Acceptability and Feasibility of the Tobacco, Alcohol, Prescription medication, and other Substance use (TAPS) Tool in U.S. Primary Care Patients

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Funding sources

Screening in primary care

- Substance use is prevalent among primary care patients, but under-identified by providers.

- Patient and primary care providers agree that primary care is an appropriate place to screen for substance use.

- Numerous implementation barriers exist.

Davis et al., World Drug Report 2014.
Aalto et al., Drug Alcohol Depend 2002.
Babor, et al., Addiction 2000.
Nilsen, P. et al.. Addiction 2010.

TAPS Tool

- TAPS tool: designed for primary care to detect tobacco, alcohol, and drug use.

- Two formats: self-administered (SA) or interviewer-administrated (IA).

- Validated in 2,000 adult primary care patients.

McNeely et al., Ann Int Med 2016
Gryczynski et al., J Gen Int Med 2017
Wu, L.T., et al., Contemp Clin Trials 2016

Objectives of this analysis

To determine the acceptability and feasibility of the TAPS tool among primary care patients, including in specific subpopulations who may suffer from stigma or may have greater difficulty in understanding the questions.
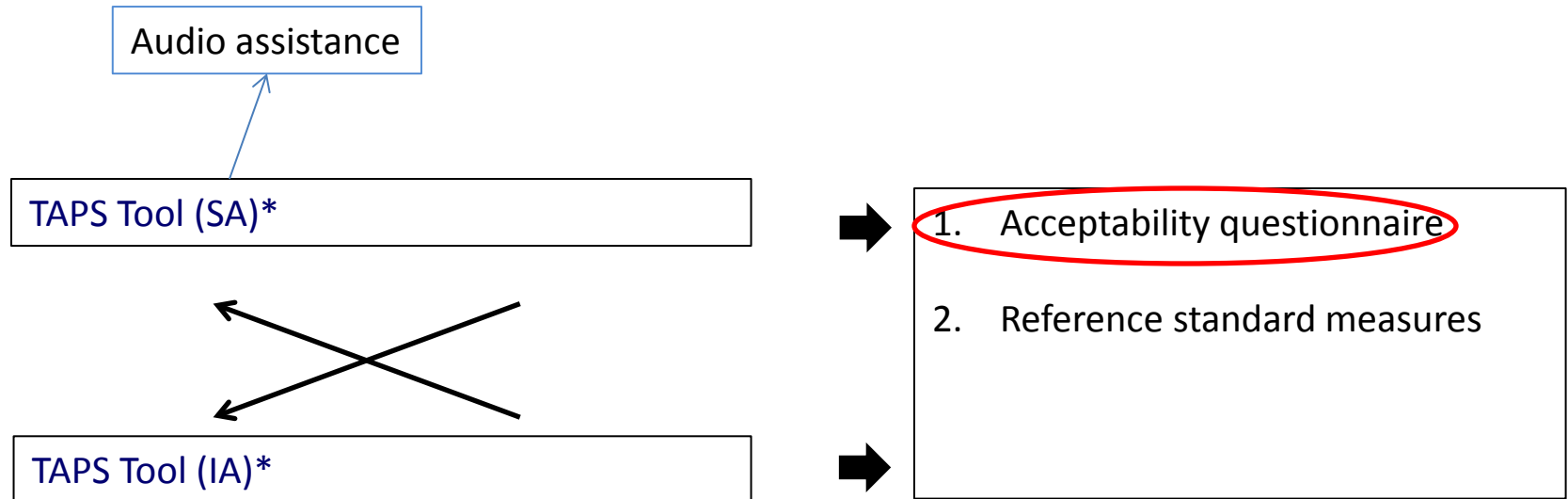
Characteristic	Stigma	Difficulty understanding
Age	Young adults (18-25)	Older adults (65+)
Gender	Female	
Race	African American	
Ethnicity	Hispanic	
Education		< High School
Substance use	Alcohol Illegal drugs Prescription drugs	

Participants

- 2,000 adults completed the study at primary care sites in:
    - Baltimore, Maryland
    - Kannapolis, North Carolina (2 sites)
    - New York, New York
    - Richmond, Virginia
- Recruitment in the waiting room
- Eligibility criteria: English speaking, age 18+, physically able to use iPad
- Verbal informed consent

Study Procedures

Audio assistance

TAPS Tool (SA)*

TAPS Tool (IA)*

1. Acceptability questionnaire

2. Reference standard measures

Confidentiality : private room & no communication of the results

Measures

- Self-reported:

  - Acceptability: comfort with the questions
  - Format preference: SA versus IA.
  - Feasibility: comprehension, ease to use the tablet, and audio assistance use.

- By RA:

  - Requests for assistance.
  - Time to complete.

Characteristics of participants (n = 2000)

	Number (%)
Women	1124 (56)
Age 18-25	225 (11)
Age > 65	160 (8)
Black / African American	1112 (56)
Hispanic	233 (11)
Education < high school (HS)	383 (19)
Alcohol use	858 (43)
Illegal drug use	492 (25)
Prescription drug use	245 (12)

* Identified through the TAPS-1 tool, cut-off of > 1 for unhealthy use.

Acceptability and Format preference

	Acceptability N (%)		Format preference N (%)	
	Comfort -self	Comfort-others	SA preferred	IA preferred
Strongly agree/ agree	1962 (98.2)	1293 (64.7)	624 (31.2)	428 (21.4)
Neither agree nor disagree	11 (0.6)	472 (23.6)	946 (47.4)	946 (47.4)
Disagree/ strongly disagree	24 (1.2)	235 (11.7)	428 (21.4)	624 (31.2)

Feasibility

	Comprehension N (%)	Tablet touch-screen N (%)
Strongly agree/ agree	1973 (98.6)	1965 (98.3)
Neither agree nor disagree	18 (0.9)	14 (0.7)
Disagree/ strongly disagree	9 (0.5)	20 (1.0)

365 (18%) participants used audio assistance for the SA format.

Unadjusted results in subgroups

	Acceptability N (%)		Format preference N (%)	
	Comfort-self	Comfort-others	SA format	IA format
Female	1103 (98.3)	759 (67.5)*	362 (32.3)	229 (20.4)
Age 18-25	225 (100.0)*	124 (55.1)**	65 (28.9)	55 (24.4)
Age > 65	159 (100.0)	122 (76.3)**	31 (19.4)*	39 (24.4)
Black/African American	1136 (98.4)	730 (63.2)	361 (31.2)	239 (20.7)
Hispanic	231 (99.6)	151 (64.8)	70 (30.2)	51 (22.0)
Education < HS	377 (98.4)	237 (61.9)	94 (24.5)*	115 (30.0)***
Alcohol use	836 (97.6)*	497 (57.9)**	296 (34.5)*	167 (19.5)
Illegal drug use	468 (95.1)**	234 (47.6)**	177 (36.0)*	99 (20.1)
Prescription drug use	233 (95.1)**	127 (51.8)**	85 (34.7)	63 (25.7)

* = $p < 0.05$, ** = $p < 0.01$, *** = $p < 0.001$

Unadjusted results in subgroups

	Feasibility N (%)		
	Comprehension	Tablet touch-screen	Audio assistance
Female	1113 (98.3)	1111 (98.8)*	149 (13.3)***
Age 18-25	224 (99.6)	221 (98.2)	12 (5.3)***
Age > 65	158 (98.7)	158 (98.7)	47 (29.4)***
Black/African American	1140 (98.6)	1135 (98.2)	225 (19.5)
Hispanic	229 (98.3)	229 (98.3)	61 (26.2)**
Education < HS	375 (97.9)	375 (97.9)	115 (30.0)***
Alcohol use	839 (97.8)**	846 (98.6)	154 (18.0)
Illegal drug use	482 (98.0)	482 (98.0)	93 (18.9)
Prescription drug use	230 (93.9)***	236 (96.3)*	53 (21.6)

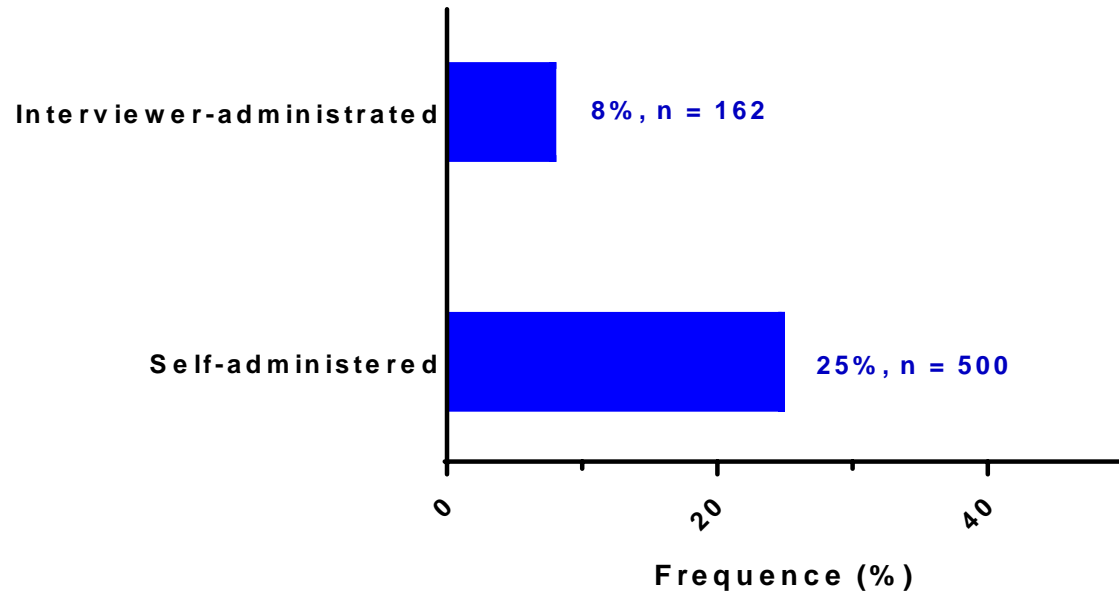* = p < 0.05, ** = p < 0.01, *** = p < 0.001

Multivariate analysis: Acceptability and Format

	Acceptability Odds ratio [95% CI]		Format preference Odds ratio [95% CI]	
	Comfort-self	Comfort-others	SA preferred	IA preferred
Women	0.58 [0.29; 1.18]	1.21 [0.99;1.47]	1.19 [0.98;1.46]	0.85 [0.68;1.06]
Age 18-25	-^	**0.67 [0.49;0.90]**	0.74 [0.54;1.03]	**1.41 [1.01;1.98]**
Age > 65	-^	1.46 [0.99;2.16]	**0.55 [0.37;0.83]**	1.11 [0.75;1.63]
Black/ African American	1.51 [0.74; 3.07]	0.89 [0.73;1.09]	1.00 [0.82;1.23]	0.85 [0.66;1.06]
Hispanic	6.02 [0.79; 46.02]	1.08 [0.79;1.47]	0.97 [0.71; 1.33]	0.90 [0.63;1.27]
Education < HS	1.17 [0.48; 2.98]	0.90 [0.71;1.15]	**0.67 [0.51;0.86]**	**1.83 [1.41;2.36]**
Alcohol use	1.03 [0.49; 2.19]	**0.79 [0.65;0.97]**	1.20 [0.98;1.47]	0.80 [0.63;1.01]
Illegal drug use	**0.14 [0.06; 0.31]**	**0.48 [0.38;0.60]**	**1.29 [1.02;1,63]**	0.86 [0.65;1.13]
Prescription drug use	**0.44 [0.20; 0.96]**	**0.74 [0.55;0.98]**	1.08 [0.8; 1.45]	**1.41 [1.01;1.95]**

Multivariate analysis: Feasibility

	Feasibility Odds ratio [95% CI]		
	Comprehension	Tablet touch screen	Audio assistance
Women	1.30 [0.58;2.93]	**2.10 [1.01;4.34]**	**0.52 [0.41;0.66]**
Age 18-25	2.50 [0.32;19.20]	0.68 [0.23;2.04]	**0.29 [0.16;0.53]**
Age > 65	0.80 [0.18;3.62]	1.41 [0.33;6.05]	**1.78 [1.22;2.61]**
Black/ African American	0.94 [0.41; 2.16]	0.90 [0.44;1.87]	1.26 [0.98;1.62]
Hispanic	0.84 [0.26; 2.68]	0.98 [0.33;2.97]	**1.90 [1.34;2.69]**
Education < HS	0.69 [0.28;1.67]	0.85 [0.37;1.93]	**2.03 [1.55;2.65]**
Alcohol use	0.41 [0.17;1.01]	1.81 [0.84;3.91]	1.00 [0.77;1.28]
Illegal drug use	1.41 [0.57; 3.47]	0.96 [0.42;2.21]	0.92 [0.69;1.24]
Prescription drug use	**0.13 [0.06;0.29]**	**0.37 [0.16;0.85]**	1.10 [0.77;1.57]

Feasibility: Assistance requested

Interviewer-administrated — 8%, n = 162

Self-administered — 25%, n = 500

Frequence (%)

0   20   40

All participants

Feasibility: Assistance requested

Interviewer-administrated
- **8%, n = 162** (All participants)
- 14%, n = 35, **OR 2.04 [1.34; 3.12]** (Prescription drug use)

Self-administered
- **25%, n = 500** (All participants)
- 31%, n = 75, **1.44 [1.05; 1.98]** (Prescription drug use)
- 38%, n = 146, **OR 2.09 [1.63; 2.68]** (Education < high school)
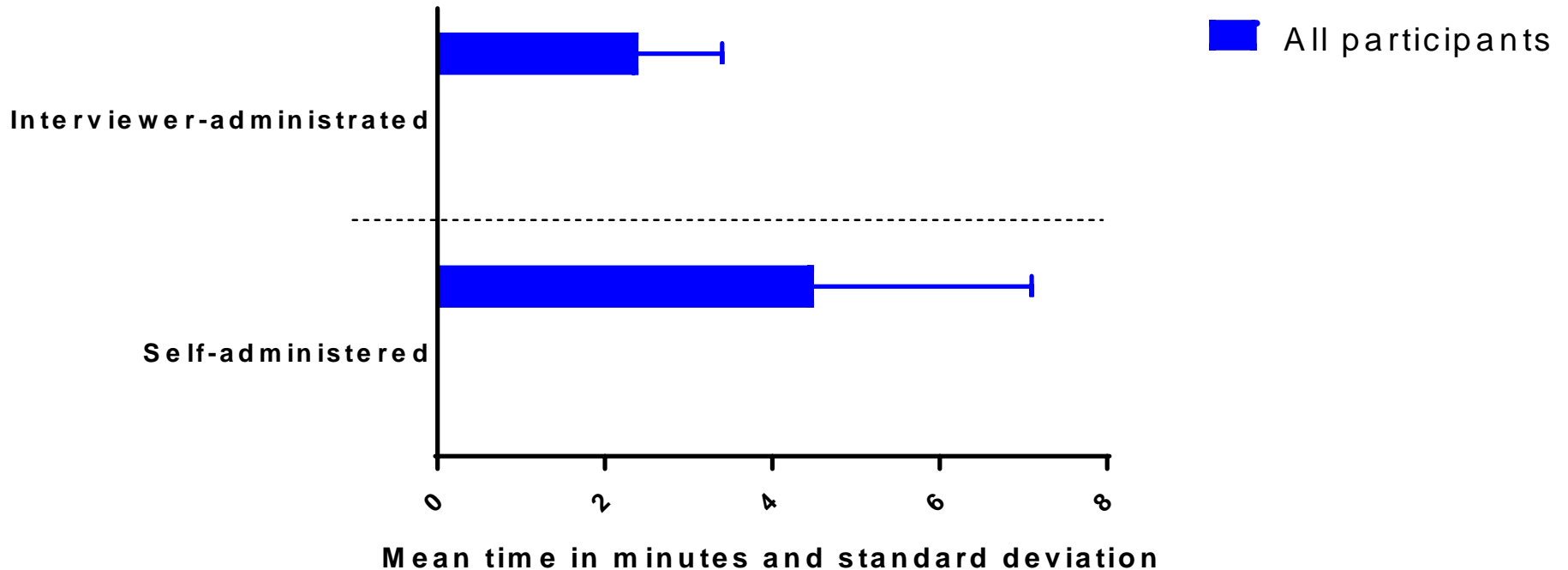- 48%, n = 77, **OR 2.79 [1.98; 3.92]** (Age > 65)

Frequence (%)
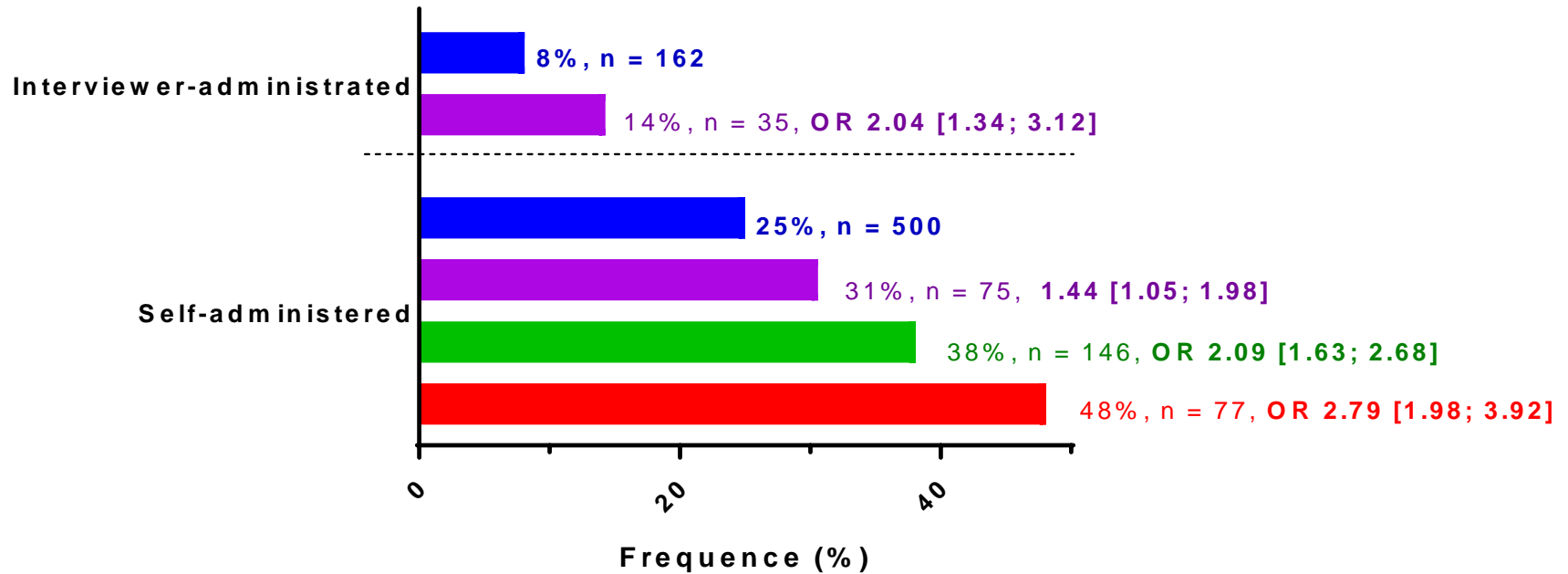
Legend:
- All participants
- Prescription drug use
- Education < high school
- Age > 65

Feasibility: Time required to complete

Mean time in minutes and standard deviation
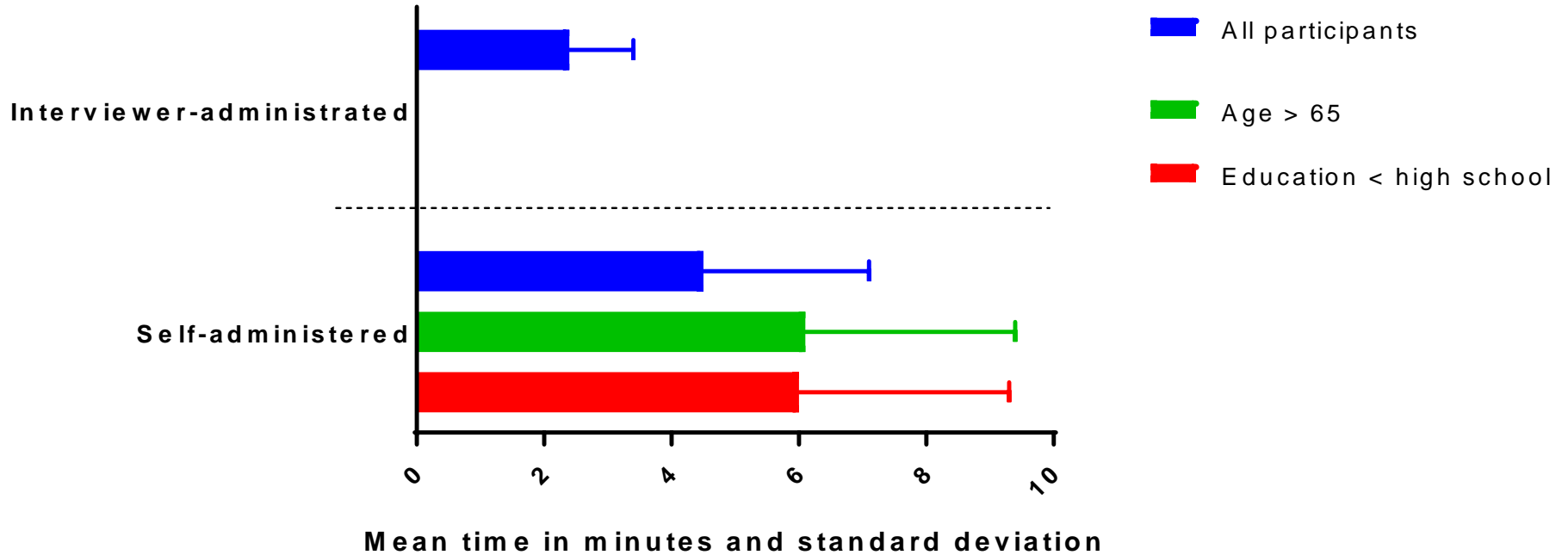
IA format: 90% completed the TAPS tool in ≤ 3 min.
SA format: 90 % completed in ≤ 7 min.

Feasibility: Time required to complete

Mean time in minutes and standard deviation

Conclusions

- Both formats of the TAPS Tool were well accepted.

- **SA-TAPS** preferred by patients who may experience more stigma related to substance use (especially illegal drugs).

- **IA-TAPS** preferred by patients who may have more difficulty using a computer (less education, age > 65).

- The time required for the TAPS would be **feasible** in primary care settings, but *older* or *less educated* patients may need assistance with the SA version.

- Participants with *prescription drug use* had more difficulties completing either IA or SA TAPS.

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Questions?

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Acceptability questionnaire

How much do you agree with the following statements on a scale of 1-5 where:

1 = strongly disagree   **2** = disagree   **3** = neither agree nor disagree   **4** = agree   **5** = strongly agree

Q1. These questions were easy to understand.

Q2. I was comfortable answering these questions.

Q3. I answered these questions as honestly as I could.

Q4. I would be willing to answer questions like these at my doctor's office.

Q5. I think my friends would answer these questions honestly at their doctor's office.

Q6. The iPad touch screen was easy to use.

Q7. I would prefer that a person asked me these questions in the doctor's office instead of answering them myself on the iPad.

Q8. I would prefer answering these questions on an iPad instead of having a person ask me.

Q9. The voice recording was helpful.

Q10. I would be comfortable sharing my answers about drug use with my doctor.