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Title: Influence of socio-demographic determinants in sexual behaviours with risk of contagious of HIV/AIDS in Cuba.

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Abstract

Although everyone can be exposed to the risk of infection of HIV/AIDS, people with risky behaviours are exposed to a higher degree.

That's why the study of their characteristics contributes to improve the efficiency of educational and communicational policies about this problematic, in order to revert the tendency to the increment of the incidence of new cases.

The objective is to analyze the evolution of the main characteristics of population with risk of infection of HIV/AIDS in Cuba between 2005 and 2006, and to analyze the socio-demographic determinants of risk behaviours in the total population and in the most exposed sub-populations to the HIV/AIDS: MSM and PPTS for 2006.

The information source that was used for this study was the data base obtained in HIV/AIDS Surveys of Cuba in 2005 and 2006². The dependent variable was the population with risky behaviours and as co-variables were used socio-demographic, knowledge and perception indicators.

To obtain these results was used: exploratory analysis method; the correlation analysis and the independence analysis from the contingency tables to select the co-variables that have significant statistical dependencies; and multivariate methods - logistic regression and probit regression- to evaluate the association of the variables estimating the probability of having risky behaviours, taking into account the different categories of perception of risk and economic situation.

The use of condom in occasional sexual relations experience has an increase between 2005 and 2006; while it is similar among groups of male who has sex with other men. Also was observed that most people doesn't have a real perception of contagious risk, and maintain high-risk behaviours.

Keywords: Risk behaviours; HIV/AIDS; gender; more exposed populations; Cuba.

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² National Surveys of Prevention of Infection Indicators for HIV/AIDS, 2005, 2006. Population and Development Studies Centre. National Statistics Office, Cuba.

Introduction

According to the Global Report 2006 of HIV/AIDS, 38,6 millions of people lived with HIV/AIDS around the World in 2005. 1,7 millions infected in Latin American countries³, where the HIV/AIDS epidemic maintain a stable prevalence in 0,5%, although it experience an increase in new infections over 10 000 infected individuals.

The Caribbean is the second region with a higher degree in infection rates all over the world. The prevalence raised to a level of 1,2 % in 2006, with 250 000 people living with HIV/AIDS.

Cuba⁴, on the other hand, has 0,09 % level of prevalence in the population between 15-49 years, with around 6 000 people infected. The epidemic has preponderance in the sexual transmission type, and is more frequently in men who have sex with other men (MSM). It's catalogued of low level; new infections maintain a slow growth, with more than 1 000 people getting infected in 2006.

Objectives

Although everyone can be exposed to the risk of infection of HIV/AIDS, people with risky behaviours are exposed in a higher degree. In Cuba, the transmission ways of infection are associates fundamentally to sexual relationships not protected.

That's why the study of their socio-demographic characteristics contributes to improve the effectiveness of education and communication policies about this problematic.

The objective is to analyze the evolution of socio-demographic characteristics in population with risky behaviours of infection of HIV/AIDS in Cuba between 2005 and 2006.

Also the socio-demographics determinants of risk behaviours in the total population and in the most exposed sub-populations to the HIV/AIDS: MSM and PPTS for 2006 will be considering.

Data and Methods

To obtain these results we used the data base of HIV/AIDS Surveys of Cuba for 2005 and 2006. The Sample Design corresponds to a transversal study, with interviews face to face, and probabilistic sample design of multistage complex sampling stratified type. 24 670 individuals in 12-49 age group were interviewed during 2005 in the capitals of province. For 2006, was interviewed 29 999 of the same age group for capitals of province, and for the rest of urban and rural area.

In this Investigation was considered the population from 15 to 49 years, because they have a higher proportion of people initiate sexually. In the process of harmonization of the data bases were selected the residents in the capitals of province to make comparable results. Besides in these territories is where concentrate the highest number of people living with HIV/AIDS.

³ AID epidemic update December 2006. UNAIDS-WHO

⁴ Health Statistics of Cuba. MINSAP.

The samples of the populations in study are 23 198 and 20 999 people respectively for 2005 and 2006. For some comparisons was used the information of the National Survey of Indicators of Prevention of Infection carried out in the year 2001, for people of 15-49 years, for residents in capitals of province, with a sample of 17 020 people.

The dependent variable was the population with risky behaviours -population that reported have had occasional sexual relations in the last 12 months without using condom-. As co-variables were used socio-demographic variables: sex, age, marital status, skin colour, durability of relations; educational level, economical status; knowledge: about HIV/AIDS, prevention methods, transmission ways; and risk perception indicators of infection among others.

To obtain these results was used: the method of exploratory analysis, the analysis of correlation and the independence analysis from the contingency tables to select the co-variables that has significant statistic dependencies; and multivariate methods to evaluate the association of variables, logistic regression, and probit regression, to estimate the probability of having risky behaviours taking into account different categories of risk perception and high and middle levels of education.

Types of relationships

To the effects of this investigation were considered two types of relationships, independently of the number of sexual relationships and the type of couples that they have had in the last 12 months previous to the survey.

- Stable relationship: married or united, independently if also has an occasional relation or not.
- Occasional relationship: relation of less than a year of duration.

Populations in study

Populations in study: People with stable couple, people with occasional couple, and the most exposed sub populations to HIV/AIDS, that are Men that has Sex with other Men (MSM), and People that Practice Transactional Sex (PPTS).

Variables

The dependent variable was the population with risky behaviours -population that reported have had occasional sexual relations in the last 12 months without using condom in the last sexual relationship with the occasional relationship.

Co-variables

- Socio-demographics: sex, age, educational level, marital status, stable relationship in the last 12 months, economic situation: work, study, housewife, doesn't make anything or another situation and colour of skin.
- Knowledge: transmission ways and prevention methods
- Perception of risk of Infection of HIV/AIDS

Methods

Methods of analysis bivariado were used with contingency charts and test chi², besides the T test for the comparison among periods. Among the multivariate methods, analysis of Logistical Regression and probit regression were applied.

Strengths

The comparability of samples was guaranteed in the analyzed periods.
Was harmonized the databases of the different years for carried out comparisons.

Limitations

The most exposed populations to HIV/AIDS represent the population from Cuba with good precision, but for some sub-populations with crossings of variables the sample is small with big coefficients of variation, that's why these sub-populations results should be taken in an indicative way.

Preliminary results

The population in study represents 56,8% of those more than 4 millions that reside in the capitals of province. (Figure 1)

Figure 1. Cuba. Population for residence area and capitals of province by sex. 2006.

	Total	Men	Women
Total	11 239 043	5 628 039	5 611 004
Urban area	8 484 628	4 173 996	4 310 632
Rural area	2 754 415	1 454 043	1 300 372
15-49	6 129 501	3 102 895	3 026 606
Capitals of Province	4 556 675	2 479 636	2 077 039
15-49	2 590 215	1 284 837	1 305 378
Percentage	56,8	51,8	62,8

Source: Demographic Yearbook of Cuba, 2006. CEPDE-ONE

Of the population in study more than 70% have stable relationship, being higher the percentage in women with 73%. Those who declared to have had occasional relationship in the last 12 months with one or more people represent 23%, being almost three times higher in men with 36%, with regard to women with 10%. (figure 2)

The most exposed people to the infection of the HIV/AIDS are the MSM and the PPTS. From the population in the capitals of province of 15 to 49 years, MSM represent 4,8%. Among the PPTS, men have the higher percentage with 2% while women don't arrive to 0,7%.

Figure 2. Cuba, capitals of province, percentage of people according to relationship type and the most exposed Populations to the HIV/AIDS by sex. (15 to 49 years), 2006.

Stable relationship			Occasional relationship				PPST		
Total	Men	Women	Total	Men	Women	HSH*	Total	Men	Women
70,61	68,27	72,91	23,16	36,12	10,41	4,81	1,34	2,03	0,65

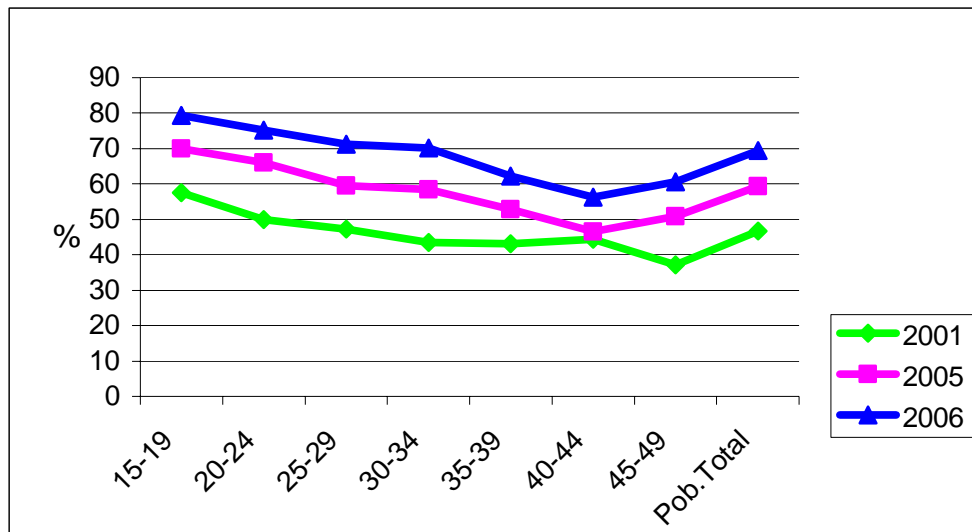
* Percentage over total of men

Source: National Survey of prevention of infection indicators of HIV/AIDS, 2006.

The changes that have happened in the population's behavior that has had Occasional Sexual Relationships were studied from those that used condom in the last occasional sexual relationship and those that didn't use it. The results are presented from three Surveys of Indicators of Prevention of Infection by the HIV/AIDS that were carried out in 2001, 2005 and 2006.

For people that have occasional sexual relationships we observed an increase in the use of condom from the year 2001 in all the age groups, being in the groups of younger ages the highest proportions of people that report their use (Graph 1).

Graph 1. - Cuba, capitals of province. Proportion of people with occasional relationships in the last 12 months that used condom in their last sexual relationship, by age groups. 2001, 2005 and 2006.



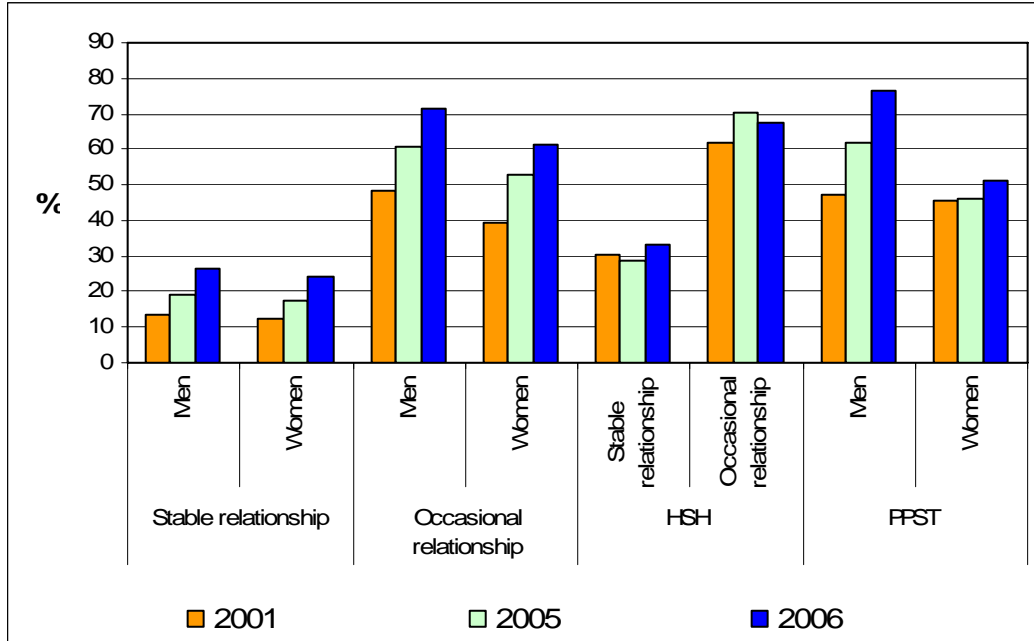
Source: National Survey of prevention of infection indicators of HIV/AIDS. 2001, 2005 and 2006.

This analysis corroborates that there are advances in the national strategy of fight against the AIDS, starting from the combined actions of the National Program Multisectorial of Fight against HIV/AIDS and the execution of the project Cuba-Global Fund of Fight against the HIV, Malaria and Tuberculosis, of which have been able to evaluate its impact in the population, being this the most important among other projects with international fund that have contributed to the confrontation of the epidemic.

With relationship to the use of condom in the different types of relationships in the three compared years, the increment of its use is appreciated for all the studied types of relationships. Only in the case of the MSM that had occasional couple is not appreciated this behavior clearly. (Graph 2)

In the statistical tests carried out to evaluate if there was significant changes in the use of condom even in stable or occasional relationships, between 2005 and 2006 they were differences statistically significant in both types of relationships. (Annex 1)

Graph 2. Cuba, capitals of province. Use of condom in different types of relationships by sex. (15 to 49 years). 2001, 2005 and 2006.



Source: National Survey of prevention of infection indicators of HIV/AIDS. 2001, 2005 and 2006.

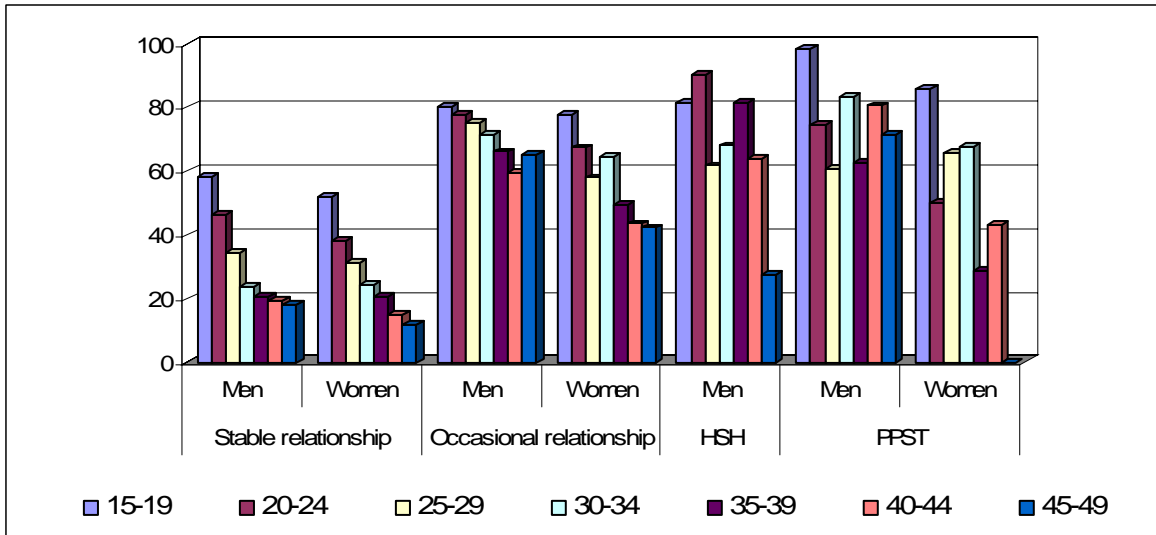
When analyze the use of condom for age groups and sex in types of relationships and subpopulations studied in 2006, the highest proportions of people that use it are among youths and decrease with the increase of the age, finding differences in the use with women's disadvantage. (Graph 3)

The tendency is to the increase of use of condom in all ages groups, being for the groups of younger ages where they have the highest proportions.

The use of condom with the occasional relationships presents higher percentages with respect to stable relationships. The use of condom in MSM is not appreciated with similar tendency with respect to men with occasional relationships, doesn't present a decrease with age, for some age groups it is higher the proportion and in other it is smaller.

The men among the PPTS have higher proportions of use of condom that women. These points out a vulnerability for women in this type relationships.

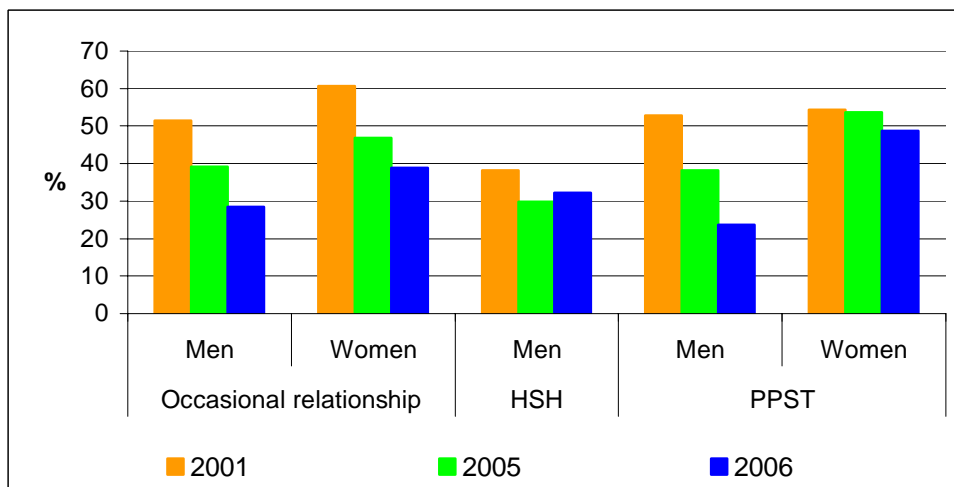
Graph 3: Cuba, capitals of province, use of condom in different types of relationship and in the most exposed populations by ages groups and sex. (15 to 49 years). 2006.



Source: National Survey of prevention of infection indicators of HIV/AIDS, 2006.

Then it is important to analyze the population with risk behaviors when having occasional sexual relationships not protected with more than one. Was observed a favorable change to decreasing in the percentage of people that were not protected in that relationship type, as much in men as in women, although it should be stood out that for the PPTS the decrease is very discreet and for the MSM between 2005 and 2006 decrease is not appreciated. (Graph 4)

Graph 4. Cuba, capitals of province, percentage of population of 15 to 49 years with risk behaviors by sex and type of relationships. 2001, 2005 and 2006.



Source: National Survey of prevention of infection indicators of HIV/AIDS. 2001, 2005 and 2006.

In the statistical tests carried out to evaluate if there was significant change in the population with risk behaviours between 2005 and 2006, were found differences statistically significant for both sexes with occasional relationships. For MSM and women PPTS, null hypothesis is not rejected, so they have the same proportions, therefore the differences are not statistically significant. (Annex 1)

For 2006, comparing the population's structure with people who has risk behaviors was observed changes in some of the studied co variables. (Annex 2). Among the covariables with changes in the general population's structure are: the age (increase the proportions of youngest people), those of mestizos and black, those of primary education decrease, for the economic situation increase women that work, study and don't make anything, and among men study and those that don't make anything. Related to marital status increase separate, divorce or widowers, with relationship to married or united.

Changes are also observed in the structures of relationship's type. (Annex 3) Increase the number of people that don't have stable relationship, and people with occasional sexual relationships with somebody that knew. Among PPTS, have higher percentages those that have risk behaviors as much the men as the women and for MSM.

The perfect knowledge of measures of prevention and transmission ways of HIV/AIDS it is considered a very important element in the population's education to achieve changes aware of behavior. It is observed that the not perfect knowledge is higher among those than they have risk behaviors that in total population; however among MSM the structures are similar to total population. (Annex 4)

The perception of risk is a very important co-variable in the analysis, having found in previous studies that people with risk behaviors don't perceive that they are in risk of infection of the HIV. It is verified in annex 4 the increase of modalities of high answer and doesn't know in both sexes.

Was studied the relation with education, to evaluate if changes took place in the risk perception: primary, secondary and high school or superior and the same ones were compared between 2005 and 2006. The analysis through the test chi² of Pearson showed significant differences in both years, and the analysis of the test chi² of not pondered pearson gave significant changes only for half superior level in both sexes, and in the men of secondary level. (Figure 3) These elements support the need to continue and enlarge the education strategies and communication.

Population's percentages with risk behaviors by categories of answer and co-variables are presented by sex for the population with occasional sexual relationships, and the most exposed populations to the HIV/AIDS. Organized in 3 figures for demographic Characteristics, type of relationships, number of relationships, risk perception, knowledge of measures of prevention and transmission ways. (Annex 5, 6 and 7)

Figure 3. Percentage of population with risk behavior of infection of HIV/AIDS by perception of risk, education level and sex. 2005-2006.

Women	2005	2006	2005	2006	2005	2006
Risk perception						
None	36,09	70,19	46,27	47,51	47,85	39,25
Low	28,35	15,12	23,97	15,32	35,5	35,92
High or already infected	2,7	0	5,25	13,14	8,17	6,65
doesn't know	32,87	14,68	24,51	24,03	8,49	18,18
Education level						
	Until primary		High school		superior	
Pearson chi2 pond	Pr = 0.000		Pr = 0.000		Pr = 0.000	
Pearson chi2 Not pond	Pr = 0.811		Pr = 0.274		Pr = 0,003	

Men	2005	2006	2005	2006	2005	2006
Risk perception						
None	33,2	20,13	46,1	35,51	35,42	28,34
Low	30,57	14,74	29,6	31,18	43,93	44,32
High or already infected	14,16	32,31	8,91	12,58	10,89	12,18
doesn't know	22,07	32,82	15,39	20,73	9,76	15,16
Education level						
	Until primary		High school		superior	
Pearson Chi2 pond	Pr = 0.000		Pr = 0.000		Pr = 0.000	
Pearson chi2 Not pond	Pr = 0.679		Pr = 0.043		Pr = 0.013	
				***		***
***	Significant No pond		Pr<0,05			

Source: National Survey of prevention of infection indicators of HIV/AIDS. 2005 and 2006.

Through the multivariate methods of logistical regression was studied the net effect of each co-variable on the dependent variable (risk behavior), maintaining under control the rest of covariables. Was transformed the covariables that had more than two categories in dummy variable. This is observed in figure 4, with the ODDS reason and the probability measured through the Wald Test, pointing out the covariables that were significant.

Total population with occasional sexual relations

Through the pattern for total population was evaluated the covariables that present a significant association with the risk behaviors, and it was observed that sex had an ODD highly significant ratio of 1,68 of women with relationship to men. This means that women although they have lower frequency in occasional sexual relationships that men, they are exposed to have risk behaviors almost one and a half point more than men. That's why the decision of making a separate model for each sex in this analysis.

It was found among women that the age presents a high significant association with risk behaviors, from those of 30 years and continues those from 25 to 29 years, with regard to the youngest of 15 to 19 years.

With relationship to education level, have a significant association with risk behaviors those that has primary level with relationship to those that has high school or superior, and women that have separate marital status.

Figura 4. ODDS ratio of logistic regression of risk sexual behavior of Active Sexual Population from 15-49 years, who has occasional sexual relations (RSO) by sex, and co-variables selected. Cuba, 2006.

Co-variables ¹		Total population						More expose population								
		Women			Men			MSM			PPTS (Women)			PPTS (Men)		
		OR	P>t	Sig	OR	P>t	Sig	OR	P>t	Sig	OR	P>t	Sig	OR	P>t	Sig
Sex	Women (Men)	1,68	0.000	***												
Age	(15-19)															
	20-24	1,52	0.129		1,09	0.618		0,08	0.000	***	0,29	0.000	***	7,94	0.000	***
	25-29	2,22	0.015	*	1,24	0.322		5,43	0.000	***	0,29	0.000	***	23,11	0.000	***
	30-49	2,79	0.000	***	1,86	0.001	***	4,66	0.000	***	0,52	0.000	***	12,14	0.000	***
Skin colour	(White)															
	Black or mestizo	1,11	0.578		0,93	0.523		1,65	0.000	***	3,02	0.000	***	0,42	0.000	***
Education level	(Superior)															
	Primary	9,78	0.040	*	1,74	0.181		5,57	0.000	***	(c)			(c)		
	High school	1,20	0.484		1,27	0.043	*	1,50	0.000	***	0,66	0.000	***	0,43	0.000	***
Economic Situation	(Study)															
	Work	1,40	0.125		1,11	0.497		0,14	0.000	***	5,51	0.000	***	1,18	0.068	
	Work home	1,37	0.348		5,03	0.012	*	(c)			0,63	0.000	***			
	Not working or looking	2,14	0.086		1,18	0.443		0,37	0.000	***	(c)			0,89	0.241	
Marital State	(Married)															
	United	1,54	0.290		1,05	0.791		0,60	0.000	***	0,67	0.011	*	2,71	0.000	***
	Separated	3,00	0.023	*	0,83	0.549		55,91	0.000	***	0,61	0.010	**	1,21	0.006	**
	Divorce or widow	1,67	0.264		1,29	0.300		0,31	0.000	***	0,07	0.000	***	1,42	0.000	***
	Single	1,72	0.214		0,83	0.364		0,07	0.000	***	0,15	0.000	***	1,49	0.000	***
Stable relation	(Tienen)															
	None	0,95	0.833		1,28	0.128		1,97	0.000	***	3,45	0.000	***	1,86	0.000	***
Know measures of prevention	(Tienen)															
	None	1,28	0.192		1,26	0.023	*	0,36	0.000	***	0,39	0.000	***	1,48	0.000	***
Know ways of transmission	(Tienen)															
	None	1,20	0.405		1,24	0.133		10,89	0.000	***	4,05	0.000	***	5,57	0.000	***
RSO conocía de antes	(No conocía)															
	Knew	1,37	0.157		1,05	0.670		0,19	0.000	***	1,29	0.002	**	0,86	0.000	***
Perception of risk	(None)															
	Low	1,02	0.931		1,16	0.254		0,24	0.000	***	3,34	0.000	***	1,72	0.000	***
	High or already infec.	2,99	0.008	**	4,78	0.000	***	1,03	0.698		22,84	0.000	***	14,68	0.000	***
	doesn't know	3,13	0.000	***	2,49	0.000	***	11,77	0.000	***	4,77	0.000	***	1,16	0.025	*

¹ Categories of reference in parenthesis

Note: Significant levels: * p<0.05; ** p<0.01; *** p<0.001.

(c) indica categorías que tienen baja su frecuencia en la población y no salieron representados en la muestra.

Source: National Survey of prevention of infection indicators of HIV/AIDS, 2006.

A strong association is presented in women that declared "doesn't know" in the possibility of infection with HIV, and continue those that declared to have a high possibility of infection. These results can give elements for the actions through different institutions that have specific projects for women in different social areas.

The Men present a very strong significant association with risk behaviors starting from 30 years with relationship to the youngest. Also present a high association: men that declared as activity chores of the home (category with very low frequency in the masculine population), for what should only be used as indicative.

Was found association with knowledge of measures of prevention of Infection against the HIV/AIDS in the category of not having a Perfect Knowledge. On the other hand was found a high significant association in those that declared in the possibility of Infection with the HIV "doesn't know" or have a high possibility of Infection with relationship to those that declared any possibility.

More exposed populations to HIV/AIDS

MSM

For MSM all variables gave a high significance in the different categories, but gets the attention that was highly significant in risk perception those that declare "lowers" possibility of risk instead of high, with relationship to those that declared any possibility, as total men and women.

With high values of OODs Ratio are: those with more than 25 years, separate ones, those that doesn't have perfect knowledge of transmission ways of HIV/AIDS and those that declare in the question of the perception of the infection possibility: " doesn't know."

PPTS

The Women PPTS also in all the variables they gave a high significance for the studied categories. The highest values in the OODs Ratio is for: those that have colour of the skin black or mestizo, work, that doesn't have stable relationship, those that don't have perfect knowledge of transmission ways of HIV/AIDS and those that declare in the question of the perception of infection possibility: that it is high or "doesn't know."

Men PPTS also in all the variables they gave a high significance in all the studied categories, except for the economic situation. High values of the OODs Ratio are for: men among 25-29 years continue those that are between 30 and 49 years and finally those that are among 20-24 with relationship to those for 15-19 years.

There is also a higher ODDs Ratio in those that are united, those that don't have perfect knowledge of transmission ways of HIV/AIDS and those that declare in the question of perception of infection possibility: that it is high with relationship to doesn't have infection possibility.

Analysis of the probability of having risk behavior in most exposed populations: MSM and PPTS.

We can continue with the analysis of associated factors to the risk behaviors, using the Probit Regression Model pondered analysis.

The analysis of the percentage changes in the occurrence probability of having risk behaviors in function of the studied co-variables is presented in the the figure 5. This analysis offers similar results to the one obtained in the logistical regression as for the net effect, highly significant the covariables for both sexes, but it also allows us to deepen the

analysis calculating the probability of having risk behaviors starting from defining the combination of certain covariables of interest, like it is shown.

MSM

Almost all co-variables presented percentage change significant with relation to risk behaviors, except for youths of 25 to 29 years respect to those of 30 to 49 years, and those that are perceived with a high probability of infection of HIV/AIDS with relationship to those that declare not to have any infection probability.

The changes of probability with higher values were for order of importance are for: Perception of Risk "doesn't know" with relationship to any, not to know the transmission ways perfectly, to be single, divorced or separated with relationship to married or united, to have between 20 and 24 years, study with relationship to those that work, those that has sexual relationships with someone already know, and those that are between 15 and 19 years with relationship to those older than 30 years.

PPTS

In the first analysis of total population was found that the change in the probability of having behaviors of risk in women with relationship to men controlling the rest of covariables was of 37,7%, for what decided to make the analysis by sex.

In women all co-variables almost presented significant percentage changes with relationship to the risk behaviors except for those that doesn't have stable relationship.

The changes of probability with higher values were for order of importance in:

Those that declare to be housewives or not to work with relationship to those that work in the question on the economic situation; the single, divorced, separated with relationship to the married or united; not to know the transmission ways perfectly; those that study with relationship to those that work; those that has among 25-29 years with relationship to those of 30 years or more and risk perception "doesn't know" with relationship to none.

For men, almost all covariables presented significant percentage changes with relationship to risk behaviors with exception those that are declared they don't Know that possibility of infection of HIV/AIDS has with relationship to those that declare not have any infection probability.

The changes of probability with higher values were for order of importance in:

Risk perception "high" with relationship to any; not to know the transmission ways perfectly; those that are between 15 and 19 years with relationship to those older than 30 years; being of black or mestizo; have between 25 and 29 years with relationship to those older than 30 years.

Figure 5. Porcentual change in the probability of present sexual risk behavior according to selected co-variables, for population 15 to 49 years being sexually active by sex.

Co-variable	Modality	Reference	Porcentual change		
			HSH	PPST	
				Ambos Sexos	Mujeres
Sex	Women	Men		37,7	
Age	15-19	30-49	21,1	22,7	17,3
	20-24	30-49	26,8	22,2	4,8
	25-29	30-49	1,7*	31,8	10,0
Skin color	Black or Mestizo	White	6,4	19,3	15,1
Education level	Superior	High school or less	9,9	8,4	9,6
Economic situation	Study	Work	23,3	38,4	3,4
	Work home, not work, other	Work	8,3	41,2	5,4
Stable relationship actual	doesn't have	have	6,6	1,9*	8,3
Know measures of prevention of infection HIV/AIDS	Non perfect knowledge	other situation	14,7	29,5	5,6
Know transmission ways of HIV/AIDS	Non perfect knowledge	other situation	31,1	39,3	22,1
Occasional sexual relation with someone knew	somebody known of before	somebody not known of before	23,2	5,6	1,5
	Single, div, separate, widowed	Married or united	26,8	41,0	2,2
Risk perception (posibility of contagious)	Low	None	19,4	25,0	8,2
Risk perception	High or already inf	None	1,8 *	51,9	51,6
Risk perception	doesn't know	None	39,3	29,2	0,3 *

* Not significant ($p < 0,5$)

Source: National Survey of prevention of infection indicators of HIV/AIDS, 2006.

Conclusions

The conclusions present a summary in three topics, on one hand general characteristics of the epidemic of AIDS in Cuba and the population's behaviors; on the other hand, the comparison of general indicators is presented for the years 2005 and 2006; lastly reference is made to the factors associated to risk behaviors according to relationship types.

In the year 2006 Cuba presented a prevalencia of people living with HIV/AIDS of 0,09%, being this the smaller percentage in the Caribbean with around 6000 infected people. The epidemic is preponderantly of sexual transmission type and concentrated on men who have sex with other men (MSM). The population was studied from 15 to 49 years, and resident in capitals of province:

- Have occasional relation with one or more people the third part of men and the tenth part of the women
- 1 of each 20 men are MSM
- Of the total of men the PPTS is around 2% and in women 3 times less than them.

The fundamental changes when comparing the Surveys of the 2005 with regard to the 2006 show the following evolution:

- The use of condom increased in all age groups in people with occasional relation.
- The use of condom increased in all types of even and in more exposed populations except in the MSM with occasional relation.
- It diminished the percentage of people with risk behaviors in all types of relations except in the MSM.
- The Perception of Risk increased fundamentally in people with risk behaviors in those of half level and superior and men with secondary level.

With regard to the factors associated to risk behaviors in the year 2006, the most significant statistically are presented by relationship type and sex:

PRSO

Women: older than 25 years, primary level, separated, perception of risk "doesn't know" or high.

Men: They are in charge of the house and they don't work, high perception of risk or " doesn't know", older than 30 years, level secondary, doesn't know the Methods of Prevention perfectly.

MSM

Separated, perception of risk "doesn't know", doesn't know transmission ways perfectly, primary or secondary level, those older than 25 years with relationship to the youngest.

PPTS

Women: High perception of risk or "doesn't know", work; they don't know the transmission ways perfectly; they don't have stable relation; color of skin black or mestizo.

Men: older than 25 years; high perception of risk; they don't know the transmission ways perfectly; they don't have relation; they don't know the methods of prevention perfectly.

Finally, results demonstrate that people need to increase their knowledge about transmission ways and prevention of HIV/AIDS, because they don't have to real perception of contagious risk yet, and that's one of the reasons they maintain to high-risk behavior. These important findings demonstrate the need of studies and actions in order to decrease the level of new contagions.

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Annex 1.

Uso del condón en distintos tipos de parejas y comportamientos de riesgo
con pareja Ocasional y en las poblaciones más expuestas
Población 15 a 49 años. Cabeceras provinciales. Comparación Años 2005 y 2006

	2005	2006	Stata ttest Comparación de medias Ho: dif=0 Ha: diff>0 or <0		Stata Pearson chi2
Uso del condón					
Pareja estable					
Ambos sexos	18,3	25,2	P> t = 0.0000	P< t =0.0000 (***)	Pr = 0.000
Mujeres	17,4	24,1	P> t = 0.0000	P< t =0.0000 (***)	Pr = 0.000
Hombres	19,28	26,38	P> t = 0.0000	P< t =0.0000 (***)	Pr = 0.000
Pareja Ocasional					
Ambos sexos	59,22	69,25	P> t = 0.0000	P< t =0.0000 (***)	Pr = 0.000
Mujeres	53,1	61,19	P> t = 0.0000	P< t =0.0000 (***)	Pr = 0.000
Hombres	60,88	71,61	P> t = 0.0000	P< t =0.0000 (***)	Pr = 0.000
No uso del condón					
Comportamiento de riesgo					
Pareja Ocasional					
Ambos sexos	40,78	30,75	P> t = 0.0000	P> t =0.0000 (***)	Pr = 0.000
Mujeres	46,9	38,81	P> t = 0.0000	P> t =0.0000 (***)	Pr = 0.000
Hombres	39,12	28,39	P> t = 0.0000	P> t =0.0000 (***)	Pr = 0.000
Poblaciones más expuestas					
HSH	29,78	32,22	P> t =0.3161	(a)	Pr = 0.000
PPST					
Ambos sexos	42,82	29,8	P > t = 0.0106	P > t = 0.0053 (**)	Pr = 0.000
Mujeres	53,62	48,72	P > t = 0.8972	(a)	Pr = 0.000
Hombres	38,19	23,62	P > t = 0.0020	P > t = 0.0010 (**)	Pr = 0.000

Las diferencias son estadísticamente significativas

*** Significativo $P > |t| = 0,001$

** Significativo $P > |t| = 0,01$

(a) No se rechaza la hipótesis nula de que sean las proporciones iguales. Las diferencias no son estadísticamente significativas

Fuente: elaborado a partir de la base de datos de la Encuesta Nacional de Indicadores de prevención de Infección por el VIH/sida

Annex 2.

Estructura de la Población sexualmente activa de 15 a 49 años según características demográficas para la Población General, los que tienen Comportamientos de Riesgo y las poblaciones más expuestas por sexo. Cabeceras provinciales. Cuba 2006.

		Población General				Comportamientos de Riesgo				HSH		PPST			
		Mujeres		Hombres		Mujeres		Hombres		Est	CV(%)	Mujeres		Hombres	
		Est	CV(%)	Est	CV(%)	Est	CV(%)	Est	CV(%)			Est	CV(%)	Est	CV(%)
Edad	15-19	8,4	5,1	9,3	4,2	12,8	17,1	11,7	10,7	9,2	24,2	15,4	35,7	6,7	35,6
	20-24	12,7	3,7	13,2	3,9	17,0	13,3	15,7	9,1	9,9	21,1	11,0	34,1	15,0	23,0
	25-29	11,4	3,9	11,7	3,9	12,4	15,7	11,2	10,4	14,9	15,5	15,4	33,1	8,6	25,9
	30-39	34,6	2	33,7	2,1	30,4	8,7	30,9	6,0	32,3	8,8	35,3	20,7	35,5	13,8
	40-49	32,9	2,1	32,2	2,4	27,4	10,6	30,4	6,0	33,8	11,2	23,0	27,4	34,2	13,6
Color de la piel	Blanco	60,1	1,5	60,2	1,5	51,2	6,5	54,1	3,7	59,8	5,6	58,0	12,2	44,4	9,6
	Negro	11,6	4,6	13,4	4,6	12,6	17,8	17,9	9,2	14,4	16,7	10,5	42,8	14,4	26,2
	Mestizo	28,2	2,8	26,4	3	36,2	8,6	28,0	6,4	25,8	12,7	31,6	17,8	41,2	12,7
Nivel de Escolaridad	Primaria o menos	1,6	10,5	1,3	13,1	1,3	45,9	1,5	33,6	3,0	52,6	0	0	2,31	56,7
	Secundaria	18,9	3,3	23,8	3,1	21,5	11,6	27,3	6,1	19,4	12,4	28,1	21,3	33,2	17,2
	Media Sup y Univ	79,5	0,9	74,9	1	77,2	3,3	71,2	2,5	77,6	3,5	71,9	8,3	64,5	8,9
Situación Económica	Trabaja	53,9	1,5	76,1	0,9	55,3	5,6	71,2	2,4	73,0	4,1	54,5	14,0	79,0	4,3
	Estudia o Estu y Trab	18,1	3,6	16,4	3,5	20,2	12,3	19,6	8,2	14,1	17,2	25,3	26,3	12,4	20,9
	Quehaceres del hogar	25,2	2,8	0,3	20,6	18,9	12,7	0,4	53,5	3,9	26,0	17,6	30,2	0,0	0,0
	No hace nada, Otra Sit.*	2,8	8,4	7,1	5,6	5,6	27,1	8,8	13,2	9,0	21,4	2,6	61,2	8,6	30,1
Estado conyugal	Unido	37,2	2,3	31,3	2,6	13,5	15,3	21,8	7,6	30,2	10,9	15,5	32,1	17,8	25,0
	Casado	39,4	2	32,3	2,4	5,6	24,7	14,1	10,1	32,3	9,6	6,2	43,0	18,2	20,3
	Separado	3,5	9,1	3,4	8,9	15,7	17,0	6,0	18,8	2,4	56,1	17,4	36,8	11,8	28,4
	Divorciado	4,6	6,7	3,3	7,3	18,1	13,5	8,2	12,6	2,2	33,6	15,3	41,8	7,4	29,7
	Viudo	0,3	24,1	0,1	32,3	1,3	44,0	0,2	64,5	0,0	0,0	1,1	100	1,0	99,0
	Soltero	15	3,7	29,5	2,7	45,8	7,0	49,7	4,3	33,0	10,9	44,4	17,6	43,9	11,3
Estado conyugal Agrupa	Casado o Unido	76,7	0,9	63,6	1,2	19,1	14,3	35,9	5,7	62,4	5,7	21,8	24,4	36,0	13,5
	Solt,div,sep,viud	23,3	3	36,4	2,1	80,9	3,4	64,1	3,2	37,6	9,5	78,2	6,8	64,0	7,6

Fuente: elaborado a partir de la base de datos de la Encuesta Nacional de Indicadores de prevención de Infección por el VIH/sida

Annex 3.

Estructura de la Población sexualmente activa de 15 a 49 años según tipo de pareja y número de parejas para la Población General, los que tienen Comportamientos de Riesgo y las poblaciones más expuestas por sexo. Cabeceras provinciales. Cuba 2006.

	Población General				Comportamientos de Riesgo				HSH		PPST			
	Mujeres		Hombres		Mujeres		Hombres		Est	CV(%)	Mujeres		Hombres	
	Est	CV(%)	Est	CV(%)	Est	CV(%)	Est	CV(%)			Est	CV(%)	Est	CV(%)
Pareja Estable														
No Tiene	9.3	5.0	22.1	3.2	66.8	4.9	51.5	4.3	20.0	14.0	55.0	12.6	50.9	9.4
Pareja Sexual Ocasional														
Tiene	13.3	4.0	42.0	2.0	100.0		100.0		41	9.12	100.0		100.0	
No. Parejas Ocasionales														
1 Pareja	8.5	4.8	14.8	3.6	61.1	5.3	39.3	4.9	10.3	21.7	49.6	16.4	23.7	19.4
2 Pareja	3.1	8.9	12.2	4.3	23.0	11.1	27.2	6.7	12.5	17.3	25.9	27.8	22.9	16.7
3 Pareja	0.7	17.2	5.4	6.9	6.0	9.1	11.2	13.7	7.5	26.0	11.0	41.2	16.6	34.6
4 Pareja	0.2	38.4	3.2	8.5	1.4	62.6	5.9	13.7	3.4	30.3	0.0	0.0	11.2	24.6
5 o más Pareja	0.3	23.2	4.5	6.9	5.2	26.6	11.9	11.5	4.4	28.5	12.6	35.6	18.5	24.0
No responde	0.4	24.2	1.9	13.8	3.4	37.3	4.5	20.6	2.8	36.3	0.9	100.2	7.1	46.4
No Pareja Ocasional	86.7	0.6	58.0	1.5	NA	NA	NA	NA	59	6.3	NA	NA	NA	NA
RSO y Conocimiento														
Anterior pareja	10.6	4.2	32.9	2.4	80.8	2.9	77.9	2.0	30.3	11.4	66.2	11.6	64.1	7.3
PPST														
	0.8	15.0	2.4	11.1	7.9	21	4.7	19.5	4.6	34.8	100.0		100.0	
HSH														
	NA	NA	4.9	8.7	NA	NA	5.4	20.6	100.0		NA	NA	9.5	30.7
Comportamientos de riesgo														
	5.2	6.1	11.9	4.1	100		100		13.2	19.7	48.7	16.2	23.6	18.2

Fuente: elaborado a partir de la base de datos de la Encuesta nacional de Indicadores de prevención de Infección por el VIH/sida

Annex 4.

**Estructura de la Población sexualmente activa de 15 a 49 años según
Percepción de Riesgo y Conocimiento de Medidas de Prevención y Vías de Trasmisión para
la Población General, la que tienen Comportamientos de Riesgo y las poblaciones más expuestas por sexo.
Cabeceras provinciales. Cuba 2006.**

	Población General				Comportamientos de Riesgo				HSH		PPST			
	Mujeres		Hombres		Mujeres		Hombres				Mujeres		Hombres	
	Est	CV(%)	Est	CV(%)	Est	CV(%)	Est	CV(%)	Est	CV(%)	Est	CV(%)	Est	CV(%)
Percepción de Riesgo														
Ninguna Posibilidad	49.9	2.3	43.9	2.5	41.4	8.1	30.1	6.7	33.4	8.4	43.1	17.8	27.2	15.6
Baja	35.1	3.1	43.2	2.5	31.3	9.2	40.4	5.4	43.9	7.7	32.1	23.6	49.4	10.8
Alta o ya infectado	3.4	8.9	3.9	7.9	8.0	20.6	12.6	10.2	9.4	25.7	8.4	51.8	12.3	35.3
No sabe	11.6	5.2	9	7.4	19.4	10.9	17.0	8.9	13.3	19.3	16.4	24.6	11.0	22.7
Conocimiento Met.Preve														
No Perfectamente	37.5	2.9	37.9	2.9	45.6	6.7	45.3	4.5	37.5	8.6	48.8	14.5	46.7	12.2
Conocimiento Vías de T														
No Perfectamente	62.1	1.7	68.8	1.6	64.4	4.6	74.1	2.6	63.3	4.7	67.4	11.3	65.3	8.2

Fuente: elaborado a partir de la base de datos de la Encuesta nacional de Indicadores de prevención de Infección por el VIH/sida

Annex 5.

**Porcentajes de la Población con Comportamiento de Riesgo
según variables demográficas por tipo de pareja y sexo.**

Población sexualmente activa de 15 a 49 años de las cabeceras provinciales. Cuba 2006.

		Parejas ocasionales		HSH	PPST	
		Mujeres	Hombres		Mujeres	Hombres
		Est	Est		Est	Est
Edad	15-19	7.9	15.1	15.3	14.3	1.9
	20-24	6.9	14.2	5.1	50.1	25.5
	25-29	5.7	11.4	14.7	34.2	39.5
	30-39	4.5	11	6.6	55.9	24.0
	40-49	4.3	11.3	20.7	69.7	22.7
Color de la piel	Blanco	4.4	10.7	8.7	40.3	34.4
	Negro	5.6	16	31.0	92.6	16.0
	Mestizo	6.6	12.6	13.9	49.6	14.6
Nivel de Escolaridad	Primaria o menos	4.2	13.7	3.2	0	0
	Secundaria	5.9	13.7	24.8	48.3	17.4
	Media Sup y Univ	5	11.3	10.7	48.9	27.7
Situación Económica	Trabaja	5.3	11.2	13.7	62.7	24.8
	Estudia o Estu y Trab	5.8	14.2	10.3	25.6	16.1
	Quehaceres del hogar	3.9	15.6	0.0	45.7	0.0
	No hace nada, Otra Sit.*	10.5	14.7	19.9	0	23.5
Estado conyugal	Unido	1.9	8.3	12.9	74.6	31.8
	Casado	0.7	5.2	10.9	61.6	23.8
	Separado	23.4	20.8	18.7	92.8	32.1
	Divorciado	20.3	29.4	27.8	36.5	24.8
	Viudo	22.5	21.3	0.0	100.0	0.0
	Soltero	15.9	20.1	14.4	23.6	18.3
Estado conyugal Agrupado	Casado o Unido	1.3	6.7	11.9	70.9	27.8
	Solt,div,sep,viud	17.9	21	15.5	42.5	21.3

Fuente: Encuesta Nacional de Indicadores de Prevención de Infección por el VIH/sida

Annex 6.

Porcentajes de la Población con Comportamiento de Riesgo según tipo de pareja, número de parejas ocasionales y conocimiento anterior de la pareja por tipo de pareja y sexo. Población sexualmente activa de 15 a 49 años de las cabeceras provinciales. Cuba 2006.

	Parejas ocasionales		HSH	PPST	
	Mujeres	Hombres		Mujeres	Hombres
	Est	Est	Est	Est	Est
Pareja Estable					
No Tiene	37.3	27.8	27.1	45.1	23.2
Pareja Sexual Ocasional					
Tiene	38.8	28.4	32.2	48.7	23.6
No. Parejas Ocasionales					
1 Pareja	37.1	31.6	36.0	38.0	10.4
2 Pareja	37.9	26.6	37.5	68.4	19.6
3 Pareja	42	24.9	12.6	31.6	16.9
4 Pareja	46.8	22	15.1	0.0	17.2
5 o más Pareja	77.6	31.4	48.6	61.6	43.0
No responde	38.9	28.6	42.4	100.0	56.2
RSO y Conocimiento					
Anterior pareja	39.7	28.2	29.4	44.3	23.1
					0.0
PPST	48.7	23.6	26.1	48.7	23.6
					0.0
HSH	NA	NA	13.2	0	26.1

Fuente: Encuesta Nacional de Indicadores de prevención de Infección por el VIH/sida

Annex 7.

Porcentajes de la Población con Comportamiento de Riesgo, según Percepción de Riesgo y Conocimiento de Medidas de Prevención y Vías de Trasmisión por tipo de pareja y sexo. Población sexualmente activa de 15 a 49 años. Cabeceras provinciales. Cuba 2006 .

	Parejas ocasionales		HSH	PPST	
	Mujeres	Hombres		Mujeres	Hombres
	Est	Est	Est	Est	Est
Percepción de Riesgo					
Ninguna Posibilidad	4.3	8.2	15.0	40.1	15.1
Baja	4.6	11.2	4.3	55.7	21.4
Alta o ya infectado	12.3	38	18.0	52.3	54.0
No sabe	8.7	22.5	34.9	55.8	20.4
Conocimiento Met. Prevenci					
No Perfectamente	6.3	14.2	16.5	44.2	29.1
Conocimiento Vías de Tran					0.0
No Perfectamente	5.4	12.8	17.2	51.9	31.0

Fuente: Encuesta Nacional de Indicadores de prevención de Infección por el VIH/sida. Cuba 2006.