Comparison of daily reports and retrospective recall for eliciting drug injection partners

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Diaries rarely used in social network research (Fu, 2007), yet may be useful method, especially when:

- **networks are large**
- **context or relation prevents observation**
- **forgetting is significant (recall data)**
- **temporal patterns are important**

Circumstances favoring diaries often present in infectious disease epidemiology

Injection drug users (IDUs) at high risk for infection with blood-borne pathogens (contaminated equipment, other blood exposures)

We assessed:

- **feasibility of daily reports and network elicitation via automated interviews (IVR)**
- **extent of forgetting in retrospective recall of drug injection partners**
- **effectiveness of recall cues**
- **reliability of retrospectively reported injection risk with particular partners**

Sample

- 2 phase study in Seattle, March-May, 2008
  - phase 1: 2-week daily reporting of inj. episodes
    - 40 out-of-treatment participants from:
      - a prior study of HCV transmission in IDUs
      - referrals from other participants
  - phase 2: injection network ascertainment
    - phase 1 participants with high compliance and multiple recent partners (estimated)
    - usually months after phase 1

Procedure: Daily interviews

- 28 days
- participants given mobile phones w/ call restrictions
- 3-hour slots for calling in, 2 reminder calls
- increasing incentives for continued compliance
- recall period = since last interview (last 24 hours if missed prior interview)
- IVR with recorded voice
- content: whether injected, injection partners (first name/nickname/etc.), partner injection risk
  - filler questions to balance length if < 3 partners
- spoken responses allowed
- participants told to respond in private
- length ~ 5-7 minutes

Procedure: Follow-up interview

- completed within 24 hours of last daily interview
- IVR alone in private office
- recall period = “since you started the study”
- content: elicitation of partners (free recall, 5 location cues, network cues), injection risk with specific partners
- duration = 9-15 minutes
- interviewer-assisted unduplication of partners reported in daily interviews

Participants

14 started study

- **2 dropped out for reasons unrelated to study**
- **1 completed daily and follow-up interviews, but reported no partners**

11 included in analysis:

- **88% men; median age = 38 (range = 23-51)**
- **64% white (others = black, Latino, mixed)**
- **82% high school graduates, 27% employed**
- **55% homeless**
- **73% ever incarcerated**
- **18% HIV+, 45% HCV+ (self-report)**
- **primary drug: 55% heroin, 45% methamphet.**

Daily interviews

number completed:

- **mean/median = 25 (of 28; 89%), range = 20-28**

proportion of days with reported injection:

- **mean = 84%, median = 87%, range = 31-100%**

proportion of injection days with 1+ injection partners:

- **mean = 67%, median = 63%, range = 17-100%**

Injection risk with partners reported in daily interviews

Proportion of partners	Mean	Median	Range	% with 1+ risky partners
Needle or syringe reuse	.17	.09	0-.50	55
Shared cooker, spoon, cotton, or rinse water	.55	.55	0-1.0	82
Any injection risk	.57	.55	0-1.0	91

Of 70 partners in aggregate:

- needle/syringe reuse with 9%
- shared cooker/spoon/cotton/rinse water with 53%
- any injection risk with 56%

Distribution of partners in daily interviews

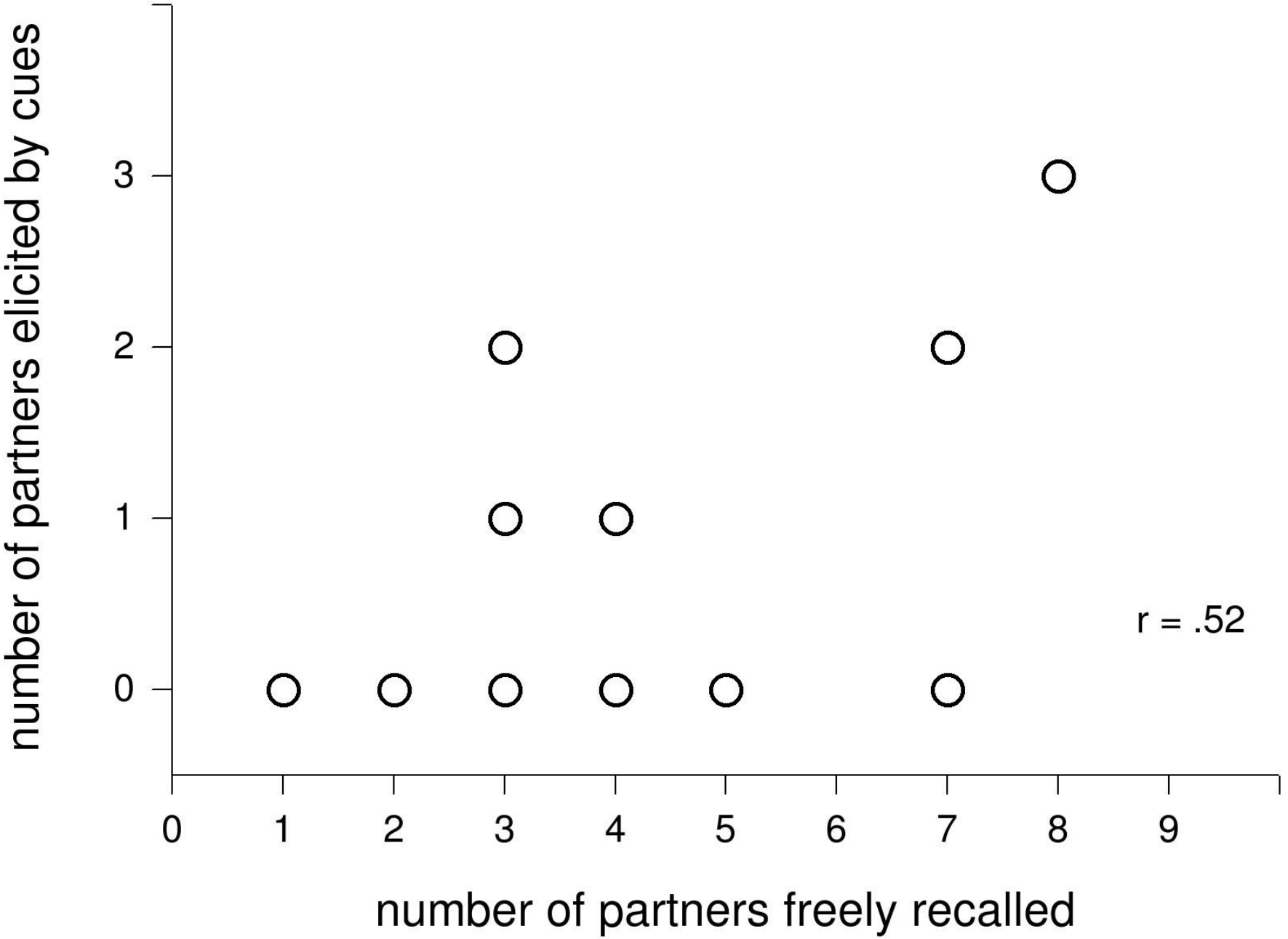
- median reported on days with partners = 1 for all
- maximum in a day: median = 2, range = 1-5
- unique partners (cumulative over 28 days):
  - mean = 6.4, median = 7, range = 1-15

Follow-up interview: Partners recalled by stage

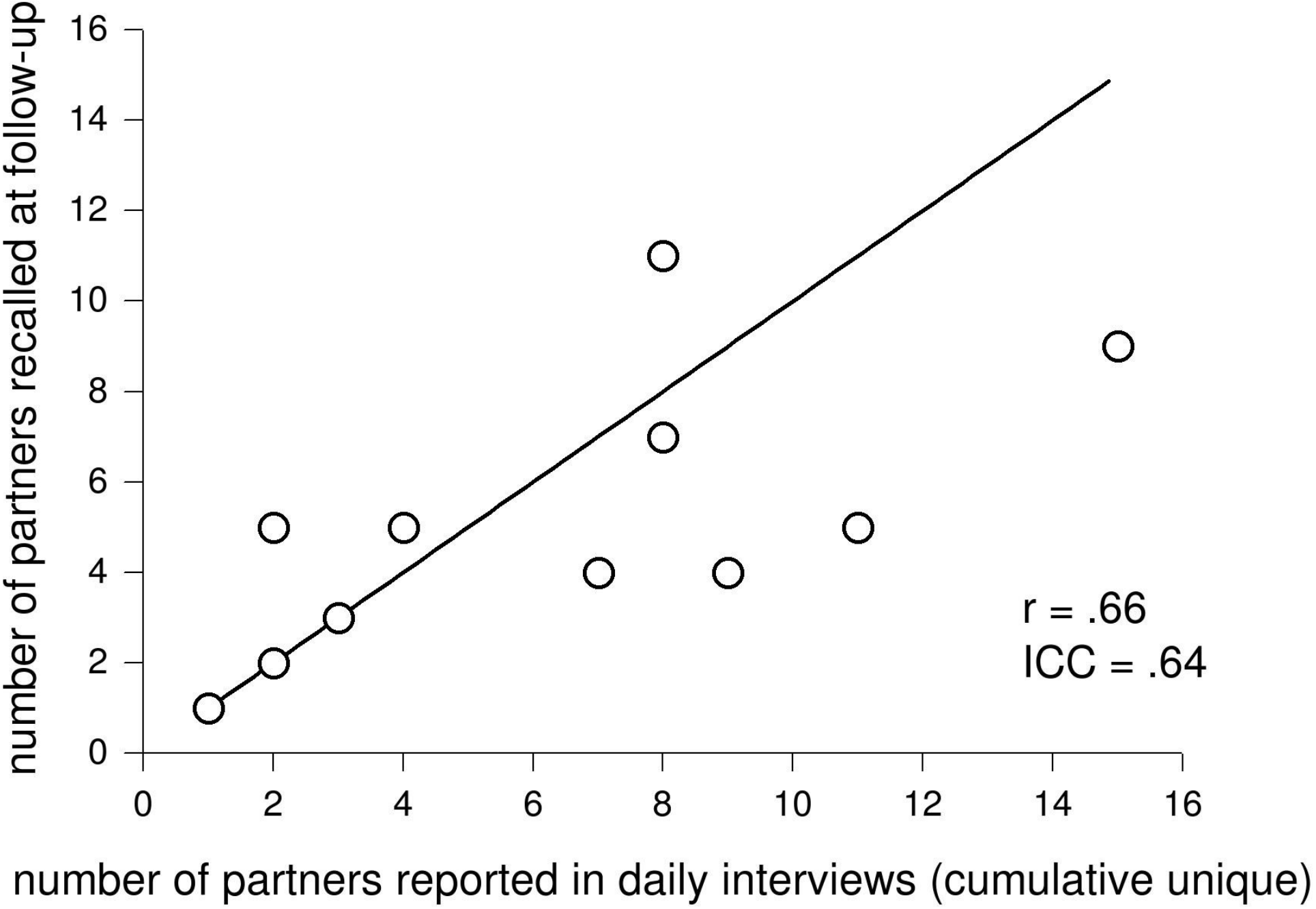
Measure	Mean	Median	Range	% responding to cues
Total elicited	5.1	5	1-11	---
Free recall	4.3	4	1-8	---
Recall cues	0.8	0	0-3	46
Location cues	0.4	0	0-2	23
Network cues	0.5	0	0-3	18
% increase	17	0	0-67	46

In aggregate, recall cues increased partners elicited by 19%

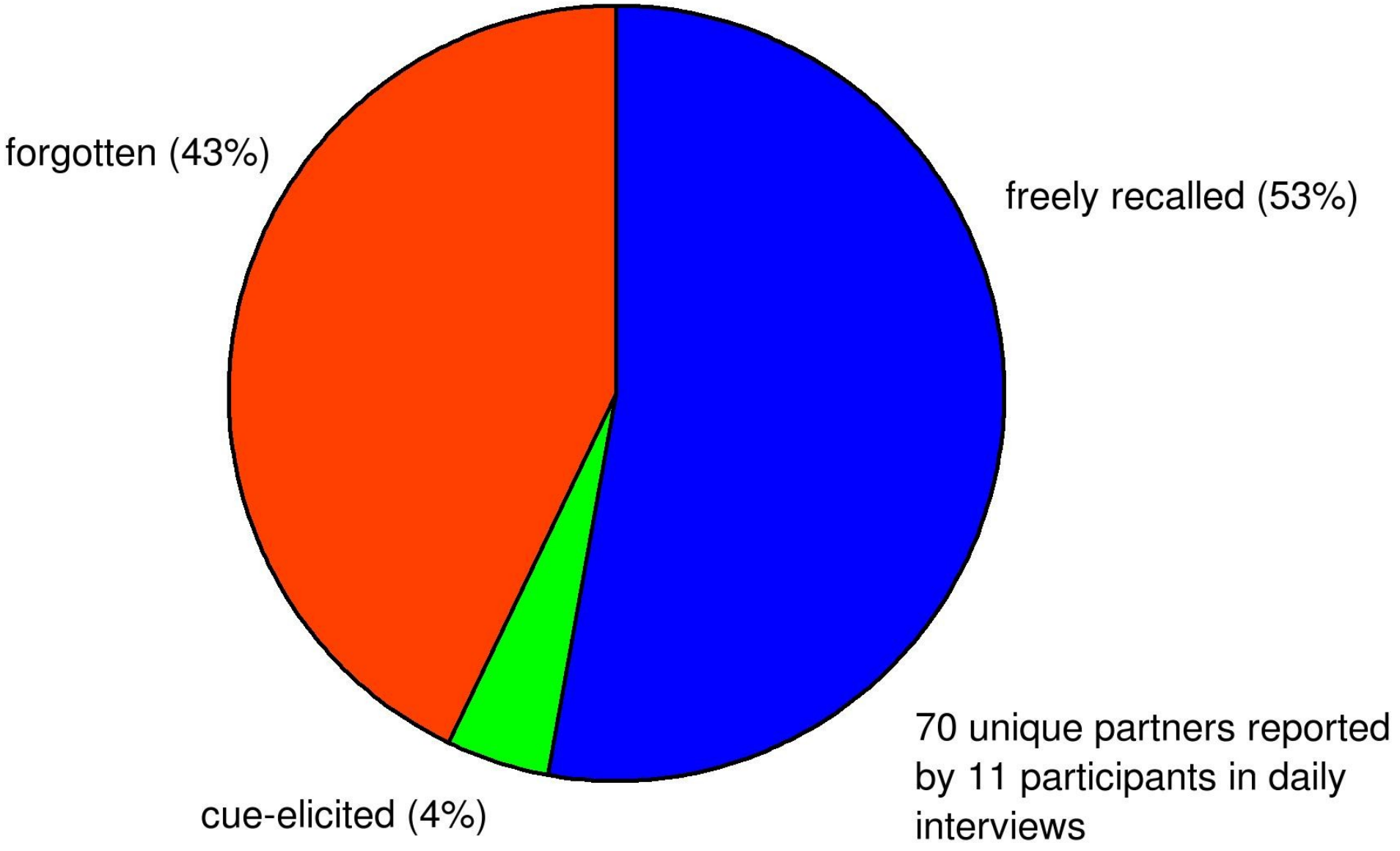
Follow-up: predicting responsiveness to recall cues



Direct comparisons: daily interviews vs. follow-up



Recall status at follow-up of partners reported in daily interviews (in aggregate)



Partnership correlates of recall in follow-up interview

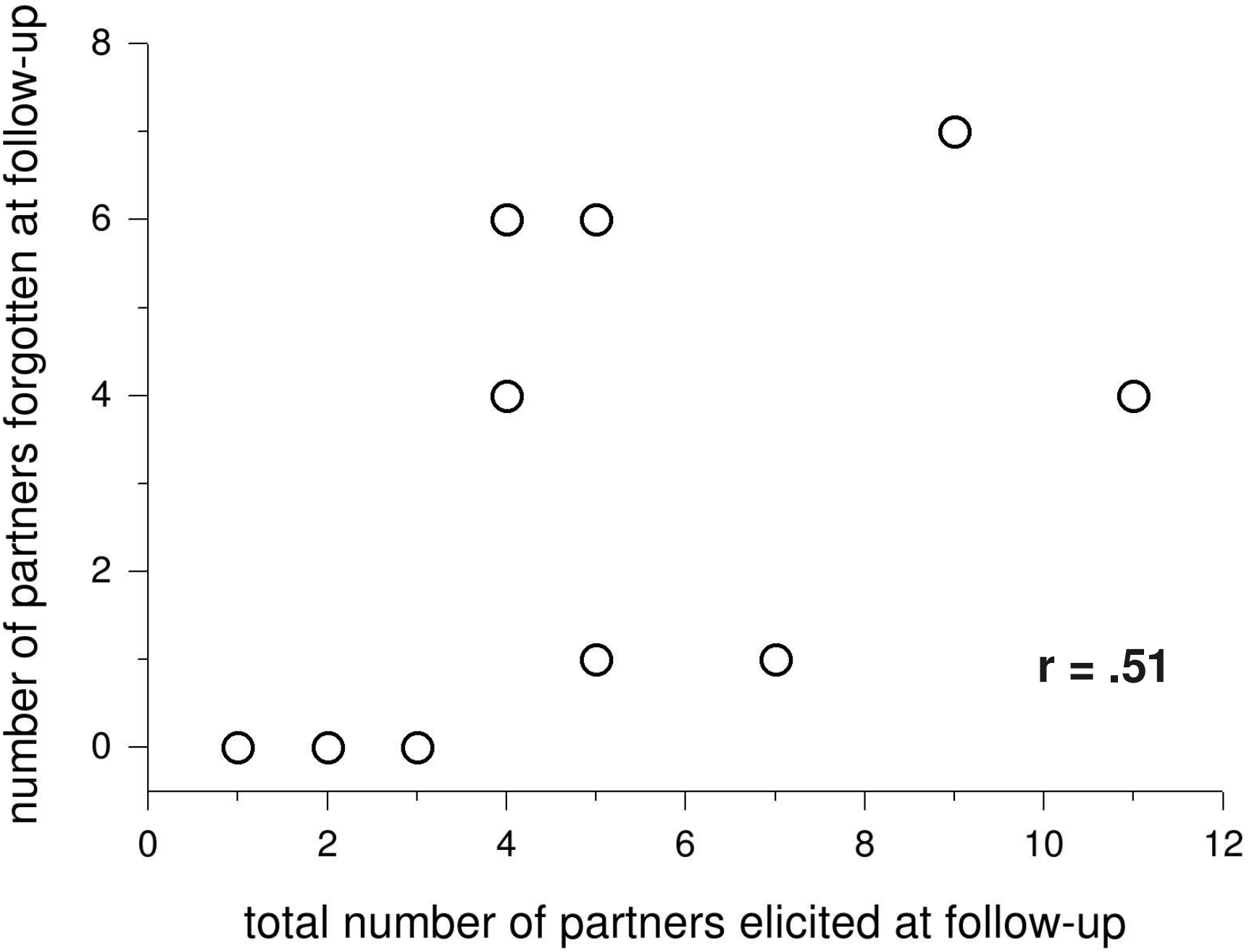
- point biserial correlations computed for each participant with > 2 partners in daily reports, then summarized

Variable	N	Weighted mean	Median	Range	% positive
Risk	5	.10	.09	-.25 to .58	80
Recency	7	.66	.50	.21 to .86	100
Frequency	7	.25	.32	-.26 to .44	86

Of 30 forgotten partners (in aggregate), participants had:

- injected with 5 in last 7 days (+10 others in last 14 days)
- injected multiple times with 6

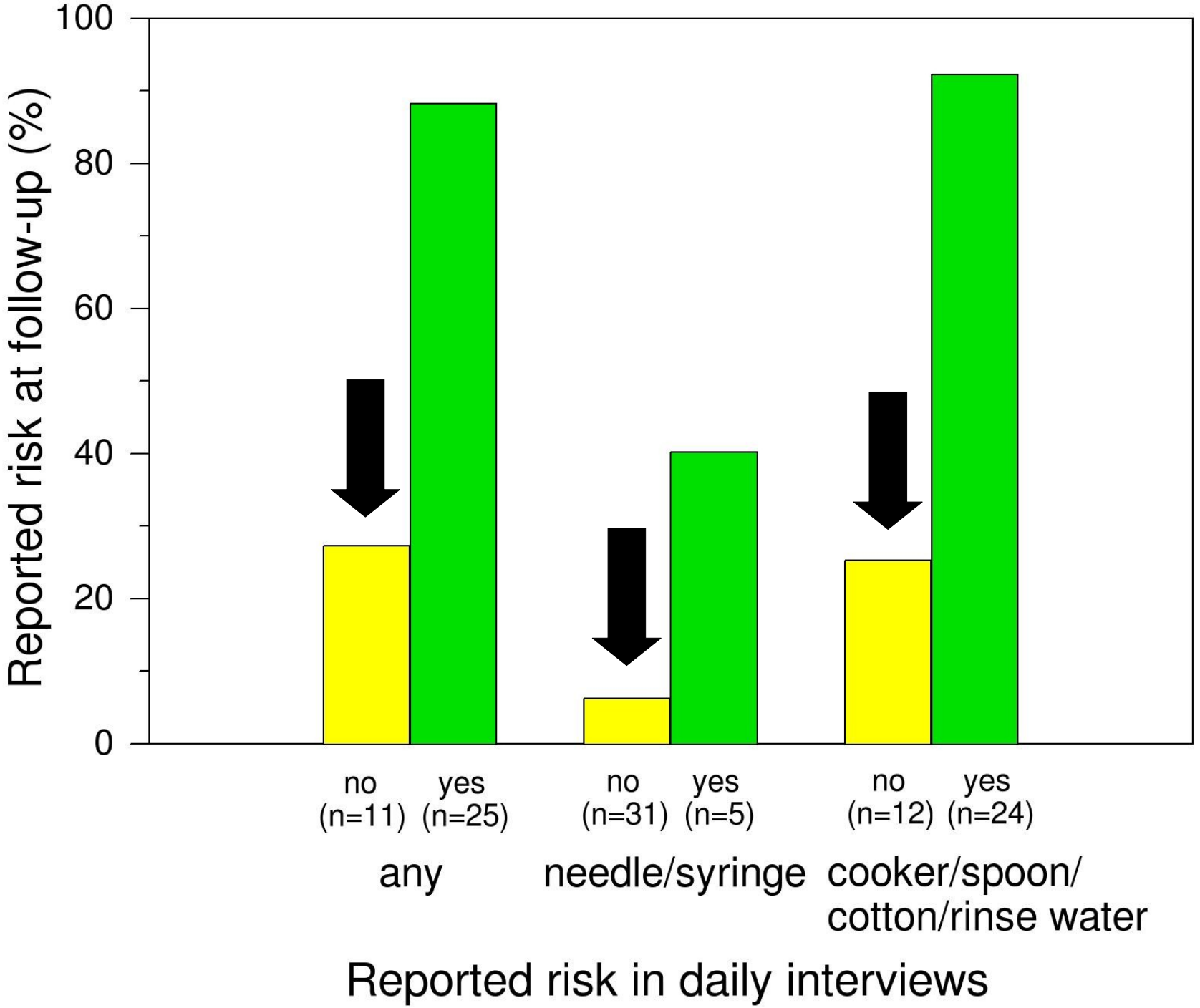
Those who recall the most, forget the most



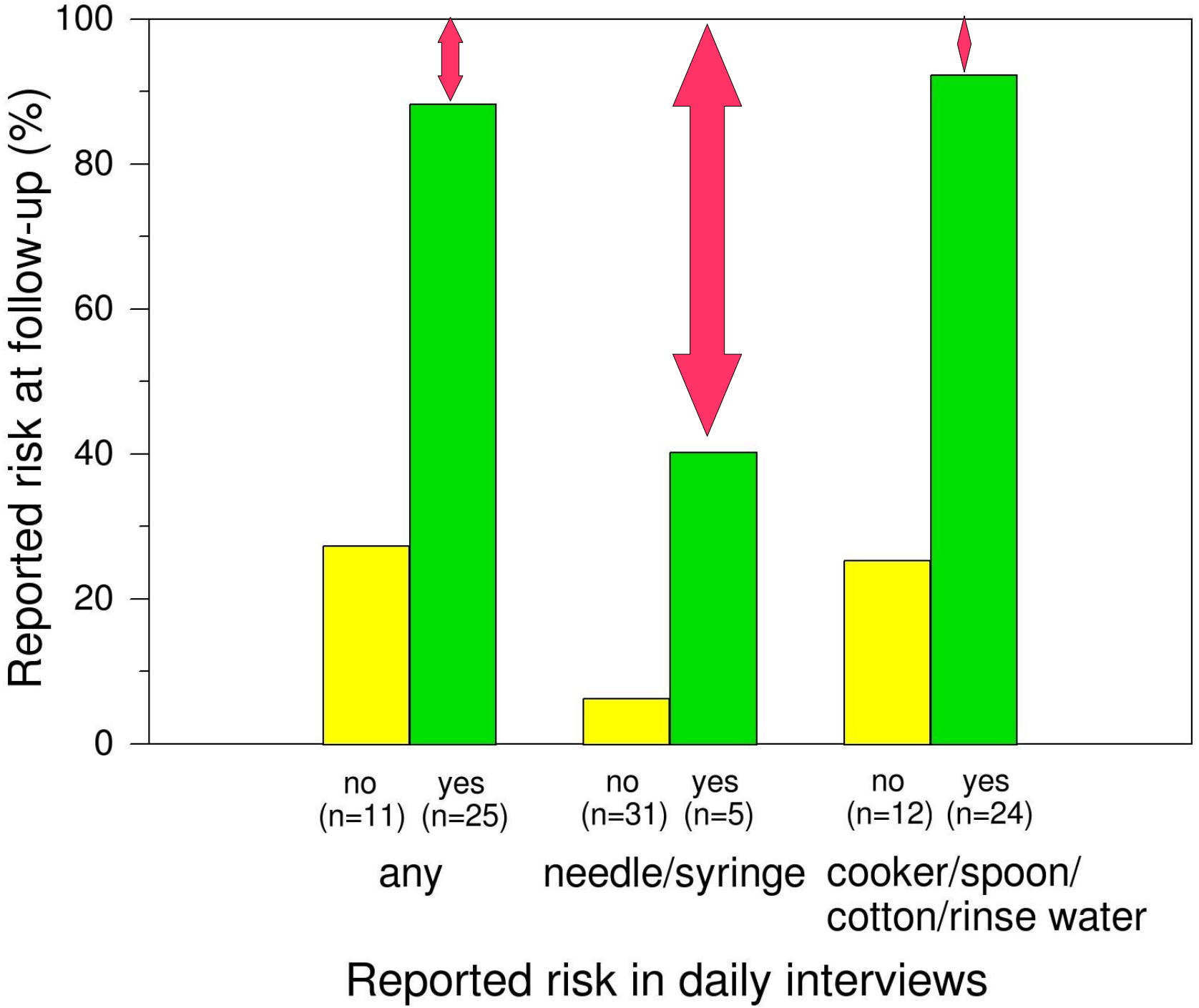
Partners recalled at follow-up but not reported in daily interviews

- 73% of participants reported such partners
- mean = 1.45, median = 1, range = 0-7
- 1 participant who reported 4 such partners may have intentionally underreported/misnamed partners in daily interviews

Overreporting of risk in partnerships or incomplete daily data?



Underreporting of injection risk in partnerships



Limitations

- small sample, likely unrepresentative of IDUs (biased toward the compliant)
- lack of direct reconciliation between daily reports and follow-up report
- 1+ participants' inconsistent naming of the same partners across daily reports – not responding in private
- small gaps in daily reports (the few missed interviews, time between last daily interview and follow-up)
- forgetting in daily reports?

Conclusions

- diary studies of networks feasible with IVR in challenging circumstances
  - require unduplication of reported contacts
  - disadvantages – cost, other limitations
  - IVR as interview mode in network research
- replication of prior research
  - forgetting substantial (short recall period)
  - recall cues effective (6th study), even by IVR
- unreliability in reported partnership risk
  - elicit *injection* partners, not *needle-sharing* partners!