

Prevalence and determinants of AIDS conspiracy and AIDS denialist beliefs and implications for risky sexual behaviour among young adults in Cape Town, South Africa



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Introduction

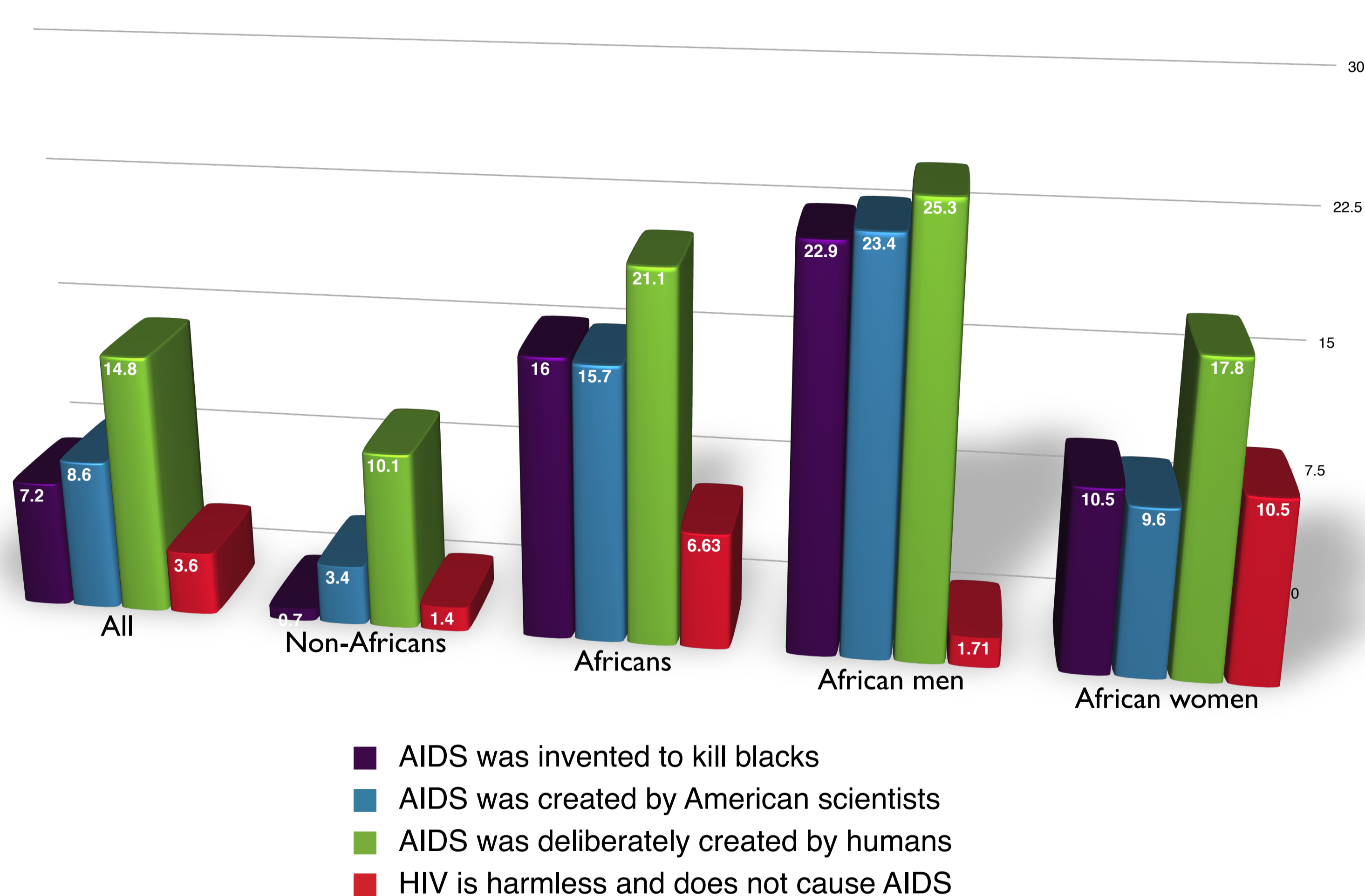
This paper explores the prevalence of AIDS conspiracy beliefs (about the origin of AIDS) and AIDS denialist beliefs amongst young adults in Cape Town. Since there is some evidence that AIDS conspiracy beliefs are associated with risky sex – in particular, a greater likelihood of reporting sex without a condom (Bogart & Thorburn Bird 2003; Bogart & Thorburn 2005) – the relationship between these beliefs and condom use is thoroughly investigated. It also explores the socio-economic correlates of these beliefs and the potential effect of civil society mobilisation around HIV/AIDS on both conspiracy and denial beliefs and on sexual behaviour.

The data analysis was conducted on near-final data from the 2009 wave of the Cape Area Panel Study (CAPS). The dataset comprises 3 142 respondents between the ages of 19 and 35 from all races and income groups, but mostly Africans and Coloureds (42% and 49% of respondents respectively). To the best of our knowledge, this is the first analysis of its kind (apart from a preliminary analysis presented in October 2009, on which this paper is partly based) that is able to take into account both the race and class dimension of these beliefs and their implications for sexual behaviour (Nattrass 2009) and the first to investigate the relationship between the activities of the prominent South African AIDS activist organisation, Treatment Action Campaign (TAC), and conspiracy/denial beliefs as well as sexual risk-taking. The paper is also distinctive in separating out AIDS conspiracy beliefs (about the origin of AIDS) from AIDS denialist beliefs. This is because these beliefs do not necessarily fit logically together, and in any case appear to appeal to different social bases and 'oppositional transcripts'.

Prevalence and determinants of conspiracy and denialist beliefs

We found that a significant minority of young adults hold conspiracy and denialist beliefs, with substantial variation according to race and gender (see graph below). In the case of AIDS conspiracy beliefs, these are driven by race and gender (with Africans, especially men, being more likely to hold these beliefs. With regard to AIDS denialist beliefs, race was not a significant predictor, and women were more likely to hold these beliefs than men.

AIDS conspiracy and AIDS denialist beliefs: agree or agree strongly (%)



We modelled the determinants of AIDS conspiracy and denialist beliefs using a series of logistic multiple regressions:

- Dependent variables are dummies taking value of one if a respondent scored > an average of 3 on a conspiracy index comprising three questions and if the respondent did not disagree that "HIV is harmless and does not cause AIDS", respectively.
- Independent variables include demographic variables (race sex and age), educational attainment (grades completed, whether respondent graduated from high school and tertiary education) and socio-economic position (household income per capita and employment status).
- The regressions also include a political attitudinal indicating whether the respondent trusts Thabo Mbeki's health minister (who, with the President, supported denialism and promoted conspiracy theories) more than her successor (who held conventional views) and a dummy variable for no contact with the Treatment Action Campaign (1 if respondent has never heard of the TAC).
- Some models include a variable indicating poor mental health (which is associated with conspiracy beliefs, though it is not clear which makes which more likely).

Results of note include:

- Race and gender remain highly significant determinants of conspiracy beliefs ($p=0.000$ and 0.003 respectively) and of denialist beliefs ($p=0.001$ and 0.000 respectively), despite the inclusion of socio-economic controls.
- Education has a substantial effect: respondents with tertiary education being 74% less likely to hold conspiracy beliefs (not statistically significant) and 71% less likely to hold denialist beliefs ($p=0.013$) than those without.
- Trusting Mbeki's health minister more than her successor was a substantial and significant predictor of holding conspiracy beliefs. Respondents who trusted her more were 5.4 times as likely to hold conspiracy beliefs ($p=0.000$) and 4.8 times as likely if contact with the Treatment Action Campaign is added to the model ($p=0.000$).
- Contact with the Treatment Action Campaign is a substantial and significant predictor of holding conspiracy and denialist beliefs. Respondents who had never heard of TAC were 2.5 times as likely to hold conspiracy beliefs ($p=0.000$) (1.5 times when trust in Mbeki's minister is included in the model, $p=0.026$) and 1.9 times as likely to hold denialist beliefs (with or without trust in Mbeki's minister included) ($p=0.000$).

While these results point to the importance of political leadership and civil society mobilisation in shaping the public's understanding of HIV/AIDS, we are even more interested in the role of AIDS conspiracy and denialist beliefs in sexual behaviour – in particular the use or non-use of condoms.

Modelling condom use: the role of conspiracy, denial and civil society mobilisation

We used a series of logistic multiple regressions to model condom use at the most recent sexual encounter (we believe this variable to be more accurately reported than frequency of condom use). These models are reported in the large table in the bottom right-hand corner of this poster.

Independent variables included the demographic, educational and socio-economic variables used in the models for conspiracy and denialist beliefs. We also control for the following independent variables:

- Perception of HIV risk: this variable indicates whether the respondent considers him/herself at risk of contracting HIV. This is clearly relevant to condom use, and should help isolate the effects of conspiracy and denialist beliefs, since the latter may in part determine perceptions of risk.
- Knowing someone who died of AIDS is included in these models because it is frequently suggested that behaviour change may be inspired by the fear that results from seeing others die of the disease (e.g. in explaining drops in HIV incidence in Uganda in the 1990s). Furthermore, when we investigate the effect of contact with the Treatment Action Campaign on condom use, we wish to exclude a potential selection effect which may result from the possibility suggested by anecdotal evidence that people often become aware of or join organisations like the TAC after a family member or friend becomes ill with and/or dies from AIDS.
- Relationship type: Since not using a condom is not necessarily an indicator of sexual risk-taking if a respondent believes him or herself to be in a monogamous relationship, we control for both monogamy and concurrent partnerships (as reported for the relationship of which the sexual encounter for which condom use is reported formed part).

We found that both conspiracy and denialist beliefs and contact with TAC have significant predictive value for condom use.

Regressions were run on the full sample and for Africans only. We found that for the sample as a whole and for Africans, condom use was positively associated with being in a concurrent relationship, being male and being relatively young. AIDS denialist and AIDS conspiracy beliefs were substantially and significantly negatively associated with condom use. Education and household income per capita were positively related to condom use in the entire sample (controlling for being African which was also significantly associated with condom use), but these variables were not significant for Africans as a whole. Never having heard of TAC (i.e. having had no contact with the organisation whatsoever) was also substantially and significantly negatively associated with condom use, in models for all respondents (controlling for being African) both when conspiracy and denialist beliefs are included and excluded. However, when regressions are run for Africans only, never having heard of TAC loses its statistical significance when conspiracy and denialist beliefs are included in the model (although the size of its effect remains almost identical).

When these regressions are repeated for African men and women separately, we find that relationship status matters in different ways for men and women. For men, being in a perceived monogamous relationship is negatively associated with condom use (but this is not a significant factor for women), whereas for women being in a concurrent relationship is significantly associated with condom use (but this is not statistically significant in the case of men). Age matters for women (the older they are, the less likely they are to use condoms) but not for men. Holding AIDS denialist beliefs or AIDS conspiracy beliefs reduces the likelihood of condom use for both men and women (but in the case of women, the relationship is weaker and if both variables are included in a regression together they lose statistical significance).

Mediational analyses

An important question raised by the effect of conspiracy and denialist beliefs and contact with TAC on condom use is how these effects could come about and whether the effect is mediated by any intermediate variables such as attitudes towards condoms as suggested by Bogart & Thorburn (2005). Since contact with TAC is also negatively associated with holding conspiracy and/or denialist beliefs, it is also pertinent to determine whether the effect of the TAC variable on condom use may be mediated by conspiracy or denialist beliefs.

- We were unable to replicate Bogart & Thorburn's results (for African-American men) either for all respondents or African men. Trust in condoms (the supposed mediating variable) was not statistically significantly related to condom use, and including it in the multiple regression model did not reduce the significance of conspiracy beliefs. We could therefore not find evidence in our data that the effect of conspiracy beliefs on condom use is mediated by attitudes to condoms.
- We conducted a series of regressions to test whether the effect of contact with TAC on condom use is mediated by conspiracy or denialist beliefs respectively for all respondents and for African respondents. In both cases (conspiracy beliefs and denialist beliefs), the significance of contact with TAC is not reduced when the analysis is conducted on all respondents. However, for both conspiracy and denialist beliefs, when the analysis is restricted to Africans, the significance of contact with TAC is reduced when the supposed mediating variables are added to the model (though not to insignificance), suggesting that the effect of TAC on condom use may be partially mediated by both conspiracy and denialist beliefs in Africans. Sobel-Goodman mediation tests (Ender 2005) suggest that a very small proportion of the effect of contact with TAC on condom use is mediated by conspiracy and denialist beliefs (about 1% and 5% respectively).

Selected References

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Logistic multiple regression models for condom use at last sex

Model Variable	Entire sample					Africans only				
	1	2	3	4	5	1a	2a	3a	4a	5a
African	Odds ratio 4.467 p-value 0.000*** (Std error) (0.558)	4.571 0.000*** (0.574)	3.411 0.000*** (0.436)	4.696 0.000*** (0.593)	3.827 0.000*** (0.502)					
Female	0.295 0.000*** (0.030)	0.280 0.000*** (0.028)	0.260 0.000*** (0.027)	0.283 0.000*** (0.029)	0.254 0.000*** (0.027)	0.412 0.000*** (0.063)	0.380 0.000*** (0.060)	0.365 0.000*** (0.060)	0.382 0.000*** (0.060)	0.343 0.000*** (0.058)
Age	0.885 0.000*** (0.017)	0.884 0.000*** (0.017)	0.883 0.000*** (0.017)	0.884 0.000*** (0.017)	0.884 0.000*** (0.017)	0.948 0.045* (0.025)	0.950 0.055 (0.025)	0.952 0.063 (0.025)	0.950 0.054 (0.025)	0.952 0.069 (0.026)
School grades completed	1.062 0.079 (0.037)	1.067 0.058 (0.037)	1.043 0.228 (0.036)	1.060 0.092 (0.037)	1.035 0.321 (0.056)	1.031 0.558 (0.053)	1.033 0.531 (0.054)	1.025 0.641 (0.053)	1.024 0.646 (0.053)	1.011 0.836 (0.053)
High school graduate	1.271 0.177 (0.226)	1.259 0.196 (0.224)	1.206 0.296 (0.217)	1.286 0.158 (0.229)	1.255 0.207 (0.226)	1.176 0.587 (0.350)	1.089 0.775 (0.324)	1.066 0.829 (0.316)	1.173 0.595 (0.351)	1.162 0.617 (0.349)
Tertiary education	1.234 0.111 (0.163)	1.257 0.083 (0.166)	1.246 0.097 (0.165)	1.221 0.132 (0.162)	1.196 0.181 (0.160)	1.240 0.282 (0.248)	1.229 0.301 (0.245)	1.258 0.249 (0.250)	1.202 0.360 (0.241)	1.182 0.406 (0.238)
Household income p/c	1.000 0.002** (0.000)	1.000 0.001** (0.000)	1.000 0.010** (0.000)	1.000 0.002** (0.000)	1.000 0.011* (0.000)	1.000 0.620 (0.000)	1.000 0.665 (0.000)	1.000 0.618 (0.000)	1.000 0.684 (0.000)	1.000 0.715 (0.000)
Employed	1.095 0.372 (0.112)	1.081 0.441 (0.110)	1.062 0.555 (0.108)	1.091 0.395 (0.111)	1.070 0.513 (0.110)	1.025 0.869 (0.151)	0.999 0.994 (0.147)	1.003 0.983 (0.147)	1.013 0.929 (0.150)	1.008 0.956 (0.150)
Concurrent partnership	1.255 0.146 (0.196)	1.342 0.058 (0.208)	1.441 0.019* (0.225)	1.247 0.159 (0.195)	1.320 0.079 (0.209)	1.509 0.025* (0.277)	1.605 0.009** (0.292)	1.708 0.003** (0.311)	1.489 0.031* (0.275)	1.526 0.023* (0.283)
Monogamous partnership	0.889 0.373 (0.117)	0.909 0.466 (0.119)	0.957 0.741 (0.126)	0.880 0.333 (0.116)	0.913 0.496 (0.122)	0.912 0.577 (0.151)	0.927 0.645 (0.153)	0.984 0.921 (0.162)	0.895 0.508 (0.150)	0.918 0.610 (0.154)
Perceived not at risk of HIV	0.821 0.046* (0.081)	0.807 0.030* (0.080)	0.916 0.387 (0.092)	0.817 0.042* (0.081)	0.910 0.353 (0.093)	0.980 0.897 (0.152)	0.973 0.859 (0.150)	1.043 0.786 (0.161)	0.964 0.813 (0.150)	0.998 0.989 (0.157)
Knows a person who died of AIDS	1.113 0.342 (0.126)	1.182 0.141 (0.135)	1.113 0.343 (0.126)	1.168 0.176 (0.134)	1.158 0.203 (0.134)	1.299 0.064 (0.184)	1.387 0.022* (0.198)	1.290 0.070 (0.181)	1.380 0.025* (0.199)	1.379 0.026* (0.199)
Aids denialist beliefs	0.513 0.000*** (0.058)			0.548 0.000*** (0.063)	0.576 0.000*** (0.066)	0.504 0.000*** (0.077)			0.557 0.000*** (0.088)	0.567 0.000*** (0.090)
Aids conspiracy beliefs		0.439 0.000*** (0.086)		0.528 0.001** (0.106)	0.597 0.010** (0.119)		0.470 0.000*** (0.097)		0.569 0.009** (0.123)	0.608 0.022* (0.132)
Never heard of TAC			0.479 0.000*** (0.053)		0.519 0.000*** (0.058)			0.603 0.007** (0.113)		0.693 0.057 (0.134)
Observations	2295	2295	2295	2295	2295	1060	1060	1060	1060	1060
Pseudo R²	0.168	0.162	0.171	0.171	0.182	0.069	0.064	0.060	0.075	0.077