

# The identification of at-risk alcohol consumption patterns: Retrospective surveys versus a smartphone application

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## Background

As harm from alcohol is proposed to arise largely from volume consumed and/or pattern of intake, experimental researchers have focused on hazards associated with various types of at-risk consumption, especially heavy and binge drinking.

### Problem: Definitions

- Heavy and binge drinking are defined in diverse ways by both national agencies and researchers.
  - There are inconsistencies and problems related to not just quantity of intake and ethanol content, but also with regard to frequency, timeframe, and time period parameters.
  - There is also a lack of clarity regarding how these at-risk behaviours are distinguished from each other, a tendency to rely on dichotomous methods of differentiating between at-risk individuals and controls, and a propensity to overlook distinctions within at-risk samples.

### Problem: Measurement

- Some of the problems associated with defining at-risk alcohol intake stem from limitations related to measurement.
  - Information about alcohol consumption is typically gathered using self-report retrospective summary methods, retrospective diaries or, more rarely, prospective diaries.
  - Retrospective summary methods are marked by drawbacks associated with the accuracy and/or detail of data they yield plus all retrospective instruments are subject to recall and self-report biases.
  - Survey layout plus verbal/non-verbal information communicated by researchers further influence participant responses.
  - Though prospective measures appear to better capture behaviour, they are subject to significant back-/forward-filling.

These issues challenge the reliability and validity of research findings in this area. Consequently, a more ecologically valid method of collecting alcohol consumption information is required.

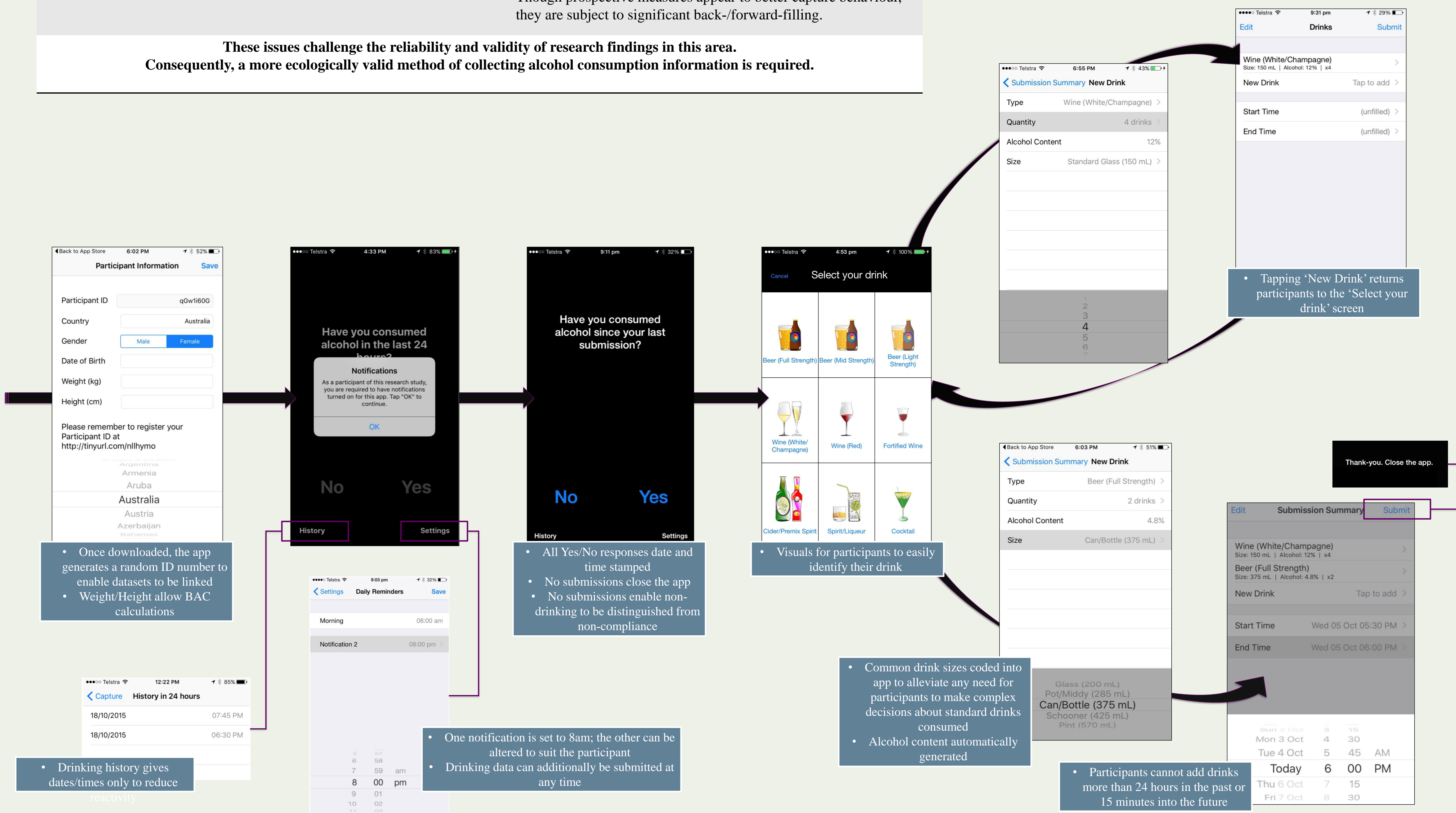
## Aim

To explore using a smartphone application (app) as a means of collecting more ecologically valid information about alcohol intake and patterns of consumption among healthy individuals.

## Method

Stage 1 Alcohol Use Disorders Identification Test (AUDIT); Alcohol Use Questionnaire (AUQ); Timeline Followback (TLFB; 21 days); WHO Alcohol, Smoking and Substance Involvement Screening Test (ASSIST)

Stage 2 Smartphone App: Alcohol Capture (AC); Twice daily submissions or more for 21 days



## TLFB vs Alcohol Capture

	TLFB	Alcohol Capture App	t(70)	p
Drinking Days (%)	25.50 (23.59)	26.91 (21.74)	-0.84	.402
Total Drinks	21.49 (20.00)	25.96 (25.82)	-2.12	.037
Av. Drinks/Week	7.16 (6.67)	8.65 (8.61)	-2.12	.037
Average Drinks/Day	1.03 (0.95)	1.24 (1.23)	-2.12	.037
Av. Highest Drinks	6.07 (4.20)	8.16 (6.70)	-3.10	.003
Av. Rate/Hour	-	1.57 (0.73)	-	-
Highest Rate/Hour	-	2.37 (1.46)	-	-
10/10+ Drinks (%)	1.41 (3.63)	2.55 (5.14)	-2.03	.046
8/8+ Drinks (%)	3.22 (5.50)	4.29 (7.51)	-1.52	.133
6/6+ Drinks (%)	6.37 (8.36)	6.57 (8.90)	-0.22	.830
4/4+ Drinks (%)	11.47 (13.22)	11.54 (12.33)	-0.05	.958

Note. All drinks measured in Australia Standard Drinks; 1 Standard Drink contains 10 grams ethanol

## Binge Category by Assessment

	High Binge	Binge	Non-Binge	Other
AUDIT-3 (%)	-	21.13	77.46	1.41
AUQ Binge (%)	-	36.62	52.11	11.27
TLFB (%)	16.91	39.44	43.66	-
Alcohol Capture App (%)	25.35	32.39	42.25	-

Note. AUDIT-3 Binge refers to at least weekly (but not daily) consumption of 6/6+ drinks; AUQ Binge refers to composite score considering rate of intake & drunkenness parameters; TLFB & AC High Binge refers to consuming 10/10+ drinks on one occasion or more; TLFB & Alcohol Capture Binge refers to consuming ≥ 6 and < 10 drinks on one occasion or more

## Conclusion

Compared with retrospective methods, AC provides more nuanced information regarding quantity and pattern of alcohol intake.

## Participants

Healthy individuals who indicated they drank alcohol (N = 71);  
No self-reported alcohol or substance use disorders

	M (SD)	95% CI
Age	25.24 (10.22)	[22.82, 27.66]
Years of Education	15.13 (2.47)	[14.54, 15.71]
AUDIT	8.68 (5.36)	[7.41, 9.94]
AUQ Binge	19.63 (16.73)	[15.67, 23.59]
ASSIST Alcohol	10.97 (7.60)	[9.17, 12.77]

Note. AUDIT scores ≥ 8 indicate hazardous use; AUQ Binge scores ≥ 24 indicate chronic binge behaviour; ASSIST Alcohol scores > 10 indicate moderate risk