

Level 2 Interventions: Preventing Alcohol-Exposed Pregnancy using the US CHOICES model

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Plenary 2, Global Action on FASD Prevention

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Learning objectives

- Demonstrate a need for primary prevention of FAS by reducing the risk for alcohol-exposed pregnancies (AEP) with efficacious Interventions
- Share evidence from selected US-based AEP prevention research projects based on the seminal CHOICES study
- Draw conclusions about best practices from a series of CHOICES-based studies

1 in 30 US women have AEP risk each month (Cannon et al, 2015)

Table 1 Number and percentage of U.S. women at risk of an alcohol-exposed pregnancy (AEP) during the last month according to drinking pattern, where AEP risk was defined as drinking (daily, binge, or any use) combined with not using contraception while having sex with a male

| Drinking pattern during month | Number and percentage of women at AEP risk among all non-pregnant women (weighted denominator = 7,236 ^a , weighted denominator = 58,486,902) | | | |
|-------------------------------|--|--------------------|------------|---------|
| | Unweighted numerator | Weighted numerator | Percentage | 95 % CI |
| Daily | 38 | 224,371 | 0.4 | 0.2–0.5 |
| Binge | 91 | 611,190 | 0.9 | 0.8–1.3 |
| Any use | 264 | 1,994,757 | 3.4 | 3.0–3.9 |

| Drinking pattern during month | Number and percentage of women at AEP risk among non-pregnant women who were not sterile and whose partner was not known to be sterile (unweighted denominator = 3,173 ^b , weighted denominator = 24,934,732) | | | |
|-------------------------------|--|--------------------|------------|---------|
| | Unweighted numerator | Weighted numerator | Percentage | 95 % CI |
| Daily | 32 | 189,225 | 0.8 | 0.5–1.1 |
| Binge | 80 | 533,083 | 2.1 | 1.6–2.7 |
| Any use | 227 | 1,643,539 | 6.6 | 5.7–7.5 |

Primary prevention of AEP (Floyd et al., 2006)

- 1997 CDC's Paradigm shift to true prevention:
 - Test a pre-conception strategy:
 - find drinkers who were not pregnant, but who are at risk for AEP,
 - help them change both drinking and contraception habits

CHOICES Intervention Design

- MI selected as the foundational intervention for “CHOICES”
- MI style is empowering, person-centered, respectful, and evokes hopes, values, and goals
- Motivational Activities included Providing Information, Feedback, Self-Monitoring, Decisional Balance, Goal Setting, Planning

CHOICES Intervention (Velasquez et al., 2010)

| Session 1 | Session 2 | Session 3 | Session 4 |
|--|--|---|------------------------------------|
| Relationship Building, Exploring Drinking and Contraception | Personalized Feedback of Risk for AEP | Setting Goals | Change Planning |
| MI Relationship Skills: Reflective Listening, Emphasizing choice and control | MI Elicit-Provide-Elicit Strategy, Reflective Listening, Explore Ambivalence | MI Technical Skills: Eliciting Change Talk, Resolving Ambivalence | MI Relational and Technical Skills |
| Self Monitoring: Daily Journal | Review/ Daily Journal | Review/ Daily Journal | Review/ Daily Journal |

CHOICES Study Design

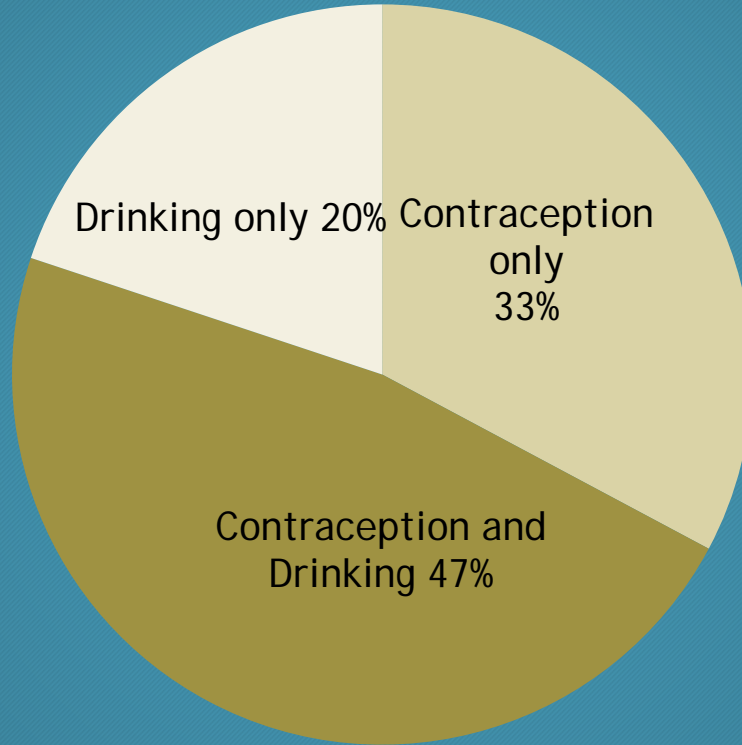
- 12 month RCT with 830 women ages 18-44 from 6 sites in 3 US states
- Proactive recruitment, non-treatment seeking sample
- 100% of study participants were **risk drinkers AND ineffective/ inconsistent contraception users**
- Randomized to CHOICES (Experimental) or Informational Control conditions
- CHOICES intervention was 4 sessions plus a gynecology informational visit
- Assessments at baseline, 3M (post intervention), 6M, and 9M

CHOICES Outcomes (Floyd et al, 2007)

- The intervention group was *twice as likely to have reduced* risk for an AEP after 3, 6, and 9 months, compared with the information-only control group
- More women in the intervention group changed both drinking and birth control behaviors

| <u>Reduced risk (9M):</u> | <u>Experimental</u> | <u>Control</u> |
|---------------------------|---------------------|----------------|
| AEP | 69% | 54% |
| Alcohol | 49% | 40% |
| BC | 56% | 39% |

How did women change?



Impact of CHOICES Study

- CHOICES intervention was efficacious
- Outcomes were robust across settings
- CHOICES could reduce the rate of AEP and FASDs if disseminated
- Adaptations began: College women, Native American women, Briefer, Telephone, Internet

Post-CHOICES Study Questions

- Can CHOICES-based interventions be made practical?
- Can it work in a single session?
- Can it work with community women?
- What if you don't provide contraception?
- Does it have to provide face to face counseling?

BALANCE: 1-Session Intervention Study in College Women

- 17% of 2012 college women were at AEP risk because 64% had risk drinking and 21% had risk for pregnancy (Ingersoll, Ceperich, Nettleman, & Johnson, 2008)
- Modified CHOICES to fit college population
 - One long motivational session with all CHOICES activities; randomized to intervention vs. brochure
 - Feedback on risk behavior and personality variables
 - Conducted in student health center
 - Briefer follow-ups (1- and 4-months)
 - Mailed and emailed follow-ups

BALANCE 4M Outcomes (208 College Women (90%), Ceperich and Ingersoll, 2011)

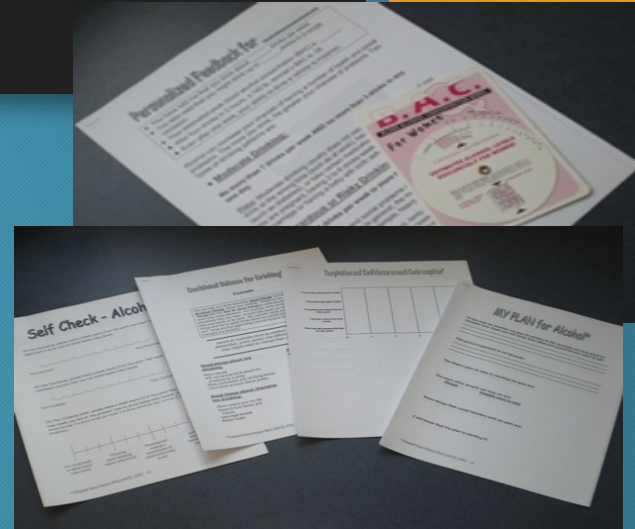
| <u>Variable</u> | Controls | | Intervention | | <u>Chi-Square Test</u> |
|-------------------------|---------------|----------------|---------------|----------------|--------------------------------|
| | N=107 | | N=101 | | |
| | <u>X or N</u> | <u>SD or %</u> | <u>X or N</u> | <u>SD or %</u> | |
| Risky Drinking No | 24 | 22.4% | 34 | 33.7% | $\chi^2_{1df} = 3.26, p < .08$ |
| Yes | 83 | 77.6% | 67 | 66.3% | |
| Contraception Effective | 50 | 55.1% | 68 | 68.7% | $\chi^2_{1df} = 3.99, p < .05$ |
| Ineffective | 48 | 44.9% | 31 | 31.3% | |
| AEP Risk No | 69 | 64.5% | 79 | 79.8% | $\chi^2_{1df} = 5.96, p < .02$ |
| Yes | 38 | 35.5% | 20 | 20.2% | |

Only independent predictor of AEP risk at 4M follow-up was **assignment to the control group** (OR 2.2, 95% CI 1.2-4.1).

EARLY : 1 Session Intervention Study in Community Women

- MI Techniques: evocation, collaboration, autonomy support and OARS
- Personalized feedback
 - drinks/week, drinks/day, bingeing, BAC
 - \$ Costs of drinking
 - Pregnancy risk
 - Efficacy of different contraception methods
- 10 minute video
- Only one activity to explore ambivalence, readiness, tempting situations, or change planning
- Encourage a gyn visit if none in past yr

- NIAAA R01AA1435



EARLY Study Conclusions (Ingersoll et al., 2013)

- 3 conditions (1 session CHOICES, Video, or Info only) decreased Risk Drinking, Ineffective Contraception, and AEP Risk
- 1 session CHOICES had larger effects than Video or Info on Ineffective Contraception and AEP risk
- Overall rate of women still at risk for AEP in 1 session CHOICES condition was 62.1%; (vs only 36.4% in CHOICES 4 session and 31.3% in college study)
- Single session intervention for AEP risk has weaker effects than CHOICES

EARLY Remote (Farrell-Carnahan et al, 2014)

NIAAA
3R01AA14356

- Adapted the EARLY (1 session) intervention for mail and telephone delivery and recruitment via Craigslist
- Findings: Remote delivery was feasible. Pilot results similar to EARLY.

| | BASELINE | 6M | | |
|-----------------------------------|--------------|--------------|-------|--------------------------------------|
| | Mean | Mean | | Effect Size ¹ (95% CI) |
| Ineffective Contraception Rate | 84.5% (n=44) | 64.3% (n=32) | | d=.57 (.07, 1.07) |
| | n | n | % | |
| Risk Drinking | 44/44 | 28/32 | 87.5% | d=1.46 (-.18, 3.09) |
| At risk for AEP | 44/44 | 22/32 | 68.8% | d=2.06 (.47, 3.64) |

Healthy CHOICES (Wilton et al., 2013)

- 2 session brief intervention modelled on CHOICES using MI + Personalized FB
- BI delivered in person vs. on telephone
- 6M Follow-up; 68% retention in study
- No differences between in person or telephone conditions
- Significant reductions in pregnancy risk to 56%, risky drinking to 89%, and AEP risk to 52%

Oglala Sioux CHOICES (Hanson et al, 2015, 2017)

- 193 American Indian women at risk for AEP enrolled in a 2-session CHOICES counseling tribal program.
- Results: Only 51% completed 6-month follow-up. Significant decrease in AEP risk from baseline at both 3- and 6-month follow-ups.
- Needs assessment identified preference for Group mode; Group CHOICES added as an option.
- Activities modified due to low literacy and numeracy. Ex: Use drink pouring to teach counting drinks
- Emphasized LARC
- Women in the OST CHOICES Program were more likely to reduce their risk for AEP by utilizing contraception, rather than decreasing binge drinking

CHOICES Dissemination

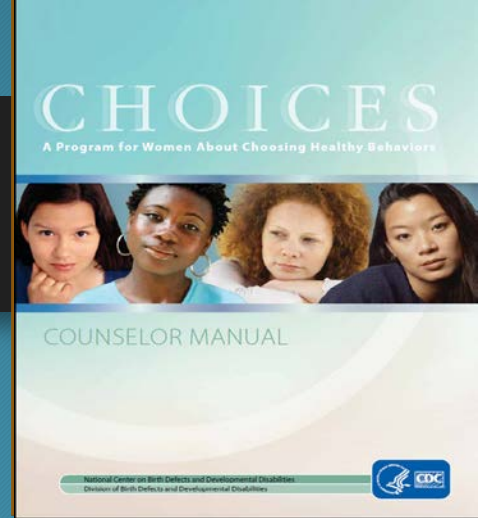
- Free counselor manuals, client workbooks, & training materials are available at:

<http://www.cdc.gov/ncbddd/fasd/freematerials.html>

- CHOICES was cited in



<http://nrepp.samhsa.gov/ViewIntervention.aspx?id=348>



New Direction: eHealth







- Can CHOICES be delivered using the Internet?
- R34 Feasibility Pilot Study-- NIAAA
- Adapted CHOICES into a highly interactive Internet Intervention (CARRII)
- CARRII provides 100% treatment fidelity
- CARRII is personalized, tailored to the user, and uses MI counseling style in I language and interactive elements



Information & Progress Panel

Tuesday, August 6, 2013

- Home 
- Cores** 
- Diaries 
- My Stuff 

 Logins **3**

 Diaries **2**

 Cores **1**

Alerts

- Complete Core 3.
- Make a diary entry for yesterday.

Cores

These are the six Core units for CARRII. During the first week, please complete the Overview Core. A new Core becomes available one week after the previous Core is completed. This gives you time to practice the techniques learned in each Core before moving to the next one. Completed Cores can be reviewed at any time.



DRINKING TEMPTATION & CONFIDENCE

Click scenarios to rate
your temptation and
confidence levels. Then
click Risk Summary to
learn more.



unpleasant
emotions



Physical
discomfort



Pleasant
emotions



Testing
control



urges and
temptations



Conflict with
others



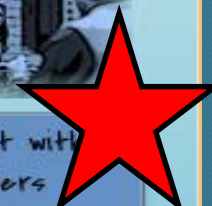
Social
pressure




Pleasant
times




Risk Summary






We had plans!


Why are you changing them?



You don't care about my feelings!



Go do whatever you want.
I don't want to argue.



But don't
expect me to stay
home by myself!

**WHAT
WOULD
YOU DO?**



Scenario

Conflict with others.

Risky Drinking Levels

4 or more standard drinks at 1 time.
8 or more standard drinks in 1 week.

How **tempted** are you to drink at risky levels when you are upset by conflict with others?

Temptation Rating



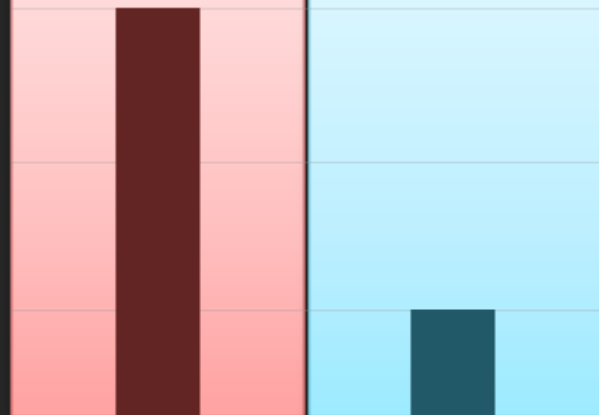
How **confident** are you that you can avoid drinking at risky levels when you are upset by conflict with others?

Confidence Rating



Temptation

Confidence



Risk Assessment



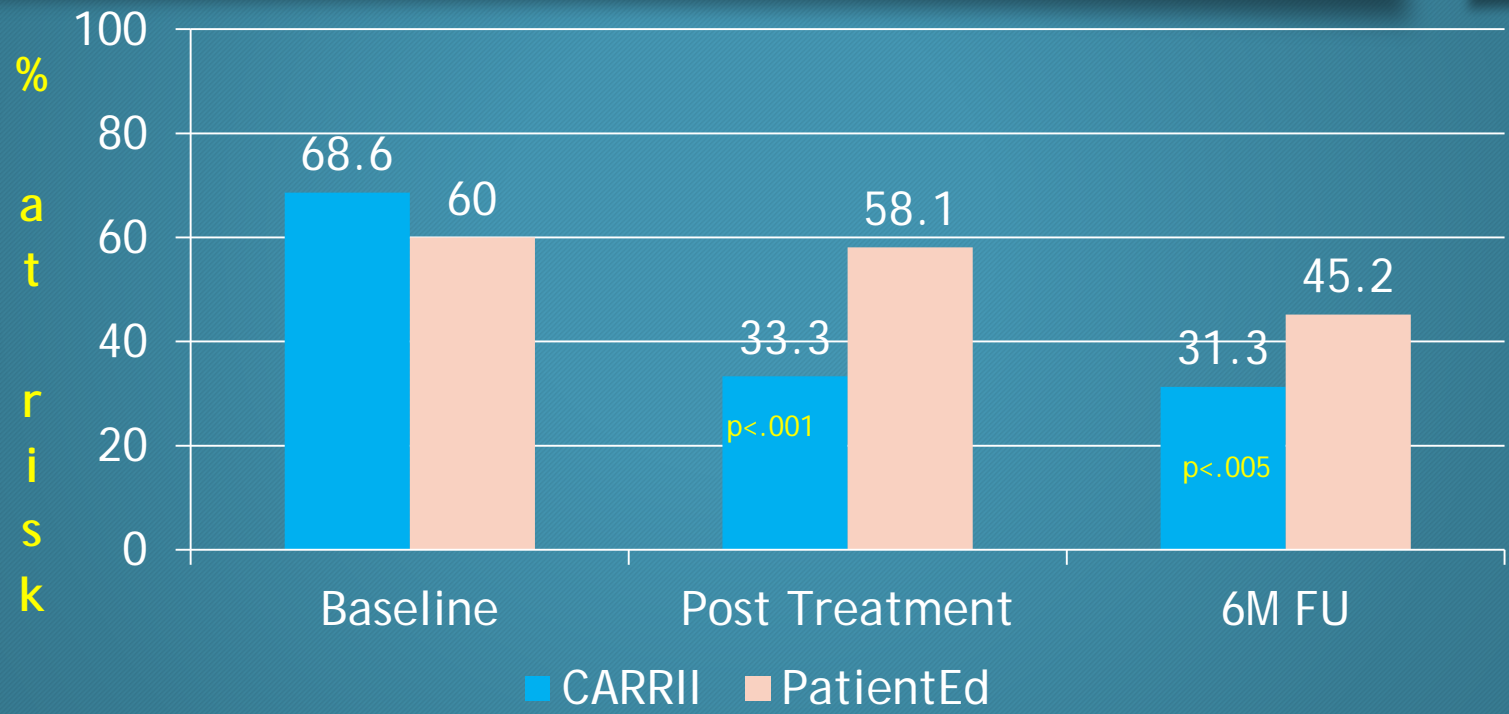
You're in a high risk situation. When you experience conflict and disagreement, you lose your head. Even though you wanted to drink below risky levels, you want to go out and party hard to forget about this stress.

When your temptation is higher than your confidence to handle it, you might take chances and drink at risky levels.

CARRII RCT

- Pilot tested (n=74) CARRII in a pilot RCT against an educational website
- Participants recruited mostly via Craigslist ads placed in 15 top binge drinking cities in U.S.
- Similar measures to previous CHOICES-like studies and added daily diaries via Internet
- Participants were 57% White, 19% Black, 8% Biracial, 5% Asian, 8% Other, with 16% reporting Hispanic ethnicity
- Educational levels: Less than High School, 5.4%, High School 30%, College 35%, Advanced Degrees 14%

CARRII AEP Risk Outcomes (Ingersoll et al., 2018)



Conclusions: Preventing AEPs

- AEP risk can be decreased with motivational interventions
- Growing evidence of a dose-response curve:
 - 4 session CHOICES and 6 Core CARRII (eHealth) for community women were more efficacious than 1 and 2 session interventions for community women
 - Single session intervention may work for college women
- Across studies, **most women change both behaviors, AND more women change contraception than drinking**

The Future of Pre-conceptual AEP prevention

- Efficacious brief interventions should be disseminated more widely
- Culturally competent adaptations should be tested
- **A continuum of interventions is needed:**
 - Highest risk women should get the most potent, relatively longer counseling and eHealth interventions
 - Less intensive interventions can increase intervention reach to at-risk subpopulations who don't want a counseling intervention

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Thank you!

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