

Background

- CRAFFT, a widely used adolescent substance use risk/problem brief screener, is a mnemonic for six items (Car, Relax, Alone, Forget, Family/Friends, Trouble)
- It is preceded by three opening questions on any past-12-month use of alcohol, cannabis, or other drugs (yes/no)
- A previous study found sensitivity of yes/no items (which may be more prone to social desirability bias) was suboptimal (<70%) (Harris et al., 2016)
- Asking instead a presumptive question, "On how many days" (open-ended response) may improve validity

Objective

- Evaluate criterion validity and test-retest reliability of past-12-month use-frequency items among adolescent patients presenting for annual well-visits

Methods

- Overall Sample:** age-gender-balanced sample of 844 patients ages 12-18 years arriving for well-visits recruited from 5 Boston area practices (2 pediatricians' offices, 1 urban hospital adolescent clinic, 1 urban hospital pediatric clinic, and 1 community health center)
- Re-test Sample:** age-gender-balanced subsample of 394 participants invited to complete re-test (77% completion rate)
- Study Flow:**
 - Informed assent for ages 12-17, consent for 18-yr-olds
 - Computerized screening before seeing provider
 - Research Assistant, blinded to screen results, administers confidential 12-month substance use Timeline Follow-Back (TLFB) interview
 - Secure link to online re-test questionnaire emailed for completion within 2 weeks of clinic visit
 - Participants receives \$15 gift card for baseline, \$10 for retest. Protocol approved by Boston Children's Hospital and other sites' IRBs.

Data Analysis

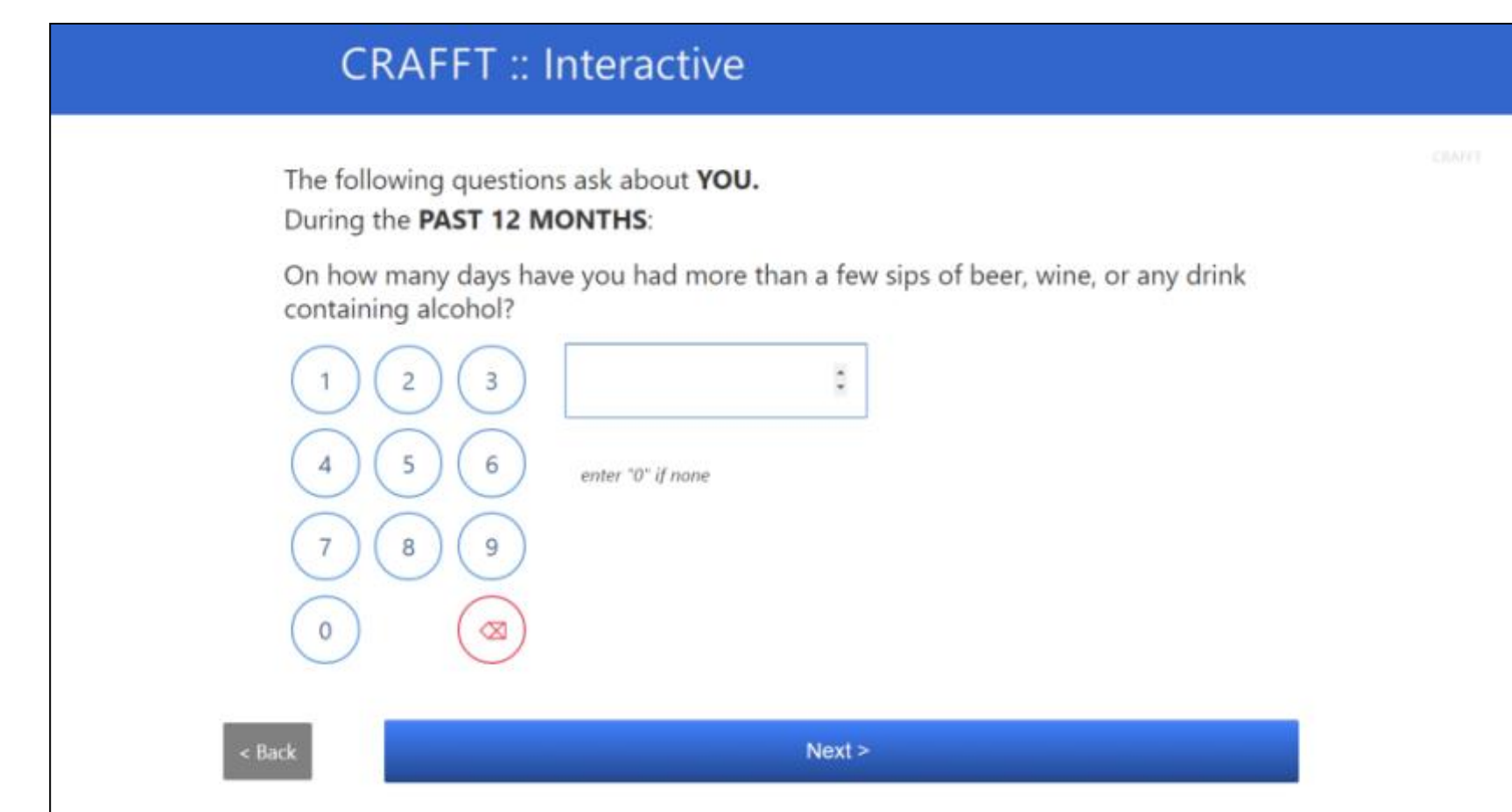
- Criterion validity (confidential TLFB criterion standard):**
 - Sensitivities/specificities computed for detection of any past-12-month use alcohol and cannabis. "Other drug" use prevalence too low for further analyses
 - Intra-class correlation coefficients (ICC) computed for agreement in number of past 12-month use days
- Test-retest reliability**
 - ICCs for agreement between time 1 and time 2 responses

Past-12-Month Frequency Items

During the past 12 months, on how many days...

- did you drink more than a few sips of beer, wine, or any drink containing alcohol?
- did you use any marijuana (pot, weed, or hash) or "synthetic marijuana" (e.g., "K2" or "Spice")?
- did you use anything else to get high (for example, other illegal drugs, medications, and things that you sniff or "huff")?

Screening Item Screenshot



CRAFFT :: Interactive

The following questions ask about YOU. During the PAST 12 MONTHS:

On how many days have you had more than a few sips of beer, wine, or any drink containing alcohol?

1 2 3
4 5 6
7 8 9
0

enter "0" if none

Back Next

Results

Participant Characteristics

	Total sample	Test-retest sample
Total N	844	302
Females	50.6%	55.3%
Age (mean ± SD years)	14.8 ± 1.9	15.2 ± 1.8
Race		
White non-Hispanic	44.8%	53.7%
Black non-Hispanic	10.4%	8.7%
Hispanic	29.7%	24.0%
Asian	8.4%	6.7%
Other/Multi-race	6.7%	7.0%
Parents with ≥college degree	72.4%	74.1%

Validity for Detection of Any Use in Past 12 Months

	TLFB criterion % Any	Screening item % Any	Sensitivity (95% CI)	Specificity (95% CI)
Alcohol	21.8%	20.3%	78.7 (72.2-84.0)	95.9 (94.1-97.2)
Cannabis	11.8%	11.1%	85.9 (77.5-91.4)	98.9 (97.9-99.5)
Other Drugs	1.0%	0.7%	--	--

Validity of Number of Past-12-Month Use Days

	TLFB criterion Mean days ± SE	Screening item Mean days ± SE	ICC (95%CI)
Alcohol	1.34 ± 0.21	1.40 ± 0.21	.55 (.51-.60)
Cannabis	3.33 ± 0.85	2.71 ± 0.77	.80 (.77-.82)

Test-Retest Reliability of Number of Past-12-Month Use Days

	Time 1 Screen Mean days ± SE	Time 2 Screen Mean days ± SE	ICC (95%CI)
Alcohol	3.15 ± 0.55	3.52 ± 0.55	.84 (.80-.87)
Cannabis	5.43 ± 1.72	5.29 ± 1.58	.95 (.93-.96)

Discussion

- Sensitivity** for identifying any past-12-month-use was higher compared to yes/no items in prior study (Harris et al., 2016).

Comparison of Sensitivity for Detecting Any Use

	Yes/No item (2014 study)	Frequency item (Current study)
Alcohol	62.1	78.7
Cannabis	72.0	85.9

- Specificity** was high for all frequency items – few false positives
- Validity** of number-of-days was low for alcohol (found higher mean days on screener compared to the TLFB)
- Test-retest reliability** (2-wks) for number-of-days was high

Potential Limitations

- Findings are preliminary as dataset is not yet finalized
- Rates of "other drug" use too low for analysis
- Findings may not be generalizable to other adolescent groups
- The criterion measure was based on self-report; however, confidential TLFB interviews have been found to yield reliable and valid reports of sensitive behaviors among adolescents (Levy et al., 2004; Hjørthøj et al., 2012))

Conclusion

- Detection of any past-12-month alcohol or cannabis use is improved by asking frequency questions compared to yes/no questions, making them better opening questions for the CRAFFT screening protocol
- CRAFFT 2.0 version with new frequency questions now available at <http://www.childrenshospital.org/ceasar/crafft>

References

- Harris SK, Knight JR, Van Hook S, Sherritt L, Brooks T, Kulig JW, Nordt C, Saitz R. Validity of computer self-administered vs. clinician-administered screening of adolescents in primary care. Substance Abuse. 2016 Jan-Mar;37(1):197-203.
- Levy S, Sherritt L, Harris SK, Gates E, Holder DW, Kulig JW, Knight JR. Test-retest reliability of adolescents' self-report of substance use. Alcoholism: Clinical and Experimental Research. 2004(Aug);28(8):1236-41.
- Hjørthøj CR, Hjørthøj AR, Nordentoft M. Validity of Timeline Follow-Back for self-reported use of cannabis and other illicit substances--systematic review and meta-analysis. Addictive Behaviors. 2012;37:225-33.

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