

HIV Testing and an Information-Motivation (IM) Intervention in South Indian Truck Drivers in Andhra Pradesh

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ABSTRACT

Objectives: Truck drivers are thought to be at increased risk for HIV infection in India. Longitudinal risk-taking behavior in this population is poorly understood. We explored changes over time in HIV risk behavior, HIV and general health knowledge following an IM intervention.

Methods: Drivers and assistants (n=235) were recruited into a program that included an interviewer-administered questionnaire in Telugu or Hindi capturing sociodemographics, sexual behavior, general health and HIV knowledge. HIV testing, a physician initiated exam, comprehensive HIV and general health education and HIV prevention information and motivation were provided every six months between 2004-2006.

Results: Mean age was 30.2, 56% were from out of state, 73% spent <7days away from family per year, 58% reported consistent condom use when visiting a commercial sex worker (CSW) and 16% with their regular partner in the past 6 months. 2.1% (n=5) were HIV infected at baseline. In bivariate analyses, unmarried status men were more likely to be HIV-infected (OR 5.1; p=0.05). Having anal sex with a man or visiting a CSW in last six months, genital symptoms or STD diagnosis in the last 12 months and number of sex partners in the last 12 months were not associated with HIV infection (OR 0.9-2.5; p-values=0.3-1.0). The 13.5% of drivers who returned for follow-up reported increased handwashing before eating (p=0.04), were more likely to have heard of the germ theory (OR 6.3; p=0.02), and had an overall improvement in HIV knowledge (p=0.022), but did not demonstrate changes in HIV risk taking behavior.

Conclusions: This cohort's HIV prevalence was twice that of the general population. An IM intervention did not lead to changes in HIV risk taking, however, changes in general health behavior and HIV knowledge were achieved. Thus, IM interventions may need to be supplemented with other interventions to decrease HIV incidence in this high risk population.

Introduction:

Truck drivers are thought to be at increased risk for HIV infection in India. This is based mostly upon sampling drivers or their cleaners from locations where high-risk behavior may take place. Longitudinal risk-taking behavior in this population is poorly understood and difficult to study given the time they spent away from home and frequent changes in employers, trucking routes and residence. We explored changes over time in HIV risk behavior, HIV and general health knowledge following an IM intervention.

Methods:

Subjects and Setting

Drivers and their assistants (n=235) employed by or under contract through *Gati Limited* a leader of trucking transport in India participated in the study from 2004-2006. Subjects were recruited from a major *Gati* depot hub 10 km outside of Hyderabad at the beginning of highway 7, the major thoroughfare to the northern part of the country.

Data Collection

A questionnaire in Telugu or Hindi capturing sociodemographics, sexual behavior, general health, personal hygiene and HIV knowledge was administered by one of two Masters level Research Assistants working in the field of HIV for over 10 years in Andhra Pradesh. HIV ELISAs (up to 3) were performed on all participants according to government protocol. A physician initiated full body physical exam was conducted. Participants were asked to return for follow-up at 6 month intervals for two years. HIV information and motivations center was open one half day/week. Chi-square and paired t-tests were used for bivariate analyses.

Information Motivation

Culturally appropriate comprehensive infectious disease information messages through one on one counseling were provided to all participants, including methods of transmission and acquisition of common infections in line with the germ theory, and specific emphasis on information pertaining to prevention of HIV and other STDs. Motivation included exploring potential barriers to HIV and other infection prevention as well as understanding social support for HIV prevention and intention to change behavior and personal hygiene.

Table 1. Subject Characteristics (n=235)

Characteristic	Frequency	% of total
Sociodemographics		
Age (years)		
15-24	41	17.9
25-29	73	31.9
30-34	68	29.7
35+	47	20.5
Education		
None	34	14.5
Primary	36	15.3
Secondary	110	63.8
College/Post Graduate	15	6.4
Location of primary residence		
Andhra Pradesh	93	39.6
Other Indian State	132	56.1
Outside India	10	4.3
Job description		
Truck driver	204	86.8
Maintenance/Helper	31	13.2
Monthly income (2500 rupees = \$55)		
<2500	59	25.1
2501-3500	88	37.5
3501-4500	28	12.1
>4501	50	21.3
Time away from home in last 12 months		
Never	117	49.8
< 7 days	55	23.4
8 - 30 days	34	14.5
31 - 90 days	6	2.6
91 - 180 days	1	0.4
> 180 days	22	9.4
Alcohol consumption		
Every Day	17	7.3
> Twice Weekly	81	34.5
Once Weekly	73	31.1
Never	62	26.4
Marital status		
Currently married	180	76.6
Currently unmarried	55	23.4
Anal sex with man in last 6 months		
Yes	21	8.9
Never	180	76.6
Ever have sexual intercourse with female commercial sex worker		
Yes	58	24.7
No	144	61.3
Have sexual intercourse with female commercial sex worker in past 6 months		
Yes	24	10.2
No	178	75.7
Number of sex partners last 12 months		
2	21	9.0
3-5	9	3.9
>5	8	3.4

Results:

- 2.1% (n=5) INFECTED AT BASELINE
- 58% reported consistent condom use when visiting a commercial sex worker (CSW) and 16% with their regular partner in the past 6 months.
- Having sex with a female CSW and anal intercourse with the same sex in last 6 months were not associated with one another (OR=1.26; p=1.0).
- No new HIV infections detected after 24 months of follow-up
- 31 follow-up visits (13.5%)

Table 2. Correlates of HIV Infection in Indian Truck Drivers (n=235)

Characteristic	OR	p-value
Marital status	5.1	0.05
Currently unmarried		
Currently married		
Time Away From Home	0.7	0.73
Never		
< 7 days		
8 - 30 days		
31 - 90 days		
>180 days		
Number of sex partners last 12 months	1.2	0.41
2		
3-5		
>5		
Ever have sexual intercourse with a commercial sex worker	2.5	0.33
Yes		
No		
Anal sex with man in last 6 months	0.9	1.0
Yes		
No		
Genital symptoms or STD diagnosed in last 6 months	*	1.0
Yes		
No		

*Fischer's Exact Test

Non statistically significant trends

- Travel >7d/year trend towards more likely to have had CSW (OR=1.8; p=0.09).
- Trend in primary residence of city as having CSW in last 6 months (OR=1.7; p=0.28).
- Trend in living in a rural area to having more than one concurrent partner (OR=1.8; p=0.12).
- Trend in away from home for <7d/yr towards having ≤ one partner (OR=0.53; p=0.20).

Table 3. Comparison of Selected Characteristics Between Baseline and 6 and 12 Month Follow-up Visits (n=31) - Potential Effect of IM Intervention*

Characteristic	OR	p-value
Hygiene		
Water obtained from		
Well	0.3	0.03
Other		
Water obtained from		
Well	1.8	0.4
Other		
Wash hands before consuming or preparing food	†	0.04
Yes		
No		
Heard of Germ Theory	6.3	0.02
Yes		
No		
Knowledge		
HIV Knowledge	-	0.02
Baseline - 69%		
Follow-up - 85%		
Aware of STDs	1.6	0.7
Yes		
No		
Behavior		
Sexual intercourse with ≥ 1 partner in the last 6 months	0.8	1.0
Yes		
No		
Know where to purchase a condom	1.1	1.0
Yes		
No		
Use condom with regular partner in the past 6 months	1.3	1.0
Yes		
No		
Sex with CSW in last 6 months	0.3	0.2
Yes		
No		
Use condom with sex worker last six months	†	0.3
Yes		
No		

*Baseline Visit is Reference Group

†Fischer's Exact Test

‡Based on a 10-item knowledge survey

Conclusions:

General

- This cohort's HIV prevalence was twice that of the general population in India.
- Lower HIV prevalence in this cohort than other reports in India. This may be secondary to sampling strategy that precluded recruitment from high-risk areas such as *Dhabas*, interstate checkpoints, and known CSW areas.
- Traditional risk factors for HIV (days away from home, CSW utilization, prior STDs) were not present in this population, however sample size limited this analysis.
- Men who reported anal intercourse with other men did not report using CSW services.
- HIV risk behaviors in truck-drivers who followed-up did not change following an IM intervention

- Several changes in general health behavior and HIV knowledge were achieved.
- IM interventions may need to be supplemented with other interventions to decrease HIV incidence in this high risk population.

Limitations

- Small Sample Size
- Limited Follow-up
- No Control Group

Future Directions

- To increase care and research capacity with this population, greater hours of availability by physician and counselor staff are needed, especially at high shipment delivery times.
- Examine acceptability and utilization of non-condom HIV prevention methods in this high risk male population
- Offer comprehensive disease prevention information and motivational counseling to improve acceptability of HIV/STD prevention programs in this population and setting.