

Making rapid HIV testing in the Emergency Department work: Getting to “Yes”

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Introduction

- It is estimated that one in five HIV-infected persons in the US is unaware of their infection (1).
- The Centers for Disease Control and Prevention (CDC) recommended in 2006 that all adults and adolescents be offered HIV screening in healthcare settings, including the Emergency Department (ED) (2).
- Acute care settings such as the ED, may have high diagnostic potential for opt-out rapid HIV testing approaches, since they disproportionately serve low-income, disadvantaged patients which are populations with a high prevalence of undiagnosed HIV infection (3,4).
- Rates of test acceptance in the ED in the U.S. are generally below 70% but may vary by approach (5).
- We evaluated a non-targeted rapid HIV testing program at Duke University Medical Center Emergency Department which cares for approximately 69,000 patients per year.

Materials and Methods

- Free, non-targeted, rapid HIV testing initiated at Duke University Medical Center (DUMC) ED December 2008. Patients offered testing were ≥18 years old, mentally competent, not known to be HIV positive, and provided written informed consent.
 - Testing offered between 11 am – 10 pm weekdays (some weekend coverage)
 - Testers included both non-medical (Pastoral staff and Divinity School interns) and medical personnel (medical students, study coordinator nurse, clinical trials assistants).
 - Both groups received similar orientation and training on HIV testing and counseling.
- Demographics, history of previous testing, and reasons for declining testing were collected
- HIV testing done by OraQuick Advance® Rapid HIV-1/2 antibody test with western blot confirmatory testing
- Patients with positive tests were referred to the Duke Infectious Diseases Clinic
- Study was approved by Duke University Medical Center IRB

Results

- Between December 1, 2008 and May 31, 2010, 2152 patients have been approached with 1370 accepting testing (63.66% overall acceptance rate).
- There were four confirmed positive results out of the 1370 tests performed, representing a frequency of 0.292%. This was not significantly different from the Durham County Health Department for the 2009-2010 fiscal year where they tested 10,626 patients with 50 positive results, a frequency of 0.471%.
- There were 11 patients who declined to have their demographic information used and were excluded from all subsequent calculations.

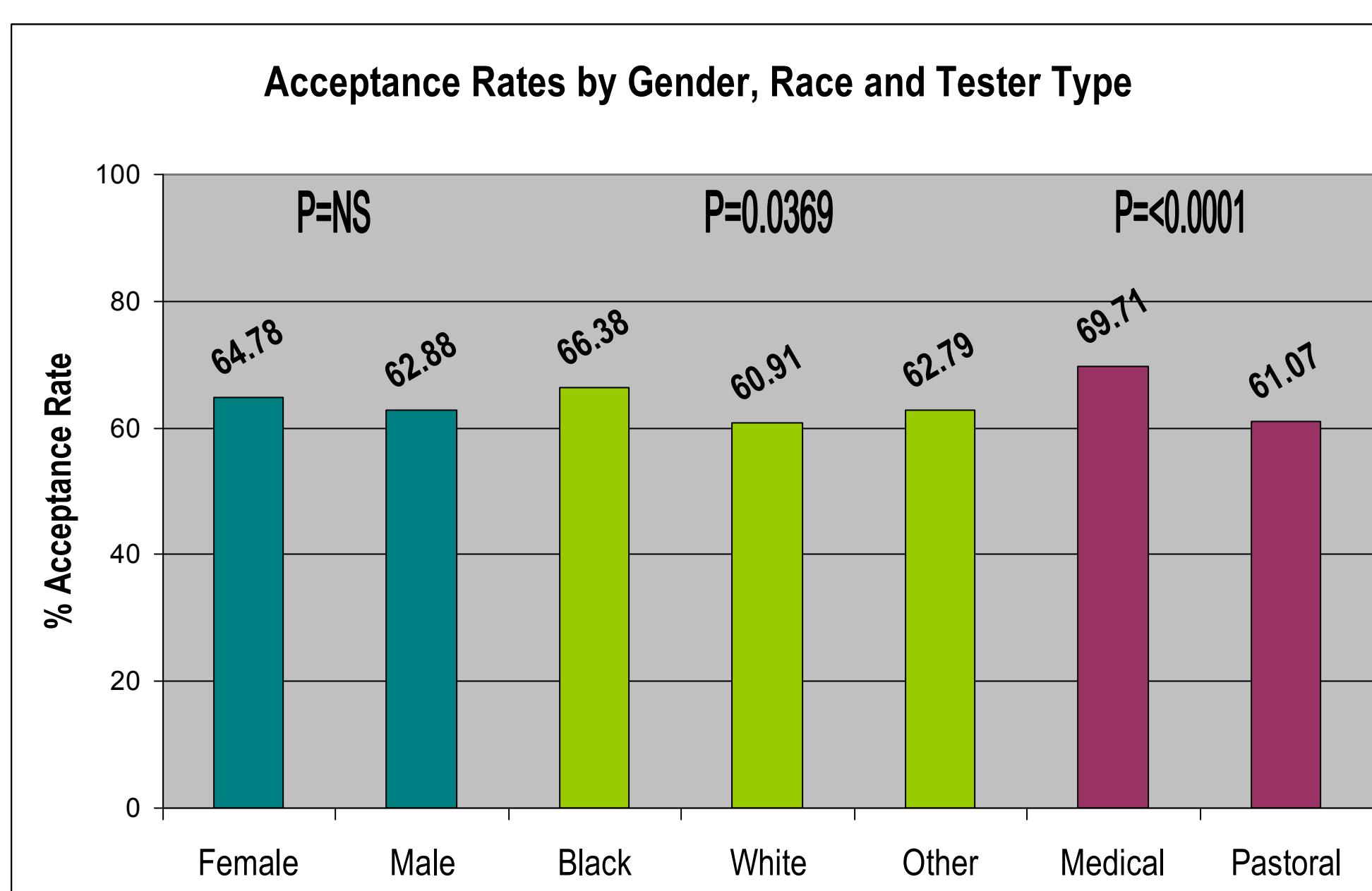


Figure 1: Significant differences in test acceptance were noted between black patients and non-black patients (780/1175 vs. 536/880 vs. 54/86, P = 0.0369) and when testing was offered by medical personnel compared to pastoral services counselors (504/723 vs. 866/1418, P=<0.0001).

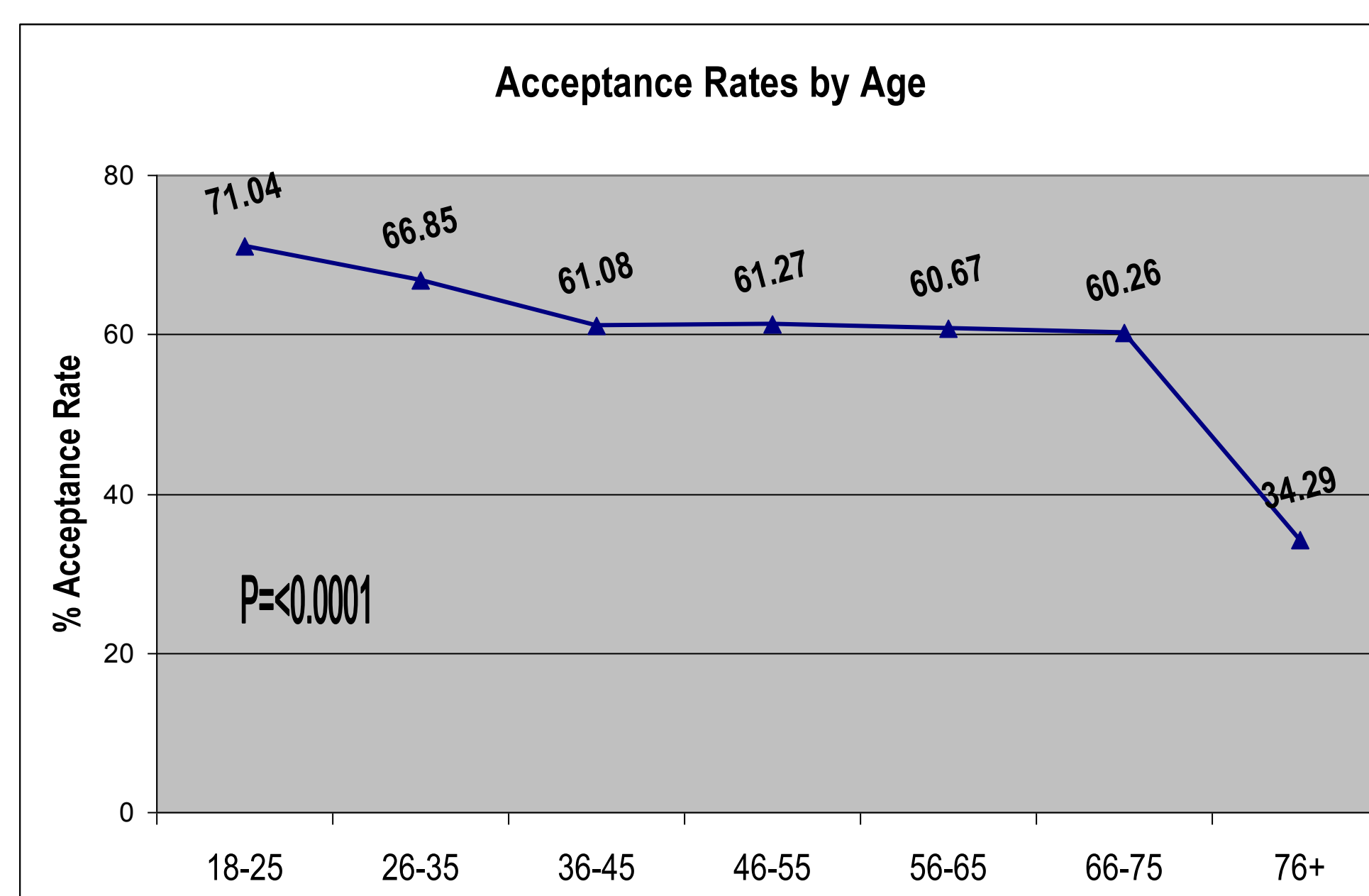


Figure 2: Younger persons (18-25) were significantly more likely to accept testing than older persons (76 and older) (287/404 vs. 12/35, P=<0.0001).

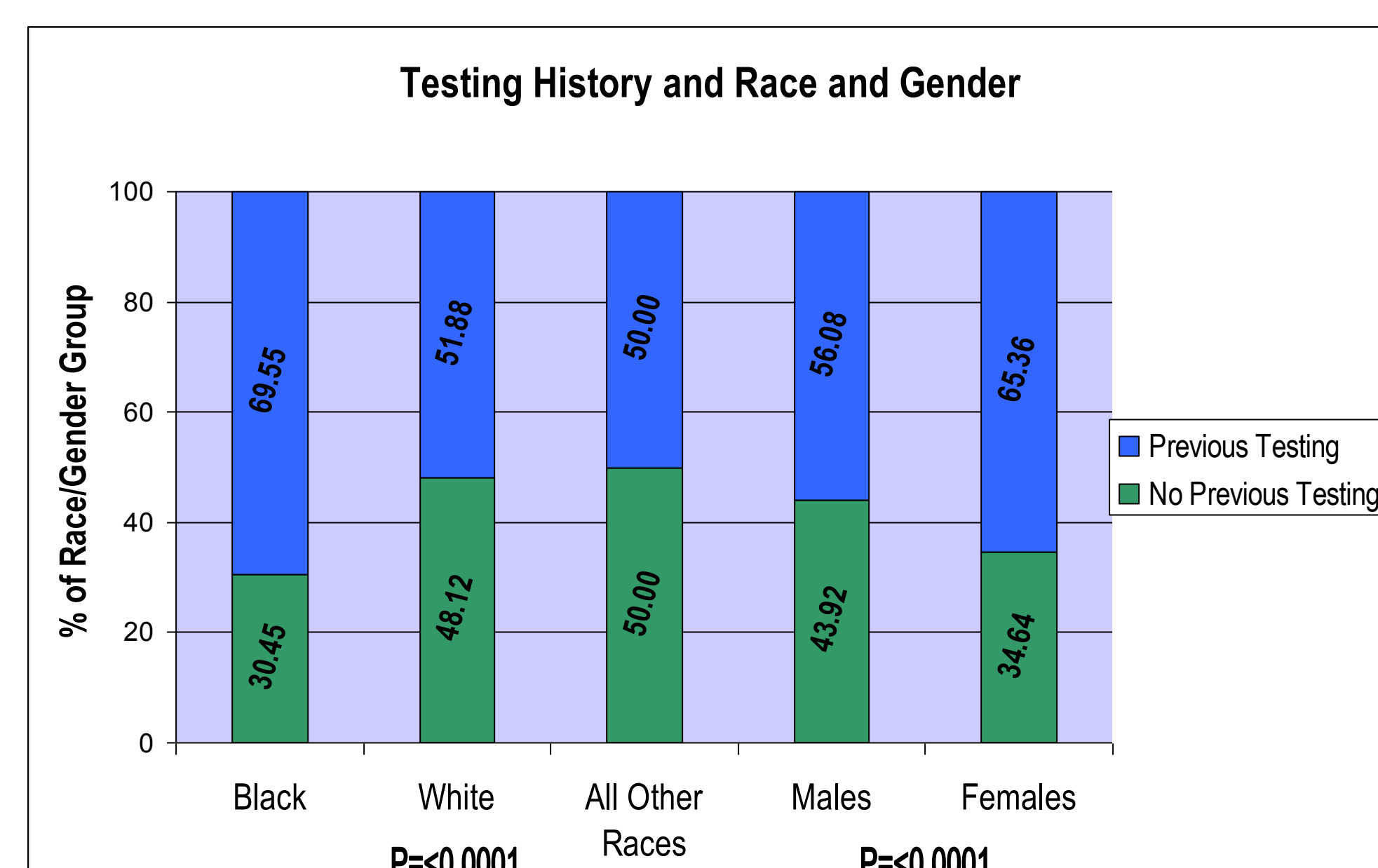


Figure 3: Black patients were more likely to have been tested previously than persons of other races (765/1100 vs. 427/823 vs. 40/80, P=<0.0001) as were females compared to men (766/1172 vs. 466/831, P=<0.0001)

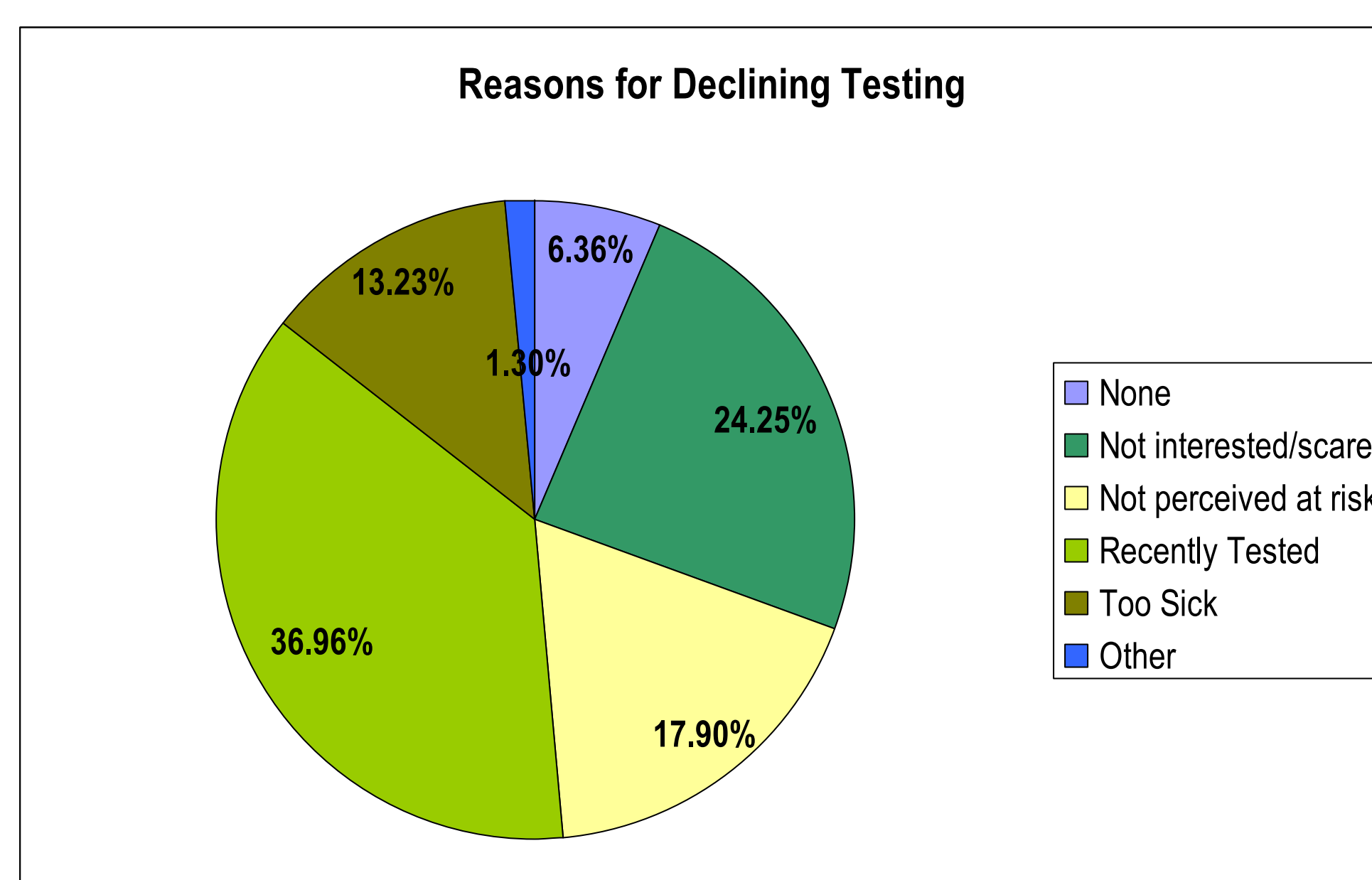


Figure 4: The most common reason for declining testing was 'recently tested.'

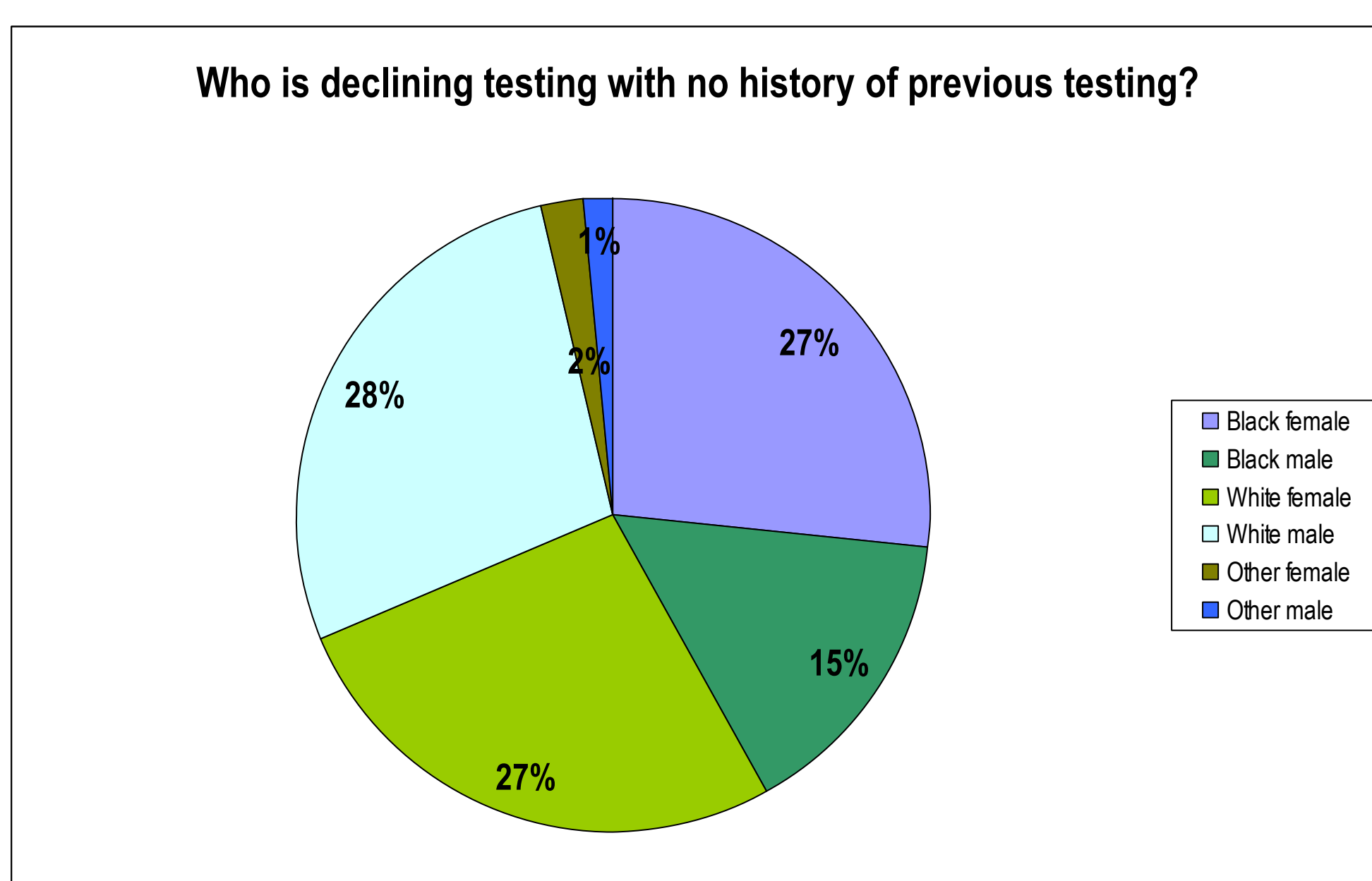


Figure 5: Of those who declined testing with no previous history of testing, white males made up the majority (74/267). White males represented only 18% (69/377) of our testing population however. Black females, who accounted for 34% of our testing population (678/2003), represented the second most likely group to decline testing with no prior history of testing.

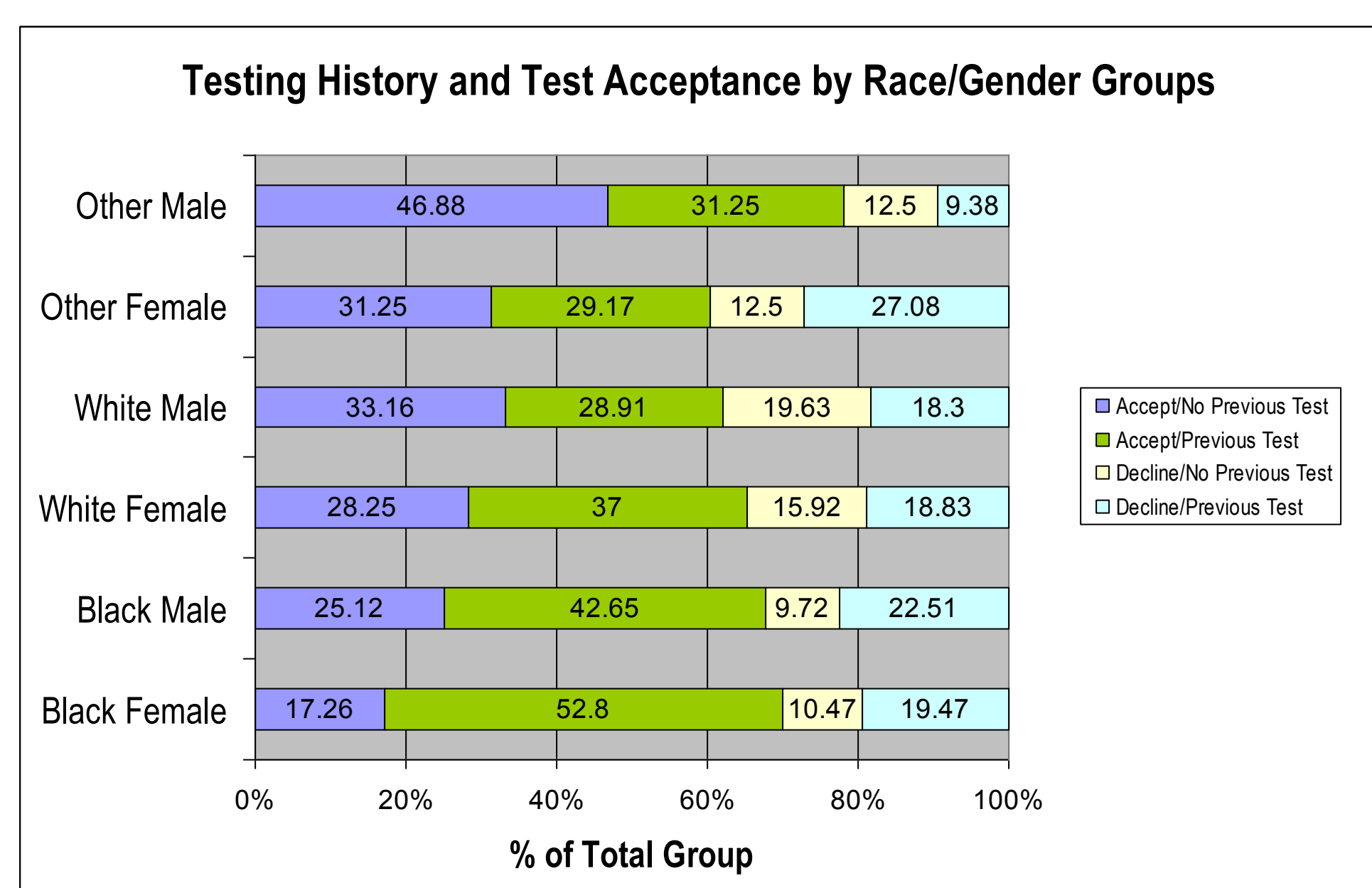


Figure 6: White Males, Other Males, and Other Females were more likely to accept testing with no history of prior testing. White Females, Black Males, Black Females were more likely to accept testing with a prior history of testing.

Age	Race	Gender	Initial CD4 (cells/mm ³)	Viral Load at Diagnosis (copies/mL)	Any Previous HIV testing?	Currently in Care?
25	Black	Male	291	1,070	Yes	Not seen in over one year
38	Black	Female	34	201,000	No	In care and on treatment
55	Black	Female	49	261,000	No	In care and on treatment
47	Black	Female	985	12,700	Yes	Being followed in clinic, not on treatment

Table 1: Data on four confirmed positive patients.



Image 1: Photograph of the OraQuick Advance® Rapid HIV-1/2 Antibody Test with a reactive (or positive) result on the left and a non-reactive result on the right

Conclusions

- Free, rapid point-of-care HIV testing has been implemented successfully in the Duke University Medical Center Emergency Department
- Rates of new HIV diagnosis in the DUMC ED were comparable to those at the public HIV testing site in the Durham County Health Department.
- Acceptance of HIV testing varied:
 - Black patients had the highest test acceptance rates, perhaps due to greater awareness of the prevalence of HIV in the black community.
 - Younger persons were more likely to accept testing than older persons, perhaps because younger persons are less likely to associate stigma with HIV testing. They may also perceive themselves at higher risk of infection due to higher rates of being sexually active and having more sexual partners.
- Black patients were more likely to have been tested previously than all other racial groups, perhaps because other testing programs have targeted African-Americans.
- Women were more likely than men to have been previously tested for HIV, perhaps related to prenatal testing programs.
- Black Females may warrant a specific intervention as they represented the largest group screened and the second largest group to decline testing with no prior history of testing.
- Medical personnel who offered HIV testing were more likely to be accepted than persons from the pastoral services group. This may be because patients seen in the hospital setting are more inclined to follow recommendations from medical persons than others.
- The most common reason for declining testing was recent previous testing. HIV testing programs should try to identify those patients with history of previous testing to improve overall program efficiency and to focus resources on those not previously tested.
- Incorporating these observations into current ED rapid testing programs could enhance detection of undiagnosed HIV infections.

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