Motivation as a Mechanism of Change in Alcohol Use

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Mechanisms of Change

- **Prediction** – Does motivation reliably predict alcohol use outcomes/behavior change?
- **Moderator** – Does motivation moderate effects of interventions (or other variables) on alcohol use outcomes/behavior change?
- **Mediator** – Does motivation or change in motivation mediate relations between interventions (or other variables) and alcohol use outcomes/behavior change?
- **Marker** – Is motivation a marker rather than a mechanism of change? Does it have an active role?
Many Facets of Motivation

- Multidimensional Concept
  - Readiness and Stage based (stage status, single score, profiles)*
  - Task based (Problem Recognition, Taking Steps)*
  - Client Change Talk and Commitment Language*
  - Behavioral Intentions
  - Decision making, outcome expectancies, etc.

- Multiple Measures
  - SOCRATES, RCQ, URICA, Ladders/Rulers, Behavioral Intentions, Commitment Language coding systems
Readiness as a Predictor

- Readiness is a consistent predictor of alcohol treatment outcomes (Adamson, Sellman, & Framptom, 2009)

- Many studies show that baseline readiness predicts alcohol use outcomes, independent of treatment type (MATCH, UKATT, COMBINE)

- However, there are some mixed findings (see next slide)
Readiness as a Predictor—important considerations

- **TIMING of ASSESSMENTS**
  - Baseline readiness has been shown not to predict alcohol use outcome when post-treatment readiness did (Heather, 2013; Lemke & Moos, 2003)

- **ACTION-ORIENTED MEASURES**
  - Taking Steps subscale of the SOCRATES has been shown to predict alcohol use outcomes up to 1 year post-tx (Bauer & Bern, 2014; Hall et al., 2014)
  - Post-tx scores and pre-post changes on Action subscale of the URICA predicted drinking outcomes (Blanchard et al., 2003)
  - Overall readiness score pre-tx can be used to predict outpatient outcomes, but end-of-tx action(+) and maintenance(-) subscale scores have most predictive ability across settings (DiClemente et al., 2004).
Readiness as a Moderator

- Readiness to change has been found to be a moderator of treatment effects in multiple studies (Barnett et al., 2010; Tomaka et al., 2012; Maisto et al., 2001)
  - Also some null moderation findings (Walton et al., 2008; Mastroleo et al., 2011)

- Direction of effects may depend on measures and type of intervention
  - Low readiness ruler (Barnett et al., 2010) and low taking steps (Maisto et al., 2001) pre-brief intervention = greater reductions in alcohol use.
  - High contemplation scores compared to low contemplation scores (on RCQ) = greater reduction on AUDIT and alcohol-related problems after BASICS intervention (Tomaka et al., 2012)

- Many studies with college drinkers (Tomako et al., 2012; Mastroleo et al., 2011) or participants from EDs (Walton et al., 2008; Barnett et al., 2010)
Readiness as a Mediator

- Limited studies with mixed findings
  - Intervention predicted changes in readiness in expected direction, but readiness did not in turn predict changes in drinking (Borsari, et al, 2009)
    - College drinkers
  - Progression in stage predicted outcomes in one (Heather et al, 2009) but not another study (Callaghan et al., 2007)
    - Differences in stage measurement

- Initial evidence of moderated mediation
  - Changes in readiness (contemplation ladder) mediated relationship between BMI and outcome only for high levels of motivation (Stein et al. 2009)
    - Emergency department hazardous drinkers
Readiness as a Mediator-more complex analyses

• Path analyses of readiness (RCQ) across multiple time points (Collins et al., 2010)
  ◦ Best fitting model included bidirectional relations between readiness and alcohol use with readiness predicting more drinking in college population

• Structural Equation Model (Small et al., 2012)

• Success Profiles From Project Match (Carbonari & DiClemente, 2000)
TTM Profile: Outpatient PDA Post Treatment

Standard Scores

Abstinent
Moderate
Heavier

Pre Con Act Main Conf Temp Exp Beh
TTM Variables
Change Talk as a Predictor

• Change and Sustain talk often predict outcomes in expected directions but not always reliably (Apodaca & Longabaugh, 2009; Baer et al, 2008; Bertholet et al, 2013; Miller & Rose, 2009)

• Commitment language as a specific type of change talk seems an important predictor (Amrhein et al, 2003; Miller & Rose, 2009; Martin et al, 2011) but again not always (Baer et al, 2008)
Change Talk as a Predictor—some interesting considerations

- Consider TIMING
  - CT measured later in individual session or entire intervention sequence as a better predictor of outcomes (Bertholet et al, 2010, Campbell et al., 2010)

- Consider DIMENSIONS of CT and ST measured
  - Rate of utterances? (e.g., Baer et al, 2008)
  - Strength of utterances? (e.g., Campbell et al, 2010)
  - Length of utterances? (e.g., Gaume et al, 2013)
  - Combination variables?
Change Talk as a Mediator

• Change talk is related to therapist behaviors and has been found to mediate relationship between therapist MICO and MIIN and drinking outcomes (Apodaca and Longabaugh, 2009; Cately et al, 2006)

• Change talk predicted and mediated relationship between therapist behavior and client drinking outcomes (Moyers et al, 2009; Vader et al, 2010)
Karno et al, 2010

- Multivariate path analysis for mediated moderation
- Client reactance moderates effect of therapist structure on outcome
- Change talk about taking steps appears to mediate relation between this interaction and outcome
Where do we go from here? I

- Focus on different aspects of motivation
  - Commitment language, URICA Action, and Taking Steps measure *taking responsibility and making change a priority*
  - They reflect aspects of motivation that differ from sustain talk, decisional considerations, contemplation, and problem recognition

- Assess reciprocal nature of these variables and how variables interact
  - For instance, problem recognition and severity can be related to increase or decrease in motivational variables
Where do we go from here? II

- Consider relationships among variables in terms of interactions and sequential analyses
  - Consider patterns among multiple mechanisms or profiles (readiness or commitment language and efficacy; motivation and environmental barriers)
  - Relational aspects of different mechanisms may be more important than single mechanisms
- Starting level of drinking and goals (e.g. severity, reduction) are very important for motivation
- Begin to include and combine explicit and implicit measures of motivation
Summary

- Motivation acts as a predictor and often can be a moderator and/or mediator of drinking outcomes.

- Motivation (variously defined) seems an important piece of the mechanisms of change conversation
  - Some aspects may be necessary but not sufficient?
  - Need multiple mechanisms interacting as well as longitudinal and interactive research designs

- Findings are often mixed and relations vary based on:
  - Concept and type of assessment of motivation
  - Global versus subscale scores
  - Timing of assessment
  - Type of outcome (reduction, abstinence, moderation)
  - Samples (college, treatment, brief intervention)
  - Intervention type