Validation of a computer self-administered Alcohol, Smoking and Substance Involvement Screening Test (ASSIST) in primary care patients

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Research Support

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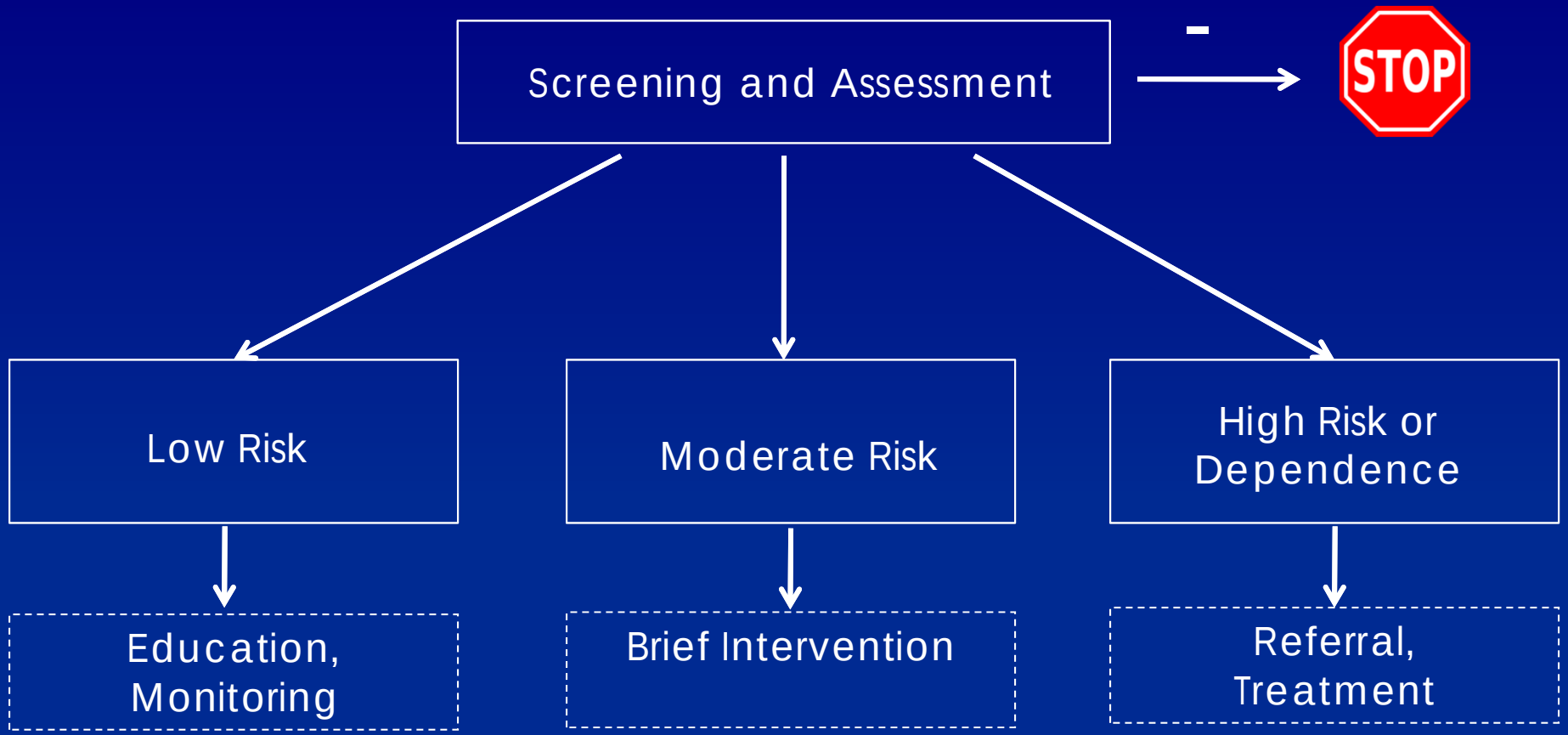
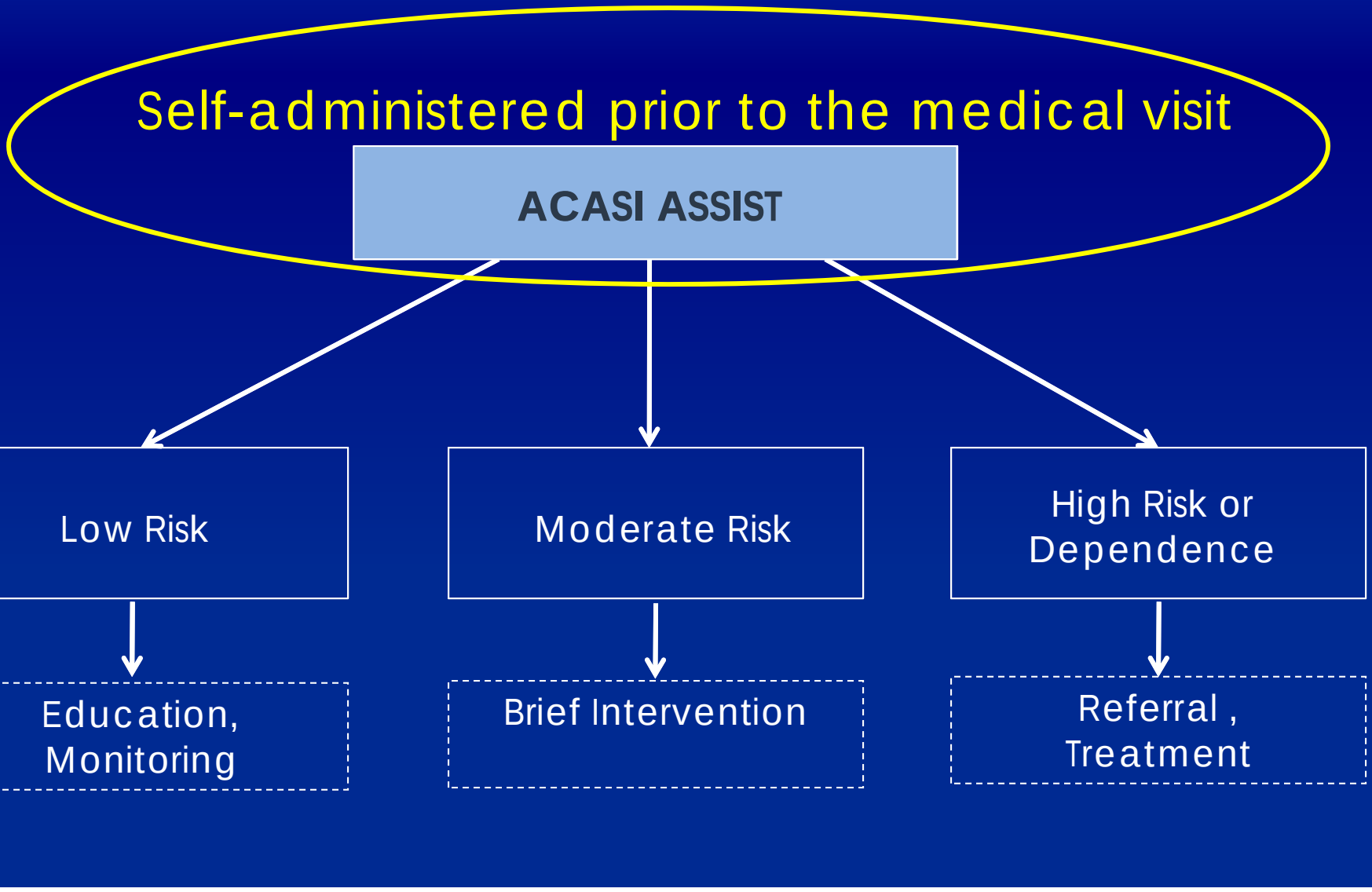
No relevant financial relationships to disclose

SBIRT for alcohol and drugs



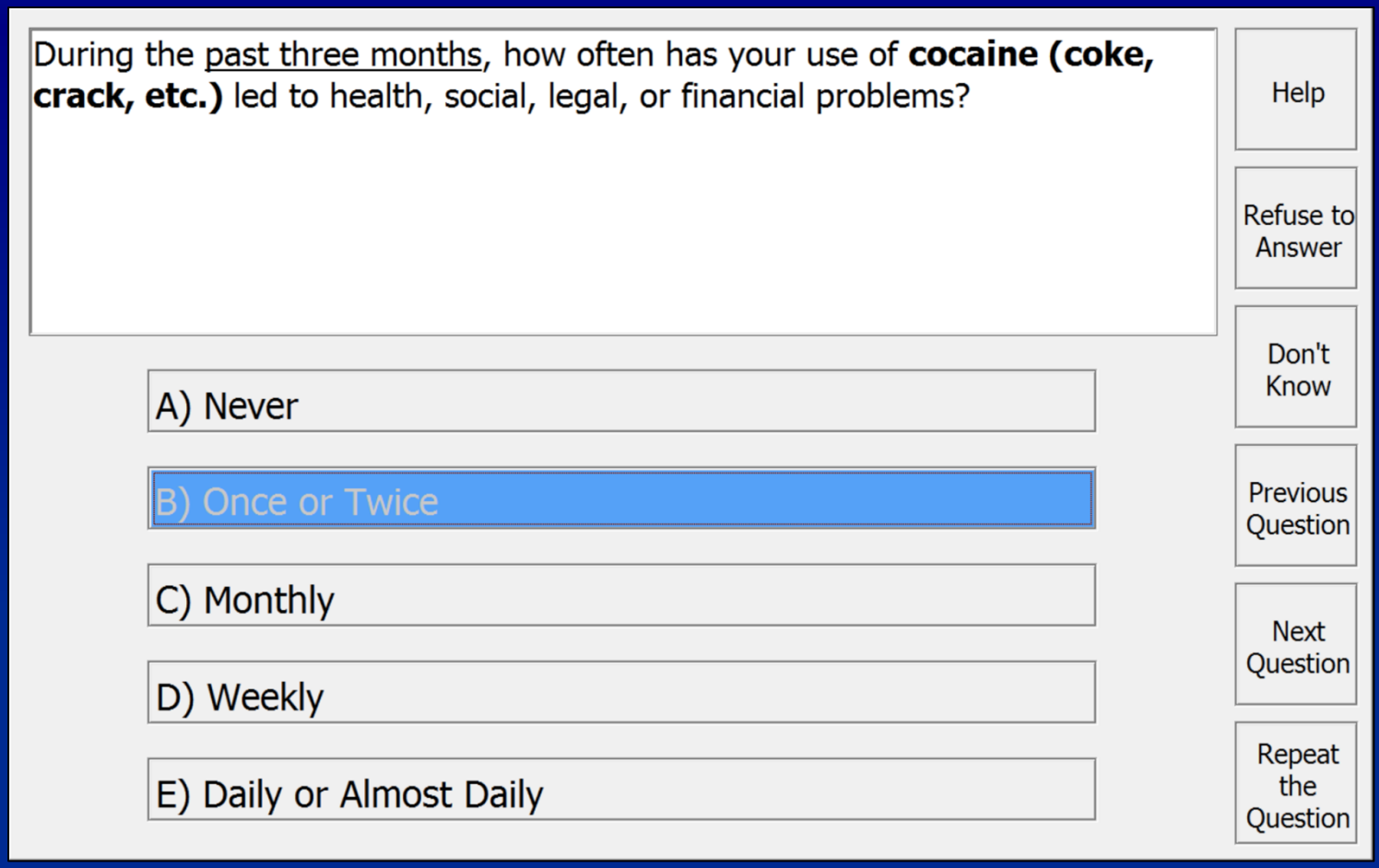
More Optimal Workflow



Alcohol, Smoking and Substance Involvement Screening Test (ASSIST)

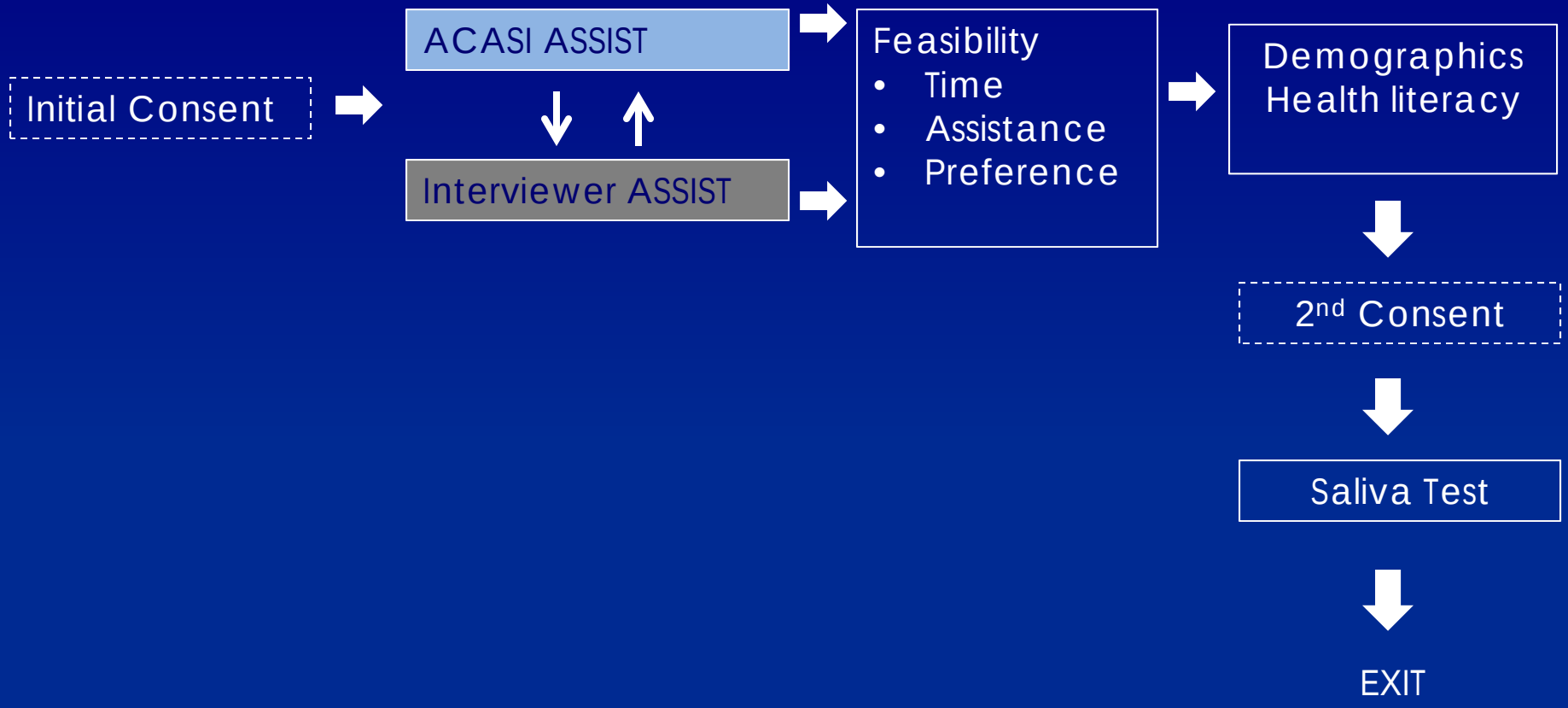
- Developed by WHO working group
- Validated:
  - In medical populations
  - Multiple languages
- Provides specific and clinically relevant information about use and level of risk
- Administered face-to-face, 5-15 minutes

Audio Computer Assisted Self Interview (ACASI) ASSIST



Validation study:

ACASI compared to interviewer ASSIST



Substances included in the ASSIST

WHO ASSIST
Tobacco
Alcohol
Cannabis
Methamphetamine
Inhalants
Sedatives or sleeping pills
Hallucinogens
Heroin
Other

Added
Prescription stimulants
Prescription opioids

Prescription Drugs

ASSIST Scores

- **Global Score**: Sum of all responses (range 0-498)

- **Substance Specific Involvement Scores (SSIS)** (range 0-39)
  - Low risk 0-3 (alcohol 0-10)
  - Moderate risk 4-26 (alcohol 11-26)
  - High risk 27+

- Summary scores for Illicit Drugs and Rx Drugs
  = Sum of SSIS for all substances in that class

Statistical Analysis

1. Examine results for an order effect

   Is there a difference in ACASI ASSIST responses for those who took it before versus after the interviewer ASSIST?

2. Concordance of risk level

   Is there agreement in classifying substance use as low versus moderate-high risk?

3. Correlation of ASSIST scores

   How similar are the global and substance specific risk scores?

4. Analysis of differences (Bland-Altman approach)

   What are the limits of agreement for the global score?

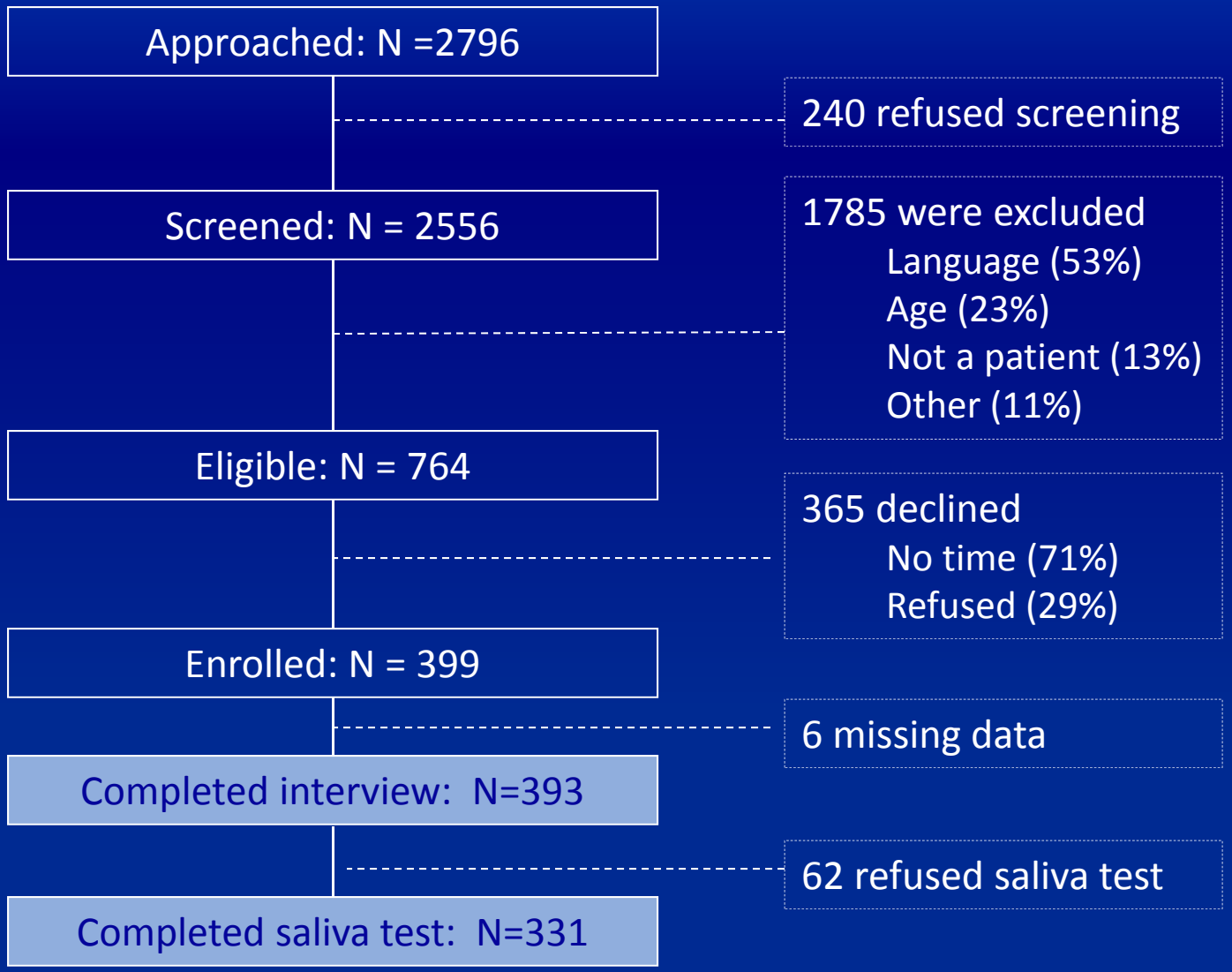
Study Site and Recruitment

- Adult primary care clinic
- Urban safety net hospital
- Consecutively recruited from waiting area

Eligibility Criteria:

- Age 21-65
- Current clinic patient
- Fluent in English
- No disability preventing computer use

Participant Recruitment

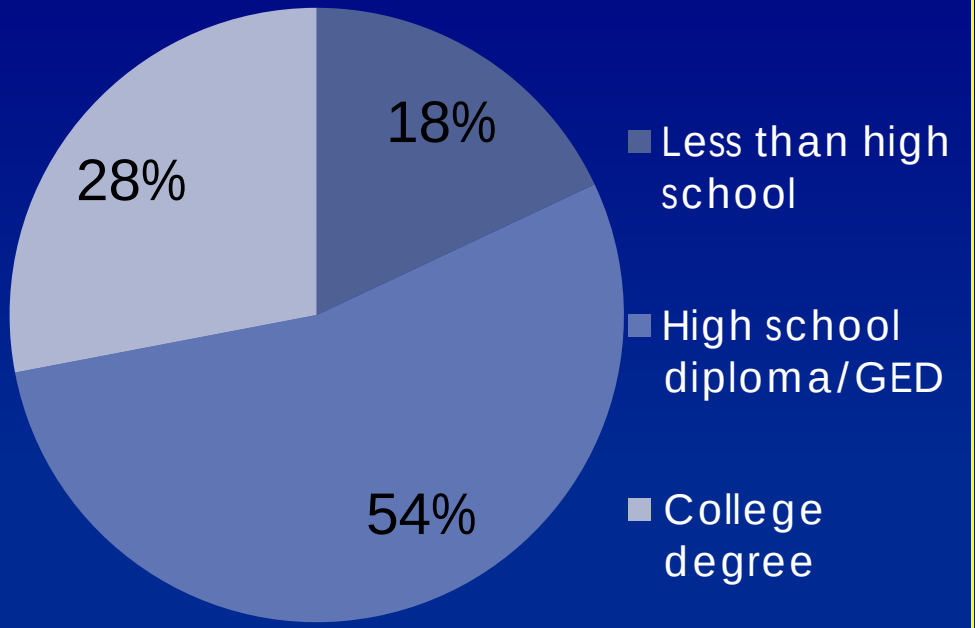


Characteristics of the 393 participants

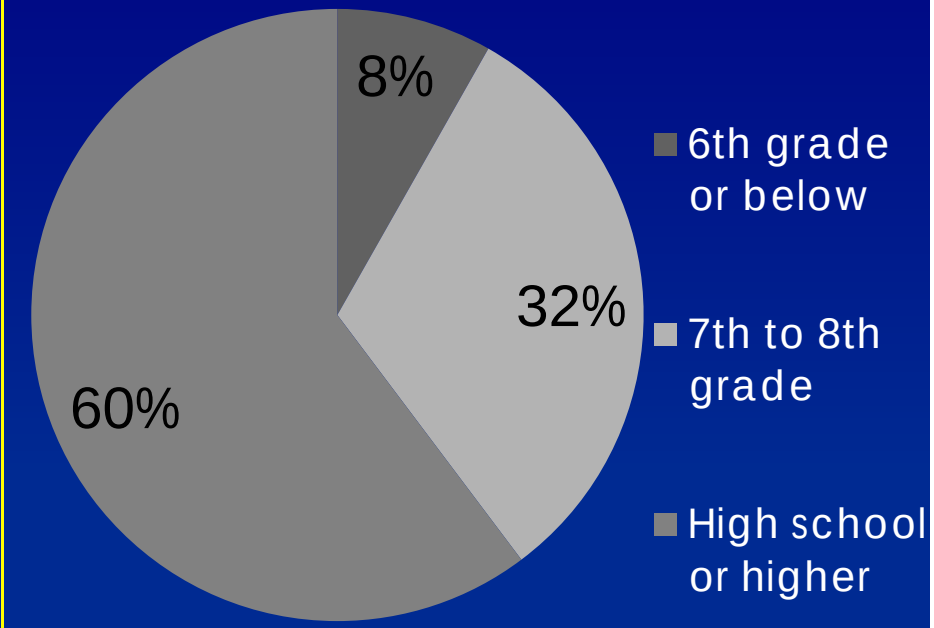
Age (years)	Mean = 47, SD = 12 Range = 19-65	
Sex (%)	Male Female	52 48
Race/Ethnicity (%)	Black/African American Hispanic White/Caucasian Other	45 29 15 11
Country of Birth (%)	United States Outside of United States	67 33

Education and Health Literacy

Highest Level of Education



Health Literacy Level



Prevalence of substance use, interviewer ASSIST

Substance	Lifetime use N (%)	Current use N (%)
Tobacco	254 (65)	135 (34)
Alcohol	337 (86)	210 (53)
Any Drug	250 (64)	96 (24)
Illicit	240 (61)	82 (21)
Prescription	105 (27)	32 (8)

Examine ACASI ASSIST scores for order effect

Score on ACASI ASSIST	Computer first N=191 Mean (SD)	Interviewer first N=202 Mean (SD)	P*
Global score	34.92 (37.41)	32.51 (35.01)	0.761
Tobacco score	6.25 (9.08)	6.82 (9.52)	0.523
Alcohol score	5.99 (8.38)	6.12 (8.16)	0.742
Illicit drugs score	7.88 (15.08)	5.89 (11.59)	0.801
Rx drugs score	0.91 (4.24)	0.76 (5.59)	0.194

* Mann-Whitney U test

Concordance of risk level: ACASI vs. Interviewer ASSIST

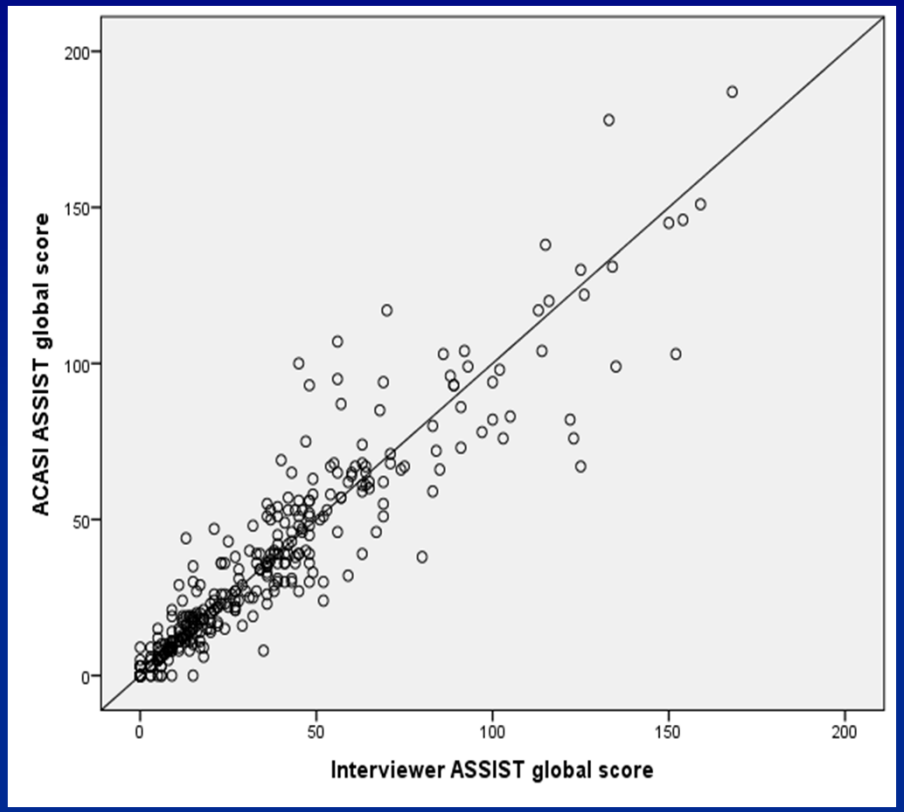
	Individuals in risk category N (%)		Concordant risk level N (%)	Higher on ACASI N	Lower on ACASI N	P-value (McNemar)
Substance Use Variable	**ACASI**	**Interviewer**				
Tobacco			367 (93)	11	15	.557
Low risk	242 (62)	238 (61)				
Mod OR high risk	151 (38)	155 (39)				
Alcohol			361 (92)	18	14	.597
Low risk	319 (81)	323 (82)				
Mod OR high risk	74 (19)	70 (18)				
Illicit Drugs			364 (93)	21	8	.024
Low risk	271 (69)	284 (69)				
Mod OR high risk	122 (31)	109 (28)				
Prescription Drugs			364 (93)	10	10	.136
Low risk	367 (93)	358 (91)				
Mod OR high risk	26 (7)	35 (9)				

Correlation of risk scores: ACASI vs. Interviewer ASSIST

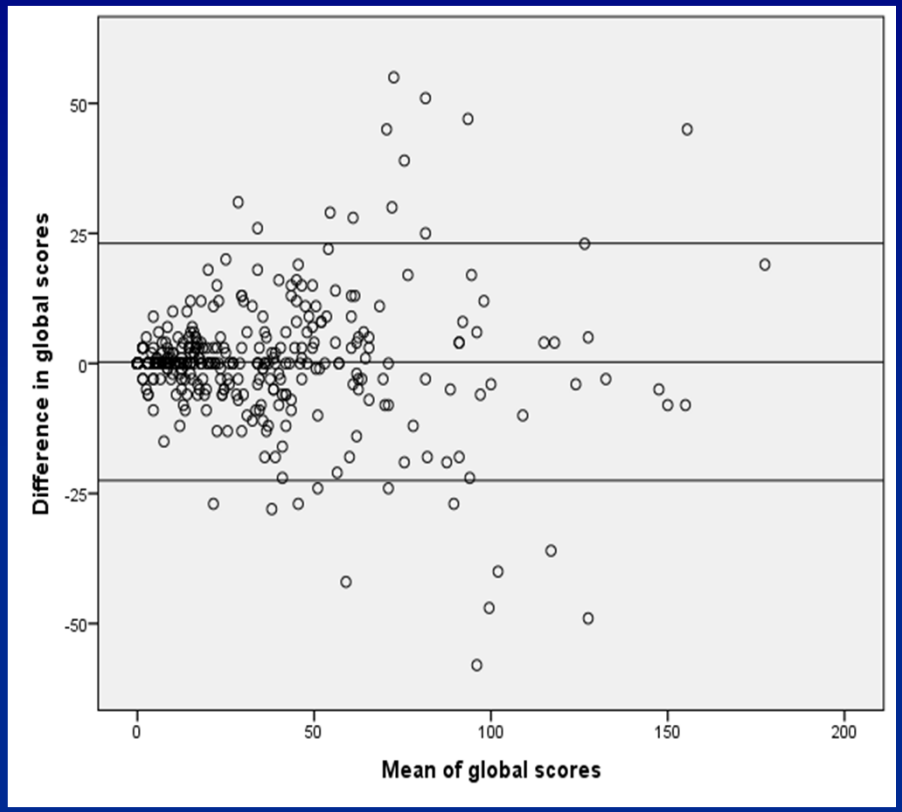
Substance Use Variable	ACASI Mean score ± SD	Interviewer Mean score ± SD	ICC
Global ASSIST score	32 ± 33	31 ± 33	.937
Tobacco	7 ± 9	7 ± 10	.927
Alcohol	6 ± 8	6 ± 8	.912
Illicit Drugs	7 ± 13	6 ± 13	.854
Prescription Drugs	3 ± 9	2 ± 6	.676

Limits of agreement: Bland and Altman analysis

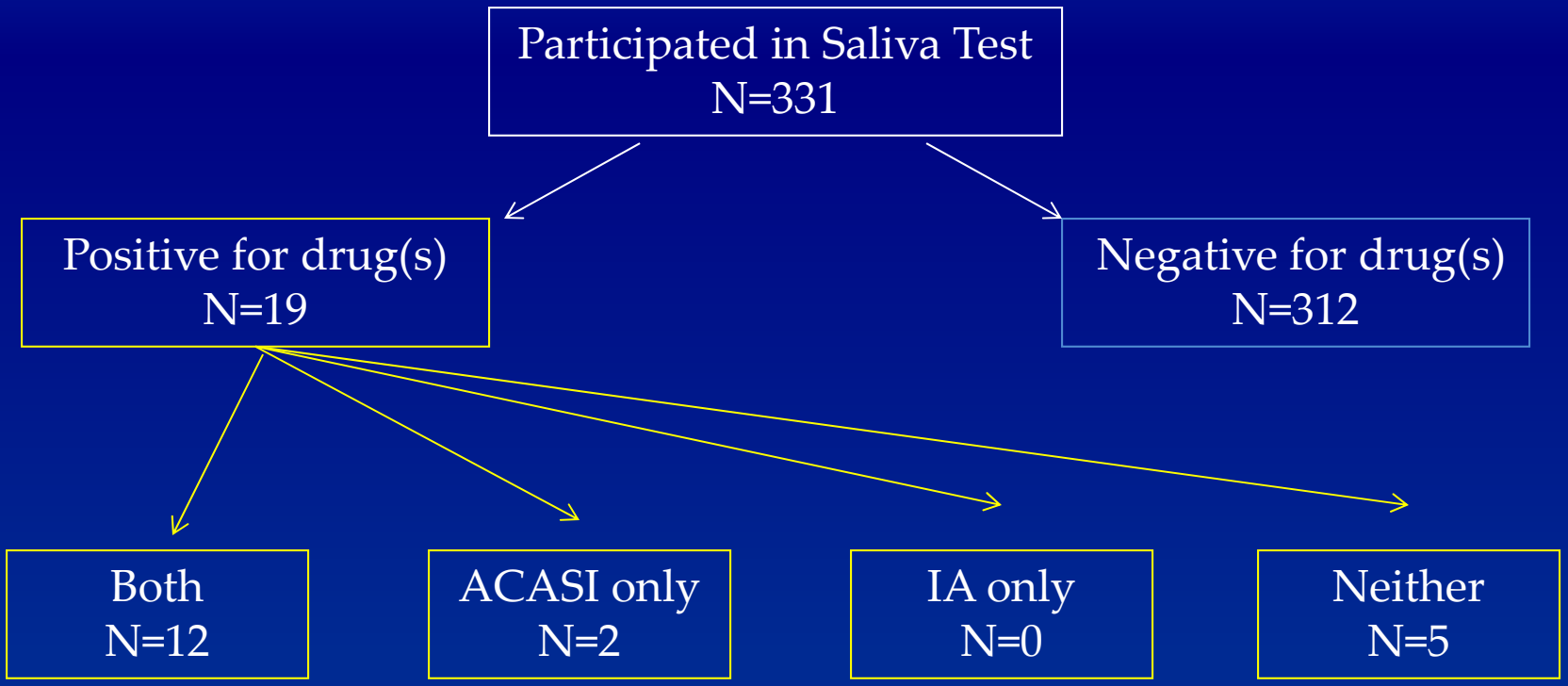
Mean global score



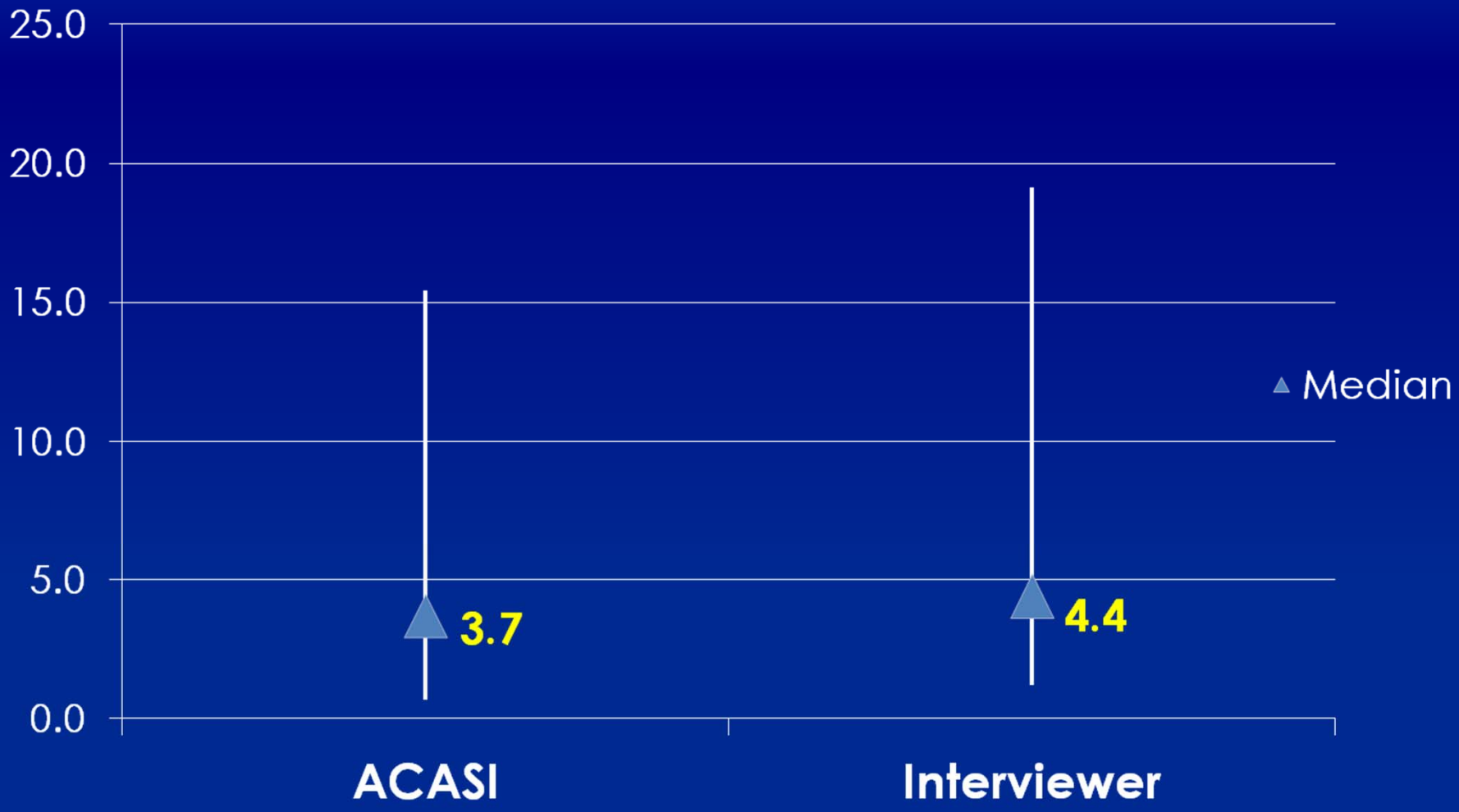
Differences in global score, with 95% limits of agreement



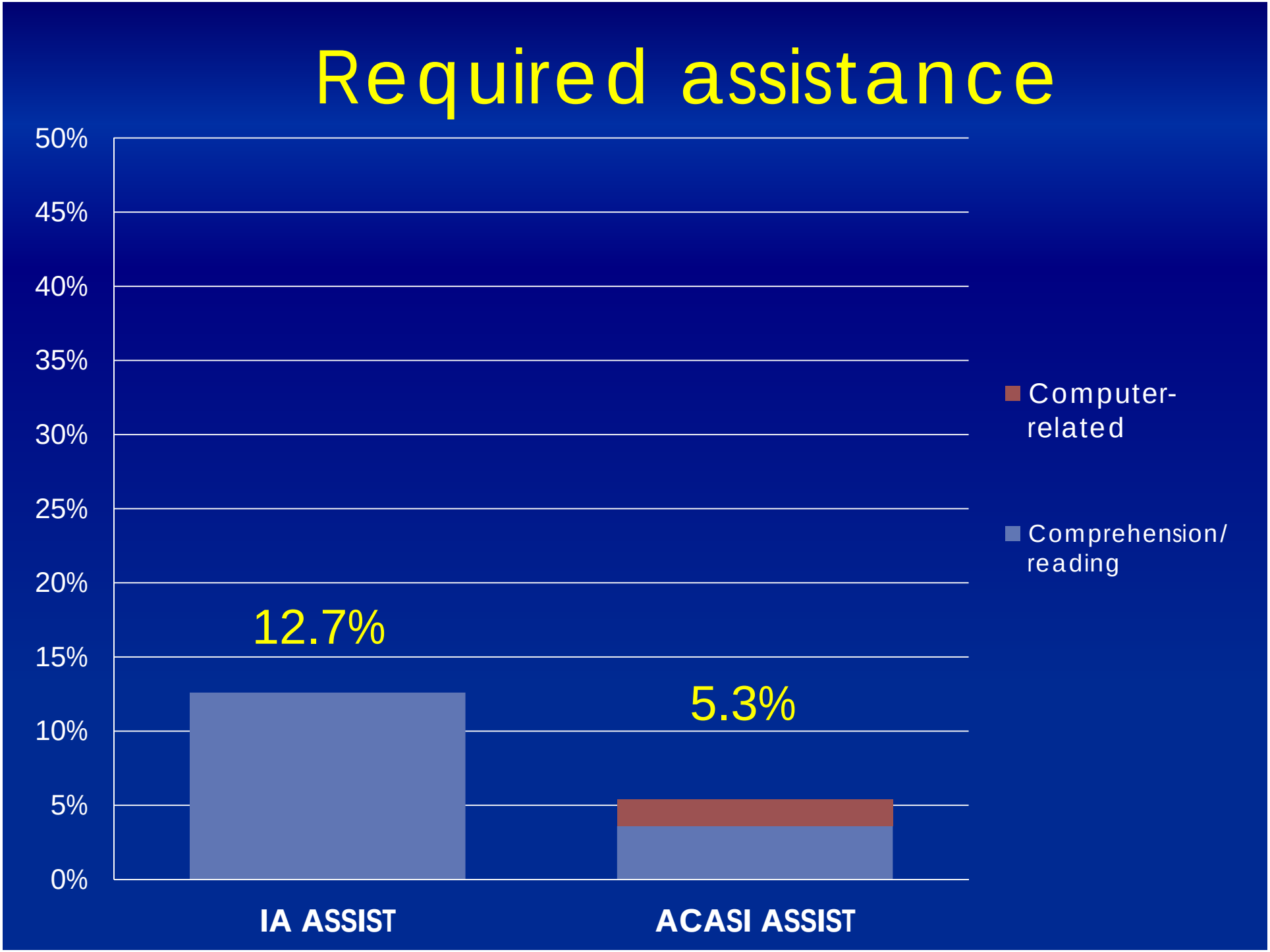
Oral fluid test results compared to ACASI and IA ASSIST



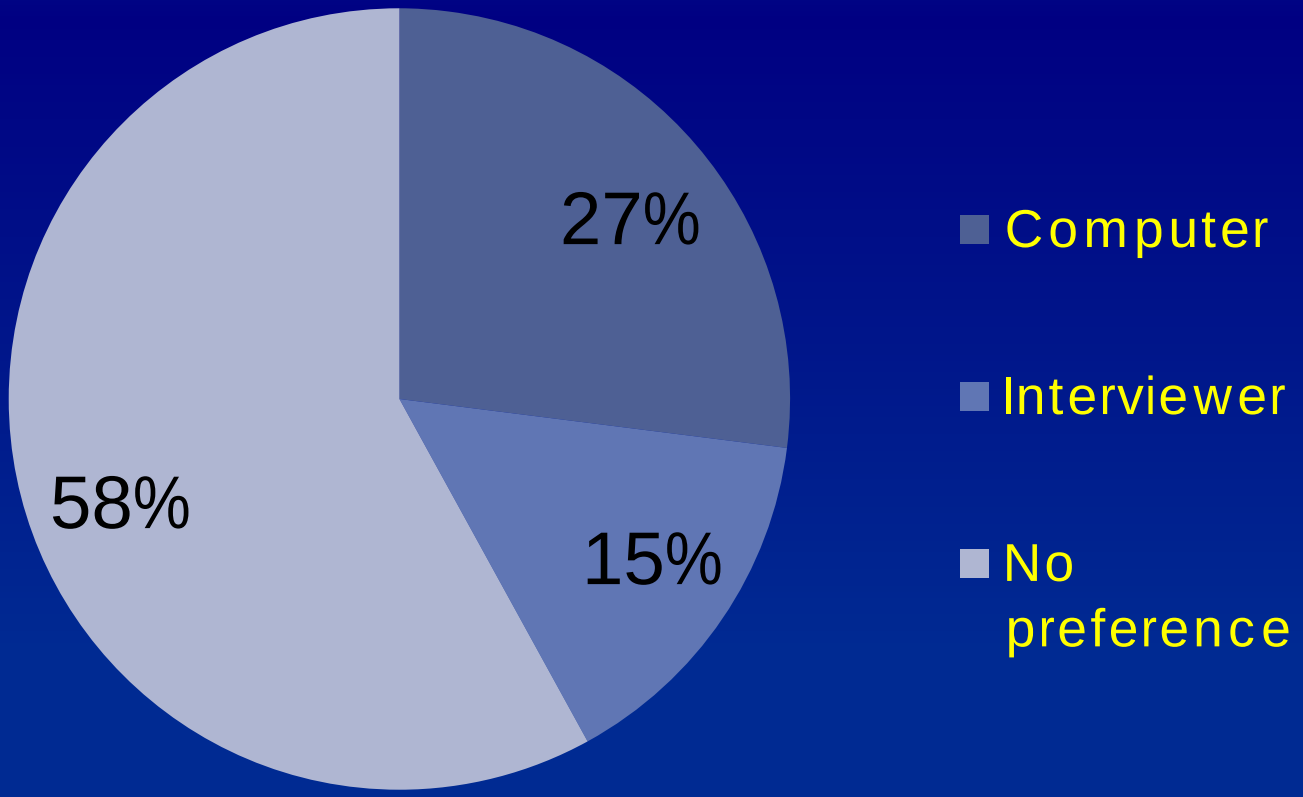
Time required to complete ASSIST (minutes)



Required assistance



Participant preferences for screening



85% either preferred the computer or had no preference

Limitations

- Single site
- Compared only to interviewer ASSIST
- Tested in research context, with assurance of confidentiality
- Low prevalence of some drug classes

Conclusions

- ACASI ASSIST appears to be a valid alternative to the traditional interviewer-administered ASSIST
- Good feasibility and acceptability for primary care patients
- ACASI approach had more reporting of illicit drug use

Next steps

- Validation of ACASI ASSIST against additional reference standard measures
- Evaluate streamlined approach to screening
- Implementation in primary care, integrated with electronic health record (EHR)

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Questions?

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Demonstration video:
http://www.youtube.com/watch?v=u34D772V3h8&feature=youtu.be