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**Statistics and Stories: Experimental
Evidence on HIV Testing in Ghana**

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Abstract

Understanding what drives people to get tested for HIV is essential for designing effective communication strategies that promote test uptake. In this study, I use a randomized experiment to examine whether and how the format of information affects HIV testing behavior among university students in Ghana. Providing factual information on HIV incidence and the availability of nearby testing services increased actual testing rates by about 1 percentage point from a near-zero baseline. In contrast, adding a story about the testing experience to this statistical information did not generate any additional effect. Financial incentives, introduced non-randomly, raised testing rates to 11 percent. Interestingly, the impact of the original information treatments diminished when a financial incentive became available. Analysis of belief outcomes indicates that the information treatment primarily worked by increasing awareness of local testing services and correcting misperceptions about peer testing behavior, rather than by heightening perceived risk. However, stories did not enhance the treatment effect on beliefs or information recall beyond the impact of simple statistical facts. These results suggest that factual information can effectively address informational barriers to HIV testing in this context, while narrative elements offer no measurable added benefit for influencing this high stakes health behavior.

JEL codes: D83, D91, I12, J13

Keywords: Beliefs; Recall; Stories/Narratives; Statistics; Information; Incentives

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1 Introduction

UNAIDS identifies HIV testing as a critical tool for the early detection and treatment of HIV, and as being central to global strategies aimed at controlling the disease. While testing rates have improved greatly across several countries in Sub-Saharan Africa, substantial heterogeneity persists, with notable gaps in uptake among specific populations and regions. Understanding the behavioral drivers of testing uptake is essential to address this disparity. A growing literature in development economics demonstrates that households in developing countries respond to health-related risk information, with measurable effects on preventive behavior (Madajewicz et al., 2007; Jalan and Somanathan, 2008; Dupas, 2011; Cohen et al., 2015; Adam, 2024). The findings of these studies imply that people could potentially respond to information about HIV prevalence, transmission, and treatment by increasing testing uptake.

Recent advances in behavioral economics further suggest that the format in which information is delivered can significantly affect its salience and persuasive power. In particular, story-based interventions may enhance the effectiveness of information by fostering emotional engagement and/or by improving recall (Graeber et al., 2024). For example, in market settings, stories have been shown to increase memory retention and influence decision-making, suggesting a mechanism through which they could also enhance health-seeking behaviors, such as HIV testing.

In this paper, I study how different formats used to present information on HIV affect beliefs and testing behavior. In particular, I test whether adding stories enhances the impact of statistical HIV information on individuals' beliefs and their likelihood of undergoing HIV testing. I also examine how these informational interventions interact with financial incentives. This extension is motivated by prior experimental evidence showing that monetary incentives can increase uptake of health interventions (Thornton, 2008; Banerjee et al., 2010). A policy relevant question, therefore, is whether information campaigns persuade the same individuals as campaigns that rely on financial incentives, or whether these approaches are more effective with different types of individuals. Understanding this distinction is important for designing cost effective public health strategies. If information and incentives appeal to different types of individuals, combining them may expand overall reach and impact. However, if they target the same individuals, one approach might be more efficient or sustainable than the other.

I study these issues in Ghana, which presents a compelling case study given its persistently low rate of HIV testing relative to that of other Sub-Saharan African countries. As of 2018, only 57% of people living with HIV in Ghana were aware of their status, compared to about 65% in Western and Central Africa, and 85% in Eastern and Southern Africa (UNAIDS, 2019). The common mode of infection across all of these countries is sexual contact. These regional statistics also show that the HIV testing gaps are particularly large for men, young people, and children. For this reason, my study sample consists of 2,518 predominantly male university students aged 18 to 32. Persons falling into this demographic are likely to be sexually active and therefore at elevated risk of contracting

the HIV infection. Given that infection rates in Ghana are generally higher in urban areas, the location of the university is also relevant for understanding information processing and health behavior among young adults in urban settings.

The experimental setup is structured to address three research questions: (1) Does provision of information about HIV incidence and ease of testing increase HIV testing? (2) Does complementing statistical information with stories about HIV amplify informational impact by enhancing emotional engagement or recall? (3) Do information treatments influence the same individuals who are responsive to financial incentives, or do they appeal to different types of individuals?

The experimental design consists of two survey rounds implemented online via Qualtrics. In the baseline survey, all participants are randomly assigned to one of two treatment arms (Statistics vs. Story treatment groups) or to a control group. Those in the Statistics treatment receive information about HIV incidence in Ghana in 2022, along with details about the availability of HIV testing services at a clinic on the university campus. Importantly, these pieces of information are presented as statistical facts. Participants in the Story treatment receive the same information delivered in the Statistics treatment arm, in addition to a brief personal narrative describing an individual's experience with HIV testing at the clinic. The control group receives no information.

In the endline survey, conducted two weeks later, all participants are offered a one time voucher that allows them to take a free HIV test at the designated clinic introduced in the information treatments, and a participation fee of 20 Ghana cedi (about 0.92 day of minimum wage earnings). Ten days after the vouchers are distributed, all respondents receive a text message informing them that they are eligible to receive an additional 50 Ghana cedi (about 2.3 days of minimum wage earnings) if they are among the first 150 people to take a test at the clinic.

The primary outcome of interest is HIV testing behavior. Because all participants received an HIV test voucher, I use administrative records from the designated clinic to measure voucher redemption, which serves as a behavioral proxy for actual HIV testing. In addition to this behavioral outcome, I examine the effect of the information treatments on beliefs about key HIV statistics in Ghana as of 2023, including infection rates, the age distribution of new cases, testing trends, and the average time required to take and receive test results. Prior beliefs were elicited before the information intervention, while posterior beliefs were collected after the intervention to capture both misperceptions and belief impacts. I also assess respondents' recall of the information content presented at baseline to shed light on mechanisms through which the treatments may influence behavior. Finally, I evaluate the effect of the information on general HIV knowledge, providing a broader measure of learning beyond specific belief updates.

I find that respondents exposed to the information treatments systematically updated their beliefs relative to the control group. Posterior beliefs about HIV incidence and peer testing behavior shifted in the direction of the information provided. Respondents revised their perceived infection risk downward and their perceptions of peer testing activity upward. These belief changes were accompanied by modest but significant gains in testing access awareness and HIV-related knowledge. Increased awareness of where to

obtain a test and understanding that treatment prevents transmission also both rose by 9%. Surprisingly, respondents who received the additional narrative information do not update their beliefs more than those who received only statistical information. Further, they are no more likely to recall the content of the information two weeks after the intervention.

Secondly, I find that, in my study context, access to HIV related health information increases HIV testing rates. From a near zero testing rate at baseline, respondents who received any of the HIV related health information are approximately 1 percentage points more likely to take an HIV test than those in the control group, a nearly fourfold increase relative to the 0.23% baseline rate. Consistent with the patterns observed on belief outcomes, this effect is not driven by the Story treatment arm. Given that the information only modestly shifted beliefs, the behavioral response appears to be less attributable to changes in perceived risk and more likely to be due to increased salience of testing services and peer testing behavior. Specifically, the realization that many individuals who were accessing tests were peers of a similar age, and the proximity of the test center may have played a significant role in encouraging testing uptake.

Third, financial incentives appear to have a stronger impact on HIV test take-up than information alone. While baseline testing rates remain near zero in the absence of incentives, they rise to approximately 11% when incentives are introduced. Moreover, the data suggest that incentives may influence the same individuals who were previously responsive to the information intervention. When incentives are offered, the earlier effects of information disappear, and testing rates converge across all groups, regardless of their original treatment assignment.

This pattern implies that information and incentives may affect similar individuals, with incentives exerting a stronger or more immediate influence. In this sense, the effects of information and incentives may act as substitutes rather than complements in driving HIV testing behavior, with incentives effectively overriding the impact of informational treatments. However, because the incentives were not randomly assigned, this finding should be interpreted with caution. It offers suggestive, rather than causal, evidence about the relative influence of information and incentives on test uptake.

Related Literature

This work is related to a growing strand of literature that has provided theory-guided evidence suggesting that narratives and stories are persuasive and can be an effective tool in the study of a number of economic outcomes (Bordalo et al., 2020; Graeber et al., 2024; Bursztyn et al., 2023; Alesina et al., 2023). These studies suggest that one mechanism through which stories influence behavior is by enhancing salience and memorability. When individuals face informational complexity or uncertainty, stories can draw attention to key aspects of a decision context, such as risks, benefits, or social norms. Additionally, by invoking empathy or social identification, stories may operate through emotional resonance, making consequences feel more personally relevant and thereby more behaviorally potent (Bordalo et al., 2013).

Graeber et al. (2024) provide recent experimental evidence on the effectiveness of stories in market settings. In controlled experiments focused on evaluation of hypothetical

products in a market, they show that the effects of stories on beliefs fade less quickly than the effects of factual information. Importantly, the authors also find that stories facilitate recall better than statistical information because they come to mind at the point of decision making. This paper is closely related to Graeber et al.'s (2024) study in terms of the methodological framework. However, this study departs from theirs in several important respects. First, while their analysis is conducted using hypothetical scenarios, I implement this information intervention in a real world, high stakes context, where the primary outcome is an actual health behavior, HIV test uptake. Second, while they find that stories generate more persistent belief updates due to superior recall, my results indicate that statistical information alone is at least equally effective in promoting recall and impacting behavior as is combining statistical information with stories.

This paper also contributes to the substantial body of literature that has examined both structural and behavioral barriers to HIV testing, including stigma, limited access to testing facilities, fear of receiving a positive result, and low perceived personal risk. In addressing these obstacles, Yu (2019) and Yang et al. (2021) find that efforts to correct misperceptions and reduce stigma through information provision alone are insufficient to eliminate the social stigma associated with HIV testing in Mozambique. In contrast, Thornton (2008) demonstrates that providing information about HIV transmission, the benefits of early detection, and the location of nearby testing centers significantly increased test uptake in Malawi. However, most of the existing information-focused interventions emphasize increasing risk salience or highlighting the benefits of knowing one's HIV status. Only limited evidence exists on whether the form in which information is presented, such as statistical versus narrative formats, can influence behavioral responses. This paper contributes to the literature by demonstrating that presenting information in a statistical format, even without stories can also effectively increase HIV testing uptake.

This paper further contributes to the literature on the role of incentives in promoting health seeking behaviors in developing countries. Financial incentives have been shown to be highly effective in encouraging individuals to adopt certain behaviors, particularly in low and middle income country contexts. For example, in their review of the evidence on conditional cash transfer (CCT) programs, Lagarde et al. (2007) find that CCTS are generally successful in increasing adoption of preventive behaviors and improving nutritional and anthropometric outcomes in Latin American countries, though the effects on overall health status are more mixed. In other contexts such as in India, Banerjee et al. (2010) show that offering small rewards, such as bags of lentils, significantly increases child immunization rates. Similarly, Dupas (2005) demonstrates that distributing free bed nets at prenatal clinics in Kenya substantially boosted uptake of antenatal care services.

Another strand of literature examines the interaction between information interventions and price subsidies (Ashraf et al., 2013; Dupas, 2014; Duflo et al., 2015; Meredith et al., 2013). These studies highlight the complementarity between information and incentives. While information can shift behavior by correcting misperceptions or emphasizing the health benefits of preventive actions, incentives help overcome economic and psychological barriers such as transaction or opportunity costs. Thornton (2008) finds that offering modest financial rewards substantially increased the proportion of individuals willing to learn their HIV status in Malawi. Similarly, Godlonton and Thornton (2012) show that

non-monetary incentives can yield comparable effects on testing behavior. In line with this literature, the results from this study show that offering incentives for HIV testing produced a sharp rise in testing rates. When participants were offered approximately 50 Ghana cedis (about 3 USD) as a reward for testing, around 11% of individuals decided to get tested, a nearly 47 fold increase relative to the baseline rate when no information or incentive was offered. Although the financial incentives in this setting are not randomly assigned, the results are consistent with the interpretation that financial incentives may operate as substitutes to information interventions.

Finally, this paper contributes to an ongoing methodological debate in experimental research: the reliability of self-reported intentions as proxies for actual behavior. While intention measures are often easier and less costly to collect, a growing literature cautions against interpreting them as accurate predictors of real-world actions. Evidence from multiple domains including health, education, labor, and finance shows that individuals frequently overstate their future behaviors. In health settings, for instance, respondents often express strong intentions to engage in preventive actions such as vaccination (Campos-Mercade et al., 2024), condom use (Dupas, 2011; Adam, 2024), or HIV testing (Thornton, 2008; Kohler and Thornton, 2012; Godlonton and Thornton, 2012), yet actual uptake remains markedly lower.

Recent experimental evidence further highlights the importance of distinguishing between stated and revealed behavior. Bartoš et al. (2022) demonstrates that while intention measures provide valuable insight into mechanisms such as belief updating, they do not always align with observed actions, and only behavioral outcomes can confirm persistent treatment effects. Building on this insight, I provide experimental evidence from an HIV testing intervention in which a substantially larger share of respondents report that they intend to take a test than the share who actually do so. Moreover, while stated intentions to take a test do not differ significantly between those exposed to information and those in the control group, objectively measured HIV testing rises significantly among treated individuals. This pattern reinforces the argument that self-reported intentions can misrepresent true behavioral responses and highlights the need for objective outcome measures when evaluating the effectiveness and persistence of information interventions.

The rest of this paper proceeds as follows: in Section 2, I present some background on HIV and HIV testing in Ghana. Section 3 presents the experimental design. In Section 4, I present the results of the experiment. Section 5 concludes the paper with a discussion section and conclusion.

2 Background: HIV and HIV Testing in Ghana

HIV Incidence. Heterosexual contact remains the dominant mode of HIV transmission in Ghana, accounting for roughly 80 percent of all new infections (Ghana AIDS Commission, 2012). Despite progress in expanding access to prevention and treatment services over the past two decades, HIV continues to pose a significant public health challenge. While overall prevalence among adults aged 15–49 has declined from its peak in the early 2000s, national surveillance data indicate that incidence rates reflecting new infections

has remained stable in recent years, particularly among young people aged 15–24.

According to UNAIDS projections, the incidence of HIV among young adults aged 15–24 years was 0.77 per 1,000 uninfected population, compared with 0.53 per 1,000 uninfected population in the general population. These figures highlight that young people face a disproportionately high risk of infection relative to their population share, driven in part by early sexual activity and inconsistent condom use (Takyi et al., 2006), and low uptake of HIV testing services (Manu et al., 2022).

HIV Testing. HIV testing serves as the critical entry point to both prevention and treatment. By identifying individuals living with HIV and linking them to antiretroviral therapy (ART), testing reduces the viral load in the overall population, improves health outcomes, and lowers the likelihood of onward transmission. Despite significant national investments, testing uptake in Ghana remains uneven across demographic groups and geographic regions. The 2022 National and Sub-National HIV & AIDS Estimates and Projections Report indicates that approximately 23 percent of people living with HIV were unaware of their status, underscoring persistent gaps in early diagnosis that weaken both prevention and treatment efforts.

Testing behavior varies markedly by age and gender. Women are substantially more likely to have ever been tested for HIV, largely because testing is routinely offered during antenatal and reproductive health visits. Among individuals aged 15–24, only 27.8 percent of women and 8.3 percent of men report having ever tested and receiving results (Ghana Statistical Service (GSS) and ICF, 2023). Testing rates rise with age, reflecting greater engagement with the health system among older adults, but remain particularly low among young men, who are the most likely to face informational barriers, stigma, and confidentiality concerns. Understanding how individuals perceive risk and process information is therefore crucial for designing interventions that close the diagnosis gap and sustain progress toward national HIV control goals.

HIV-Related Knowledge and Testing Barriers. Despite decades of public health efforts, gaps in HIV-related knowledge and persistent barriers to testing remain central challenges to controlling HIV in Ghana. According to the 2022 Ghana Demographic and Health Survey (GDHS), comprehensive knowledge of HIV prevention and transmission is unevenly distributed across the population, with significant disparities by age, gender, education, and region. Among youth aged 15–24, only 35% of females and 24% of males could correctly identify two major prevention methods and reject common misconceptions. These knowledge gaps have critical implications for HIV testing and translate into behavioral gaps.

Akweh et al. (2025) report that among sexually active youth who have never been tested, the most common reasons include low perceived risk, lack of awareness about where to get tested, and fear of social judgment. Together, these factors reveal the dual informational and psychosocial barriers that constrain testing decisions, particularly among younger populations.

National Policy on HIV Testing. Policymakers have implemented a range of supply-side strategies including mobile testing campaigns, peer outreach, and conditional incentives to expand testing access (Ghana AIDS Commission, 2012). Public health facilities generally provide free HIV testing and counseling, supported by government funding and international partners such as PEPFAR and the Global Fund, while private facilities charge modest fees of about 0.70 USD, which is below the daily minimum wage of 1.28 USD. Despite these efforts, testing rates remain below target levels, particularly among men and adolescents.

Relatively little is known about the effectiveness of behavioral interventions in increasing HIV testing. This has generated growing interest in low-cost, scalable informational strategies, particularly those grounded in behavioral science, as tools to address persistent barriers. Understanding how different formats of information, such as data driven messages and personal narratives, influence behavior is essential, especially in contexts like Ghana where traditional public health approaches have had limited reach. Identifying the most effective informational strategies in such settings is critical for developing evidence-based interventions that can sustainably increase HIV testing uptake.

Ghana provides an ideal context for such an inquiry: its moderate HIV prevalence, low testing rates, and broad availability of testing services together create favorable conditions to evaluate whether and how information design can increase HIV testing in a real-world, policy-relevant environment.

3 Experimental Design

This section describes the structure of the main experiment. I begin by outlining the study population, followed by a discussion of the randomization procedures used to assign participants to treatment arms. I then present the details of the information intervention itself, including the timing, delivery, and content of the treatments. Finally, I describe the primary and secondary outcomes of interest and how they are measured. Figure 1 summarizes the structure of the experimental design.

3.1 Sample and Randomization

The experiment was conducted among undergraduate students at Kwame Nkrumah University of Science and Technology (KNUST) in Ghana. Participants were invited to complete a two-part online survey administered via personalized Qualtrics links. Respondents were randomly assigned at the individual level to one of two treatment groups or to a control group. Randomization was successfully implemented, as participants' baseline characteristics did not differ significantly across groups (see Table 1).

A total of 2,518 students completed part one of the survey. Participants were, on average, 20 years old and predominantly male (72%). Nearly all were undergraduate students (99%), and only 4% reported being employed. The vast majority were unmarried

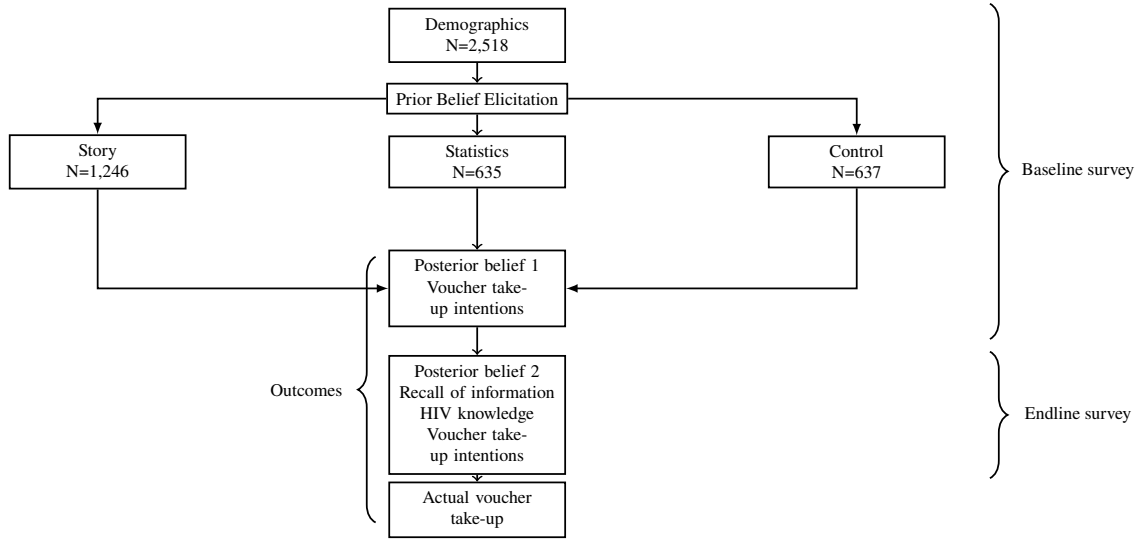


Figure 1: Illustration of experimental stages

(99%). Just under half of the sample (47%) reported being sexually active¹, and only 1% had children. Regarding HIV-related outcomes, only 16% of participants had ever been tested for HIV, with 36% of these tests being conducted at least six months before the intervention. 38% of participants reported currently having a boy/girlfriend.

For prior beliefs regarding HIV, respondents substantially overestimated HIV incidence, reporting an average of 10.25 (log) new infections and believed that nearly 48% of infections occurred among individuals aged 15–24. Although 80% correctly identified those aged 15–24 as the age group with the highest testing rate, they underestimated the actual share of youth test takers (52% vs. 57% in reality). Perceived test duration (28 minutes) closely matched the true average, suggesting accurate beliefs about testing time. A few marginal differences appear, specifically in the perceived share of infections and the estimated share of test takers aged 15–24 years. These differences are small in magnitude and unlikely to affect the interpretation of treatment effects. Moreover, the main results are robust to controlling for these baseline beliefs, and unadjusted estimates yield similar conclusions. A joint test of equality across all covariates produces a p-value of 0.67, indicating overall balance between the treatment arms.

¹Jamison et al. (2013), using list experiments in Uganda, show that self-reported sexual behavior, particularly the number of sexual partners, is substantially underreported in direct survey questions due to social desirability bias. Their results highlight the challenges of measuring sensitive behaviors and caution against relying solely on self-reported outcomes to predict sensitive behavior in surveys.

Table 1: Summary Statistics

	(1) All	(2) Story	(3) Statistics	(4) Control	(5) (2) vs. (3)	(6) (3) vs. (4)
N	2518	1246	635	637	2492	1270
Age	20.59 (2.10)	20.61 (2.21)	20.53 (2.02)	20.62 (1.97)	0.47	0.43
Male(%)	71.92	73.27	71.65	69.54	0.46	0.41
Unmarried(%)	99.40	99.52	99.06	99.53	0.23	0.31
Sexually Active (%)	46.78	46.63	47.40	46.47	0.75	0.74
Have Children(%)	1.39	1.36	1.57	1.26	0.72	0.63
Tested for HIV(%)	16.32	15.57	17.64	16.48	0.25	0.58
Have a Partner(%)	37.69	36.04	38.58	40.03	0.28	0.60
Undergraduate Student(%)	98.89	98.48	99.21	99.37	0.18	0.73
Employed(%)	4.25	4.74	3.78	3.77	0.34	0.99
Religion						
Christian	91.58	91.73	91.18	91.68	0.68	0.75
Muslim	7.82	7.70	8.19	7.69	0.71	0.74
Trad. Indigenous Religion	0.28	0.32	0.31	0.16	0.98	0.56
Not Religious	0.32	0.24	0.31	0.47	0.77	0.66
Household Income						
Up to 2,000 Cedis	62.31	62.12	61.10	63.89	0.67	0.30
2,000 - 4,999 Cedis	20.21	20.14	20.47	20.09	0.87	0.87
5,000 - 7,999 Cedis	8.94	8.75	9.13	9.11	0.78	0.99
8,000 - 11,999 Cedis	4.25	4.17	5.67	2.98	0.15	0.02
Above 12,000 Cedis	4.29	4.82	3.62	3.92	0.23	0.78
Ethnicity						
Akan	68.43	69.50	66.61	68.13	0.20	0.56
Ewe	12.43	10.91	14.49	13.34	0.02	0.56
Ga-Adangbe	6.83	7.22	7.09	5.81	0.91	0.35
Mole-Dagbani	8.30	8.67	8.50	7.38	0.90	0.46
Guan	3.10	2.81	2.52	4.24	0.72	0.09
Gurma	0.91	0.88	0.79	1.10	0.83	0.57
Region of Residence						
Western	7.11	7.38	7.40	6.28	0.99	0.43
Central	6.43	6.42	6.61	6.28	0.87	0.81
Greater Accra	29.71	29.70	29.45	29.98	0.91	0.83
Volta Region	1.75	1.61	2.05	1.73	0.49	0.67
Eastern	6.00	6.10	6.77	5.02	0.57	0.19
Ashanti	36.58	36.44	35.28	38.15	0.62	0.29
Brong-Ahafo	3.46	3.77	3.31	2.98	0.61	0.74
Northern	2.18	2.49	2.20	1.57	0.70	0.41
Upper East	1.31	1.12	1.89	1.10	0.18	0.25
Upper West	0.60	0.64	0.31	0.78	0.36	0.26
Bono East	1.27	1.20	0.79	1.88	0.41	0.09
Ahafo	1.11	0.88	1.10	1.57	0.64	0.47
Savannah	0.40	0.48	0.31	0.31	0.60	1.00
North East	0.36	0.32	0.31	0.47	0.98	0.66
Oti	0.48	0.48	0.79	0.16	0.41	0.10
Western North	1.27	0.96	1.42	1.73	0.38	0.66
Beliefs about HIV						
New HIV infections (log)	10.248 [2.471]	10.260 [2.482]	10.209 [2.440]	10.262 [2.485]	0.051 (0.674)	-0.053 (0.702)
% infected age 15–24	47.780 [23.557]	47.303 [23.341]	49.288 [23.503]	47.212 [24.002]	-1.986* (0.082)	2.076 (0.119)
Highest test takers 15–24	0.802 [0.398]	0.815 [0.389]	0.802 [0.399]	0.779 [0.415]	0.013 (0.496)	0.023 (0.316)
% test takers age 15–24	51.952 [22.574]	52.425 [22.605]	52.676 [22.778]	50.306 [22.263]	-0.250 (0.821)	2.369* (0.061)
Average Test Time (mins)	27.989 [22.756]	27.322 [22.485]	29.482 [23.968]	27.771 [21.968]	-2.160 (0.118)	1.712 (0.287)
Test of Joint Significance of all Variables						
P-value						0.67

Data from Survey part 1.

3.2 Experimental Treatment Arms

Treatment 1: Statistics Treatment Group. A total of 635 participants were randomized into this treatment group to evaluate the effect of receiving statistical health information on HIV beliefs and testing behavior.

Participants assigned to this treatment arm were presented with three sequential blocks of information designed to increase perceived risk to HIV, emphasize testing behavior of people aged 15-24, and illustrate the ease of accessing test services.

The first block focused on risk perception and salience. It presented national data on new HIV infections in 2022, disaggregated by age group (15–24 and 25+). The figures highlighted that, although individuals aged 15–24 constitute only 19% of the population, they accounted for 28% of all new HIV infections. Presenting absolute numbers alongside percentages was intended to convey the disproportionate burden of infection among youth and make the risk more personally relevant.

The second block highlighted testing behavior among youth, emphasizing HIV testing as a key step in prevention and early treatment. It included statistics from the campus-based Bomso PPAG Clinic, which conducted 4,828 HIV tests in 2022 for individuals aged 15 and above, of which 57% of all tests were among those aged 15–24. This information was aimed to suggest that testing is already common among peers and signaled its social acceptability.

The third block targeted barriers to testing by describing the testing process in detail, emphasizing ease of access, availability of pretest counselling, and the clinic’s high level of user satisfaction. It highlighted that the HIV testing process takes approximately 30 minutes and used peer relevant language (e.g., “many young people like you”) to evoke social norms and peer influence. Together, these elements were designed to make HIV testing appear safe, convenient, and socially accepted among young adults.

To increase the salience of the data points, each block was accompanied by a pictorial graph which repeated the factual information in an animated form. All information presented aside from the clinic-specific statistics was publicly available online. Refer to Appendix C for the full presentation of the information treatment.

Treatment 2: Story Treatment Group. A total of 1,246 participants were randomized into this treatment group to evaluate the effect of receiving additional narrative information².

In addition to the three factual information blocks provided in the statistics treatment arm, participants in this group were shown two supplementary narrative blocks featuring a testimonial from an individual who visited the Bomso PPAG Clinic for HIV testing. The first narrative described the individual’s initial belief that they were not at risk, their emotional reaction upon learning that a former partner had tested positive, and the fear and uncertainty that led to them delaying getting tested. The second narrative recounted their

²To explore potential heterogeneity in treatment effects, both the narrator’s gender (male vs. female) and the test outcome (positive vs. negative) were experimentally varied. These subgroups account for the large sample size in this treatment. However, no substantial variation in treatment effects was found based on either the gender of the narrator or the test outcome. Therefore, results for this treatment arm are presented without distinguishing between story types.

eventual decision to get tested, highlighting the confidential and supportive environment at the clinic, the testing process itself, and their emotional response upon receiving the result.

Control Group. 637 participants were randomized into this group. Participants in this group received no information.

3.3 Outcomes

I focus on two outcomes: HIV testing behavior and belief updates in response to the information intervention. The primary measure of HIV testing behavior is actual HIV testing. This is complemented by participants' self-reported intentions to get tested.

Treatment effect on beliefs are assessed using a series of belief elicitation tasks designed to capture changes in participants' beliefs about HIV, and their understanding of HIV-related information. To enrich the analysis, I also examine self-reported knowledge measures and performance on informational recall tasks, which provide insight into participants' comprehension and retention of the information provided.

Actual HIV Testing Data. The availability of HIV test vouchers was announced during the baseline survey, but the vouchers themselves were only distributed after the endline survey. Each voucher could be redeemed for a free HIV test at the Bomso PPAG Clinic. Voucher redemption data were obtained from the clinic's administrative records, which included the date of redemption and an indicator of whether the individual self-reported having completed the survey.

While voucher redemption serves as a behavioral proxy for HIV testing, it is not a perfect measure, because vouchers could be transferred to others. In practice, however, resale or transfer is highly unlikely. HIV testing is officially free at public health facilities in Ghana, so the voucher holds no intrinsic monetary value outside the study context. Its main value lies in providing convenient and confidential access to testing at the campus-based Bomso PPAG Clinic, which helps participants avoid the long wait times and limited privacy typically associated with nearby public hospitals. Moreover, each voucher was assigned a unique serial code linked to the participant's survey ID, to facilitate matching between administrative and survey data while maintaining anonymity. This design further discouraged transfer, because redeemed vouchers could be traced back to the originally assigned respondent without disclosure of personal identities. The voucher therefore offers practical utility in terms of reducing time and stigma costs for the assigned individual, but has no resale or transfer value. Consistent with this interpretation, only one participant reported receiving a voucher from someone else, and excluding this observation does not affect the main results.

To assess whether testing behavior was influenced by extra financial incentives, a non-experimental financial incentive was introduced ten days after the endline survey. Participants were informed that they were eligible to receive an additional fifty Ghana cedis (approximately 3 USD) if they were among the first 150 individuals to get tested at

the clinic. This amount is equivalent to 2.3 days of minimum wage earnings. Because this incentive was offered to all participants and not randomized, it does not constitute a separate treatment condition. Nevertheless, the date-stamped administrative data allow disaggregation of voucher redemption before and after the announcement of the financial incentive, and so enables analysis of potential incentive-induced shifts in behavior.

Self-Reported Intention to Test for HIV. Because the availability of HIV test vouchers was announced at the start of the study, participants were given the opportunity in both survey rounds to indicate whether they wished to receive a voucher. I use this self-reported interest in obtaining a test voucher as a complementary measure to the observed behavioral outcome of voucher redemption.

This comparison provides insight into the relationship between stated intentions and actual behavior, contributing to a broader understanding of how self-reported measures in survey data align with real-world actions.

Belief Elicitation Tasks. Prior beliefs about key HIV statistics in Ghana as of 2023, including the rate of new infections, the age distribution of new cases, patterns of HIV testing, and the average duration of the testing process were elicited before the information intervention. Posterior beliefs about the same statements were collected immediately after the information intervention. For each belief-related question, treatment effects were estimated by comparing the average posterior beliefs of treated and control participants after the intervention. The following questions were used as belief elicitation tasks during the surveys:

- In 2023, what do you think the total number of new HIV infections recorded in Ghana was? Please enter the number.
- In 2023, among all people who were newly infected with the HIV virus, what percentage do you think are between the ages 15-24?
- What age group do you think had the highest percentage of test takers among all those aged 15 years and above who visited the Bomso PPAG clinic for an HIV test in 2023? Recoded as (Highest percentage of test takers are between the age group 15-24 yrs)
- Out of all the people aged 15 years and above who went to the Bomso PPAG clinic to take an HIV test in 2023, what do you think is the percentage of test takers who were between 15-24 years old?
- Guess the average time (in hours) it takes to get tested and receive the results for HIV at the Bomso PPAG clinic? Please enter a number.

Importantly, the treatment effect on posterior beliefs in this study was framed as a forward-looking task. Participants received information about outcomes observed in 2022 and were subsequently asked to form beliefs about those outcomes for the year 2023. Since the future values were unknown at the time of the survey, there was no objectively correct

answer. Instead, the focus was on whether beliefs shifted in an intuitive response to the information provided.

Self-Reported Knowledge of HIV. Given that the information provided may influence participants' knowledge and perceptions of HIV, the analysis is complemented with data on self-reported knowledge. This measure offers an additional lens through which to assess the informational impact of the intervention, beyond changes in belief accuracy.

Participants were asked to evaluate their own understanding of HIV across several dimensions. The following questions were used to assess self-reported knowledge:

- Do you know of a place where people can take a test for HIV?
- HIV has no cure. However, can it be effectively treated with medication?
- Do you think treatment for HIV is expensive?
- Do you think treatment for HIV can help patients live for as long as uninfected people?
- Do you think treatment for HIV at the local health center can prevent HIV transmission?

Additionally, an overall knowledge index was constructed as the average of responses to the last four questions.

Information Recall Tasks. As part of the endline survey, participants completed a set of information recall tasks to assess how well they remembered key aspects of the information intervention. First, respondents were asked to identify the type of information they received during the baseline survey (e.g., statistical facts, a story). Responses to this question served as a measure of recall accuracy regarding the information type received.

Participants who correctly identified the information type were then asked two follow-up questions: (i) which of the two focal age groups (15–24 or 25+) they learned had the highest rate of new HIV infections in 2022, and (ii) the infection rate among individuals aged 15–24 years. This task was designed to assess recall of the informational content, i.e., whether participants accurately remembered the substantive content of the message.

3.4 Preregistration

The experimental protocol, including the randomization procedure, treatment descriptions, sample size calculations, outcome measures, and exclusion rules, was pre-registered with the AEA RCT Registry. The pre-analysis plan is publicly available at <https://doi.org/10.1257/rct.13880-1.0>.

4 Results

I begin by discussing the impact of information on beliefs by outlining prevalent misperceptions regarding risk perceptions, peer testing behavior, and test access. I present how information affects these beliefs and recall of the information. Next, I present the effect of the information on behavior by exploring actual HIV testing behavior, and how incentives affect testing. I conclude the results section with a methodological discussion of behavior measurement using survey questions on intentions.

4.1 Effect of Receiving Information on Beliefs

4.1.1 Prior Beliefs

Table 2 compares baseline beliefs with the corresponding true values for each belief elicitation question. The results reveal systematic misperceptions about HIV incidence and testing patterns among respondents. On average, respondents substantially overestimated the number of new HIV infections, reporting an average belief of 10.25 (log scale) compared to the true value of 8.44 for 2022. Similarly, they overestimated the share of new infections occurring among people aged 15–24 years by nearly 20 percentage points, suggesting that respondents disproportionately associate new infections with younger individuals.

In contrast, perceptions about HIV testing patterns reveal some underestimation. Respondents believed that 15–24 year olds made up only about 52% of all test takers at the local clinic, while the actual figure was 57%. Moreover, 80% of respondents correctly identified this age group as representing the highest share of test takers, though the true value was 100%. These patterns indicate some degree of disconnect between perceived risk and perceived prevention behaviors. While respondents overstate the infection risk among their age group, they understate the extent of testing.

Finally, respondents slightly underestimated the average HIV test duration, reporting 28 minutes compared to the actual 30 minutes.

The experiment was designed to ask subjects about their expectations for 2023 statistics, and made explicit that the true values cited were from 2022. This design feature was deliberate. It made the exercise more realistic by encouraging respondents to think about how HIV incidence and testing patterns might evolve over time rather than anchoring their answers to past figures. Asking about the upcoming year allowed me to capture how individuals project newly learned information into their expectations for the near future, a process that reflects real-world decision-making about testing and risk. However, because this approach relies on forward-looking beliefs rather than direct comparisons within the same year, the resulting measures of misperceptions should be interpreted as tentative rather than exact.

Table 2: Misperceptions about HIV Incidence and Testing

	Baseline Belief (2023)	True Value (2022)	Difference (P-value)
Number of new HIV infections (log)	10.248	8.44	1.812 (0.000)
% infections among people aged 15–24 yrs	47.780	28.00	19.780 (0.000)
% who agree that highest test takers are 15–24 yrs	80.222	100.00	-19.778 (0.000)
% test takers who are 15–24 yrs	51.952	57.00	-5.048 (0.000)
Average Test Time (mins)	27.989	30.00	-2.011 (0.000)

Data from Survey part 1.

4.1.2 Posterior Beliefs and Self-Reported Knowledge

Table 3 examines how exposure to the information treatments affected respondents' beliefs about HIV incidence and testing patterns, as well as their knowledge of HIV testing and treatment. The results show systematic treatment effect on beliefs consistent with the direction of prior misperceptions documented above.

Perceptions of Health Risk. Following exposure to the information interventions, respondents revised their beliefs about HIV incidence significantly downwards. The perceived number of new infections declined by 0.20 log points, and the perceived share of infections among 15–24 year olds fell by nearly 9 percentage points (both $p < 0.00$). These changes indicate that participants internalized the factual correction that HIV incidence among youth is lower than they had previously believed.

When disaggregated by specific treatment type, both Story and Statistics messages produced comparable belief updates. Respondents in the Story arm lowered their perceived new infection rate by 0.19 log points and the infection share among those aged 15–24 by 8 percentage points, while those in the Statistics arm adjusted downwards by 0.23 log points and 9 percentage points, respectively. Tests of equality show no statistically significant difference between the two treatments, suggesting that the Story and Statistical formats were similarly effective in realigning risk perceptions.

Perceptions of Peer Testing Behavior. In contrast to the downward revisions in infection risk, respondents significantly increased their beliefs about peer testing activity. Exposure to the pooled information treatment increased the share who correctly identified 15–24 year olds as the most frequent test takers by 6.5 percentage points ($p < 0.01$). However, when asked to state the percentage of all test takers who were aged 15–24, the information treatment reduced reported percentages by about 4.3 percentage points ($p < 0.01$) relative to the control mean of 50.4%. Because the actual share is 57%, this change widened the gap between beliefs and the truth. In short, respondents became more likely to identify the correct age group as the most frequent test-takers (column 3), but underestimated the degree of testing to a greater extent (column 4). As with perceptions of infection risk, the magnitude of effect on these beliefs did not differ significantly across the Story and Statistics treatments.

Perceptions of Testing Access. Columns (5) and (6) report effects on beliefs about the accessibility of HIV testing, measured by perceived time it takes to conduct and receive the results of a test, and awareness of testing locations. The pooled treatment marginally improved the accuracy of beliefs about testing duration by roughly 1 minute ($p < 0.10$), an effect primarily driven by the Story treatment. Given that the actual testing time is about 30 minutes and the control group's mean belief was 28 minutes, this small effect likely reflects a ceiling effect, suggesting that respondents already held relatively accurate beliefs about test duration prior to the intervention.

In contrast, the treatments substantially increased respondents' knowledge of testing locations. The pooled effect is positive and highly significant (7.2 percentage points, $p < 0.01$), with similar magnitudes for the Story and Statistics arms. This suggests that, while beliefs about test time remained stable, the information intervention effectively increased awareness of where HIV testing can be accessed.

Self-Reported Knowledge. Columns 7 through 11 present the post-intervention knowledge outcomes. The knowledge index (column 11), constructed as the unweighted average of the four knowledge items in columns 7 through 10 increased by 0.02 percentage points under the pooled treatment ($p = 0.08$), indicating a small but significant improvement in overall HIV related knowledge. Among the individual items, the combined treatment significantly increased understanding that treatment prevents transmission by 5.6 percentage points ($p < 0.05$). The effects on knowledge about how treatment prolongs life, how HIV can be treated, and is affordable were small and statistically insignificant.

Disaggregated, the results by specific treatment assignments again show little difference between the Story and Statistics arms. Both formats improved knowledge that treatment prevents transmission. However, p-values for equality between the two exceed conventional levels for statistical significance.

Table 3: Effect of Receiving Information on HIV Beliefs and Related Knowledge

	Health Risks		Peer Testing		Testing Access		Knowledge				
	(1) New Infections (log)	(2) % Infections among 15-24 yrs	(3) % Agree 15-24 highest testers	(4) % Testers 15-24 yrs	(5) Average test time (min)	(6) Know a test location	(7) Treatment prolongs life	(8) Treatment prevents transmission	(9) HIV Can be treated	(10) Treatment is not expensive	(11) Knowledge Index
Any Treatment	-0.204*** (0.0689)	-8.543*** (0.713)	6.466*** (1.327)	-4.337*** (0.652)	1.349* (0.715)	0.0719*** (0.0183)	0.00264 (0.0225)	0.0556** (0.0265)	0.00344 (0.0115)	0.0259 (0.0243)	0.0219* (0.0128)
R^2	0.396	0.366	0.330	0.356	0.406	0.031	0.014	0.017	0.007	0.018	0.019
Story	-0.189** (0.0764)	-8.313*** (0.775)	6.399*** (1.430)	-4.175*** (0.716)	1.381* (0.759)	0.0735*** (0.0191)	0.0123 (0.0238)	0.0518* (0.0281)	0.00342 (0.0123)	0.0339 (0.0260)	0.0254* (0.0135)
Statistics	-0.233*** (0.0856)	-8.991*** (0.924)	6.595*** (1.689)	-4.653*** (0.833)	1.287 (0.846)	0.0689*** (0.0208)	-0.0163 (0.0279)	0.0631** (0.0319)	0.00349 (0.0138)	0.0103 (0.0297)	0.0151 (0.0156)
R^2	0.396	0.366	0.330	0.356	0.406	0.031	0.015	0.017	0.007	0.019	0.019
Control Mean	10.263	46.885	76.609	50.414	27.262	0.851	0.779	0.615	0.953	0.257	0.651
N	2518	2518	2518	2518	1633	1782	1782	1782	1782	1782	1782
Test:											
Any Treatment=Control	-0.204	-8.543	6.466	-4.337	1.349	0.072	0.003	0.056	0.003	0.026	0.022
P-value	(0.003)	(0.000)	(0.000)	(0.000)	(0.059)	(0.000)	(0.907)	(0.036)	(0.765)	(0.288)	(0.087)
Story=Stat	0.044	0.678	-0.197	0.478	0.094	0.005	0.029	-0.011	-0.000	0.024	0.010
P-value	(0.602)	(0.448)	(0.901)	(0.558)	(0.894)	(0.763)	(0.237)	(0.676)	(0.995)	(0.363)	(0.439)

Data from Survey parts 1 and 2. The dependent variables in columns 1 to 5 are the posteriors elicited after the information intervention in the baseline survey, and the dependent variable in columns (6) through (10) is equal to 1 if the respondent responded "yes" to the variable in the column heading, and 0 otherwise, recorded in the survey part 2. The knowledge index is constructed as the unweighted average of the binary responses to the four individual knowledge items reported in columns (7) through (10). All regressions include the set of pre-registered controls. Standard errors are in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

4.1.3 Recall

Recall was measured along two dimensions. *Type recall* captures whether participants correctly remembered the format of information they received (i.e., statistical versus story). *Content recall* captures whether they accurately remembered the substantive information conveyed: (i) which age group had the highest HIV infection rate in 2022, and (ii) the infection rate among individuals aged 15–24 years.

As shown in subfigure (a) of Figure 2, a large majority of participants were able to recall the type of information they received at baseline, but accuracy differed significantly across treatments. About 80% of participants in the Statistics group correctly remembered receiving statistical information, compared to 66% who recalled receiving a Story, amounting to a 14 percentage point difference ($p < 0.001$). Thus, respondents exposed to statistical information were more likely to remember the format of the message than those assigned to the Story treatment arm.

Turning to content recall, subfigure (b) of Figure 2 shows that, among participants who correctly identified the information type, there were no significant differences in how well they remembered the factual details. Roughly 28% of Statistics respondents and 25% of Story respondents correctly recalled that people aged 25 and above had the highest infection rate in 2022 ($p = 0.26$). Likewise, about 40% in each group accurately recalled the infection rate among 15–24 year olds ($p = 0.95$). In short, while Story recipients were somewhat less likely to remember that they had received a story, they were no less accurate in recalling the underlying facts.

Table A1 helps rule out the possibility that differences in recall were driven by variation in attention or engagement with the information treatments. The data show no statistically significant differences in the time spent reading the statistical component of the information or in any of the emotions experienced. Participants in the Story treatment spent, on average, about 10 seconds longer reading the statistical component than those in the Statistics treatment, but this difference is not statistically significant. Likewise, self-reported emotions experienced while reading the information, happiness, sadness, anger, fear, and surprise, did not differ meaningfully across treatments.

To summarize, the information intervention increased perceptions of peer testing behavior and perceived ease of HIV testing access, primarily by raising awareness of a local clinic and its proximity. However, it did not heighten perceived health risks, instead, it appeared to reduce overly pessimistic beliefs about infection rates. Moreover, the similarity in treatment effect on beliefs across both information formats across all outcomes suggests that the type of information did not differentially influence perceptions or recall accuracy. This latter finding contrasts with prior evidence suggesting that stories enhance recall (Graeber et al., 2024). In this context, statistical information appears to be at least as memorable as narrative formats.

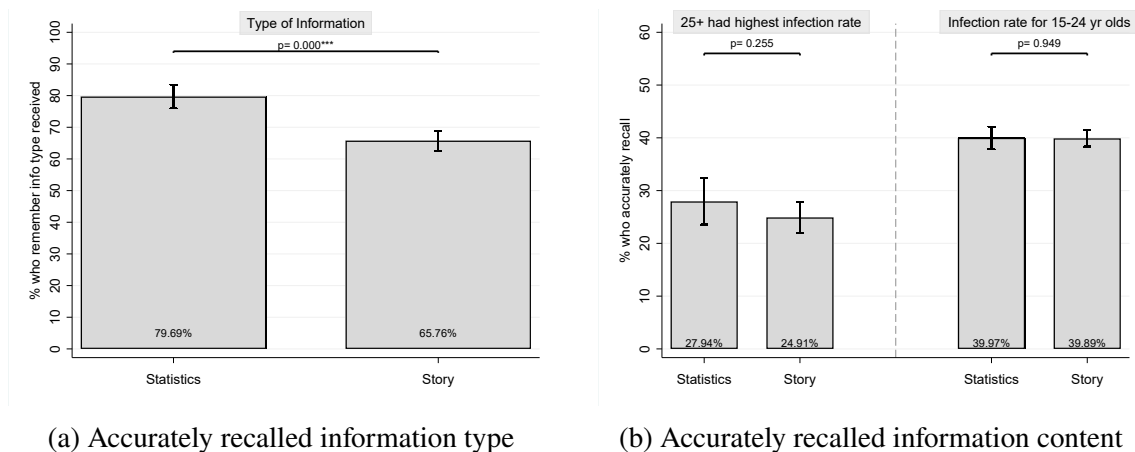


Figure 2: Effect of information on recall. The left panel displays respondents' recall of the type of information they received at baseline. The right panel shows their recall of the content of the information: i.e., the percentage of subjects who accurately recall that those aged 25 and above had the highest rate of infection in 2022, and the reported percentage of subjects aged 15–24 newly infected with HIV in 2022.

4.2 Effects of Receiving Information on HIV Testing Behavior

Next, I examine the impact of the information treatments on actual HIV testing behavior, measured by clinic voucher redemption, and reported intentions to get tested collected during the survey.

4.2.1 Actual HIV Testing Behavior

Receiving either form of HIV information led to a modest but statistically significant increase in actual HIV testing behavior. As shown in Figure 3 (left panel) participants who receive either kind of information are 0.9 percentage points more likely to get tested for HIV at the clinic compared to those in the control group ($p=0.08$). Although the absolute testing rates are low, the treatment effect difference represents a nearly fourfold increase relative to the baseline testing rate of 0.23% in the control group.

Disaggregating by specific treatment arms (Figure 3, right panel), participants in the Statistics treatment were 1.3 percentage points more likely to take an HIV test compared to those in the control group ($p = 0.036$). Participants exposed to the Story treatment showed a smaller, marginally significant increase of 0.7 percentage points ($p < 0.10$). The difference in effects between the two treatments is not statistically significant ($p = 0.30$), indicating that neither information format is clearly more effective in promoting actual test uptake.

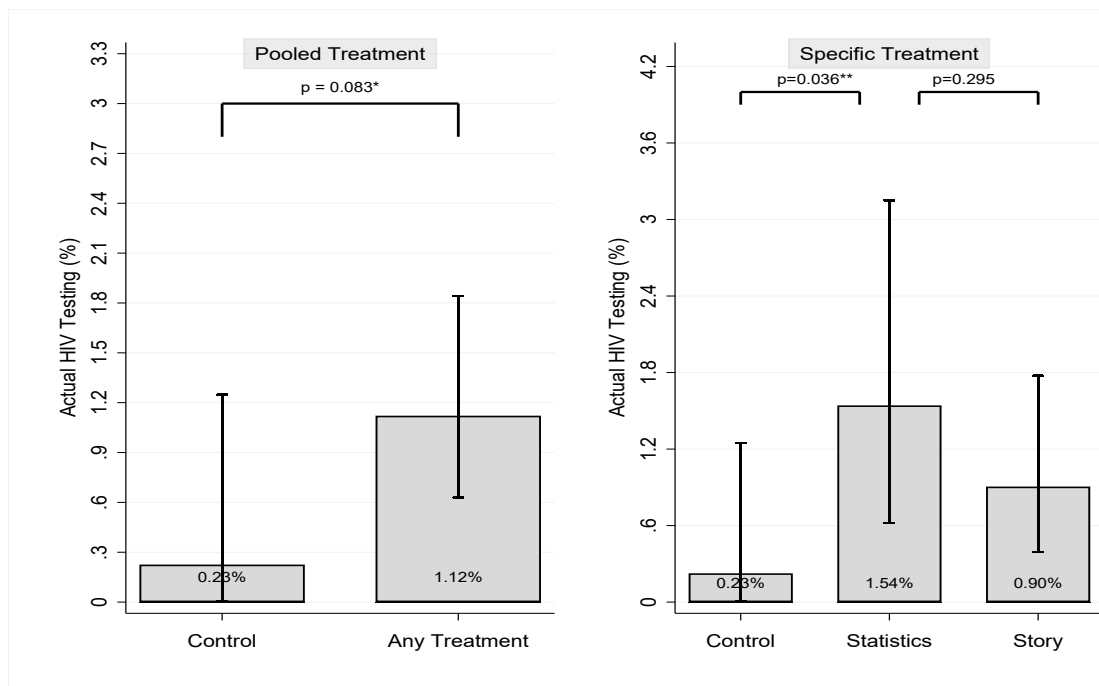


Figure 3: Effects of information on actual HIV testing behavior. The left figure illustrates the estimated effects of receiving either type of information on actual HIV testing at the clinic. The right figure displays the same results, further disaggregated by the specific types of treatment information received.

I observe little systematic heterogeneity in the treatment effects. Appendix Table A2 presents exploratory analyses of treatment effect heterogeneity across respondent subgroups. Overall, the results are consistent with the interpretation that the intervention did not operate primarily through changes in perceived risk. Specifically, I find no evidence that sexually active respondents or those who had never previously tested for HIV were more responsive to the information treatment than were their counterparts.

If the treatment had worked by increasing perceived risk, we would expect larger effects among individuals who were sexually active, had never previously been tested, or had not been tested for a longer period of time. However, chi-squared comparisons of coefficients across subgroups do not support this hypothesis. The differences in treatment responsiveness across these subgroups are small and not statistically significant.

Interestingly, the results suggest that the information treatment may have been somewhat more effective among female participants, which is broadly consistent with national HIV testing patterns that show higher uptake among women. However, the difference in treatment effects between male and female respondents is also not statistically significant.

It is important to note that these subgroup analyses are exploratory and may be underpowered. Given the relatively low actual HIV test take-up, the lack of statistical significance could reflect limited precision rather than the absence of meaningful differences. As such, these results should be interpreted with caution and viewed as suggestive rather than conclusive evidence of heterogeneity.

Finding significant effects of information on actual HIV test uptake is robust to a large extent. Panel A of Figure 4 examines the effect of receiving either type of information

on actual HIV testing behavior, controlling for different sets of control variables. The estimated effect size ranges between 0.84 and 0.92 percentage points, depending on the control set used. The consistency of these results and the narrow confidence intervals across specifications suggest that the treatment effect is robust to model specification and the inclusion of additional covariates.

Panel B of Figure 4 extends the analysis to estimate the effects of the Statistics and Story treatments separately. The results indicate that the Statistics treatment significantly increases HIV test uptake, with effect sizes within the range of 1.3 and 1.4 percentage points, depending on the controls. Likewise, the effect sizes for the Story treatment range between 0.62 and 0.70 percentage points. While the point estimate for the Story treatment is smaller and not always statistically significant at conventional levels, the confidence intervals for both treatments largely overlap, indicating that the two types of information are not statistically different from each other. These findings are consistent across specifications using both pre-registered and LASSO-selected controls. Full regression results are presented in Supplementary Table A3.

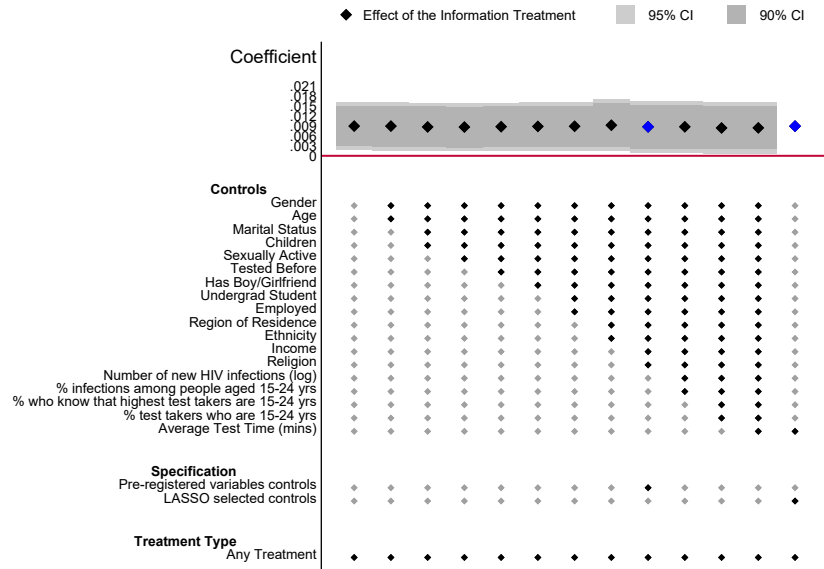
Differential attrition is unlikely to explain the results. First, participation rates are relatively high and do not differ significantly across treatment groups ($p > 0.10$). Although the overall attrition rate is 28%, average attrition is balanced across experimental arms (see Appendix Table A4), indicating that treatment assignment did not directly affect survey participation. Randomization was also verified, as treatment status is not correlated with baseline covariates. However, the omnibus F-test for the joint significance of treatment interactions with the pre-specified covariates reveals some subgroup-specific variation in attrition ($p < 0.01$), suggesting that attrition does not correlate with treatment directly, but rather correlates with treatment conditional on some observables³.

As a robustness check, I compute Lee bounds under the assumption of monotonic attrition, that is, assuming the treatment influences survey participation in only one direction (for example, it cannot make some participants more likely and others less likely to remain in the sample). The estimated treatment effects remain stable, with a conservative lower bound of -0.002 ($p = 0.32$) and an upper bound of 0.009 ($p < 0.05$). These estimates imply that, after adjusting for potential selective attrition, the true effect of the treatment on participation likely falls between a 0.2 percentage point decrease and a 0.9 percentage point increase relative to the control group, suggesting no meaningful treatment-induced attrition.

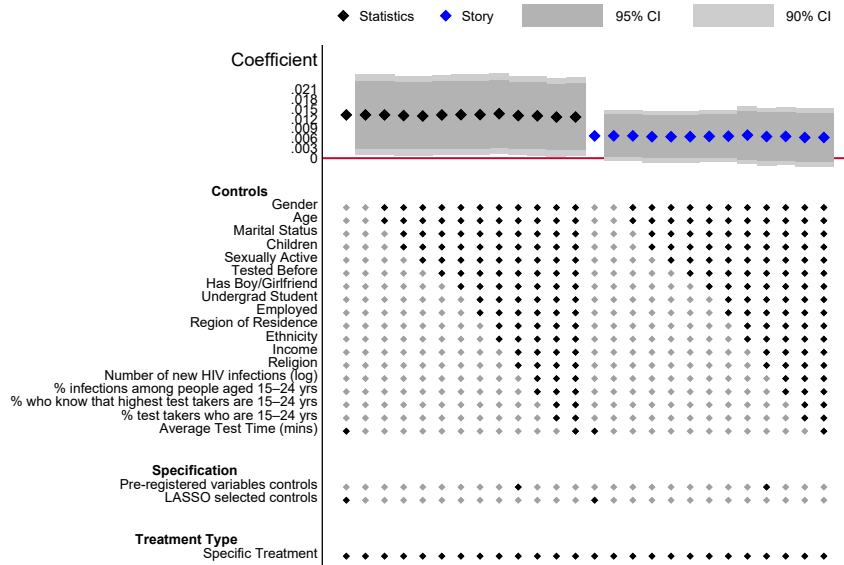
Experimenter demand effects are unlikely to account for the observed treatment impacts. Because HIV testing is a costly, effortful action, it is less susceptible to temporal demand effects. This reinforces the interpretation that the observed behavioral changes reflect genuine responses to the information interventions.

Lastly, I also replicate all results using the subsample of attentive respondents, reported in Appendix B. This subsample includes participants who passed an attention check requiring them to select a specific response to a trivial question. The results are broadly consistent with the main findings presented here. Readers concerned that online survey responses may be affected by inattentive answering may therefore prefer the estimates based on this more selective sample.

³Age, ever been tested in the past, region of residence, ethnicity, household, income, and religion.



(a) Any Treatment



(b) Specific Treatment

Figure 4: Effect of receiving information on actual HIV testing behavior: Robustness. The darker (lighter) whiskers denote the 95% (90%) confidence interval based on standard errors clustered at the respondent level. I report a range of specifications by sequentially adding sets of control variables in Table 1. In panel A, the specification with all pre-registered sets of controls and the LASSO specification are marked with blue diamonds. In Panel B, coefficients for the Statistics treatment are marked with black diamonds and the coefficients for the Story treatment are marked with blue diamonds. Supplementary Table A3 shows the regression results in detail.

4.2.2 The Role of Incentives

In this section, I examine how information affects testing behavior when incentives for testing are introduced. Because incentives were not randomly assigned, the results presented here are descriptive rather than causal. I explore two key questions (a.) How do informational effects compare to incentive effects? and (b.) Do incentives target the same population as information? In essence, this section explores whether informational effects persist when individuals are also offered financial rewards for testing.

After the introduction of incentives, testing rates increased sharply across all groups, particularly among the control group (see Figure 5). The control group's testing rate rose to 11%, effectively eliminating the earlier treatment difference observed in Figure 3. At this stage, respondents who had previously received either type of information were about 0.05 percentage points less likely to get tested, though this difference is not statistically significant. This large increase in the control group behavior eliminates any differential effects of the prior information intervention, suggesting that the information intervention affected the same kinds of people that the incentives affected. Similarly, the type of treatment assignment does not matter. I find no statistically significant difference between the Statistics and the Story treatment coefficients (see right side of Figure 5).

The incentive effect observed here implies a large behavioral response, especially considering the small monetary value of the reward. Offering approximately 50 Ghana cedis (about US 3, or roughly 2.7 days of the minimum wage) increased HIV test rates to around 11 percent, compared to only 0.23 percent in the baseline control group when neither information or incentives was provided. Evidence from other settings also shows that small incentives can substantially shift preventive health behaviors. Providing a kilogram of lentils or a metal plate to mothers in India increased full immunization coverage by 39% (Banerjee et al., 2010), and offering modest cash payments in Malawi doubled the share of individuals who return to clinics to learn their HIV test results to about 68% (Thornton, 2008).

To summarize, the results on actual testing behavior reinforce the main patterns observed in Section 4.1 regarding the impact of information on beliefs. The information intervention modestly increased actual HIV test uptake, with the effect being primarily driven by participants in the Statistics treatment arm. This pattern is consistent with the idea that information improved awareness of local testing services and corrected misperceptions about peer behavior, thereby lowering perceived barriers to testing rather than amplifying risk perceptions. However, when financial incentives were introduced, these informational effects were effectively eliminated. The sharp rise in testing across all groups suggests that incentives fully washed away the information effects.

These findings should be interpreted in the context of Ghana's broader HIV epidemiological landscape. In 2022, individuals aged 15–24 accounted for approximately 28 percent of all new HIV infections, yet only 28 percent of sexually active women and 8 percent of sexually active men in this age group reported ever having been tested for HIV and receiving their results. This disconnect between elevated risk and limited testing is particularly salient given that about 70 percent of the study sample is male. The results are therefore especially informative for understanding behavioral responses among a pop-

ulation that is both disproportionately under-tested and less engaged with routine HIV prevention services.

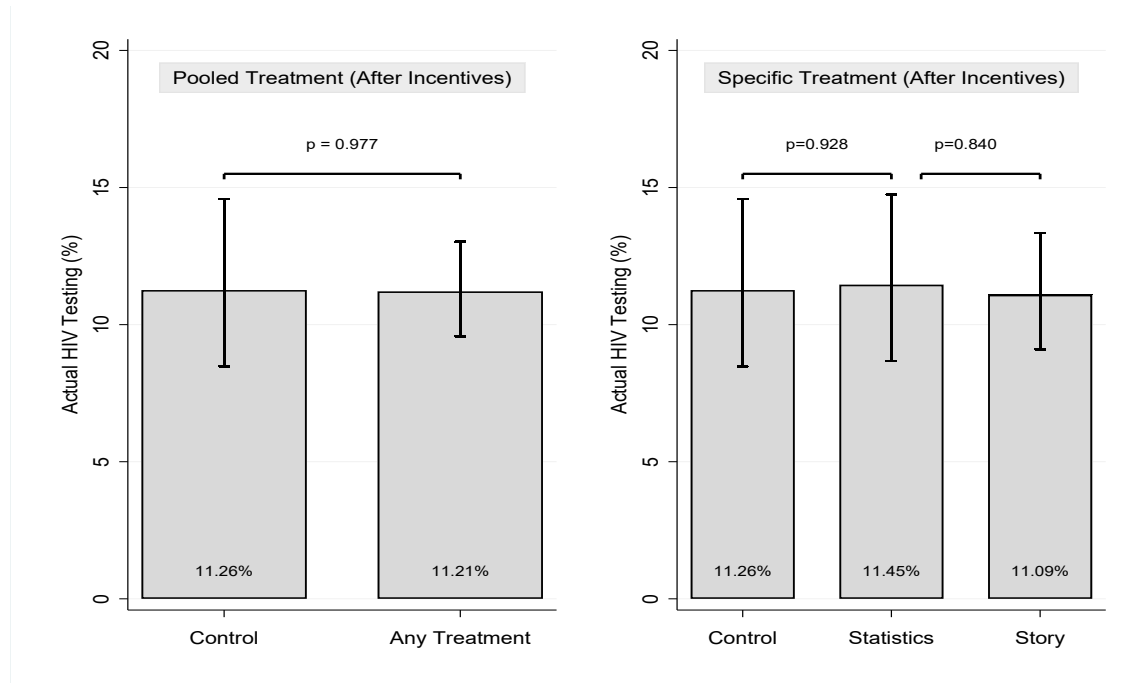


Figure 5: Effect of information on actual HIV testing behavior after incentives are announced. The left figure illustrates the estimated effects of receiving either type of information on actual HIV tests at the clinic after incentives are announced. The right figure displays the same results, further disaggregated by the specific types of treatment information received.

4.2.3 Self-Reported Intentions to Test Vs. Actual Testing Behavior

Self-reported intentions to test are a poor proxy for actual testing behavior in this context. As shown in Table 4, immediately after receiving the health information, about 81% of control respondents indicated that they would like to receive an HIV test voucher. This figure contrasts sharply with the actual testing rate of just 0.23% among control respondents (Figure 3). Even when pooling across treatment arms, actual test uptake reached only about 1.1% following the intervention. The enormous gap between stated intentions and realized behavior highlights that self-reported willingness to engage in sensitive health behaviors such as HIV testing provides virtually no information about what people will actually do.

Moreover, intentions and actual testing behavior show little to no meaningful correlations. Although more than four-fifths of respondents initially reported that they intended to take an HIV test, fewer than one in a hundred ultimately did so within ten days after the endline survey. The pairwise correlation between stated intentions and actual test take-up is only 0.05. While individuals who reported an intention to test were marginally more likely to do so, by about 1.1 percentage points, the magnitude of this relationship is trivial relative to overall testing levels. This weak link persists even after accounting for timing, as the decline in stated intentions two weeks later does not correspond to any observable

change in actual testing. This result indicates that self-reported intentions are largely disconnected from real behavior and provide little information about who will follow through on sensitive actions such as HIV testing.

Finally, self-reported intentions fail to capture treatment effects observed in behavioral outcomes. While actual testing increased significantly among treated respondents (approximately 0.9 percentage points relative to the control, $p < 0.10$, Figure 3), there was no corresponding change in stated willingness to get tested by treatment assignment (Table 4). Treatment effects on intentions were statistically indistinguishable from zero across all specifications and did not differ between the Story and Statistics arms. In other words, although the intervention successfully increased real HIV testing, reported intentions remained entirely unchanged.

These findings illustrate that self-reported intentions, especially for sensitive behaviors like HIV testing, are not only imperfect, but are effectively uninformative. They reflect neither the true underlying behavioral propensities nor do they capture treatment-induced changes in behavior. This emphasizes the necessity of measuring actual outcomes rather than stated ones when evaluating the effectiveness of health information interventions.

Table 4: Effect of Receiving Information on Self-Reported Intentions to Get Tested

	Immediately		2 Weeks Later	
	(1)	(2)	(3)	(4)
Any Treatment	0.00391 (0.0179)	0.00692 (0.0176)	0.00684 (0.0252)	0.00580 (0.0246)
R^2	0.000	0.027	0.000	0.042
Correlate Sign-up Take-up		0.045		0.062
Story	-0.00263 (0.0191)	0.000298 (0.0188)	0.00885 (0.0267)	0.0102 (0.0262)
Statistics	0.0167 (0.0216)	0.0198 (0.0214)	0.00295 (0.0307)	-0.00271 (0.0301)
R^2	0.000	0.028	0.000	0.042
Control Mean	0.812	0.812	0.697	0.697
N	2518	2518	1775	1775
Test:				
Any Treatment=Control	0.004	0.007	0.007	0.006
P-value	(0.827)	(0.695)	(0.786)	(0.814)
Story=Statistics	-0.019	-0.019	0.006	0.013
P-value	(0.300)	(0.294)	(0.824)	(0.623)
Correlation Regression:				
Sign-up	0.011	0.011	0.013	0.013
P-value	(0.000)	(0.000)	(0.000)	(0.000)
Controls	No	Yes	No	Yes

Data from Survey parts 1 and 2. The dependent variable is equal to 1 if the respondent indicates an interest in the HIV test voucher. Standard errors are in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

5 Conclusion

This paper uses a randomized field experiment to examine how different information formats influence HIV testing behavior among young adults in Ghana. Using voucher redemption at a clinic as an objective measure of testing, I find that providing information on HIV incidence and testing accessibility increased actual testing by about one percentage

point from a near-zero baseline. The evidence suggests that this effect operated primarily by improving awareness of local testing services and correcting misperceptions about peer testing behavior. Adding narrative elements to the statistical information produced no additional behavioral impact, contrary to findings from other contexts that emphasize the persuasive power of story-based interventions.

Financial incentives generated a much larger behavioral response, increasing testing rates to approximately 11%. When incentives were introduced, testing rates converged across all treatment groups, suggesting that information and incentives influence similar populations rather than reinforcing each other. Self-reported intentions to get tested, in contrast, inflate actual testing demand and showed no significant treatment effects. This discrepancy highlights the limitations of using stated intentions as proxies in studies of sensitive health behavior.

A key limitation of this study is that financial incentives were introduced non-randomly, which prevented causal identification of their interaction with information treatments. Nonetheless, the observed patterns suggest that incentives may act as substitutes rather than complements, overriding prior information effects and producing much larger behavioral responses. Another concern relates to external validity. The information was delivered through an online platform to university students, who may be more responsive to digital interventions than other populations. It is possible that the same information, if delivered through different channels or to different demographic groups, could be either less or more effective.

Nevertheless, the findings demonstrate that sexual health behavior among young adults is responsive to factual, low-cost information. Elaborate narrative presentations do not appear to be more effective than simple statistical facts. This suggests that HIV education campaigns can achieve broad impact without relying on resource-intensive storytelling, and that modest information interventions may complement or even substitute for more expensive, incentive based programs.

More broadly, these results speak to the importance of comparing the relative effectiveness of different intervention types when designing public health campaigns. Increasing awareness of testing opportunities and reducing economic barriers appear to be the most effective levers for motivating HIV testing among educated young adults. While clear, data driven information can promote meaningful behavioral change, even small financial incentives substantially amplify take-up, thus highlighting that reducing both informational and economic frictions is key to improving preventive health behavior.

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A Appendix A

TABLES

Table A1: Mean Differences: Time Spent and Emotional Engagement with Information

	(1) Time Spent	(2) Engagement Level	(3) Happiness	(4) Sadness	(5) Anger	(6) Fear	(7) Surprise	(8) None
Story	10.290 (174.53)	0.009 (0.48)	-0.007 (0.26)	0.016 (0.42)	0.001 (0.07)	-0.012 (0.43)	0.025 (0.50)	-0.019 (0.33)
Statistics	134.188	0.631	0.071	0.233	0.005	0.230	0.496	0.115
N	1881	1881	1881	1881	1881	1881	1881	1881

Data from Survey part 1. The dependent variable in columns 2 through 8 is equal to 1 if the respondent responded "yes" to the variable in the column heading, and 0 otherwise. Standard errors are in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A2: Effect of Receiving Information on Actual HIV Testing Behavior: Heterogeneity

	Sexually Active (1)	Not Sexually Active (2)	Tested Before (3)	Never Tested Before (4)	Tested less than 6 months ago (5)	Tested more than 6 months ago (6)	Male (7)	Female (8)
Any Treatment	0.00999 (0.00748)	0.00700** (0.00316)	0.0122 (0.00881)	0.00803* (0.00413)	0.0153 (0.0165)	0.00750 (0.00831)	0.00612 (0.00450)	0.0154** (0.00703)
R^2	0.024	0.059	0.046	0.017	0.112	0.057	0.016	0.057
Comparison chi-sq (p-value)	0.138 (0.710)		0.192 (0.661)		0.212 (0.645)		1.285 (0.257)	
Story	0.00800 (0.00807)	0.00493 (0.00382)	0.0110 (0.00984)	0.00561 (0.00457)	0.00658 (0.00980)	0.0113 (0.0119)	0.00513 (0.00508)	0.0101 (0.00697)
Statistics	0.0136 (0.0109)	0.0113* (0.00647)	0.0139 (0.0134)	0.0130* (0.00695)	0.0247 (0.0256)	0.000414 (0.00412)	0.00808 (0.00659)	0.0258* (0.0141)
R^2	0.024	0.060	0.047	0.018	0.118	0.061	0.016	0.061
Control Mean	0.005	0.000	0.000	0.003	0.000	0.000	0.003	0.000
N	821	961	288	1494	111	177	1290	492
Test:								
Any Treatment=Control	0.010	0.007	0.012	0.008	0.015	0.008	0.006	0.015
P-value	0.182	0.027	0.168	0.052	0.355	0.368	0.174	0.029
Story=Statistics	-0.006	-0.006	-0.003	-0.007	-0.018	0.011	-0.003	-0.016
P-value	0.615	0.416	0.842	0.333	0.356	0.338	0.681	0.294

Data from Survey Part 2. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A3: Effect of Receiving Information on Actual HIV Testing Behavior: Robustness

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
PANEL A: Pooled Treatment													
Any Kind of Treatment	0.00896** (0.00366)	0.00896** (0.00369)	0.00871** (0.00367)	0.00867** (0.00366)	0.00878** (0.00367)	0.00886** (0.00372)	0.00890** (0.00372)	0.00922** (0.00398)	0.00874** (0.00395)	0.00875** (0.00394)	0.00840** (0.00392)	0.00842** (0.00392)	0.00895** (0.00366)
Observations	1782	1782	1782	1782	1782	1782	1782	1782	1782	1782	1782	1782	1782
R^2	0.002	0.004	0.006	0.007	0.007	0.008	0.008	0.019	0.024	0.025	0.026	0.026	
PANEL A: Specific Treatment													
Story	0.00680* (0.00390)	0.00680* (0.00393)	0.00653* (0.00396)	0.00653* (0.00395)	0.00655* (0.00395)	0.00663* (0.00399)	0.00669* (0.00400)	0.00701 (0.00445)	0.00659 (0.00449)	0.00663 (0.00449)	0.00629 (0.00450)	0.00631 (0.00450)	0.00679* (0.00391)
Statistics	0.0132** (0.00621)	0.0132** (0.00624)	0.0130** (0.00614)	0.0128** (0.00615)	0.0132** (0.00620)	0.0132** (0.00624)	0.0132** (0.00624)	0.0135** (0.00626)	0.0129** (0.00612)	0.0129** (0.00614)	0.0125** (0.00610)	0.0125** (0.00611)	0.0132** (0.00621)
R^2	0.002	0.005	0.007	0.007	0.008	0.008	0.009	0.020	0.025	0.025	0.027	0.027	
Control mean	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
Specification													
Pre-registered sets of controls	No	No	No	No	No	No	No	No	Yes	No	No	No	No
Double- selection LASSO Linear regression	No	No	No	No	No	No	No	No	No	No	No	No	Yes
Baseline Controls													LASSO selected:
None	Yes	No	No	No	No	No	No	No	No	No	No	No	No
Gender	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Age	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Marital Status	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Children	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Sexually Active	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Tested Before	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Has Boy/Girlfriend	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Undergraduate Student	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No
Employed	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No
Region of Residence	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	No
Ethnicity	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	No
Income	No	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes	No
Religion	No	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes	No
Baseline Beliefs													
Number of new HIV infections (log)	No	No	No	No	No	No	No	No	No	Yes	Yes	Yes	No
% infections among people aged 15–24 yrs	No	No	No	No	No	No	No	No	No	Yes	Yes	Yes	No
% who agree that highest test takers are 15–24 yrs	No	No	No	No	No	No	No	No	No	No	Yes	Yes	No
%test takers who are 15–24 yrs	No	No	No	No	No	No	No	No	No	No	Yes	Yes	No
Average Test Time (mins)	No	No	No	No	No	No	No	No	No	No	No	Yes	Yes

Data from Survey part 2. The dependent variable is equal to 1 if the respondent took an HIV test at the clinic. Standard errors are in parentheses *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A4: Respondent Attrition at Survey Round 2

	Participated in Survey Round 2
Any Treatment	0.0143 (0.0210)
R^2	0.000
Story	0.0125 (0.0223)
Statistics	0.0179 (0.0256)
R^2	0.000
Control Mean	0.697
N	2518
Omnibus test for a joint effect of interaction terms of Treatment and pre-specified controls:	
P-value (any Treatment)	0.001
P-value (Stat, Story)	0.000
Lee(2009) Bounds: T	
Lower	-0.0023 (0.0023)
Upper	0.0092 (0.0037)

Data from Survey part 2. The dependent variable is an indicator for whether a respondent participated in the survey round 2. The omnibus randomization test of joint significance presents a p-value of an F-test for joint significance of a sum of coefficients for the treatment assignment and of all interactions of pre-specified controls with treatment in an OLS regression, with participation as a dependent variable and treatment, pre-specified set of controls, and interaction terms of treatment and the pre-specified set of controls as independent variables. Standard errors are in parenthesis. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

B Appendix B: Results for Attentive Sample

FIGURES

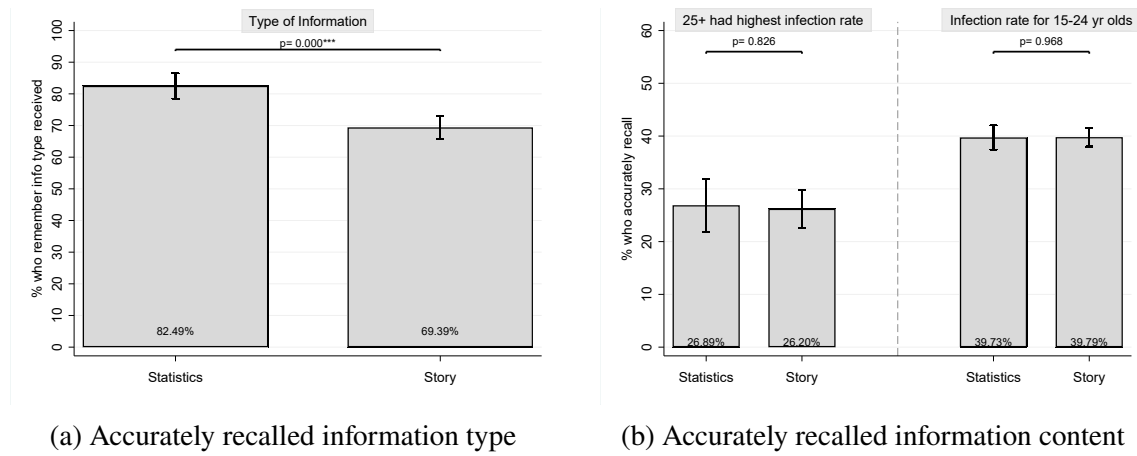


Figure B1: Effect of information on recall. Attentive sample only. The left panel displays respondents' recall of the type of information they received at baseline. The right panel shows their recall of the content of the information: i.e., the percentage of subjects who accurately recall that those aged 25 and above had the highest rate of infection in 2022, and the reported percentage of subjects aged 15–24 newly infected with HIV in 2022.

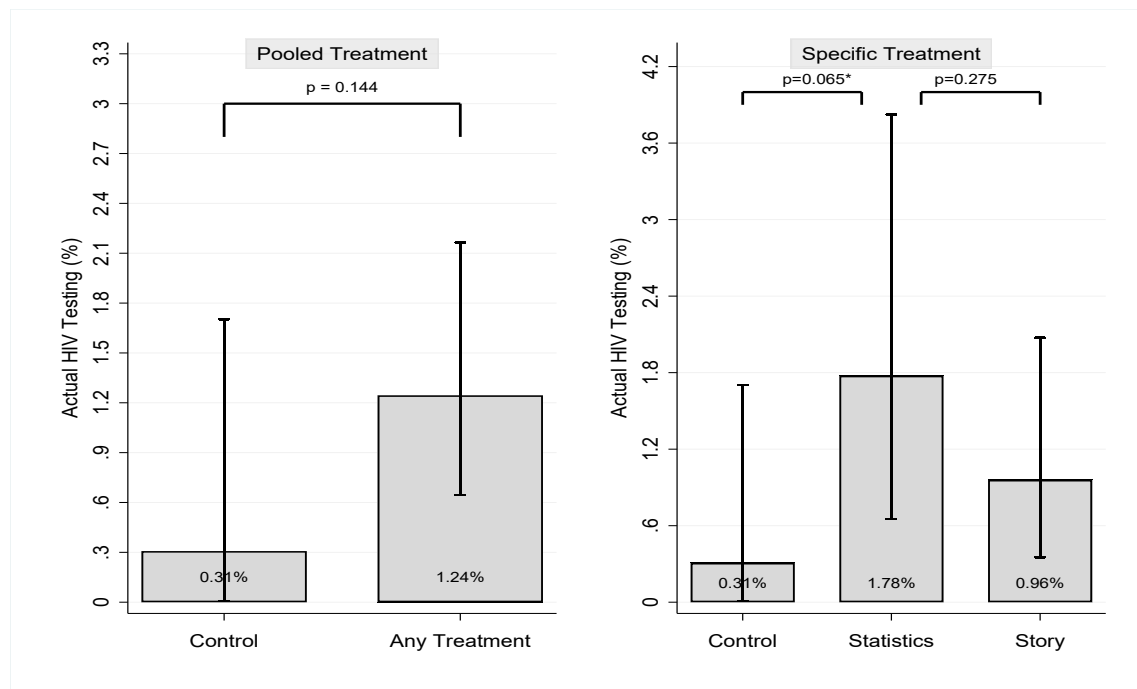
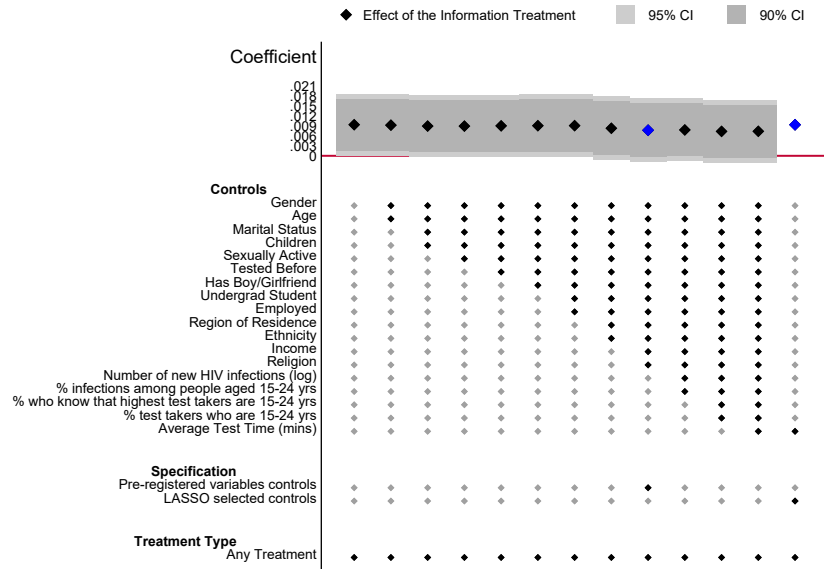
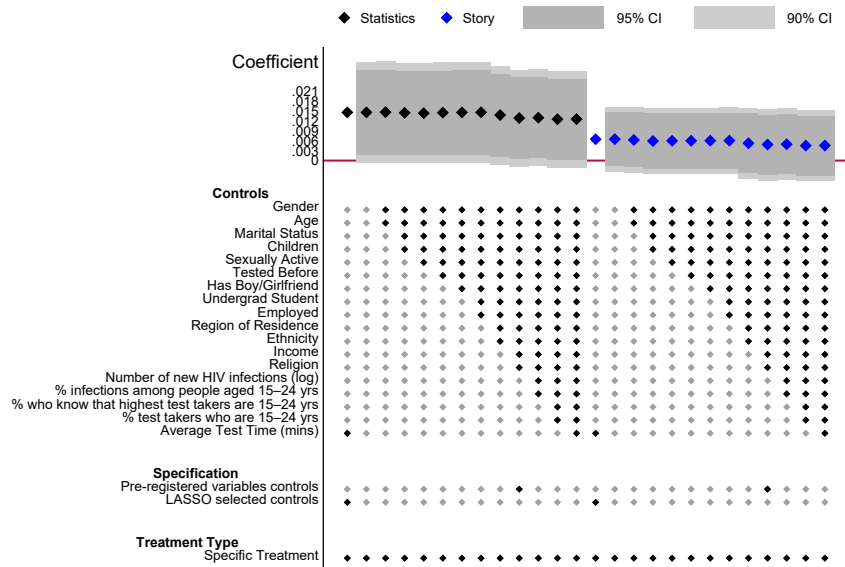


Figure B2: Effects of information on actual HIV testing behavior. Attentive sample only. The left figure illustrates the estimated effects of receiving either type of information on actual HIV testing at the clinic. The right figure displays the same results, further disaggregated by the specific types of treatment information received.



(a) Any Treatment



(b) Specific Treatment

Figure B3: Effect of receiving information on actual HIV testing behavior: Robustness. Attentive sample only. The darker (lighter) whiskers denote the 95% (90%) confidence interval based on standard errors clustered at the respondent level. I report a range of specifications by sequentially adding sets of control variables in Table B1. In panel A, the specification with all pre-registered sets of controls and the LASSO specification are marked with blue diamonds. In Panel B, coefficients for the Statistics treatment are marked with black diamonds and the coefficients for the Story treatment are marked with blue diamonds. Supplementary Table B7 shows the regression results in detail.

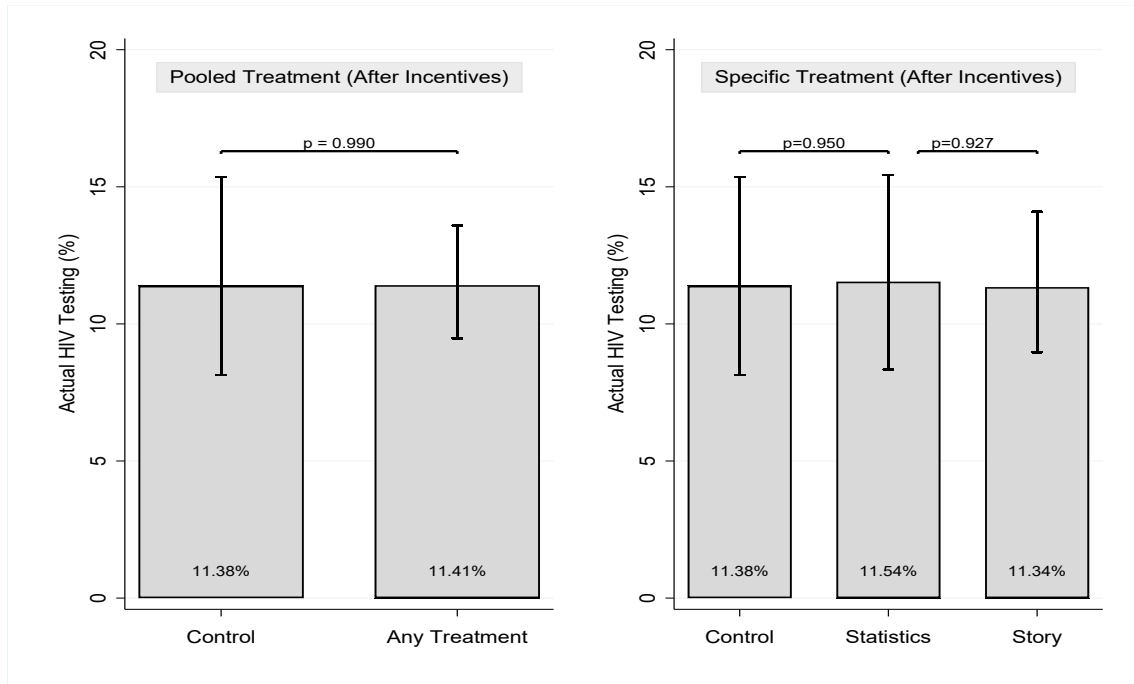


Figure B4: Effect of information on actual HIV testing behavior after incentives are announced. Attentive sample only. The left figure illustrates the estimated effects of receiving either type of information on actual HIV tests at the clinic after incentives are announced. The right figure displays the same results, further disaggregated by the specific types of treatment information received.

TABLES

Table B1: Summary Statistics

	(1) All	(2) Story	(3) Statistics	(4) Control	(5) (2) vs. (3)	(6) (3) vs. (4)
N	1796	882	463	451	1764	926
Age	20.50 (2.10)	20.55 (2.29)	20.43 (1.90)	20.47 (1.92)	0.31	0.74
Male(%)	69.27	70.98	69.11	66.08	0.48	0.33
Unmarried(%)	99.44	99.55	99.14	99.56	0.35	0.43
Sexually Active (%)	46.71	46.15	48.16	46.34	0.48	0.58
Have Children(%)	1.11	1.25	0.86	1.11	0.53	0.71
Tested for HIV(%)	16.43	15.65	17.49	16.85	0.38	0.80
Have a Partner(%)	37.47	35.83	38.23	39.91	0.39	0.60
Undergraduate Student(%)	99.05	98.64	99.57	99.33	0.11	0.63
Employed(%)	3.79	4.31	3.02	3.55	0.25	0.66
Religion						
Christian	92.26	92.74	91.36	92.24	0.37	0.63
Muslim	7.24	6.80	7.99	7.32	0.42	0.70
Trad. Indigenous Religion	0.22	0.23	0.22	0.22	0.97	0.99
Not Religious	0.28	0.23	0.43	0.22	0.51	0.58
Household Income						
Up to 2,000 Cedis	60.97	60.20	62.42	60.98	0.43	0.65
2,000 - 4,999 Cedis	20.27	20.29	20.09	20.40	0.93	0.91
5,000 - 7,999 Cedis	9.86	10.20	8.42	10.64	0.29	0.25
8,000 - 11,999 Cedis	4.34	4.42	5.40	3.10	0.42	0.09
Above 12,000 Cedis	4.57	4.88	3.67	4.88	0.31	0.37
Ethnicity						
Akan	67.04	67.69	66.52	66.30	0.67	0.94
Ewe	12.86	11.56	14.25	13.97	0.16	0.90
Ga-Adangbe	7.63	8.62	7.13	6.21	0.34	0.58
Mole-Dagbani	8.24	8.50	8.42	7.54	0.96	0.62
Guan	3.23	2.83	2.59	4.66	0.80	0.09
Gurma	1.00	0.79	1.08	1.33	0.60	0.73
Region of Residence						
Western	7.07	7.03	7.78	6.43	0.62	0.43
Central	6.51	6.24	6.91	6.65	0.63	0.88
Greater Accra	30.29	30.95	28.51	30.82	0.35	0.44
Volta Region	2.17	1.93	2.38	2.44	0.58	0.95
Eastern	6.24	6.58	6.91	4.88	0.82	0.19
Ashanti	36.53	36.96	35.85	36.36	0.69	0.87
Brong-Ahafo	3.17	2.95	3.46	3.33	0.61	0.91
Northern	2.06	2.27	2.16	1.55	0.90	0.50
Upper East	1.28	1.02	1.94	1.11	0.16	0.30
Upper West	0.50	0.57	0.22	0.67	0.36	0.30
Bono East	1.11	1.02	0.65	1.77	0.49	0.12
Ahafo	0.84	0.45	0.86	1.55	0.35	0.34
Savannah	0.33	0.57	0.00	0.22	0.10	0.31
North East	0.33	0.23	0.43	0.44	0.51	0.98
Oti	0.39	0.57	0.43	0.00	0.74	0.16
Western North	1.17	0.68	1.51	1.77	0.14	0.76
Beliefs about HIV						
New HIV infections (log)	10.248 [2.471]	10.260 [2.482]	10.209 [2.440]	10.262 [2.485]	0.051 (0.674)	-0.053 (0.702)
% infected age 15–24	47.780 [23.557]	47.303 [23.341]	49.288 [23.503]	47.212 [24.002]	-1.986* (0.082)	2.076 (0.119)
Highest test takers 15–24	0.802 [0.398]	0.815 [0.389]	0.802 [0.399]	0.779 [0.415]	0.013 (0.496)	0.023 (0.316)
% test takers age 15–24	51.952 [22.574]	52.425 [22.605]	52.676 [22.778]	50.306 [22.263]	-0.250 (0.821)	2.369* (0.061)
Average Test Time (mins)	27.989 [22.756]	27.322 [22.485]	29.482 [23.968]	27.771 [21.968]	-2.160 (0.118)	1.712 (0.287)
Test of Joint Significance of all Variables						
P-value						0.90

Data from Survey part 1. Attentive sample only.

Table B2: Misperceptions about HIV Incidence and Testing

	Baseline Belief (2023)	True Value (2022)	Difference (P-value)
Number of new HIV infections (log)	10.283	8.44	1.847 (0.000)
% infections among people aged 15–24 yrs	47.845	28.00	19.845 (0.000)
% who know that highest test takers are 15–24 yrs	81.682	100.00	-18.318 (0.000)
% test takers who are 15–24 yrs	53.326	57.00	-3.674 (0.000)
Average Test Time (mins)	28.642	30.00	-1.358 (0.044)

Data from Survey part 1. Attentive sample only.

Table B3: Effect of Receiving Information on HIV Beliefs and Related Knowledge

	Health Risks		Peer Testing		Testing Access		Knowledge				
	(1) New Infections (log)	(2) % Infections among 15-24 yrs	(3) % Agree 15-24 highest testers	(4) % Testers 15-24 yrs	(5) Average test time (min)	(6) Know a test location	(7) Treatment prolongs life	(8) Treatment prevents transmission	(9) HIV Can be treated	(10) Treatment is not expensive	(11) Knowledge Index
Any Treatment	-0.207*** (0.0787)	-9.261*** (0.855)	5.663*** (1.497)	-4.640*** (0.777)	1.659* (0.873)	0.0789*** (0.0216)	0.0352 (0.0268)	0.0551* (0.0312)	0.0133 (0.0129)	0.0305 (0.0287)	0.0335** (0.0151)
R^2	0.406	0.359	0.312	0.348	0.362	0.034	0.014	0.021	0.012	0.024	0.023
Story	-0.199** (0.0875)	-9.259*** (0.928)	5.132*** (1.607)	-4.474*** (0.851)	1.964** (0.930)	0.0804*** (0.0225)	0.0490* (0.0282)	0.0442 (0.0332)	0.0115 (0.0137)	0.0427 (0.0307)	0.0368** (0.0159)
Statistics	-0.223** (0.0956)	-9.265*** (1.097)	6.666*** (1.913)	-4.952*** (0.982)	1.093 (1.011)	0.0760*** (0.0243)	0.00943 (0.0328)	0.0755** (0.0370)	0.0167 (0.0148)	0.00793 (0.0345)	0.0274 (0.0181)
R^2	0.406	0.359	0.312	0.348	0.362	0.034	0.016	0.022	0.012	0.025	0.024
Control Mean	10.257	47.310	80.931	51.871	27.679	0.849	0.766	0.618	0.954	0.258	0.649
N	1796	1796	1796	1796	1191	1289	1289	1289	1289	1289	1289
Test:											
Any Treatment=Control	-0.207 (0.009)	-9.261 (0.000)	5.663 (0.000)	-4.640 (0.000)	1.659 (0.058)	0.079 (0.000)	0.035 (0.190)	0.055 (0.077)	0.013 (0.303)	0.030 (0.288)	0.034 (0.026)
Story=Stat	0.025 (0.792)	0.006 (0.995)	-1.534 (0.387)	0.478 (0.615)	0.871 (0.296)	0.004 (0.796)	0.040 (0.153)	-0.031 (0.318)	-0.005 (0.658)	0.035 (0.251)	0.009 (0.533)

Data from Survey parts 1 and 2. Attentive sample only. The dependent variables in columns 1 to 5 are the posteriors elicited after the information intervention in the baseline survey, and the dependent variable in columns (6) through (10) is equal to 1 if the respondent responded "yes" to the variable in the column heading, and 0 otherwise, recorded in the survey part 2. The knowledge index is constructed as the unweighted average of the binary responses to the four individual knowledge items reported in columns (7) through (10). All regressions include the set of pre-registered controls. Standard errors are in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table B4: Effect of Receiving Information on Self-Reported Intentions to Get Tested

	Immediately		2 Weeks Later	
	(1)	(2)	(3)	(4)
Any Treatment	-0.0160 (0.0214)	-0.0126 (0.0210)	0.00988 (0.0298)	0.00952 (0.0292)
R^2	0.000	0.035	0.000	0.043
Correlate Sign-up Take-up	0.049		0.067	
Story	-0.0246 (0.0229)	-0.0202 (0.0225)	0.00932 (0.0317)	0.0121 (0.0311)
Statistics	0.000508 (0.0258)	0.00159 (0.0256)	0.0109 (0.0359)	0.00485 (0.0355)
R^2	0.001	0.035	0.000	0.043
Control Mean	0.814	0.814	0.687	0.687
N	1796	1796	1284	1284
Test:				
Any Treatment=Control	-0.016 (0.455)	-0.013 (0.548)	0.010 (0.740)	0.010 (0.744)
Story=Statistics	-0.025 (0.269)	-0.022 (0.336)	-0.002 (0.959)	0.007 (0.816)
Correlation Regression:				
Sign-up	0.012	0.013	0.014	0.016
P-value	(0.000)	(0.001)	(0.000)	(0.001)
Controls	No	Yes	No	Yes

Data from Survey parts 1 and 2. Attentive sample only. The dependent variable is equal to 1 if the respondent indicates an interest in the HIV test voucher. Standard errors are in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table B5: Mean Differences: Time Spent and Emotional Engagement with Information

	(1) Time Spent	(2) Engagement Level	(3) Happiness	(4) Sadness	(5) Anger	(6) Fear	(7) Surprise	(8) None
Story	17.344 (196.50)	0.006 (0.48)	-0.000 (0.25)	0.012 (0.42)	-0.000 (0.07)	-0.002 (0.42)	0.004 (0.50)	-0.012 (0.34)
Statistics	149.997	0.650	0.069	0.233	0.004	0.231	0.495	0.127
N	1345	1345	1345	1345	1345	1345	1345	1345

Data from Survey part 1. Attentive sample only. The dependent variable in columns 2 through 8 is equal to 1 if the respondent responded "yes" to the variable in the column heading, and 0 otherwise. Standard errors are in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table B6: Effect of Receiving Information on Actual HIV Testing Behavior: Heterogeneity

	Sexually Active (1)	Not Sexually Active (2)	Tested Before (3)	Never Tested Before (4)	Tested less than 6 months ago (5)	Tested more than 6 months ago (6)	Male (7)	Female (8)
Any Treatment	0.00907 (0.00951)	0.00718* (0.00399)	0.0152 (0.0113)	0.00712 (0.00526)	0.0219 (0.0253)	0.00916 (0.0108)	0.00622 (0.00612)	0.0182** (0.00917)
R^2	0.031	0.089	0.062	0.030	0.159	0.078	0.029	0.086
Comparison chi-sq (p-value)	0.035 (0.852)		0.459 (0.498)		0.274 (0.601)		1.239 (0.266)	
Story	0.00357 (0.00970)	0.00671 (0.00555)	0.0142 (0.0125)	0.00404 (0.00575)	0.0142 (0.0205)	0.0138 (0.0151)	0.00351 (0.00651)	0.0151* (0.00881)
Statistics	0.0182 (0.0142)	0.00812 (0.00621)	0.0171 (0.0186)	0.0129 (0.00843)	0.0313 (0.0338)	-0.00125 (0.00649)	0.0113 (0.00960)	0.0240 (0.0149)
R^2	0.034	0.089	0.063	0.031	0.163	0.083	0.030	0.088
Control Mean	0.007	0.000	0.000	0.004	0.000	0.000	0.005	0.000
N	598	691	215	1074	80	135	901	388
Test:								
Any Treatment=Control	0.009	0.007	0.015	0.007	0.022	0.009	0.006	0.018
P-value	0.341	0.073	0.179	0.176	0.390	0.398	0.310	0.047
Story=Statistics	-0.015	-0.001	-0.003	-0.009	-0.017	0.015	-0.008	-0.009
P-value	0.288	0.874	0.885	0.327	0.416	0.340	0.435	0.525

Data from Survey Part 2. Attentive sample only. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table B7: Effect of Receiving Information on Actual HIV Testing Behavior: Robustness

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
PANEL A: Pooled Treatment													
Any Kind of Treatment	0.00937** (0.00471)	0.00924* (0.00476)	0.00897* (0.00473)	0.00896* (0.00473)	0.00903* (0.00473)	0.00907* (0.00476)	0.00910* (0.00477)	0.00830* (0.00490)	0.00771 (0.00487)	0.00780 (0.00482)	0.00737 (0.00478)	0.00740 (0.00479)	0.00936** (0.00472)
Observations	1289	1289	1289	1289	1289	1289	1289	1289	1289	1289	1289	1289	1289
R ²	0.002	0.004	0.009	0.009	0.010	0.011	0.012	0.025	0.033	0.033	0.036	0.036	
PANEL A: Specific Treatment													
Story	0.00651 (0.00497)	0.00627 (0.00505)	0.00596 (0.00510)	0.00601 (0.00509)	0.00604 (0.00509)	0.00606 (0.00511)	0.00608 (0.00513)	0.00528 (0.00549)	0.00487 (0.00554)	0.00497 (0.00554)	0.00455 (0.00550)	0.00458 (0.00549)	0.00649 (0.00497)
Statistics	0.0147* (0.00782)	0.0147* (0.00785)	0.0145* (0.00774)	0.0144* (0.00773)	0.0146* (0.00776)	0.0147* (0.00779)	0.0147* (0.00782)	0.0138* (0.00761)	0.0129* (0.00751)	0.0130* (0.00745)	0.0126* (0.00745)	0.0126* (0.00747)	0.0147* (0.00782)
R ²	0.003	0.005	0.010	0.010	0.011	0.012	0.013	0.026	0.034	0.034	0.037	0.037	
Control mean	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003
Specification													
Pre-registered sets of controls	No	No	No	No	No	No	No	No	Yes	No	No	No	No
Double- selection LASSO Linear regression	No	No	No	No	No	No	No	No	No	No	No	No	Yes
Baseline Controls													LASSO selected:
None	Yes	No	No	No	No	No	No	No	No	No	No	No	No
Gender	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Age	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Marital Status	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Children	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Sexually Active	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Tested Before	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Has Boy/Girlfriend	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Undergraduate Student	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No
Employed	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No
Region of Residence	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	No
Ethnicity	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	No
Income	No	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes	No
Religion	No	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes	No
Baseline Beliefs													
Number of new HIV infections (log)	No	No	No	No	No	No	No	No	No	Yes	Yes	Yes	No
% infections among people aged 15–24 yrs	No	No	No	No	No	No	No	No	No	Yes	Yes	Yes	No
% who agree that highest test takers are 15–24 yrs	No	No	No	No	No	No	No	No	No	No	Yes	Yes	No
%test takers who are 15–24 yrs	No	No	No	No	No	No	No	No	No	No	Yes	Yes	No
Average Test Time (mins)	No	No	No	No	No	No	No	No	No	No	No	Yes	Yes

Data from Survey part 2. Attentive sample only. The dependent variable is equal to 1 if the respondent took an HIV test at the clinic. Standard errors are in parentheses ***
p<0.01, ** p<0.05, * p<0.1.

Table B8: Respondent Attrition at Survey Round 2 (Attentive Sample Only)

	Participated in Survey Round 2
Any Treatment	-0.00389 (0.0245)
R^2	0.000
Story	-0.0109 (0.0261)
Statistics	0.00940 (0.0296)
R^2	0.000
Control Mean	0.721
N	1796
Omnibus test for a joint effect of interaction terms of Treatment and pre-specified controls:	
P-value (any Treatment)	0.000
P-value (Stat, Story)	0.000
Lee(2009) Bounds: T	
Lower	0.0094 (0.0047)
Upper	0.0124 (0.0036)

Data from Survey Part 2, attentive sample only. The dependent variable is an indicator for whether a respondent participated in Survey Round 2. The omnibus randomization test of joint significance reports the p -value from an F-test for the joint significance of treatment assignment and all interactions between treatment and pre-specified controls in an OLS regression. The regression includes treatment, the pre-specified set of controls, and their interaction terms as independent variables, with participation as the dependent variable. Standard errors are in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

C Appendix C: Wording of Information Treatments

Treatment: Statistics

Block 1: New HIV Infections: In 2022, Ghana recorded 16,574 new HIV infections. The situation is especially serious among the youth. For example;

Out of the 33.48 million people in Ghana, 6.2 million are aged between 15-24, similar in age to Kofi. Despite making up 19% of the population, this age group experienced 4,610 new HIV infections, representing 28% of all new cases.



Figure C1: Young People and HIV Testing in Ghana

Block 2: Importance of HIV Testing: Knowing one's HIV status is crucial in reducing the risk of spreading the virus and getting treatment, which is free. Encouragingly, many young people in Ghana are getting tested regularly. For instance;

In 2022, the Bomso PPAG clinic conducted HIV tests for 4,828 individuals who were 15 years and above. Of these, 2,749 (representing 57%) were people aged 15-24 similar in age like Kofi, making them the largest group of test-takers at the clinic.

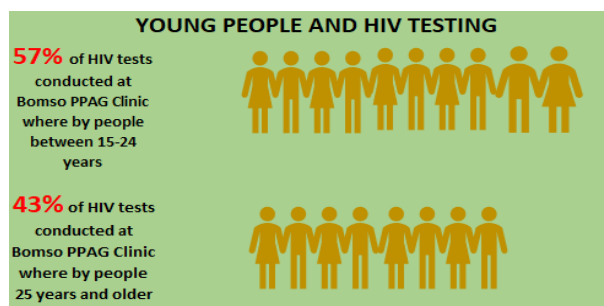


Figure C2: Young People and HIV Testing in Ghana

Block 3: This significant participation in HIV testing, especially among young people, highlights the growing awareness and proactive steps being taken to combat the spread of HIV in Ghana. You, too, can take an HIV test at the Bomso PPAG clinic, located directly behind the KNUST shuttle bus rank at the commercial area and opposite the UBA Bank.

The entire process takes an average of 30 minutes, during which you will receive pre-test counseling to guide you on the next steps should your results come back positive. Many young adults like yourself who visit the clinic for an HIV test report high satisfaction with the quality of services provided. By getting tested, you join a growing number of young people who are taking charge of their health and contributing to the fight against HIV.

Treatment: Story (Negative Results, Male Narrator)

Block 1:

Do You Know Your HIV Status?

Kofi had always been the life of the party. He often told himself HIV was something that happened to other people, not someone like him, because he was not sleeping around. Then one day, his ex-girlfriend told him to get tested for HIV because she had tested positive.

Immediately, his mind went to the worst case scenario; what if the test came back positive? How will his family and friends treat him? He convinced himself that not taking a test was the best thing to do. However, whenever he felt any slight discomfort in his body, a deep sense of fear and uncertainty filled him.

Block 2: Eventually, he mustered some courage and decided to get an HIV test at the Bomso PPAG clinic. In a confidential and private setting, he was educated on the test's nature and the implications of both positive and negative results.

After the test was conducted, he anxiously awaited the results. Then, the nurse brought the results - negative. Suddenly, a sense of relief washed all over him. Kofi realized that by facing his fears and choosing to get tested, He had taken control over his life

Block 3: New HIV Infections: In 2022, Ghana recorded 16,574 new HIV infections. The situation is especially serious among the youth. For example;

Out of the 33.48 million people in Ghana, 6.2 million are aged between 15-24, similar in age to Kofi. Despite making up 19% of the population, this age group experienced 4,610 new HIV infections, representing 28% of all new cases.

[Same as Fig C1]

Block 4: Importance of HIV Testing: Knowing one's HIV status is crucial in reducing the risk of spreading the virus and getting treatment, which is free. Encouragingly, many young people in Ghana are getting tested regularly. For instance;

In 2022, the Bomso PPAG clinic conducted HIV tests for 4,828 individuals who were 15 years and above. Of these, 2,749 (representing 57%) were people aged 15-24 similar in age like Kofi, making them the largest group of test-takers at the clinic.

[Same as Fig C2]

Block 5: This significant participation in HIV testing, especially among young people, highlights the growing awareness and proactive steps being taken to combat the spread of HIV in Ghana. You, too, can take an HIV test at the Bomso PPAG clinic, located directly behind the KNUST shuttle bus rank at the commercial area and opposite the UBA Bank.

The entire process takes an average of 30 minutes, during which you will receive pre-test counseling to guide you on the next steps should your results come back positive. Many young adults like yourself who visit the clinic for an HIV test report high satisfaction with the quality of services provided. By getting tested, you join a growing number of young people who are taking charge of their health and contributing to the fight against HIV.

Treatment: Story (Negative Results, Female Narrator)

Block 1:

Do You Know Your HIV Status?

Afia had always been the life of the party. She often told herself HIV was something that happened to other people, not someone like her, because she was not sleeping around. Then one day, her ex-boyfriend told her to get tested for HIV because he had tested positive.

Immediately, her mind went to the worst case scenario; what if the test came back positive? How will her family and friends treat her? She convinced herself that not taking a test was the best thing to do. However, whenever she felt any slight discomfort in her body, a deep sense of fear and uncertainty filled her.

Block 2: Eventually, she mustered some courage and decided to get an HIV test at the Bomso PPAG clinic. In a confidential and private setting, she was educated on the test's nature and the implications of both positive and negative results.

After the test was conducted, she anxiously awaited the results. Then, the nurse brought the results - negative. Suddenly, a sense of relief washed all over her. Afia realized that by facing her fears and choosing to get tested, she had taken control over her life.

Block 3: New HIV Infections: In 2022, Ghana recorded 16,574 new HIV infections. The situation is especially serious among the youth. For example;

Out of the 33.48 million people in Ghana, 6.2 million are aged between 15-24, similar in age to Afia. Despite making up 19% of the population, this age group experienced 4,610 new HIV infections, representing 28% of all new cases.

[Same as Fig C1]

Block 4: Importance of HIV Testing: Knowing one's HIV status is crucial in reducing the risk of spreading the virus and getting treatment, which is free. Encouragingly, many young people in Ghana are getting tested regularly. For instance;

In 2022, the Bomso PPAG clinic conducted HIV tests for 4,828 individuals who were 15 years and above. Of these, 2,749 (representing 57%) were people aged 15-24 similar in age like Afia, making them the largest group of test-takers at the clinic.

[Same as Fig C2]

Block 5: This significant participation in HIV testing, especially among young people, highlights the growing awareness and proactive steps being taken to combat the spread of HIV in Ghana. You, too, can take an HIV test at the Bomso PPAG clinic, located directly behind the KNUST shuttle bus rank at the commercial area and opposite the UBA Bank.

The entire process takes an average of 30 minutes, during which you will receive pre-test counseling to guide you on the next steps should your results come back positive. Many young adults like yourself who visit the clinic for an HIV test report high satisfaction with the quality of services provided. By getting tested, you join a growing number of young people who are taking charge of their health and contributing to the fight against HIV.

Treatment: Story (Positive Results, Male Narrator)

Do You Know Your HIV Status?

Kwame had always been the life of the party. He often told himself HIV was something that happened to other people, not someone like him, because he was not sleeping around. Then one day, his ex-girlfriend told him to get tested for HIV because she had tested positive.

Immediately, his mind went to the worst case scenario; what if the test came back positive? How will his family and friends treat him? He convinced himself that not taking a test was the best thing to do. However, whenever he felt any slight discomfort in his body, a deep sense of fear and uncertainty filled him.

Block 2: Eventually, he mustered some courage and decided to get an HIV test at the Bomso PPAG clinic. In a confidential and private setting, he was educated on the test's nature and the implications of both positive and negative results.

After the test was conducted, he anxiously awaited the results. Then, the nurse brought the results - positive. Suddenly, a wave of fear and despair engulfed him. However, Kwame realized that if he had not faced his fears and chosen to get tested, he might have remained unaware to his condition, but now, he had the opportunity to start early treatment which could allow him to live longer and healthier

Block 3: New HIV Infections: In 2022, Ghana recorded 16,574 new HIV infections. The situation is especially serious among the youth. For example;

Out of the 33.48 million people in Ghana, 6.2 million are aged between 15-24, similar in age to Kofi. Despite making up 19% of the population, this age group experienced 4,610 new HIV infections, representing 28% of all new cases.

[Same as Fig C1]

Block 4: Importance of HIV Testing: Knowing one's HIV status is crucial in reducing the risk of spreading the virus and getting treatment, which is free. Encouragingly, many young people in Ghana are getting tested regularly. For instance;

In 2022, the Bomso PPAG clinic conducted HIV tests for 4,828 individuals who were 15 years and above. Of these, 2,749 (representing 57%) were people aged 15-24 similar in age like Afia, making them the largest group of test-takers at the clinic.

[Same as Fig C2]

Block 5: This significant participation in HIV testing, especially among young people, highlights the growing awareness and proactive steps being taken to combat the spread of HIV in Ghana. You, too, can take an HIV test at the Bomso PPAG clinic, located directly behind the KNUST shuttle bus rank at the commercial area and opposite the UBA Bank.

The entire process takes an average of 30 minutes, during which you will receive pre-test counseling to guide you on the next steps should your results come back positive. Many young adults like yourself who visit the clinic for an HIV test report high satisfaction with the quality of services provided. By getting tested, you join a growing number of young people who are taking charge of their health and contributing to the fight against HIV.

Treatment: Story (Positive Results, Female Narrator)

Do You Know Your HIV Status?

Ama had always been the life of the party. She often told herself HIV was something that happened to other people, not someone like her, because she was not sleeping around. Then one day, her ex-boyfriend told her to get tested for HIV because he had tested positive.

Immediately, her mind went to the worst case scenario; what if the test came back positive? How will her family and friends treat her? She convinced herself that not taking a test was the best thing to do. However, whenever she felt any slight discomfort in her body, a deep sense of fear and uncertainty filled her.

Block 2: Eventually, she mustered some courage and decided to get an HIV test at the Bomso PPAG clinic. In a confidential and private setting, she was educated on the test's nature and the implications of both positive and negative results.

After the test was conducted, she anxiously awaited the results. Then, the nurse brought the results - positive. Suddenly, a wave of fear and despair engulfed her. However, Ama realized that if she had not faced her fears and chosen to get tested, she might have remained unaware to her condition, but now, she had the opportunity to start early treatment which could allow her to live longer and healthier

Block 3: New HIV Infections: In 2022, Ghana recorded 16,574 new HIV infections. The situation is especially serious among the youth. For example;

Out of the 33.48 million people in Ghana, 6.2 million are aged between 15-24, similar in age to Kofi. Despite making up 19% of the population, this age group experienced 4,610 new HIV infections, representing 28% of all new cases.

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In 2022, the Bomso PPAG clinic conducted HIV tests for 4,828 individuals who were 15 years and above. Of these, 2,749 (representing 57%) were people aged 15-24 similar in age like Afia, making them the largest group of test-takers at the clinic.

[Same as Fig C2]

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The entire process takes an average of 30 minutes, during which you will receive pre-test counseling to guide you on the next steps should your results come back positive. Many young adults like yourself who visit the clinic for an HIV test report high satisfaction with the quality of services provided. By getting tested, you join a growing number of young people who are taking charge of their health and contributing to the fight against HIV.

Abstrakt

Porozumění tomu, co motivuje lidi k testování na HIV, je zásadní pro navrhování účinných komunikačních strategií podporujících využívání testování. V této studii používám randomizovaný experiment, abych zkoumala, zda a jak formát poskytnutých informací ovlivňuje chování související s testováním na HIV mezi vysokoškolskými studenty v Ghaně. Poskytnutí faktických informací o výskytu HIV a dostupnosti blízkých testovacích služeb zvýšilo skutečné míry testování přibližně o 1 procentní bod z téměř nulového výchozího stavu. Naproti tomu přidání příběhu o testovací zkušenosti k těmto statistickým informacím nepřineslo žádný dodatečný efekt. Finanční pobídky, zavedené nerandomizovaně, zvýšily míry testování na 11 procent. Zajímavé je, že dopad původních informačních intervencí zeslábl, když byla k dispozici finanční pobídka.

Analýza výsledků týkajících se přesvědčení ukazuje, že informační intervence působila především zvýšením povědomí o místních testovacích službách a korigováním mylných představ o chování vrstevníků v oblasti testování, spíše než zvýšením vnímaného rizika. Příběhy však nezvýšily účinek intervence na přesvědčení ani na zapamatování informací nad rámec dopadu jednoduchých statistických údajů. Tyto výsledky naznačují, že faktické informace mohou v tomto kontextu účinně odstraňovat informační bariéry k testování na HIV, zatímco narativní prvky nenabízejí žádný měřitelný dodatečný přínos při ovlivňování tohoto vysoce významného zdravotního chování.

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