Research, 26(2), 272-275.

World Health Organization(WHO)(1995). The currant global situation of the HIV/AIDS pandemic. Geneva, Switzerland: The World Health Organization.

World Health Organization(WHO Global Program on AIDS)(1996).Global prevalence and incidence of selected curable sexually transmitted diseases: Overview and estimates. Geneva: WHO.

APPENDICES

READER NOTE: Alignment of materials included in the appendix may differ from originals due to margin restraints for binding.

APPENDIX A

EARLY PROJECT ATTEMPTS

BURNS BROTHERS LETTER # 1

From: Elizabeth Tuning
Dept. of Health, Leisure & Safety
1914 Andy Holt Ave.
Knoxville, TN 37996-2700

To: Mr. Jack Burns
516 SE Morrison
Suite 1200
Portland, OR 97214

August 8, 1990

Dear Mr. Burns,

I am a Doctoral student in Health Education at the University of Tennessee. I am very interested and concerned over the AIDS issue. Enclosed you will find a brief exert from a research proposal I have been trying to get funded since last year. I feel very strong about the fact that very little concern has been given to truckers pertaining to their health habits and their potential for contracting and spreading sexually transmitted diseases, especially AIDS.

I want you to understand that I am not trying to cast a bad light on these men. I have working knowledge of the industry through a previous marriage and have close friends who drive over the road. I know that while not all truckers are promiscuous, a great many of them are and a great many of them do not practice safe sex. This leaves them, as well as their wives and friends at risk.

One of the epidemiologist at The Center For Disease Control felt that the study had merit, but , since there is no data to prove that AIDS specifically involves truckers, the CDC could not fund such a project. There is little, if any, data available focusing on truckers and their health practices. Frankly, you are my last hope. I am not financially able to do such a project without some financial help.

I have decided to scale down my original research to a smaller project. Would you be willing to help support such a project by:

(1.) letting me conduct the research in three Burns Bros. Truck Stops (Portland, Barstow, and Cheyenne);
(2.) Paying for a motel room on the premisses or immediate area for two nights at each site;
(3.) Paying for meals for those two days; and
(4.) Paying for a tank of gas at each of the designated sites?

I will be responsible for covering the other costs incurred in the project. The data would be gathered in May and June of next year.

It is my sincere hope that the data gathered from such a study can be used to educate these drivers and be used for their advantage. I hope that you will be able to assist me in my efforts. If you agree, I will be able to give you more specific information.

I will be looking forward to hearing from you. Please feel free to contact me if you need further information or have any questions. I would appreciate an answer as soon as possible.

Yours truly,

Elizabeth Tuning,

FAX TO "FLYING J" TRUCK STOP

Mr. Mark Adamson, District Manager
Flying J Truck Stop
800 Watt Road
Knoxville, TN
Fax # 539-6385

October 19, 1992

Dear Mr. Adamson:

I am writing in response to our telephone conversation to gain written permission to use the truck stop to gather data for my doctoral dissertation using a questionnaire which will be given to truckers as they approach the restaurant/store area. I will not be out around the truck bays or parking areas.

As I said in our conversation, I will do a pilot study of 20 subjects sometimes in the near future but the majority of the data will be collected with the next year. I plan to approach drivers and ask if they will participate by filling out the questionnaire and then place it in a sealed box which I have provided. Those drivers who state they do not wish to participate will be excluded from the study. No names will be attached to the questionnaires and data will be reported as group data.

I sincerely appreciate your help and cooperation in this matter and I will be looking forward to receiving your fax as conformation of our agreement.

Yours truly,

Elizabeth B. Tuning, MS, MPH, RN
Graduate Teaching Associate and
Doctoral Candidate
Enclosure

LETTER TO PETRO MANAGEMENT

December 3, 1992

Mr. Jim Cardwell
P.O. Box 26808
El Paso, Texas 79926

Dear Mr. Cardwell:

I have talked with Mr. Dan Tipton at the Petro Truck Stop in Knoxville and was referred to your office in El Paso.

I am a fourth year graduate student in the doctoral program for Health Education at the University of Tennessee at Knoxville. I have completed all the required course work and am ready to begin the final stage of study which is the completion of my doctoral research. The topic I have chosen is ***Sexual Risk Behaviors And STD/AIDS Knowledge Reported by Tractor-Trailer Drivers: A Baseline For Education.*** My interest in this population stems from the fact that I was married to a trucker for eight years and frequently traveled with him. He was employed part of the time by a driving school and I came to realize that the population of drivers is a very diverse and unique one. We became close to several of the drivers and their families and have kept track of them over the years. It is not my intention in any way to cast the drivers in a bad light. It is my hope that by gaining answers to my questions I can in some way provide information that might decrease their risk of illness.

Because of the increased numbers of drivers who frequent the Petro at Watt Road in Knoxville, with your permission, I would like to use the truck stop for my research site during this next year.

A pilot study using 20 truckers will be completed and then the major study will involve a total of 400 subjects. Subjects will be both male and female tractor-trailer drivers 21 years or older stopping and entering the restaurant/store areas chosen by means of convenience sampling techniques at varied hours throughout the day and night. Those persons approaching the restaurant and/or store area will be asked to participate. Those who state they do not wish to participate will be excluded. No identities will be solicited due to the nature of the questions. Questionnaires will be identifiable by site name only. Confidentiality and anonymity will be maintained through out the project. Details of the research are explained in the questionnaire and return of the questionnaire will be considered to be consent. Subjects will be instructed to place the completed questionnaires into a sealed box placed away from the immediate proximity of the researcher.

Because of the nature of the questions, I insist that the study be conducted in good taste and decorum at all times. I will do my best to see that there is no disruption of the normal flow of business and will not insist that anyone participate in the study if it appears that they are unwilling. Most of my work will occur in the evenings and on the

week-end when I know drivers have time to kill before delivering on Monday.

Enclosed is a copy of the purpose and justification for the study along with a copy of the questionnaire. Please feel free to contact me if you have further questions or should need clarification on any part of the study. I sincerely hope that you will consider allowing me to conduct this research at the Petro in Knoxville. Aside from the time and effort I have put into this project for the past four years I feel it is worthwhile and will contribute to the educational literature about this diverse and at risk population and allow educational information to be designed to meet their specific needs.

Yours truly,

Elizabeth B. Tuning, MS, MPH, RN
Graduate Teaching Associate and
Doctoral Candidate
Enclosures

LETTER TO FOOD LION

(Written on University of Tennessee letterhead)

March 10, 1993

Mr. Larry Wright
Food Lion Distribution Center
400 J.D. Yarnell Drive
Industrial Parkway
Clinton, TN 37716

Dear Mr. Wright:

I am writing in response to our phone conversation on March 10, 1993 to furnish the following information for your home office regarding permission to use your facility to gain access to a variety of trucks for research purposes.

As a fifth year graduate student in Health Education at the University of Tennessee in Knoxville I have completed all course work for the Doctorate Degree except the dissertation. This research project will focus on health behaviors and knowledge of AIDS/STDs reported by tractor-trailer drivers and has already been approved by my Doctoral Committee and the University of Tennessee Committee for Human Subjects.

The implications of this study are evident when one considers that a minimal amount of baseline information about a target population is needed in order for teaching-learning to be effective. There is little to nothing in the way of reported data on tractor trailer drivers specific to knowledge or health behaviors. Therefore, a teaching/learning baseline is needed to develop effective strategies for teaching this ethnographic population.

After a pilot study of 20 drivers is conducted to establish validity, 400 male and female tractor-trailer drivers will be needed for the study. With your permission, drivers will be asked to participate either as they enter the lot or the loading docks. Those who state they do not wish to participate will be excluded. Drivers will be given an envelope containing a pencil and questionnaire to be returned to a locked box upon completion. Details of the research is explained in the questionnaire and return of the questionnaire is considered to be consent.

No identities of subjects or companies will be solicited. Confidentiality and anonymity will be maintained throughout the project and all data will be reported as group data. When not in use by the researcher, questionnaires will remained in a locked file inside the locked office of the researcher. Information derived from the study will be used for educational purposes.

It is my plan to have completed gathering the data by the end of summer and would like to begin the process by April or the beginning of May. I

very much appreciate any help you might give me to secure drivers for this study. I am sure you can appreciate the importance I place on the completion of this project of which I have an investment of five years in time and money. If you have further questions feel free to contact me.

I look forward to hearing from you.

Yours truly,

Elizabeth B. Tuning, MS, MPH, RN
Enclosures

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LETTER TO T A IN GALLUP,NM with QUESTIONNAIRE

(Printed on UT Letterhead)

May 16, 1994

Mr. Mark Camp
Truck Stops of America
3404 W Highway 66
Gallup, NM 87301

Dear Mr. Camp:

Enclosed is a working copy of the questionnaire we discussed per our phone conversation. I am not sure how much information my father was able to give you about the research, so I will give you some background.

For the past five years, I have been a doctoral student in Health Education at the University of Tennessee at Knoxville. I have completed all coursework and am working on the final step toward graduation which is the completion of the research dissertation. The original idea for this project began some three and a half years ago with my trying to obtain funds through grants to survey drivers in seven areas across the U.S. I ended up with permission from Burns Brothers to use their facilities, but without financial help.

In an attempt to scale down the project into one I could handle financially, I have attempted to conduct the survey locally at the DOT Scales (traffic hazard), local companies (drivers on clock), truck stops (managers do not want soliciting or their customers bothered). As I explained on the phone, each time I venture to make a change, I have to gain approval from district offices, the four members of my Doctoral Committee, and the University Committee on Human Subjects. Therefore, each undertaking has cost me valuable time.

After numerous frustrations, road blocks, refusals, a depressed economy and some $50,000 in loans for tuition and expenses, I have exhausted my finances and reached a point where I need to complete this project as soon as possible. I chose Gallup for the sake of expediency since I already had permission from Burns Brothers, and it was their closest stop on I-40 from Knoxville. My decision was also influenced by the fact that I have a son in Albuquerque.

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Mr. Mark Camp

Page 2

I desperately need your help and would like to gather my data at your truck stop in Gallup. The enclosed questionnaire is not in its final form. It appears to be lengthy because each question/answer is listed separately and is spread over several pages.

I realize this is a sensitive topic. With a background as a registered nurse and experience working with people of varied circumstances and education, I have tried to ask the questions in a form that might be easily understood by all, yet, due to their nature keep them in good taste. If you find some are offensive, I am willing to discuss them and possibly make changes in the wording.

If you have any questions or reservations about the study, please give me the opportunity to discuss them with you. You may contact me at the office (615-974-5041) if you prefer. However, due to the time differences it may be more convenient if you reach my at home in the late afternoon or evening (615-588-8040). I will need written confirmation of approval for my committee.

Thank you for your time and consideration on this issue.

Yours truly,

Elizabeth Tuning, MS, MPH, RN
Doctoral Candidate

APPENDIX B

PILOT INSTRUMENT

CONFIDENTIAL

INSTRUCTIONS:

1. If you agree to participate in this survey please answer the following questions and then place the questionnaire in the appropriately marked box which has been provided for you. Do **NOT** put your name on the questionnaire.

AIDS is a STD. Examples of other STDs include gonorrhea, syphilis, herpes, chlamydia, genital warts.

DIRECTIONS: Please circle your answer to the following questions.

1.	T	F	A person who does not look sick can pass AIDS to someone else.
2.	T	F	I can not get AIDS from giving oral sex.
3.	T	F	If my partner does not have sores on his/her body, I do not have to worry about getting AIDS or venereal diseases.
4.	T	F	I could catch the AIDS virus from having sex with a female during her period (the curse, time of the month).
5.	T	F	Both sheep skin and latex condoms (rubbers) will equally protect you from the AIDS virus.
6.	T	F	A person can get AIDS from a mosquito bite.
7.	T	F	AIDS can be passed to others through semen.
8.	T	F	Having other STDs such as syphilis or herpes can increase your chance of getting AIDS.
9.	T	F	You can catch AIDS by shaking hands.
10.	T	F	Having a monogamous (one person only) relationship decreases the risk for getting AIDS and STDs.

DIRECTIONS: Please circle your answer to the following questions using this example:

Based on the laws of probability without considering any other known factors, I have a 50/50 chance of contracting a sexually transmitted disease (STD).	AGREE	NOT SURE	DISAGREE

May 16, 1994

Dear Survey Participant

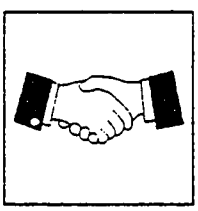
Truckers have special needs due to job diversity, mobility and work lifestyle. A study which focuses on drivers is important because there are many misconceptions about truck drivers since little is known about the truck driver as an individual. As a group it is known that they spend a great deal of time on the road, and by doing so, contribute to the lives of the general public at large. Taking part in this survey can be your way of giving a more accurate picture of the truck driving population.

Research is being conducted by Elizabeth Tuning, a doctoral candidate in the Department of Health, Leisure and Safety at the University of Tennessee in Knoxville under the supervision of her Doctoral Committee. Completion of this step is the final requirement for the Doctor of Education Degree and has been approved by the University Committee On Human Subjects.

The purpose of this study is (1) to provide information about sexually transmitted diseases (STDs) and the Acquired Immune Deficiency Syndrome (AIDS), and (2) to assess health knowledge, and behaviors of tractor-trailer drivers concerning STDs and AIDS (3) to provide a baseline for health delivery and education designed specifically for this population.

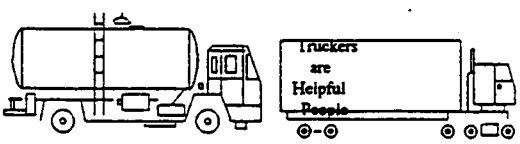
Due to the increasing number of cases of sexually transmitted diseases (STDs) and AIDS cases in the general public, it is important to establish how the present health behaviors and knowledge of truckers about STDs and AIDS interrelate to these statistics.

It is this researcher's conviction that all questions must be presented and/or answered in terms which facilitate understanding. This may require explicit language. However, this researcher is unyielding about the fact that any such responses be conducted in good taste and the asking of such questions are strictly for research purposes only.



The completion of this form indicates that you willingly take part in this research and implies consent. The only benefit derived from this research will be the knowledge gained from your participation. There are no anticipated ill effects from the participation in this survey.

You have the right to discontinue your participation at any time, however, should you choose to complete the project, it is important that you answer all questions asked. It is equally important that you be as honest as possible in your answers. This will assure a complete and valid representation of the data gathered to help form a true picture of the drivers. You can help by making sure that your information is counted...Return your questionnaire.



Thank you for taking the time out of your busy schedule to participate in this research. It is greatly appreciated.

Yours truly,
Elizabeth B. Tuning, MS, MPH, RN

11. The pill (oral contraceptive) prevents the transmission of STDs.	AGREE	NOT SURE	DISAGREE
12. If I had a STD and got treated for it, I COULD NOT contract it again.	AGREE	NOT SURE	DISAGREE
13. I could have gonorrhea and syphilis at the same time.	AGREE	NOT SURE	DISAGREE
14. A condom should be used for protection against all STDs when engaging in anal or vaginal intercourse.	AGREE	NOT SURE	DISAGREE
15. A condom should be used for protection against STDs with oral stimulation of the penis (blow job)?	AGREE	NOT SURE	DISAGREE
16. Petroleum jelly or hand lotions can safely be used as a lubricant when using a condom?	AGREE	NOT SURE	DISAGREE

The following statements relate to behaviors. Circle the appropriate response.

17. How likely are you to refuse sexual intercourse with casual sexual partners who would not accept the use of a condom (rubber)?	WOULD	NOT SURE	WOULD NOT
18. How likely are you to ask a partner about their number of sexual partners?	WOULD	NOT SURE	WOULD NOT
19. How likely are you to avoid sexual intercourse with persons who have many sexual partners?	WOULD	NOT SURE	WOULD NOT
20. How likely are you to examine regularly the genital area of sexual partner(s) for any sign of infection?	WOULD	NOT SURE	WOULD NOT
21. How likely are you to carry a condom (rubber) at all times for use whenever you have sexual intercourse with a casual sexual partner?	WOULD	NOT SURE	WOULD NOT
22. How likely are you to tell your sexual partner you suspect that you have a STD?	WOULD	NOT SURE	WOULD NOT

23. Since learning about AIDS, I have decreased my use of drugs.	AGREE	NOT SURE	DISAGREE
24. I have changed my diet, exercise, sleep patterns or level of stress to decrease my chance of getting AIDS.	AGREE	NOT SURE	DISAGREE
25. Since learning about AIDS, I have increased my use of condoms.	AGREE	NOT SURE	DISAGREE

26. AIDS is fatal.	ALWAYS	SOMETIMES	NEVER
27. How much do you know about the past sexual practices of your partners?	A LOT	LITTLE	NOTHING
28. Have you personally known anyone who is HIV positive or has AIDS?		YES	NO
39. Have you ever had a HIV (AIDS) test?		YES	NO
30. If yes, the results was (CIRCLE ONE)		NEGATIVE	POSITIVE

31. On a scale of one to ten, with ten being the highest, how much risk do you think you have for getting AIDS?
(Circle the appropriate number)

1	2	3	4	5	6	7	8	9	10

32. How often do you use the services of a (male or female) prostitute, hooker, professional for sexual pleasure?



CHECK
ONE ONLY

Check Below	
	ALL THE TIME
	75%
	50%
	25%
	LESS THAN 25%
	NEVER

34. In the last year, how often did you use a condom?



CHECK
ONE ONLY

	ALL THE TIME
	75%
	50%
	25%
	LESS THAN 25%
	NEVER

35. If you do not use condoms (rubbers):  Reasons for **NON-USE** CHECK ALL THAT APPLY		Not easily available
		Cost too much
		Embarrassed to buy them
		Decreases pleasure
		Unable to have child
		Long-term one-person relationship
		Difficuly to put on
		Use other means of protection
		Don't really protect you
36. If you use condoms:  Reasons for **USING** condoms. CHECK ALL THAT APPLY		Prevent pregnancy
		Prevent/decrease chance of getting AIDS
		Prevent/decrease chance of getting STDs.
		Freedom to engage in casual relations
		My partner insists
37. Which type of condom do you MOST OFTEN use?  CHECK ONE ONLY		Sheep Skin Condom
		Sheep Skin with Nonoxonyl 9
		Latex Condom
		Latex with Nonoxonyl 9

38. Which of the following drugs have you used within the last year?  Check all that apply.		Amphetamines (Uppers, speed)
		Cocaine (Coke, Snow, Crack)
		Any IV drug (put into the vein with a needle)
		Hashish; Marijuana (Pot, Grass, Tea)
		Morphine
		Heroin
		Codeine
		Barbiturates (Red devils, Yellow jackets)
		Quaaludes
		PCP (Hog, Peace pill, Angel dust)
		LSD (Acid)
		Beer/ Whisky
		None

39. While under the influence of any of the above drugs, have you ever had oral, anal, vaginal or rectal sex with anyone that you might not have chosen if you had not used this drug?		Yes
		No

CONFIDENTIAL

40. Which group best describes you?  CHECK ONE ONLY		Gay
		IV drug user
		Hemophilia
		Bisexual
		Sex partner of any of the above
		Multiple sexual partners PAST of PRESENT
		Partner of someone with multiple past or present sexual partners
		NONE OF THE ABOVE

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41. What is your sexual preference?  CHECK ONE ONLY		Gay/Homosexual
		Straight/Heterosexual
		Bisexual/AC/DC
		Lesbian
42. With how many different people have you had sex within the last six (6) months?  CHECK ONE ONLY		None
		1 person CNLY
		2-5
		6-10
		11 0r more
43. Have you ever engaged in oral, vaginal, rectal/anal sex with a member of your same sex?		Yes
		No
44. Which of the following do you most often choose as a sexual partner?  CHECK ONE ONLY		Paid for service male or female prostitute.
		Casual traveler or someone living where you happen to be
		BOTH of the above (Paid and Casual)
		OTHER Please explain.
45. How do you most frequently find a sexual partner?  CHECK ONE ONLY		CB radio
		Pick up in bars.
		Give rides from city to city.

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		Other (explain).

Please respond appropriately to the following questions.

46. AGE_____	48. MALE_____ FEMALE_____ (Check one only)
47. Home State _____	

49. What is your Ethnic Origin?  CHECK ONE ONLY		White (Caucasian)
		Black (African American)
		American Indian (Tribe_____)
		Hispanic
		Oriental
		Other_____
50. What is the highest level of education you have attained?  Check the HIGHEST level attained.		Less than 8th Grade
		8th Grade
		9th Grade
		10th Grade
		11th Grade
		High School
		GED
		Associate Degree in_____
		Bachelor Degree in _____
		Master Degree in _____
		Doctorate Degree in _____
		Other

51. What is your religious preference?  CHECK ONE ONLY		Baptist
		Catholic
		Lutheran
		Methodist
		Presbyterian
		Other_____
52. What is your marital status? Check one only		Married
		Single
		Divorced
		Widowed
53. How many times have you been married? Check one only		0
		1
		2
		3
		4
		5 or more
54. Driver status Check one only		Owner/operator Independent
		Owner/operator Leased to a company
		Company driver
55. How many years experience do you have driving an eighteen wheeler? Check one only		1-5 years
		6-10 years
		11-15 years
		16-20 years
		21 or more

56. **Using the map provided, CIRCLE THE NAMES of the states in which you drive your tractor trailor while working.**

APPENDIX C

SURVEY INSTRUMENT

College Of Education
Department of Health, Leisure, and Safety
1914 Andy Holt Avenue
Knoxville, Tennessee 37996-2700
(615) 974-5041

THE UNIVERSITY OF TENNESSEE
KNOXVILLE

AUGUST 8, 1993

Dear Survey Participant:

Truckers have special needs due to job diversity, mobility and work lifestyle. A study which focuses on drivers is important because there are many misconceptions about truck drivers since little is known about the truck driver as an individual. As a group it is known that they spend a great deal of time on the road, and by doing so, contribute to the lives of the general public at large. Taking part in this survey can be your way of giving a more accurate picture of the truck driving population.

Research is being conducted by Elizabeth Tuning, a doctoral candidate in the Department of Health, Leisure and Safety at the University of Tennessee in Knoxville under the supervision of her Doctoral Committee. Completion of this step is the final requirement for the Doctor of Education Degree and has been approved by the University Committee On Human Subjects.

The purpose of this study is to assess health knowledge, and behaviors of tractor-trailer drivers concerning STDs and AIDS to provide a baseline for health delivery and education designed specifically for this population.

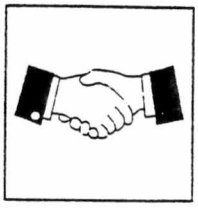
Due to the increasing number of cases of sexually transmitted diseases (STDs) and AIDS cases in the general public, it is important to establish how the present health behaviors and knowledge of truckers about STDs and AIDS interrelate to these statistics.

It is this researcher's conviction that all questions must be presented and/or answered in terms which facilitate understanding. This may require explicit questions or language which some may find embarrassing or offensive. *Please do not be offended*, but realize these questions are necessary in order to get to the true picture of health knowledge and behavior. This researcher is unyielding about the fact that any such responses be conducted in good taste and the asking of such questions is strictly for research purposes *only*.

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CONFIDENTIAL

The completion of this form indicates that you willingly take part in this research and implies consent. The only benefit derived from this research will be the knowledge that you have helped to clarify any misconceptions and myths the public may have concerning drivers in general. There are no anticipated ill effects from the participation in this survey.



You have the right to discontinue your participation at any time, however, should you choose to complete the project, it is important that you *answer all questions asked*. It is equally important that you be *as honest as possible* in your answers. This will assure a complete and valid representation of the data gathered to help form a true picture of the drivers. You can help by making sure that your information is counted...Return your questionnaire.



Thank you for taking the time out of your busy schedule to participate in this research. It is greatly appreciated.

Yours truly,

Elizabeth B. Tuning, MS, MPH, RN

TRUCKER SURVEY

INSTRUCTIONS:

1. If you agree to participate in this survey please answer the following questions. When completed place the questionnaire in the designated container.

Do NOT put your name on the questionnaire.



ANONYMOUS

I. Knowledge

NOTE THIS

AIDS is a sexually transmitted disease (STD). Examples of other STDs include gonorrhea, syphilis, herpes, chlamydia, and genital warts.

DIRECTIONS: Please circle your answer to the following questions.

1.	T	F	A person who does not look sick can pass the AIDS virus to someone else.
2.	T	F	I can not get AIDS from giving oral sex.
3.	T	F	If my partner does not have sores on his/her body, I do not have to worry about getting AIDS or venereal diseases.
4.	T	F	I could catch the AIDS virus from having sex with a female

5.	T	F	When used correctly, both sheep skin and latex condoms (rubbers) will equally protect you from the AIDS virus.
6.	T	F	A person can get AIDS from a mosquito bite.
7.	T	F	AIDS can be passed to others through semen.
8.	T	F	Having other STDs such as syphilis or herpes can increase your chance of getting AIDS.
9.	T	F	You can catch AIDS by shaking hands.
10.	T	F	Having a monogamous (one person only) relationship decreases the risk for getting AIDS and STDs.
11.	T	F	The pill (oral contraceptive) prevents the transmission of STDs.
12.	T	F	If I had a STD and got treated for it, I *COULD NOT* get it again.
13.	T	F	I could have gonorrhea and syphilis at the same time.
14.	T	F	A condom should be used for protection against all STDs when engaging in anal or vaginal intercourse.
15.	T	F	A condom should be used for protection against STDs with oral stimulation of the penis (blow job)?
16.	T	F	Petroleum jelly can safely be used as a lubricant when using a condom?

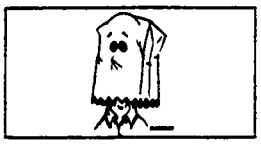
II. Behaviors

Directions: Circle the appropriate response which best corresponds to the situation.

	YES	NO
17. Would you refuse sexual intercourse with a casual sexual partner who would not accept the use of a condom (rubber)?	1	2
18. Do you ask about the past sexual practices of your potential sex partners?	1	2
19. Do you avoid sexual intercourse with persons who have many (more than one) sexual partners?	1	2
20. Do you examine the genital area of sexual partner(s) for any sign of infection?	1	2
21. Do you carry a condom (rubber) for use if you should decide to have sexual intercourse with a casual sexual partner?	1	2

22. Would you tell your sexual partner if you suspect that you have a STD? 1 2

23. Since learning about AIDS, have you altered or changed any of the following: 1 2



a. drug use 1 2

b. diet 1 2

c. sleep patterns 1 2

d. number of sexual partners 1 2

e. condom use 1 2

24. AIDS is fatal. 1 2

25. Have you personally known anyone who is HIV positive or has AIDS? 1 2

26. Have you ever had a HIV (AIDS) test? 1 2

27. If yes, the results was
(CIRCLE ONE)
Negative Positive

28. Based on your behavior, what is your risk for getting AIDS?

(Circle the appropriate number)

1	2	3	4	5	6	7	8	9	10
Lowest									Highest

NOTE THIS

Driving a truck is seen by some as a well paying and glamorous job. Therefore, drivers are often the target of propositions both on the CB radio and in person. With this statement in mind, please respond to the following questions.

29. Do you engage in casual sex? (Circle one only)

Yes NO If no, go to question 34.

30. How often do you use the services of a (male or female) prostitute, hooker, professional for sexual pleasure?

(Check one only)

____1. All the time
____2. 75% of time
____3. 50 % of time
____4. 25% of time
____5. Less than 25%
____6. Never

31. With how many different people have you had sex within the last six (6) months?

(Check one only)

____1. None
____2. 1 person only
____3. 2-5 people
____4. 6-10 people
____5. 11 or more people

32. Which of the following do you most often choose as a sexual partner? (Check all that apply)

____1. Paid for service male or female
____2. Casual traveler or some one picked up where I happen to be driving
____3. Legal Wife/Husband
____4. Live in roommate
____5. Other (Please explain) _____

33. How do you most frequently find a sexual partner?

(Check all that apply)

____1. CB radio
____2. Pick up in bars
____3. Give rides in exchange
____4. Find in truck stops
____5. Find in rest areas/parks
____6. Other _____

34. In the last year, how often did you use a condom?

(check one only)

____1. All the time
____2. 75% of time
____3. 50 % of time
____4. 25% of time
____5. Less than 25%
____6. Never

35. If you do not use condoms (rubbers), why do you not use them?

(Check all that apply)

____1. Not easily available
____2. Cost too much
____3. Embarrassed to buy
____4. Decrease pleasure
____5. Unable to have child
____6. Partner doesn't like them
____7. Long-term one-person relationship
____8. Difficult to put on
____9. Use other protection
___10. Don't protect you
___11. Other _____

Go to question 38

36. If you use condoms, what are your reasons for using them?
(Check all that apply)

____1. Prevent pregnancy
____2. Prevent/decrease chance of getting AIDS
____3. Prevent/decrease chance of getting STDs
____4. Freedom to engage in casual sex
____5. My partner insists
____6. Other_____

37. Which type of condom do you MOST OFTEN use? (Check one only)

____1. Sheep Skin Condom
____2. Sheep Skin with Nonoxonyl 9
____3. Latex Condom
____4. Latex with Nonoxonyl 9
____5. Any type that is available
____6. Not sure

38. Are you in a one-person, monogamous relationship? (Circle one only)

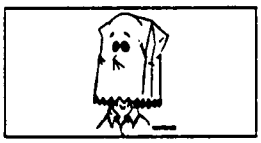
Yes No

If yes, How long have you been in this relationship?

(Fill in the correct number that applies)

____Days
____Weeks
____Months
____Years

ANONYMOUS



39. Which of the following drugs, if any, have you used within the last year?

(Choose all that apply)

____1. Amphetamines (Uppers, speed)
____2. Cocaine (Coke, Snow, Crack)
____3. Any IV drug (put into the vein with a needle)
____4. Hashish, Marijuana (Pot, Grass, Tea)
____5. Morphine
____6. Heroin
____7. Codeine
____8. Barbiturates (Red devils, Yellow jackets)
____9. Quaaludes
____10. PCP (Hog, Peace pill, Angel dust)
____11. LSD (Acid)
____12. Beer/ Whisky
____13. Poppers
____14. None

40. While under the influence of any of the above drugs, have you ever had oral, anal, vaginal or rectal sex with anyone that you might not have chosen if you had not used this drug?
(Circle one only)

Yes No

41. What is your sexual preference? (Check one only)

____1. Gay/Homosexual
____2. Lesbian
____3. Straight/Heterosexual
____4. Bisexual/AC/DC

42. Which if any of the following best describes you?
(Check all that apply)

____1. Gay/Lesbian
____2. IV drug user
____3. Hemophiliac
____4. Bisexual
____5. Sex partner of any of the above
____6. Multiple sexual partners PAST or PRESENT
____7. Partner of someone with multiple partners
____8. NONE OF THE ABOVE



43. Have you ever engaged in oral, vaginal, rectal/anal sex with a member of your same sex?
(Choose one only)

YES NO

III. Demographic Information

Please provide the information below to help classify your responses.

44. AGE_____

45. Gender
____1.Male ____2. Female

46. In which state were you born?_____

47. In which state are you licensed?_____

48. Ethnic Background:

____1. White (not Hispanic)
____2. Black (African American)
____3. Native American
(Tribe_____)
____4. Hispanic
____5. Asian
____6. Other_____

49. What is the highest level of education you have attained?

____1. Less than 8th Grade
____2. 8 thru 12th grade
____3. Graduated high school
____4. GED
____6. AS/AA in_____
____7. BS/BA in_____
____8. MS/MA in_____
____9. PhD/EdD in _____

52. How many times have you been married? (Circle one only)

0 1 2 3 4 5 or more

53. Driver status? (Check one only)

____1. Owner/operator Independent
____2. Owner/operator Leased to a company
____3. Company driver

54. How many years experience do you have driving an eighteen wheeler? (Check one only)

____1. less than 6 mos
____2. 6 mo to 1 year
____3. 1-5 years
____4. 6-10 years
____5. 11-15 years
____6. 16-20 years
____7. 21 or more

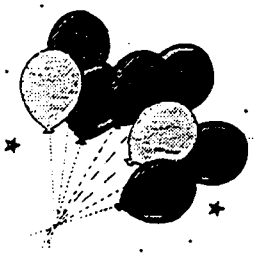
55. In which of the following states do you drive your tractor trailer while working? (Check all that apply)

____1. All continental states
____2. All continental states and Alaska
____3. Canada
____4. Only the states checked below:

____AL	____LA	____OH
____AK	____ME	____OK
____AZ	____MD	____OR
____AR	____MA	____PA
____CA	____MI	____RI
____CO	____MN	____SC
____CT	____MS	____SD
____DE	____MO	____TN
____DC	____MT	____TX
____FL	____NE	____UT
____GA	____NV	____VT
____ID	____NH	____VA
____IL	____NJ	____VI
____IN	____NM	____WA
____IA	____NY	____WV
____KS	____NC	____WI
____KY	____ND	____WY

THANK YOU !

Please place your questionnaire in the designated container to be counted.



APPENDIX D

PANEL OF EXPERTS

*(NOTE: All letters printed on UT letterheads)

April 12, 1993

Dear Mr. :

My name is Elizabeth Tuning. I am a Doctoral Candidate in Health Education at the University of Tennessee. My research project is an investigation of sexual risk behaviors and STD/AIDS knowledge reported by tractor-trailer drivers to be used as a baseline for educational programs for this population.

I am writing to request that you serve as a judge for the validation of the questionnaire to be used in the study. You are being approached for your expertise and experience in the trucking industry. Your assistance is considered invaluable to this project.

Enclosed is a copy of the questionnaire with description of subjects and methods and procedures. An attempt has been made to reflect linguistic and population appropriateness in phrasing and sentence structure and freedom from suggestion while maintaining comprehension and understanding. Finally, attempts were made to eliminate as much technical jargon as possible, while preserving the accuracy of the intended content areas.

I have enclosed a self-addressed stamped envelop for your convenience. The completion and return of the instrument at your earliest convenience would be greatly appreciated.
Thank you kindly for your assistance in this matter.

Sincerely,

Elizabeth Tuning, MS, MPH, RN
Doctoral Candidate

VITA

VITA

Elizabeth Anne Boyd Tuning was born in Hopkinsville, KY. She lived a major portion of her life in Clarksville, TN where she attended High School until the mid-Junior year when her family was stationed in Munich Germany. She graduated from Munich American High School in 1957, married and moved to Hillsboro, OR. where she first began to work in the medical field as a nurses aide.

After returning to Clarksville, TN she graduated from Austin Peay State University in 1974 with an Associate Degree in Nursing, 1986 with a Bachelor of Science in Psychology, and 1987 with a Masters in Health & Physical Education. Following graduation from APSU she entered The University of Tennessee-Knoxville and received an Associateship in the Department of Health, Leisure and Safety where she taught for four years. In December of 1991, concurrent to the Doctoral program, she received the Masters in Public Health. She received the Ed.D in Health Education in May of 1998.