



Ambulatory Assessment of Substance Use Antecedents: The Need for a Person-Centered Approach

Rachel L. Tomko, Ph.D.
Medical University of South Carolina

Disclosures

- Research and training supported by the National Institute on Alcohol Abuse and Alcoholism (NIAAA) and the National Institute on Drug Abuse (NIDA)

Overview

- **Clinic** → Dialectical Behavior Therapy/functional analysis
- **Lab** → Ambulatory assessment of antecedents of substance use
- **Back to the Clinic?** → automated functional analysis?

Dialectical Behavior Therapy (DBT)

- Third wave Cognitive-Behavioral Therapy developed by Marsha Linehan, Ph.D.
- Chronic suicidality
- Adapted for:
 - Comorbid Substance Use Disorders (McMain, Sayers, Dimeff, & Linehan, 2007)
 - Adolescent suicidality/self-injury (Miller, Rathus, & Linehan, 2007)
 - Eating Disorders (Wisniewski, Safer, & Chen, 2007)

DBT Diary Card

Dialectical Behavior Therapy Diary Card											Filled out in meeting? Y (N)		How often did you fill out this side? ___ Daily <input checked="" type="checkbox"/> 2-3x ___ Once				Date started: 6/5/17	
Day	Emotions						Urges for...					Actions				Skills		
	Anger	Sadness	Fear	Guilt	Enthusiasm	Joy	Suicide	Substance Use	Quit Therapy			Substance Use				Take Meds (y/n)	Willingness	Application
	0-5	0-5	0-5	0-5	0-5	0-5	0-5	0-5	0-5	0-5	0-5	y/n	# Specify	# Specify	# Specify	0-5	0-5	
15 Mon	2	2	4	4	3	3	0	2	0			N				Y	2	4
16 Tues	0	1	1	0	4	3	0	1	0			N				Y	3	3
17 Wed	0	0	1	0	2	4	0	1	0			N				Y	3	4
18 Thur	0	0	5	0	0	0	0	5	0			N				Y	3	3
19 Fri	0	2	2	3	4	4	0	1	0			N				Y	5	5
20 Sat	4	1	0	0	0	0	1	5	3			Y	3			Y	1	0
21 Sun	3	4	2	4	0	0	2	2	3			N				N	2	3

Actions: Use the blank spaces to track behaviors. These can be behaviors you would like to reduce (e.g., alcohol or drug use, lying, binge eating, spending, stealing) as well as behaviors you might wish to increase (e.g., taking prescribed medications, exercising).

Skills: Rate your willingness to use skills from 0 (not willing) to 5 (so willing you felt as though you did not even have to try). Then rate the degree to which you apply these skills, regardless of outcome, from 0 (did not use skills at all) to 5 (applied many skills).

DBT Diary Card

Dialectical Behavior Therapy Diary Card											Filled out in meeting? Y (N)		How often did you fill out this side? ___ Daily <input checked="" type="checkbox"/> 2-3x ___ Once				Date started: 6/5/17	
Day	Emotions						Urges for...					Actions				Skills		
	Anger	Sadness	Fear	Guilt	Enthusiasm	Joy	Suicide	Substance Use	Quit Therapy			Substance Use				Take Meds (y/n)	Willingness	Application
	0-5	0-5	0-5	0-5	0-5	0-5	0-5	0-5	0-5	0-5	0-5	y/n	# Specify	# Specify	# Specify	0-5	0-5	
15 Mon	2	2	4	4	3	3	0	2	0			N				Y	2	4
16 Tues	0	1	1	0	4	3	0	1	0			N				Y	3	3
17 Wed	0	0	1	0	2	4	0	1	0			N				Y	3	4
18 Thur	0	0	5	0	0	0	0	5	0			N				Y	3	3
19 Fri	0	2	2	3	4	4	0	1	0			N				Y	5	5
20 Sat	4	1	0	0	0	0	1	5	3			Y	3			Y	1	0
21 Sun	3	4	2	4	0	0	2	2	3			N				N	2	3

Actions: Use the blank spaces to track behaviors. These can be behaviors you would like to reduce (e.g., alcohol or drug use, lying, binge eating, spending, stealing) as well as behaviors you might wish to increase (e.g., taking prescribed medications, exercising).

Skills: Rate your willingness to use skills from 0 (not willing) to 5 (so willing you felt as though you did not even have to try). Then rate the degree to which you apply these skills, regardless of outcome, from 0 (did not use skills at all) to 5 (applied many skills).

Functional Behavior Analysis

Antecedents	Behavior	Consequences
Difficulty concentrating	Smoke a cigarette	Notice short-term improvement in concentration
Fight with parent	Use alcohol/marijuana	Feel "in control"
Significant physical pain	Take a prescription pain medication (opiate)	Pain is reduced
Friend offers marijuana, want to enhance friendship	Use marijuana	Had fun, friendship enhanced
Anxious in social situation	Drink alcohol	Anxiety reduced, socialization more enjoyable

Person-Centered Approach

- *Functional significance* of use for each *individual* may be key to identifying and prescribing optimal treatment
- Antecedents and consequences provide insight into functional significance
- Adolescent substance use more environmentally-driven (Kendler et al., 2013)
- Limited time for assessment in clinical settings

Research Questions

1. How can we best measure substance use and antecedents “in the moment”?
2. Are there meaningful individual differences in substance use antecedents?
3. Can a pre-treatment assessment period outside of the clinic be used to inform treatment decisions?

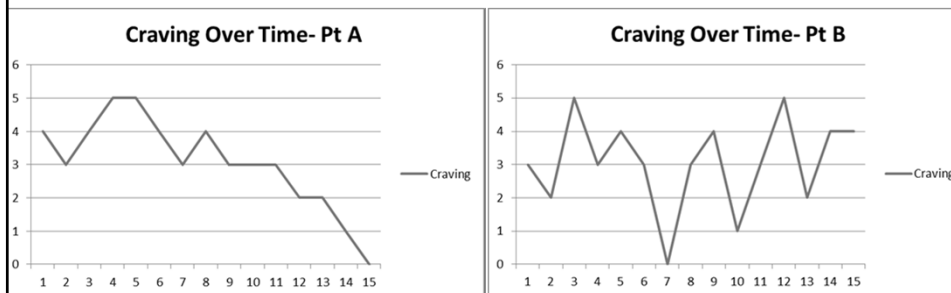
A Momentary Perspective

- Ambulatory Assessment, Experience Sampling Method, Ecological Momentary Assessment (EMA), Mobile Health (mHealth)
- *Definition: Repeated and frequent assessment that occurs in the natural environment of individuals close in time to the behavior of interest*

Advantages of Momentary Perspective

- Reduced retrospective recall
- Reduced reliance on insight
- Better way to measure dynamic processes

Considering Temporality



Methodological Research

- Passive measurement of cigarette use
- Real-time measurement of medication adherence
- Measurement of antecedents/maintaining factors of substance use (e.g., negative affect, cue reactivity) in adolescent cannabis use disorder

Proposed Clinical Applications

- Can pre-treatment monitoring of antecedents predict response to N-Acetylcysteine?

Summary

- “Functional analysis” important clinically
 - May begin to conduct “outside the clinic” with help of ambulatory assessment
- Person-centered research necessary to improve clinical assessment and decision making

Acknowledgments

Grant Support:

NIDA R01 DA042114 (Gray)
NIDA U01 DA031779 (Gray)
NIAAA T32 AA007474 (Woodward)