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J Health Care Poor Underserved. 2016 February ; 27(1): 131–144. doi:10.1353/hpu.2016.0015.**Factors Associated with HIV Discussion and Condom Use with Sexual Partners in an Underserved Community in South Africa****Donaldson F. Conserve, PhD,**

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Abstract

We examined factors associated with discussing HIV and condom use with a sexual partner. Two cross-sectional surveys were conducted in 2004 prior to the implementation of an HIV awareness campaign in a South African community and in 2008 after a three-year education program. Overall, the proportion of individuals who had discussed HIV with a sexual partner increased from 76% in 2004 to 89% in 2008 ($p < .001$). Among respondents who had sex six months before completing the surveys, condom use significantly increased from 64% in 2004 to 79% in 2008 ($p < .05$). Respondents who discussed HIV with a sexual partner were more likely to use condoms than respondents who had not discussed HIV with a sexual partner (OR=2.08, 95% CI=1.16, 3.72). These findings indicate the importance of interventions aimed at promoting HIV awareness and discussion of HIV in communities with individuals at risk of acquiring HIV.

Keywords

Condoms; HIV; discussion; sexual partners; South Africa

Despite the efforts undertaken by the South African government to support people living with HIV/AIDS (PLWHA) and to prevent new HIV infections, South Africa continues to have one of the world's largest HIV epidemics, with an estimated 6.8 million PLWHA.¹ Some of the factors driving the epidemic in South Africa include social inequalities, mistaken public policies, mobility, sexual violence, and the legacy of apartheid that fosters mistrust among some South Africans towards science, and public health.² These social conditions combined with HIV/AIDS misconceptions have impeded the success of HIV prevention programs aiming to promote condom use.³ For example, AIDS conspiracy beliefs

and AIDS denialism have been identified as significant predictors of failure to use condoms among young adults in Cape Town, South Africa.⁴

Although studies have examined predictors of condom use among South Africans, very few of them have focused on the association between partner communication about HIV and the prevalence of condom use. From a public health perspective, communication about HIV and prevention methods with a partner is vital because it can promote HIV testing and safe sex. In a study that examined past HIV testing in Tanzania, Zimbabwe, South Africa, and Thailand, it was found that common conversations about HIV was the only significant and consistent predictor of past HIV testing in all four countries.⁵ Studies have also shown that individuals in Namibia, Tanzania and Kenya who have discussed HIV status with their partners are more likely to use condoms.⁶⁻⁸

Condom use self-efficacy (i.e., confidence in one's ability to use condoms effectively) may explain the relationship between HIV discussion and condom use.⁹ In a study that employed the Social Cognitive Model to examine self-efficacy for condom use and sexual negotiation, the authors reported that female youths in South Africa who communicated with someone other than a parent or guardian about HIV/AIDS were more likely to have higher self-efficacy.¹⁰ This relationship is supported by a recent study showing that condom negotiation self-efficacy is associated with consistent condom use with casual partners.¹¹ Research has also indicated alcohol influences condom use self-efficacy and condom use. However the findings have been mixed. An earlier study found that lower self-efficacy regarding condom use while intoxicated was associated with less actual condom use behavior during intoxicated sexual situations among college students.¹² In contrast, a more current study found that condom use self-efficacy and condom negotiation intentions were stronger for intoxicated women than for sober women.¹³

Given the relationship reported in the aforementioned studies between HIV/AIDS communication, condom use self-efficacy, and condom use more research is needed to understand factors that facilitate discussion of HIV and consistent condom use among sexually active individuals in South Africa. Thus this paper presents the results of two cross-sectional studies analyzing factors associated with having ever discussed HIV with a sex partner and condom use during sex in the past six months among individuals residing in a peri-urban community in South Africa.

Methods

Two cross-sectional community surveys assessing HIV knowledge, attitudes, uptake of voluntary counseling and testing (VCT) services, and HIV risk behaviour history were conducted four years apart in a peri-urban township in the Western Cape of South Africa. During the implementation of this study, the residents of this community were of predominantly poor socioeconomic status, with high unemployment rates and overcrowded living conditions.¹⁴ The community population increased by almost 20% between 2004-2008, and the HIV prevalence among residents 15 years of age and older increased from 23% to 25% during the same period.^{14, 15} Antiretroviral therapy (ART) became

available in this community in 2004 and 21% of HIV-infected population were receiving treatment by 2008.

Between 2004 and 2008, we performed several HIV prevention activities in the community, including a three-year education program, HIV related research studies and the scale-up of the ART program. The education campaign and study design have been described elsewhere.^{16, 17,18} Briefly, we randomly selected 10% of plots (formal sector) and 10% of households (informal sector) and invited participants 14 years and older from these plots and households in the study. Community members were trained in the consenting process and survey procedures. The recruiters visited the randomly selected houses at least three times, in order to ensure maximum opportunity to engage with eligible inhabitants. Participants who agreed to participate in the survey were asked to complete the relevant questionnaire, which was available in English and Xhosa. The questionnaires were anonymous and self-administered to reduce social desirability bias and increase the validity of the data collected. All completed questionnaires were deposited in a sealed box to ensure confidentiality. Participants received 25 rand (U.S.\$3.38) to compensate them for their time and effort for participating. All participants provided written informed consent, parents or guardians signed the informed consent together with participating minors and these studies were approved by the Human Research Ethics committee of the University of Cape Town.

Variables

The dependent variables were *ever discussed HIV with a partner* and *condom use within the past six months*. Ever discussed HIV with a partner was assessed by asking the following question: *Do you ever discuss HIV with your partner(s)?* Condom use was assessed by the following question: Have you used a male or female condom during sex in the last six months? Responses to both questions were *yes*, *no*, and *refused to answer*. Only participants who reported that they had a sexual partner were included in the analyses that examined factors associated with ever discussing HIV with a partner. The question that inquired about sexual partner was the following: *Do you have a sexual partner?* The responses were *yes*, *no*, and *refused to answer*.

The socio-demographic and independent variables selected for analysis were gender, age, education level, employment status, having heard of HIV, HIV risk perception, previous HIV test, knowledge of current sexual partner's HIV status, knowing someone infected with HIV, ever discussing HIV with a partner, sex in the past six months and, sex after drinking alcohol in the past six months. The age range included all respondents between 14 and 81 years old. The education variable consisted of the following three categories: 1) primary, secondary, and tertiary (any post-secondary education including but not limited to university, nursing school). Knowledge of current sexual partner's HIV status was assessed with the following question: Do you know if the person or people you are currently having sex with are HIV positive? The responses were the following: 1) *Yes, one of them is definitely HIV positive*; 2) *No, all of them were tested and are HIV negative*; 3) *Unsure, some of them may be HIV positive, but I cannot say for sure*; and 4) *Refuse to answer*. For the bivariate and multivariate analyses, individuals who selected one of the first two responses for the knowledge of current sexual partner's HIV status question were categorized as being aware

of their current sexual partner's HIV status and those who selected the third response were categorized as unaware. The categories for the remaining variables were *no* and *yes*. HIV risk perception was measured by the following question: *Do you think you may be at risk of getting HIV?*

Statistical analysis

Univariate analyses were performed to examine the distribution of the socio-demographic, HIV knowledge, HIV testing, sex partner, discussing HIV with a partner, sex in the past six months, and condom use variables for the 2004 and 2008 surveys. Bivariate analysis employing Chi square tests were used to compare condom use and discussing HIV with a partner with the socio-demographic variables for both 2004 and 2008. Two multivariate logistic regression models were developed to examine factors associated with discussing HIV with a partner (*no* vs. *yes*) and condom use (*no* vs. *yes*) in 2008. Only respondents who reported that they had a sexual partner and or had sex in the past six months were used in the bivariate and multivariate analyses that examined ever discussing HIV with a partner and condom use. Finally, the variables significant in the bivariate analyses for 2008 were included in the multivariate logistic regression models. All statistical tests were two-tailed and the level of statistical significance was set at $p < .05$. All analyses were performed using SPSS for Windows, Version 20 (IBM SPSS Inc., Chicago, IL).

Results

As shown in Table 1, the samples for 2004 and 2008 consisted of 640 and 1,357 participants, respectively. The samples were similar in 2004 and 2008 in terms of age, and gender, however more participants reported higher levels of education and unemployment in 2008 compared with 2004. The proportion of participants who had a sex partner significantly increased from 29% in 2004 to 70% in 2008 ($\chi^2 = 255.7$, $p < .0001$). Although, the proportion of participants who had heard of HIV in 2004 (96%) decreased slightly in 2008 (91%) ($\chi^2 = 15.8$, $p < .0001$), HIV testing was significantly higher in 2008 (71%) versus 2004 (40%) ($\chi^2 = 140$, $p < .0001$). There was no statistically significant difference in HIV risk perception and knowledge of partner's HIV status between 2004 and 2008. In 2008, a significantly higher proportion of the participants reported that they knew someone who was infected with HIV compared with 2004 (58% vs. 45%, respectively; $\chi^2 = 26.45$, $p < .001$). Among those who reported that they had a sexual partner, discussion of HIV with a partner increased from 76% in 2004 to 89% in 2008 ($\chi^2 = 23$, $p < .001$). Fewer participants reported having had sex in the past six months in 2008 (69%) compared with 2004 (89%), ($\chi^2 = 65$, $p < .001$). There was a statistically significant reduction in the proportion of individuals who drank alcohol before sex in the past six months in 2008 (9%) compared with 2004 (15%); ($\chi^2 = 65$, $p < .001$). Of those who reported that they had sex in the past six months, a significantly higher proportion of them used a condom in 2008 than in 2004 (79% vs. 64%, respectively; $\chi^2 = 35$, $p < .001$).

Bivariate analyses showed in 2008 female gender ($p < .001$), having heard of HIV ($p < .001$), knowledge of partner's HIV serostatus ($p < .05$), knowing someone infected with HIV ($p < .01$), having sex in the past six months ($p < .001$), and not consuming alcohol before sex

($p < .01$) were associated with ever discussing HIV with a sexual partner (Table 2). Bivariate analyses also revealed in 2008 younger age ($p < .001$), increasing education ($p < .001$), not consuming alcohol before sex ($p < .01$), and ever discussing HIV with a sexual partner ($p < .01$) were associated with condom use (Table 3).

Multivariate logistic regression (MLR) analysis revealed that having heard of HIV, having had sex in the past six months, and alcohol consumption before sex in the past six months remained significant predictors of discussing HIV with a partner in 2008 (Table 4). Individuals who had heard of HIV were more likely to discuss HIV with a partner (OR=8.88, 95% CI =3.05, 25.83) than individuals who had not heard of HIV. Compared with respondents who did not have sex in the past six months, respondents who had sex in the past six months were significantly more likely to discuss HIV with a partner (OR=2.37, 95% CI =1.09, 5.11). Drinking alcohol prior to engaging in sex resulted in a lesser likelihood a discussion about HIV with a partner would occur (OR= .33, 95% CI = .13, .83).

Multivariate logistic regression analysis also showed individuals who drank alcohol before sex in the past six months were also less likely to have used a condom (OR= .39, 95% CI = .22, .71) (Table 5). Respondents who have discussed HIV with a sexual partner were more likely to have used a condom than individuals who had not discussed this topic with a partner (OR=2.08, 95% CI=1.16, 3.72). Individuals aged 41 years and older were less likely to use a condom than those aged 14-25 years old (OR=.22, 95% CI=.12, .41).

Discussion

In this study, we used data from two cross-sectional surveys conducted in 2004 and 2008 to investigate the relationship between HIV knowledge and attitudes, HIV testing, ever discussing HIV with a sexual partner and condom use among residents in a peri-urban South African community. Having heard of HIV had the strongest association with ever discussing HIV with a sexual partner in 2008. This may be a result of the different types of information about HIV that became available in the community after the implementation of the community-wide HIV education campaign and implementation of an ART program after 2004. The HIV education campaign included both drama sketches and didactic teaching, and focused on addressing key HIV knowledge issues, correcting myths and misconceptions, promoting VCT and explaining HIV-related research projects in the community.¹⁶ The increase in the proportion of individuals who ever discussed HIV with a sexual partner may also be associated with the reported decrease in HIV-related stigma in the community.¹⁸ These findings support a recent HIV prevention randomized controlled trial program from Uganda that reported an improvement in participants' HIV-related information over time at a greater rate for the intervention groups compared to the control group.¹⁹

Another encouraging finding is that individuals who had sex in the past six months were more likely to ever discuss HIV with a sexual partner. The fact that individuals who were sexually active during the past six months had higher odds of discussing HIV with a sexual partner is important because our results showed that respondents who ever discussed HIV with a sexual partner are more likely to use a condom than individuals who have not discussed HIV with a sexual partner. These findings support the explanation that a

conversation about HIV and other STIs might turn to a discussion about condom use, which in turn may lead to the use of condoms.²⁰ The higher rate of condom use among individuals who have discussed HIV with a partner suggests the need for future interventions to focus on helping individuals in South Africa learn how to initiate HIV-related conversations with their sex partners. As expected, older individuals were significantly less likely to have used a condom in recent sexual encounters than younger participants in 2008. The lower rate of condom use among older participants is consistent with findings from another South African study.²¹ The belief that condoms are associated with promiscuity and HIV stigma have also been identified as reasons some people in South Africa feel ashamed to talk about or use condoms.²¹ More efforts are needed to help older individuals become receptive to condom use.

Supporting the literature on alcohol, condom use self-efficacy, and condom use we also found that participants who consumed alcohol before sex in the past months were both less likely to have ever discussed HIV with a sexual partner and have used a condom during sex in the past six months.¹² Similar to our finding, a recent study that examined the association between alcohol use and sexual behaviors in South Africa revealed that participants who had been drinking before sex were less likely to use condoms with their sexual partners.²² These results suggest the need to provide interventions that reduce alcohol use prior or during sex and promote condom use among alcohol drinkers at alcohol serving venues in South Africa. Based on the relationship between condom use self-efficacy and condom use, it is also important for the interventionist to focus on increasing condom use self-efficacy which can in turn increase condom use.²³ Future interventions can be based on a recent skills-based alcohol-related HIV risk-reduction intervention in South Africa that proved to be successful in reducing alcohol use before sex, and increasing greater condom use.²⁴

The strengths of our study include the large sample size collected randomly from a well-defined community four years apart, inclusion of residents in the same community before and after implementation of a community-wide HIV education campaign and implementation of an ART program, and ability to compare HIV knowledge, testing, and sexual behaviors, among participants. Considering the analysis only included residents in one community, the results of this study may not be generalizable to all communities in South Africa. Other limitations of our study are that we did not recruit illiterate participants and literacy may influence access to VCT or attitudes to PLWHA. In addition, the questionnaire was self-administered, which resulted in incomplete data for some questions. Moreover, the second survey was not administered to the same participants as the baseline survey and therefore matched analyses were not possible. Furthermore, one of the strengths is also a limitation because we cannot causally link the changes shown in this study to any one intervention implemented in this community: a number of potential influences include community-wide education programmes associated with numerous research studies, other community based programmes, as well as the impact of the availability of ART. Finally, due to the cross sectional design used in this study we do not know the temporal direction of the association of the co-linearity between discussing HIV with a sexual partner and condom use.

Overall, this study demonstrates that VCT alone is not enough in order to promote condom use. More resources should be invested in HIV educational campaign which would increase condom use self-efficacy and knowledge about HIV without having to seek HIV testing, especially for individuals who are not yet sexually active.

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Table 1

Demographics characteristics and background information for participants in 2004 and 2008

	2004 (Survey 1) Total n =640 n (%) ^a	2008 (Survey 2) Total n =1357 n (%) ^a	χ^2 (p value) ^b
Gender			
Male	251 (41%)	552 (44%)	.7, 0.40
Female	354 (59%)	715 (56%)	
Age			
14-25	222 (41%)	572 (45%)	11.2, < 0.01
26-40	234 (43%)	573 (45%)	
41 and above	87 (16%)	134 (11%)	
Education			
Primary	150 (26%)	159 (14%)	38.7, < 0.001
Secondary	370 (63%)	834 (72%)	
Tertiary	64 (11%)	165 (14%)	
Employed			
No	294 (52%)	840 (68%)	44.7, < 0.001
Yes	260 (46%)	386 (31%)	
Sex partner			
No	406 (71%)	378 (30%)	255.7, < 0.001
Yes	170 (29%)	860 (70%)	
Heard of HIV			
No	23 (4%)	112 (9%)	15.8, < 0.001
Yes	563 (96%)	1107 (91%)	
Perceived HIV risk			
No	262 (67%)	703 (66%)	.1, 0.73
Yes	127 (33%)	356 (34%)	
Previous HIV test			
No	302 (60%)	306 (29%)	140.3, < 0.001
Yes	203 (40%)	763 (71%)	
Knowledge of partner HIV status [*]			
HIV negative	59 (49%)	304 (45%)	.7, 0.70
HIV positive	13 (11%)	82 (12%)	
Unaware	49 (40%)	295(43%)	
Knowing someone infected with HIV			
No	297 (55%)	484 (42%)	26.45, < 0.001
Yes	243 (45%)	678 (58%)	
Ever discuss HIV with partner(s) [*]			
No	39 (24%)	87 (11%)	23.0, < 0.001
Yes	121 (76%)	738 (89%)	
Sex in the past 6 months			
No	66 (12%)	339 (29%)	64.3, < 0.001

	2004 (Survey 1) Total n =640 n (%) ^a	2008 (Survey 2) Total n =1357 n (%) ^a	χ^2 (p value) ^b
Yes	503 (88%)	834 (71%)	
Sex after drinking in the past 6 months			
No	413 (85%)	739 (91%)	8.6, < 0.01
Yes	71 (15%)	76 (9%)	
Condom Use [*]			
No	169 (36%)	168 (21%)	35.2, < 0.001
Yes	302(64%)	642 (79%)	

Therefore, the n for each variable not be equal to the total n for the survey.

^aWhile there were no substantial sections of missing data, some questions were skipped by participants.

^bChi-square test of proportions.

^{*}The values for knowledge of partner HIV status and having discussed HIV with a partner only include individuals who reported they had a sex partner. The values for condom use only include people who reported having sex six months prior to the survey.

Table 2

Characteristics of participants who reported having a sexual partner by ever discussing HIV with partner (s)

	(2004 survey 1: n =121 (75%))*	(2008 survey 2: n = 738 (90%))*
Gender		
Male	54 (71%)	306 (86%)
Female	67 (80%)	426 (92%)
	$\chi^2 = 1.6$ (p = 0.20)	$\chi^2 = 7.8$ (p < 0.001)
Age		
14-25	16 (89%)	283 (88%)
26-40	53 (77%)	378 (91%)
41 and above	31 (63%)	75 (89%)
	$\chi^2 = 5.2$ (p = 0.07)	$\chi^2 = 2$ (p = 0.36)
Education		
Primary	41 (68%)	87 (87%)
Secondary	63 (80%)	473 (89%)
Tertiary	13 (92%)	112 (91%)
	$\chi^2 = 4.7$ (p = 0.09)	$\chi^2 = .96$ (p = 0.62)
Employed		
No	49 (69%)	449 (91%)
Yes	61 (82%)	260 (88%)
	$\chi^2 = 3.6$ (p = 0.06)	$\chi^2 = 2.0$ (p = 0.20)
Heard of HIV		
No	6 (86%)	21 (64%)
Yes	113 (75%)	690 (91%)
	$\chi^2 = .39$ (p = .53)	$\chi^2 = 24$ (p < 0.001)
Previous HIV test		
No	61 (68%)	139 (88%)
Yes	42 (91%)	519 (92%)
	$\chi^2 = 9.1$ (p < .01)	$\chi^2 = 2.3$ (p = 0.13)
Knowledge of partner HIV status		
Unaware	36 (84%)	245 (87%)
Aware	52 (77%)	347 (92%)
	$\chi^2 = .84$ (P = 0.34)	$\chi^2 = 4.2$ (p < 0.05)
Knowing someone with HIV		
No	70 (75%)	247 (86%)
Yes	69 (73%)	457 (93%)
	$\chi^2 = .10$ (p = 0.74)	$\chi^2 = 9.7$ (p < 0.01)
Perceived HIV risk		
No	58 (75%)	425 (86%)
Yes	27 (79%)	223 (91%)
	$\chi^2 = .22$ (P = 0.64)	$\chi^2 = .80$ (p = 0.37)
Sex in the past 6 months		

	(2004 survey 1: n =121 (75%))*	(2008 survey 2: n = 738 (90%))*
No	11 (85%)	78 (11%)
Yes	100 (75%)	622 (87%)
	$\chi^2 = .57$ (p = 0.45)	$\chi^2 = 17$ (p < 0.001)
Sex after drinking in the past 6 months		
No	99 (76%)	663 (91%)
Yes	12 (86%)	48 (79%)
	$\chi^2 = .65$ (p = 0.42)	$\chi^2 = 8.3$ (p < 0.01)

Only clients who reported that they discussed HIV with a partner are reported in this tables.

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Table 3

Characteristics of participants who had sex in the past 6 months by condom use

	(2004 survey 1: n= 302 (64%))*	(2008 survey 2: n = 642 (79%))*
Gender		
Male	119 (65)	277 (78)
Female	164(63)	361 (80)
	$\chi^2 = .30$ (p = 0.58)	$\chi^2 = .39$ (p = 0.53)
Age		
14-25	103 (64)	272 (85)
26-40	120 (67)	327 (80)
41 and above	30 (48)	42 (55)
	$\chi^2 = 7.31$ (p < 0.05)	$\chi^2 = 32.6$ (p < 0.001)
Education		
Primary	62 (55)	62 (67)
Secondary	185 (69)	429 (81)
Tertiary	25 (56)	99 (86)
	$\chi^2 = 7.97$ (p < 0.05)	$\chi^2 = 12.8$ (p < 0.001)
Employed		
No	120 (58)	396 (79)
Yes	135 (69)	214 (78)
	$\chi^2 = 5.09$ (p < 0.05)	$\chi^2 = 1.12$ (p = 0.57)
Heard of HIV		
No	10 (59)	38 (84)
Yes	263 (63)	581 (79)
	$\chi^2 = .15$ (p = 0.70)	$\chi^2 = .75$ (p = 0.39)
Ever test		
No	136 (63)	128 (83)
Yes	110 (70)	440 (79)
	$\chi^2 = 1.95$ (p = 0.16)	$\chi^2 = 1.19$ (p = 0.28)
Perceived HIV risk		
No	133 (61%)	368 (81%)
Yes	75 (71%)	205 (78%)
	$\chi^2 = 3.72$ (p < 0.05)	$\chi = 1.26$ (p = 0.26)
Sex after drinking in the past 6 months		
No	242 (61%)	582 (81%)
Yes	52 (81%)	49 (67%)
	$\chi^2 = 9.4$ (p < 0.01)	$\chi^2 = 7.5$ (p < 0.01)
Ever discuss HIV with partner(s)		
No	59 (64.8)	50 (67)
Yes	199 (62)	567 (81)
	$\chi^2 = .24$ (p = 0.62)	$\chi^2 = 8.4$ (p < 0.01)

Only clients who used a condom during sex in the past six months are reported in this table.

Table 4

Multivariate logistic regression model assessing discussing HIV with partner in 2008

	Adjusted odds ratio (95% CI)	<i>p</i> value
Gender		
Male	1	0.05
Female	1.81 (.99 - 3.27)	
Heard of HIV		
No	1	< 0.001
Yes	8.88 (3.05 - 25.83)	
Knowledge of partner's HIV status		
Unaware	1	0.18
Aware	1.50 (.82 - 2.73)	
Knowing someone infected with HIV		
No	1	0.23
Yes	1.46 (.79 - 2.69)	
Sex in the past 6 months		
No	1	< 0.05
Yes	2.37 (1.09 - 5.11)	
Sex after drink in the past 6 months		
No	1	< 0.05
Yes	.33 (.13 - .83)	

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Table 5

Multivariate logistic regression model assessing condom use in 2008

	Adjusted odds ratio (95% CI)	<i>p</i> value
Age		
14-25	1	< 0.001
26-40	.73 (.47 - 1.12)	
41 and above	.22 (.12 - .41)	
Education		
Primary	1	0.13
Secondary	1.47 (.86 - 2.53)	
Tertiary	3.07 (1.11 - 8.54)	
Sex after drinking in the past 6 months		
No	1	<0.01
Yes	.39 (.22 - .71)	
Discuss HIV with partner		
No	1	< 0.05
Yes	2.08 (1.16 - 3.72)	