

#NAMIcon16

Borderline Personality Disorder

Research Update:

*Childhood Precursors,
Predictors, & Risk Factors*

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BPD Carries Severe Consequences

- Suicide rate: 8-10%
- High rates of costly treatment utilization: 6.3 inpatient days/year + 1 ER visit/year
- Chronic impairments: 40% received disability payments after 10+ year follow-up

Pompili, Girardi, Ruberto, & Tatarelli (2005); Zanarini, Frankenburg, Hennen, & Silk (2003); Gunderson, Stout, McGlashan, Shea, Morey, Grilo...Ansell (2011)



Developmental Approach Can Inform Prevention & Early Intervention

- Typical onset: early adolescence – emerging adulthood
- Most research has examined adults
- Limited ability to identify mechanisms and contextual risks predicting onset

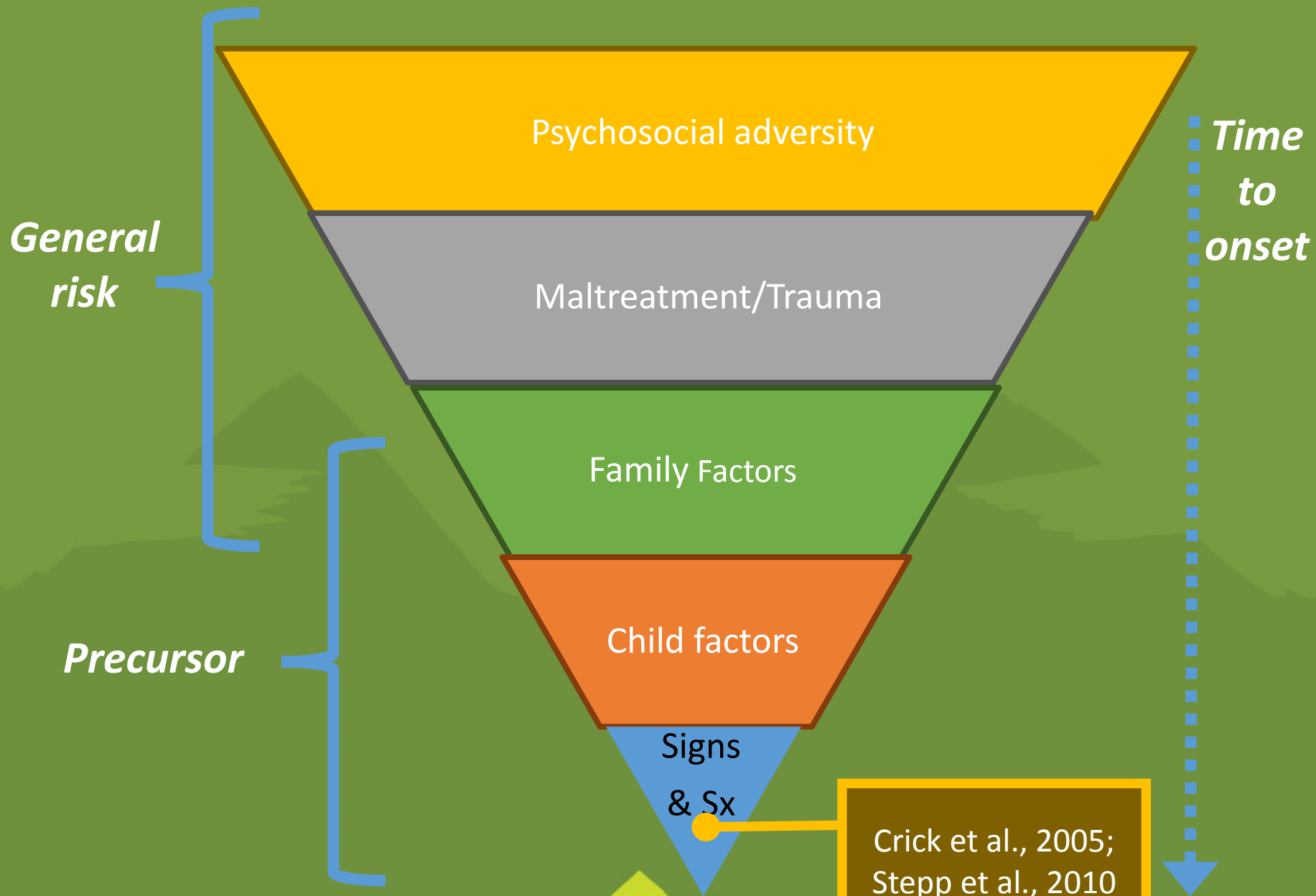


Predictors

A. Risk Factors

B. Precursors





Significance of Precursors

Precursors *prospectively* increase the likelihood of BPD

- Early signs & symptoms that are similar to BPD phenotype
- Occur close in time to the onset of the disorder
- More specific than “risk factors”

Identification high-risk individuals

- Short-term longitudinal studies
- Identify pathogenic mechanisms

Indicated Prevention

- Intervention *prior* to full-blown disorder
- Requires detection of individuals experiencing precursors

Chanen & Mcutcheon, 2013; Eaton, Badawi, & Melton, 1995; Yung & McGorry, 1996



Examining the Evidence for Precursors of BPD

Identification

1. Searched literature

- *Study design:* Longitudinal, observational
- *Predictors:* prospectively identified, increases risk of onset
- *Outcomes:* diagnosis, symptoms, traits, features
- 358 articles identified

Screening

2. Screened articles

- 358 articles: title & abstract review → 309 Excluded
- 49 articles: full manuscript review → 11 Excluded
- 38 articles in final analysis

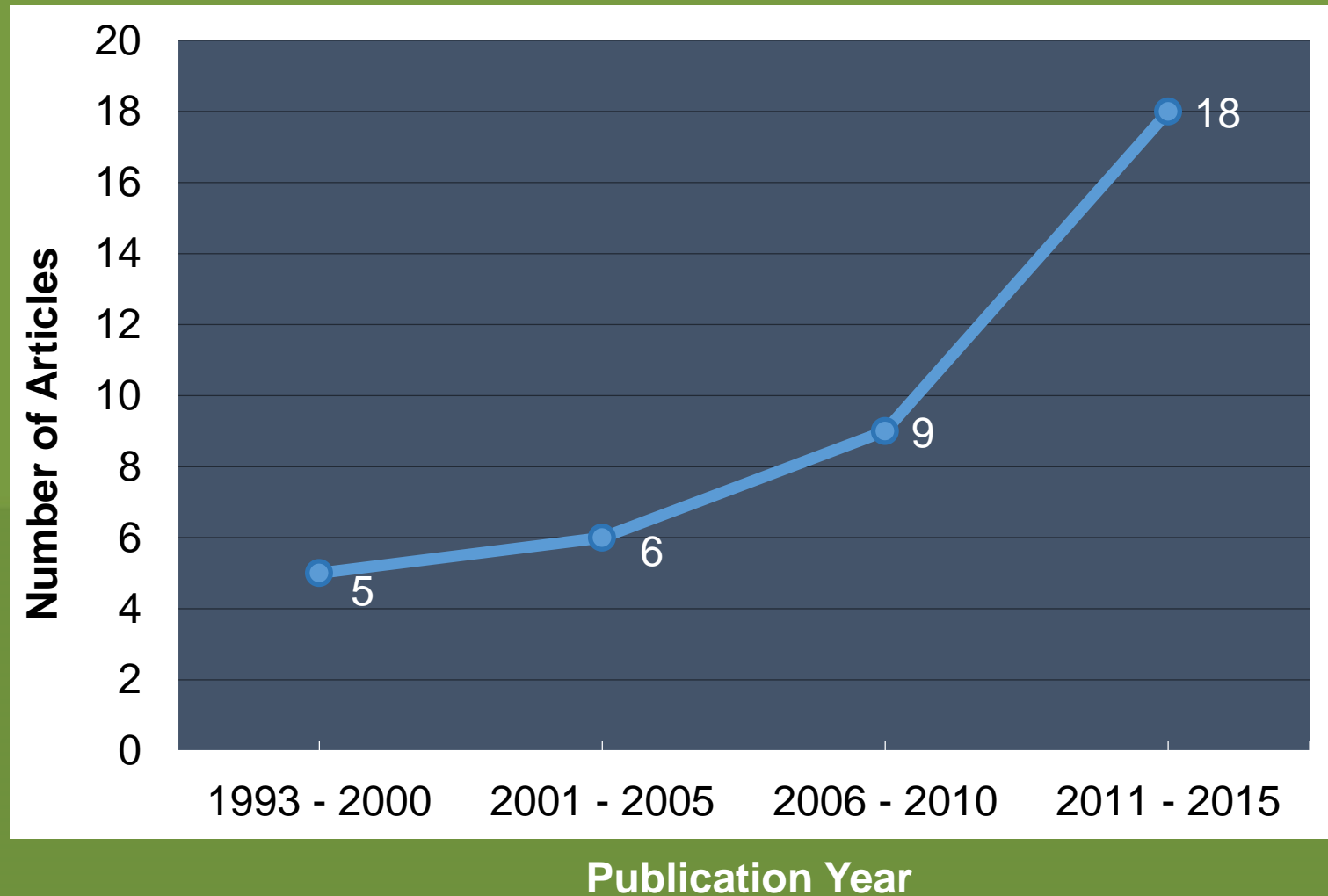
Coding

3. Extracted pre-defined data fields

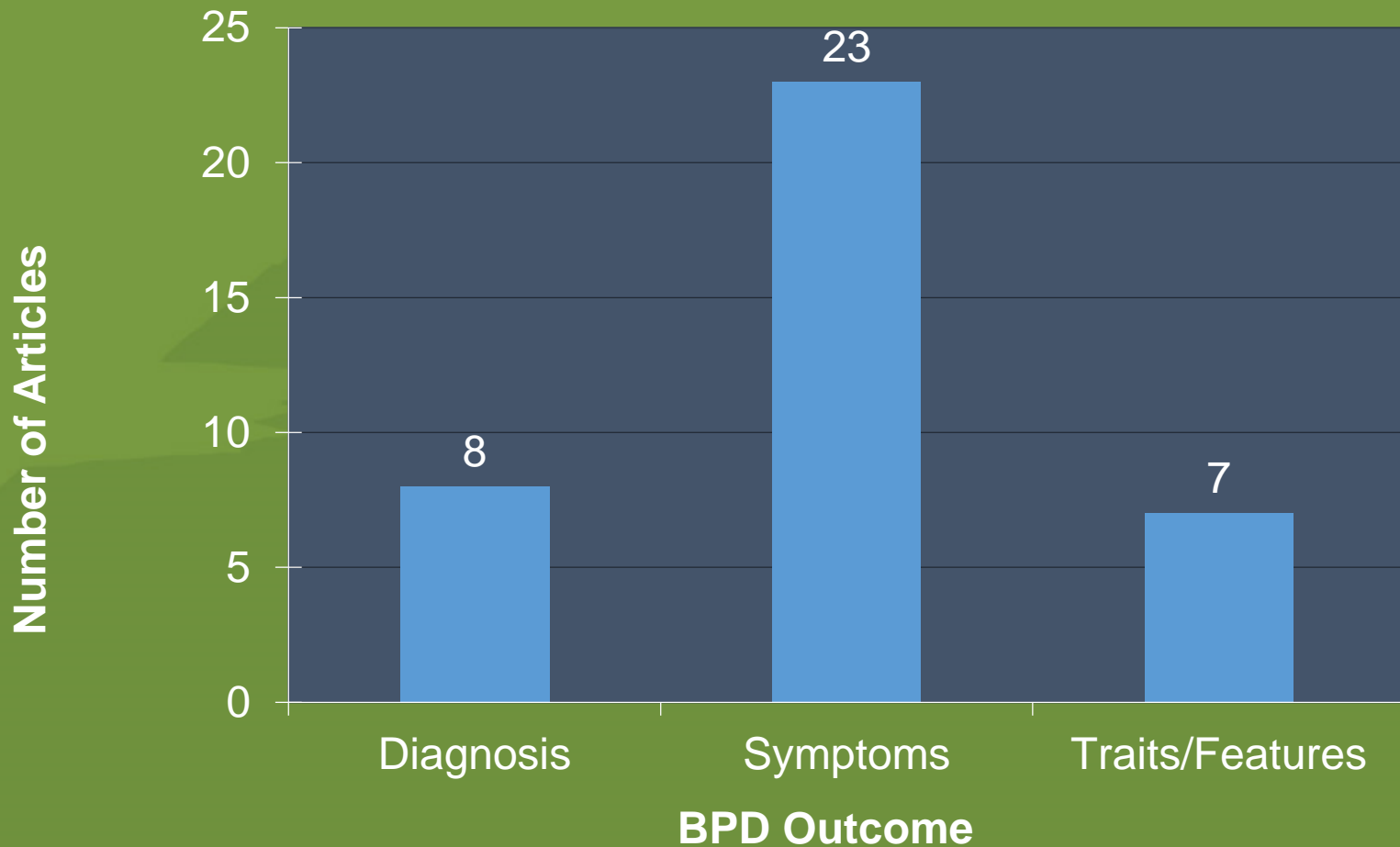
- Recorded study characteristics, measurement of risk factor and outcome, findings
- 3 raters, double-coded Stepp, Lazarus, & Byrd (*in press*)



Articles ($n = 38$) by Publication Year



Articles by Type of BPD Outcome



Psychosocial Adversity & Maltreatment

Family characteristics

Limited Family Resources

- Poverty
- Low maternal education
- Single parent household
- Stressful life events

Carlson et al., 2009; Cohen et al., 2008; Conway et al., 2015; Stepp et al., 2015

Maltreatment

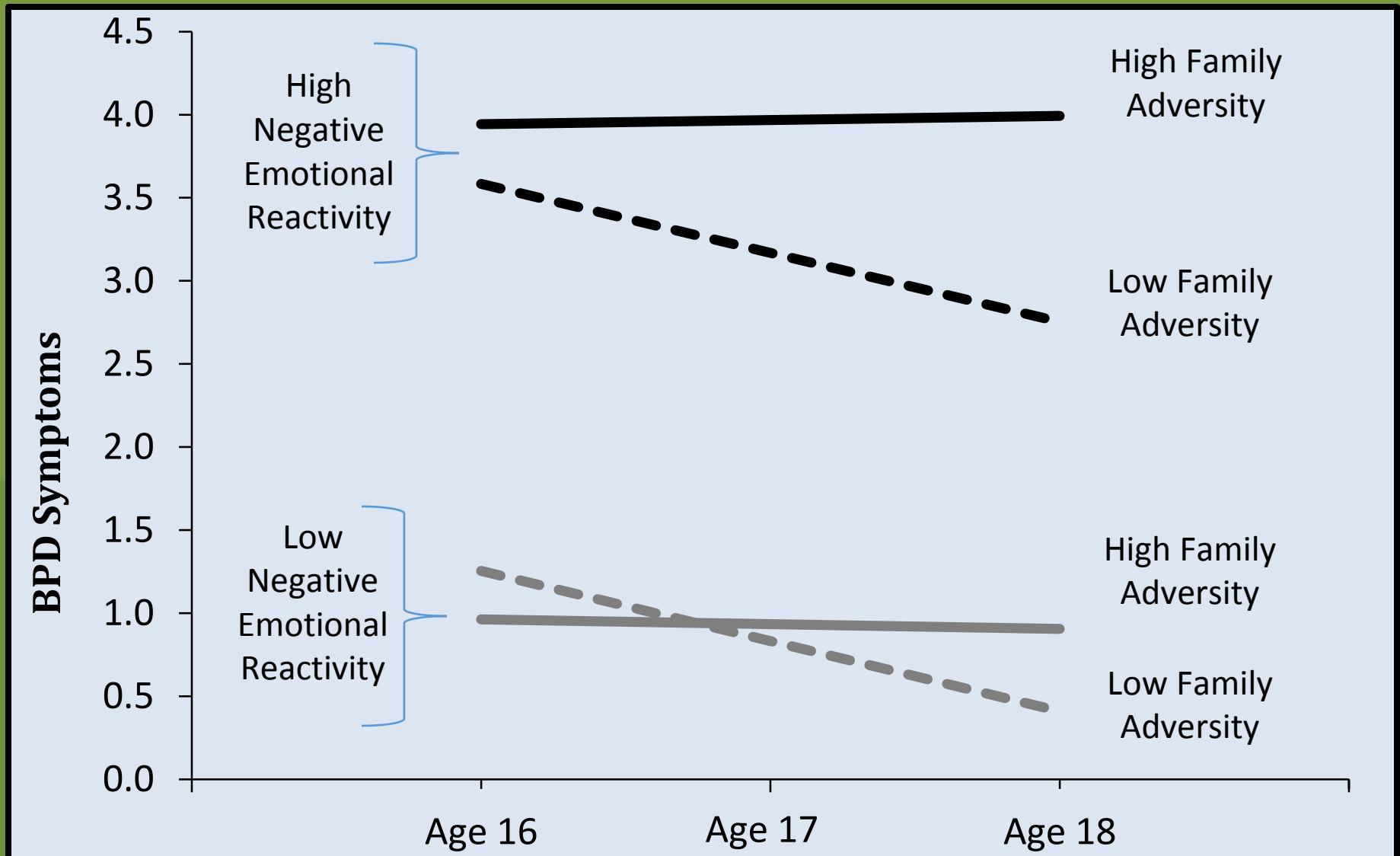
Childhood Trauma

- Neglect, verbal abuse, physical abuse, sexual abuse
- Early maternal separation
- Multiple moves for caregiver's new partner(s)
- Perinatal adversities

Belskey et al., 2012; Crawford et al., 2009; Johnson et al., 2009; Widom et al., 2009; Winsper et al., 2015; Wolke et al., 2012



Family Adversity Exposure Moderates Effect of Negative Emotional Reactivity on BPD Symptoms



Family & Parent-Child Factors

Parent-child relationship

- 1. Attachment to caregiver**
 - Insecure
 - Disorganized
- 2. Poor relationship quality**
 - Low trust in caregiver
 - High maternal hostility

Belskey et al., 2012; Carlson et al., 2009; Hammen et al., 2015

Parenting behaviors

- 3. Emotional qualities**
 - Low warmth
 - Control through guilt
- 4. Behavioral strategies**
 - High behavioral control
 - Harsh punishment
 - Intrusive & inconsistent

Bezirgianian et al., 1993; Hallquist et al., 2015; Johnson et al., 2006; Stepp et al., 2014; Widom et al., 2012



Child Factors: Temperament & Psychopathology

Temperament/Personality

1. Negative Affectivity

- Emotionality
- Affective instability
- Experiential avoidance

2. Behavioral undercontrol

- Low self-control
- Low constraint
- High impulsivity

Hallquist et al., 2015; Jovev et al., 2013; Lenzenweger et al., 2005; Sharp et al., 2015; Stepp et al., 2014; Tragresser et al., 2007;

Psychopathology

3. Internalizing problems

- Depression
- PTSD Symptoms
- Dissociation

4. Externalizing problems

- ADHD
- CD/ODD
- Substance use

Bornovolova et al., 2013; Carlson et al., 2009; Burke & Stepp, 2012; Krabbendam et al., 2015; Miller et al., 2008; Stepp et al., 2012



Specific Pattern of Prospective Associations between ADHD, ODD and Age 14 BPD symptoms

Ages 8-13 Predictors		Age 14 Outcomes		
		Depression	BPD	CD
ADHD Trajectory	Higher level	<i>ns</i>	.14**	.11*
	Increasing: 8-10	<i>ns</i>	<i>ns</i>	<i>ns</i>
	Increasing: 10-13	<i>ns</i>	.17*	<i>ns</i>
ODD Trajectory	Higher level	<i>ns</i>	.15*	.19*
	Increasing: 8-10	<i>ns</i>	.24**	<i>ns</i>
	Increasing: 10-13	.18*	<i>ns</i>	<i>ns</i>



Summary of the prospective evidence for BPD precursors

1. Predictors

- Focus on ‘known’ general risk factors
- Distal from outcome
- Few control for 3rd variable influences or examine mediating processes
- Limited information about contextual influences

2. Outcomes

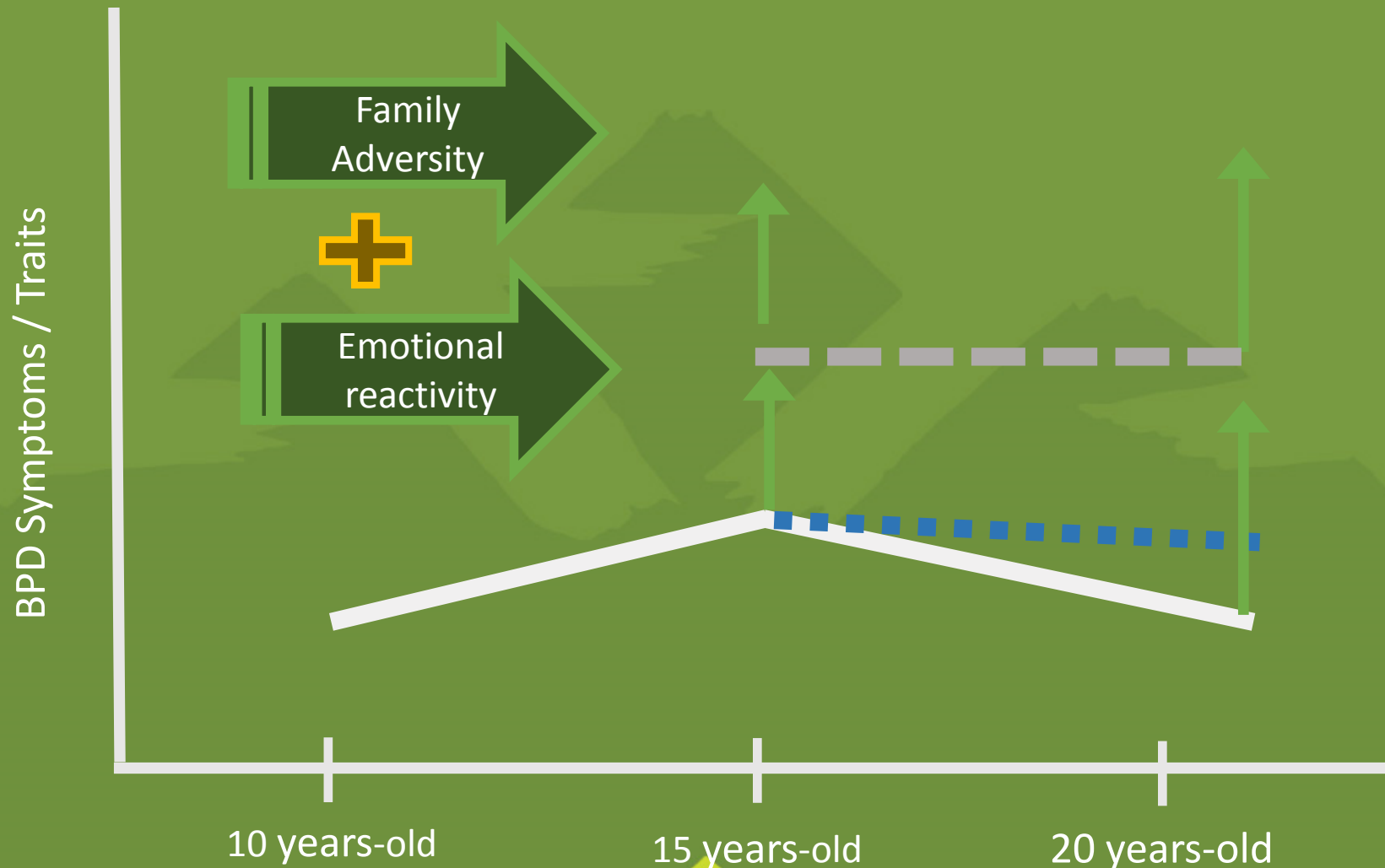
- Primarily predict symptoms; Few studies predict disorder (or even extreme group)
- Onset? Maintenance? Exacerbation?
- Few studies predict more than one outcome

3. Results concentrated within few cohorts

CIC (n = 6) or PGS (n = 5), 29% of articles



Developmental Course of BPD: Age-based Trajectories



Limitations to the Age-based Approach

- Few studies include additional outcomes
What pathways are distinct for BPD?
- Ignores stage of disorder:
Onset? Maintenance? Exacerbation?
- Few studies predict disorder:
Are processes same for symptom onset?



Increasing Prediction Accuracy: Converting Precursors into Prodromes

Initial onset
of Major
Depressive
Disorder

Childhood
Precursors

Initial onset
of BPD



Identifying a Prodromal Phase

Repeated assessments during a peak period of prevalence

1. Identify prodromal periods after onset



1. Examine signs and symptoms immediately before onset (precursors)



1. Examine specificity of relative risk to BPD



The Pittsburgh Girls' Study

PIs: Hipwell & Stepp; Co-Is: Keenan & Loeber



- Enumerated the City of Pittsburgh
 - 100% sampling of low-income neighborhoods
 - 50% sampling of remainder
- Sampled 103,238 Pittsburgh households
 - 2,876 5-8 year-old girls identified
 - 2,450 agreed to participate (85.2%)



Accelerated Longitudinal Study

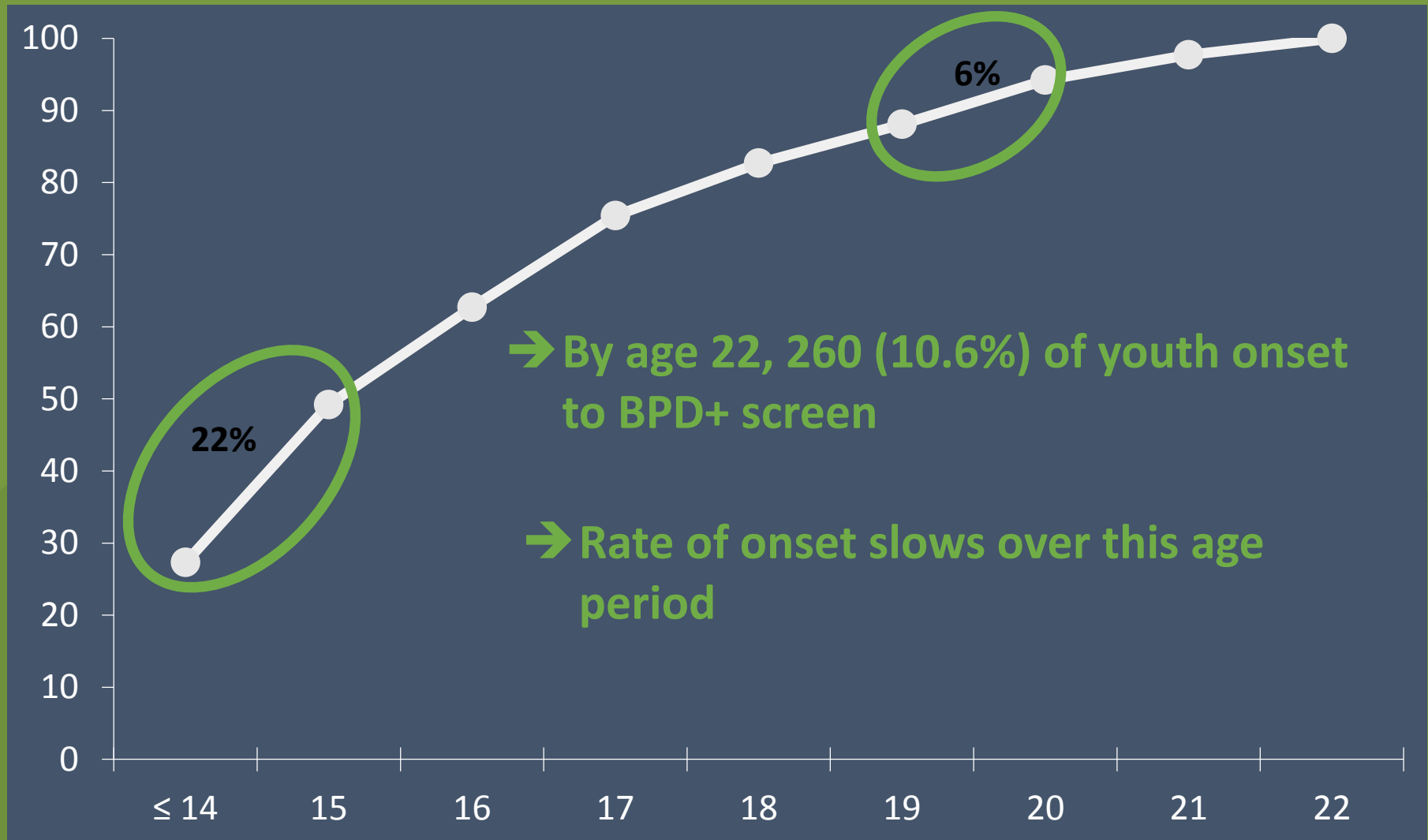
Cohort	Girls age (years)														
	5	6	7	13	14	15	16	17	18	19	20	21	22	
5 N=588	PT	PT	GPT	GPT	GPT	GPT	GPT	GPT	GPT	GP	W	W*			
6 N=630		PT	GPT	GPT	GPT	GPT	GPT	GPT	GPT	GP	W	W	W*		
7 N=611			GPT	GPT	GPT	GPT	GPT	GPT	GPT	GP	W	W	W	W*	
8 N=622				GPT	GPT	GPT	GPT	GPT	GPT	GP	W	W	W	W	W*

* Indicates Current Assessment Wave (Wave 16)

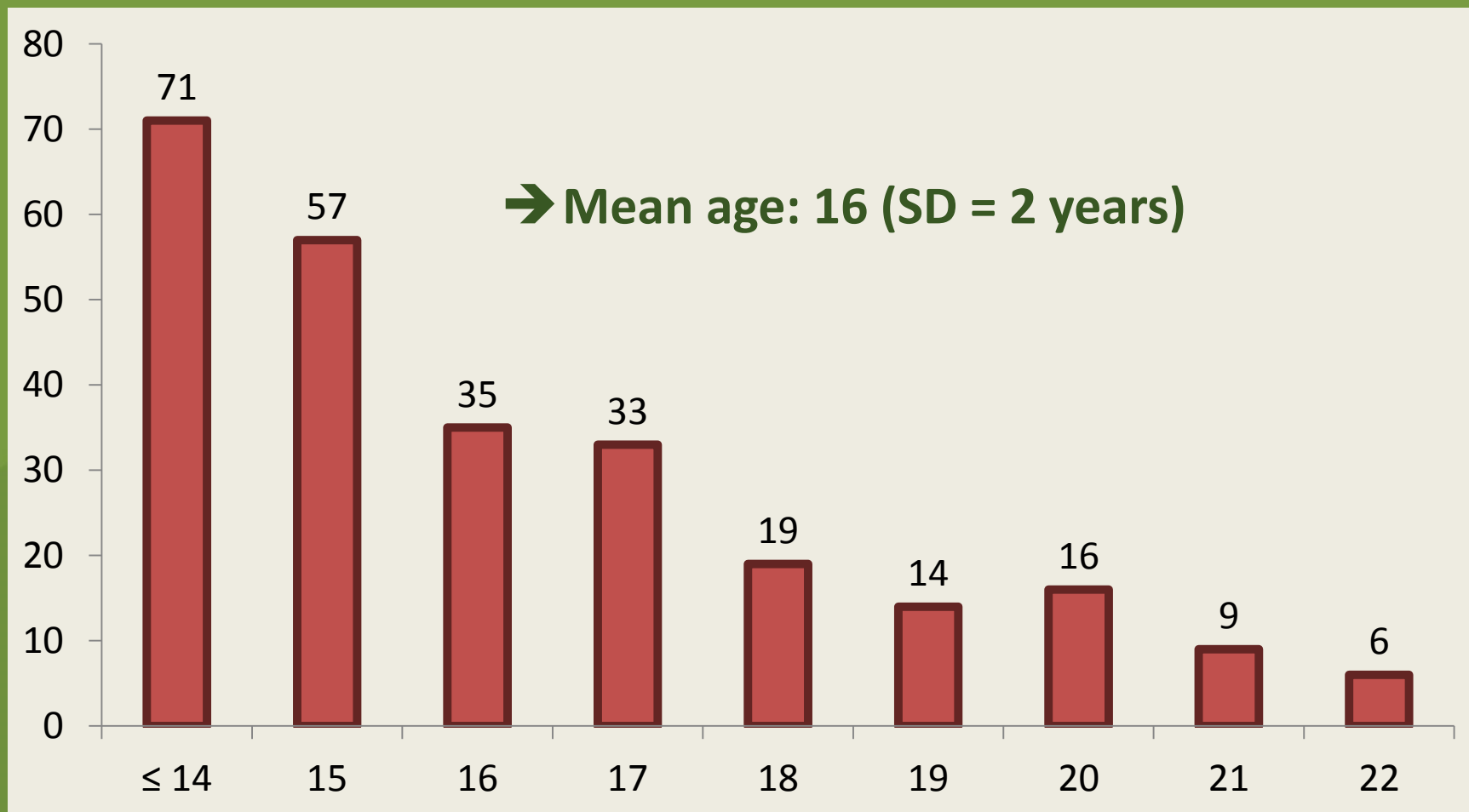
G = Girl transitioning to W = Woman; P = Parent; T = Teacher



Cumulative Percent of PGS Youth Who Onset to BPD By Age 22



Frequency of Onset by Age



Time from Symptom Onset to Disorder

- Time from 1st symptom → clinical cut-off
 - $M = 5$ years, $SD = 1.4$ years
 - Range: 1-8 years
 - 73% experienced 1st symptom by age 14
- Presence of symptoms
 - 66.0% of girls experienced ≥ 1 symptom, between ages 14 & 22
 - Similar rate of DEP/ANX symptoms (~50-60%)



	Early Adult Disorder	
Precursor Signs & Symptoms	BPD (n = 64, 2.6%)	MDD (n = 74, 4.7%)
Risk factor	<i>Relative Odds</i>	<i>Relative Odds</i>
Family Adversity	3.63	3.52
Temperament Emotionality	1.01	1.01
Clinical sign		
ADHD	1.61	1.11
ODD	1.22	1.15



	Early Adult Disorder	
Precursor Signs & Symptoms	BPD (n = 64, 2.6%)	MDD (n = 74, 4.7%)
BPD symptom		
Impulsivity	4.24	1.91
Unstable relationships	2.68	1.09
Non-suicidal self-injury	6.34	1.7
Suicide	1.44	1.19
Emptiness	4.07	1.91
Anger	7.49	2.77
Affective instability	7.95	2.58
Dissociation	4.61	2.21
Abandonment fears	3.15	1.18
Identity disturbance	2.99	1.72

Identifying Precursors of Chronicity

- Predicting youth with BPD diagnosis across adolescence and young adulthood
- 160 girls onset in adolescence
 - 57 continued to screen positive for BPD during young
 - 103 remitted
- Identify precursors of onset for those youth in the “stable” group



Symptom Profile Year Prior to Onset that Predicts Risk

- Threatened suicide
- Felt empty much of the time
- Frequent temper tantrums and anger



Summary

- Potential group of “close-in” precursors
- Examine attributable risk
- Replication in additional datasets



Future Directions

- Recruiting a potential high-risk sample
- Continue to conduct analyses with the PGS as they age
- Examine precursor signs & symptoms



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