I-Connect: A Self-monitoring Intervention to Support Secondary Students Utilizing a Mobile Application

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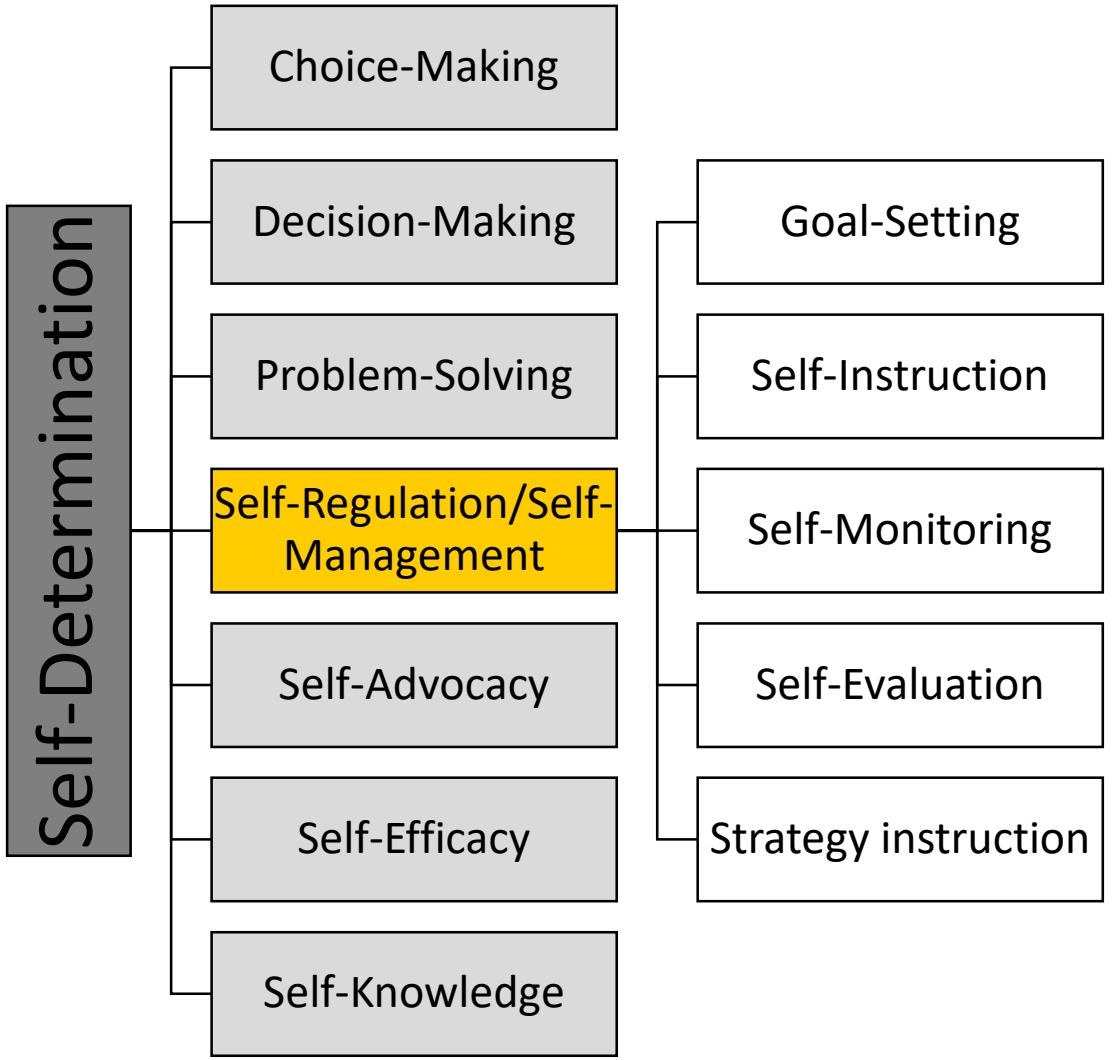
A focus on self-regulation/self-management



What strategies do you use in your own life? How do you help your students self-manage?

www.ebi.missouri.edu

What is self-monitoring?

OBSERVE AND RECORD

Example of **“in the moment”** self-monitoring: Are you in your seat right now?

Behavior: In Seat		
Interval	**Yes**	**No**
1:00	X	
2:00	X	
3:00		X
4:00	X	
5:00		X
6:00	X	
7:00	X	
8:00	X	
9:00	X	
10:00	X	
Total	80%	20%

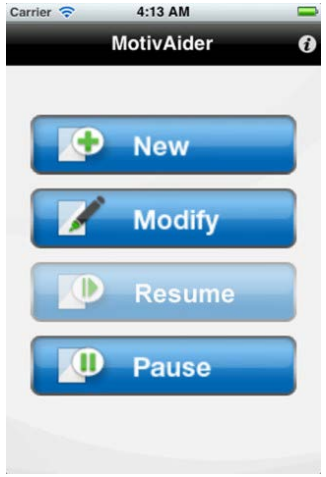
Goal: During math class, Juan will be in his seat for 80% of intervals each day for a week.

Example of **“retrospective”** self-monitoring:

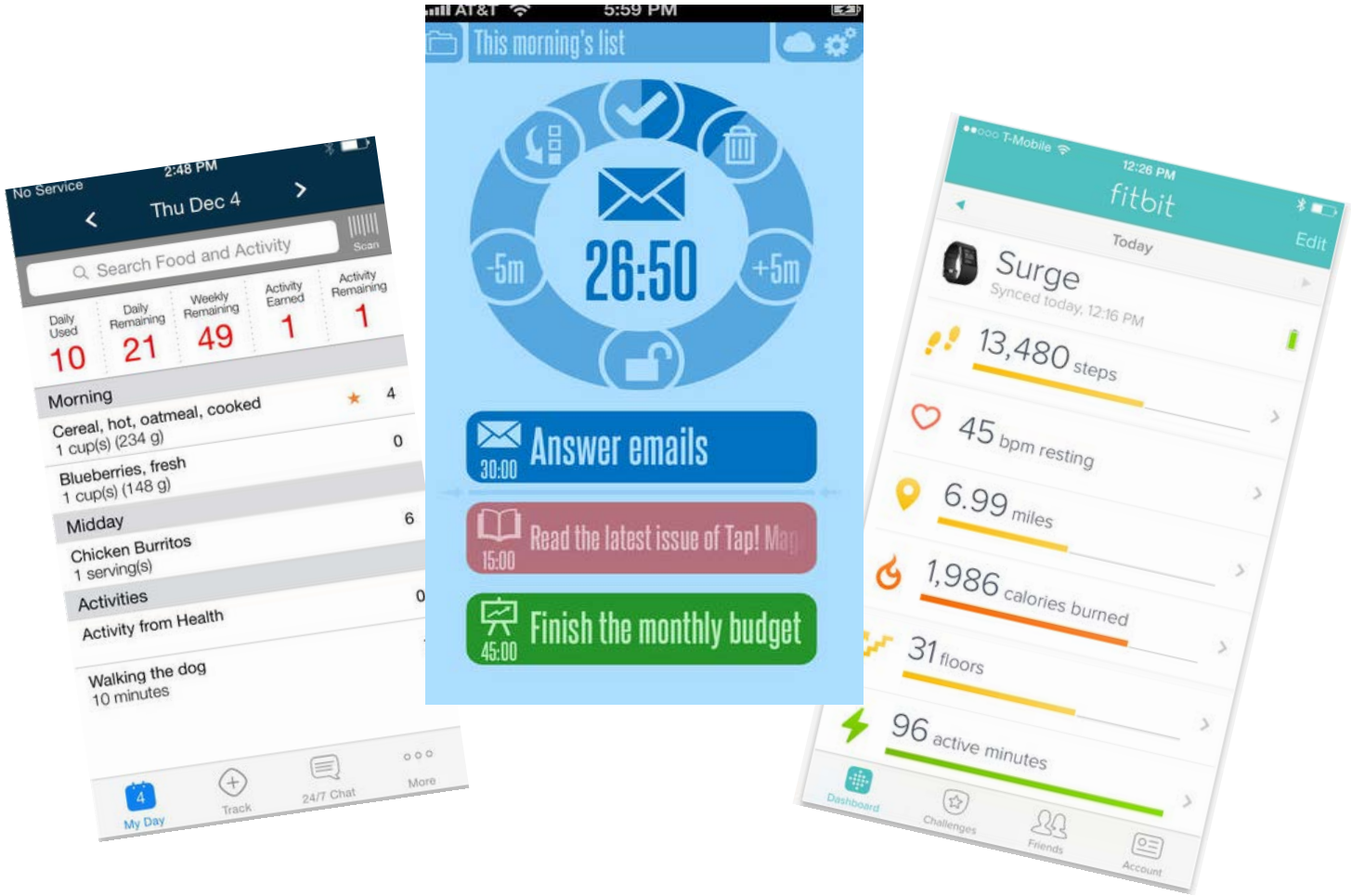
During Math Rate How Well Stayed in your seat…

The Role of Technology

- Prompting devices:
  - helpful for cueing, but not collecting data



We use technology to self-monitor so many other things…why not behavior in schools?



What can we learn from the medical field?

Technology-based self-recording interventions, involving making an observation and recording a behavior, have been used in applications focusing on…

Weight Loss

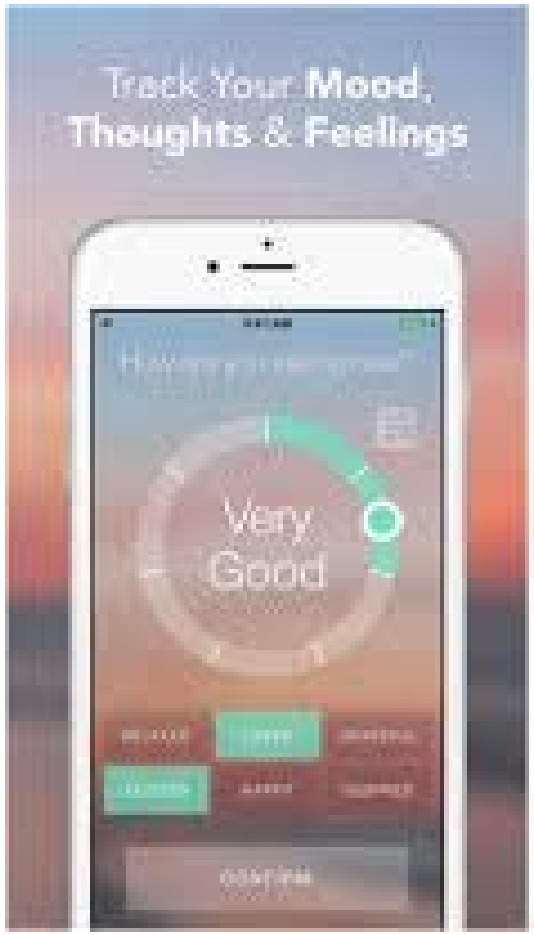
Turner-McGrievy, Beets, Moore, Kaczynski, Barr-Anderson, Tate, 2013

Diabetes Management

Levine, Burns, Whittle, Fleming, Knudson, Flax, & Leventhal, 2016

Mental Health

Kauer, Reid, Crooke, Khor, Hearps, Jorm, & Patton, 2012



Benefits of Mental Health Mobile Apps

- Provide Psychoeducation
- Enhance Provider/ Patient Communication
- Self-Monitoring
- Reduce Stigma
- Supplement & Support Therapy
- Patient Empowerment

Physical Activity and Health Records

(Burke, Wang, & Sevick, 2011) (Häyrinen, Saranto, & Nykänen, 2008).

BENEFITS

Health Care Professionals	Patients
Real-time patient care data	Real-time feedback
Another means of communicating…	Reminders
Data over time	Goal-tracking
Increased Patient Accountability	Accountable and Supported

WEARABLE DEVICES

- Real-time feedback
- Prompts to get up and move
- Upload activity data to the web and produce simple graphs and charts for users to monitor progress
- Connect! (Share and Join a Community)

Learning from the Medical and Health Fields

Piette (2007) Recommendations:

- "Look before you leap (but do not forget to leap)" (p. 2428).
- "One size does not fit all" (p. 2428).
- "Beware of "cool apps" (applications)" (p. 2428).
- TBSM, "is most effective when it supports human contact" (p. 2428).

Emerging TBSM in Education

ASD ON THE GO

NATIONAL INSTITUTE ON DISABILITY, INDEPENDENT LIVING, AND REHABILITATION RESEARCH
NIDILRR

Grant #90DP0058

www.asdonthego.ku.edu

I-Connect

Stepping Up Technology Enabled Self-Monitoring for High School Students with Disabilities.

Office of Special Education and Rehabilitative Services

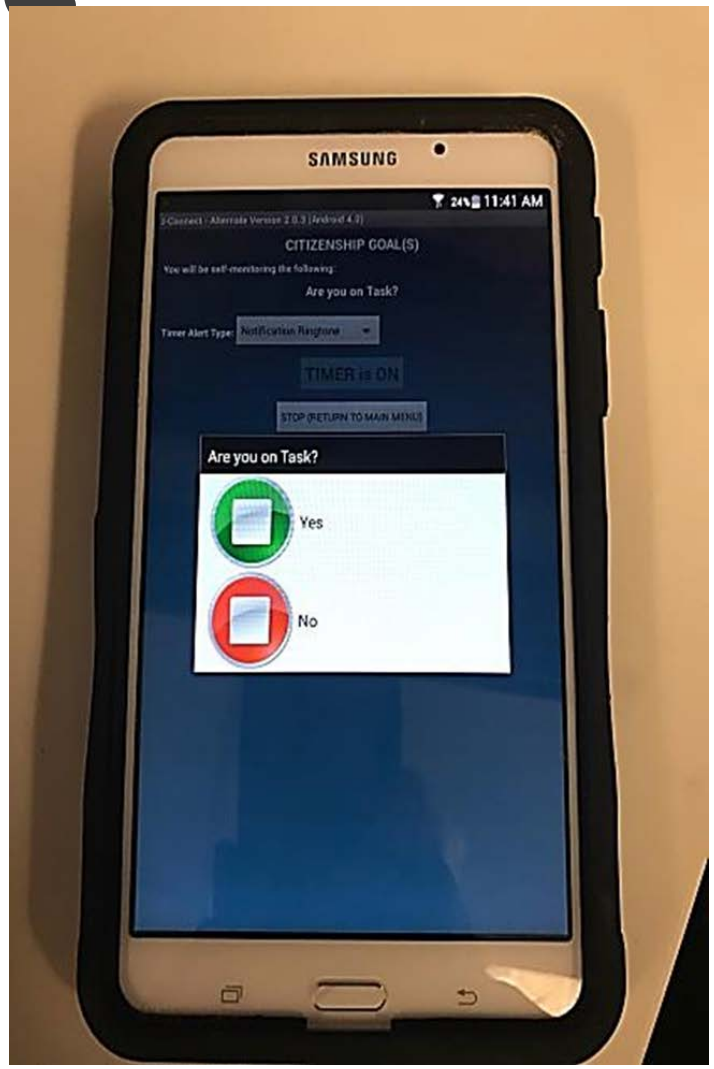
Award: H327S170001

IDEAs that Work

www.iconnect.ku.edu

I-Connect

www.iconnect.ku.edu



Some studies supporting the use of I-Connect

Clemons, L. L., Mason, B. A., Garrison-Kane, L., & Wills, H. P. (2016). Self-monitoring for high school students with disabilities: A cross-categorical investigation of I-Connect. *Journal of Positive Behavior Interventions*, *18*(3), 145-155.

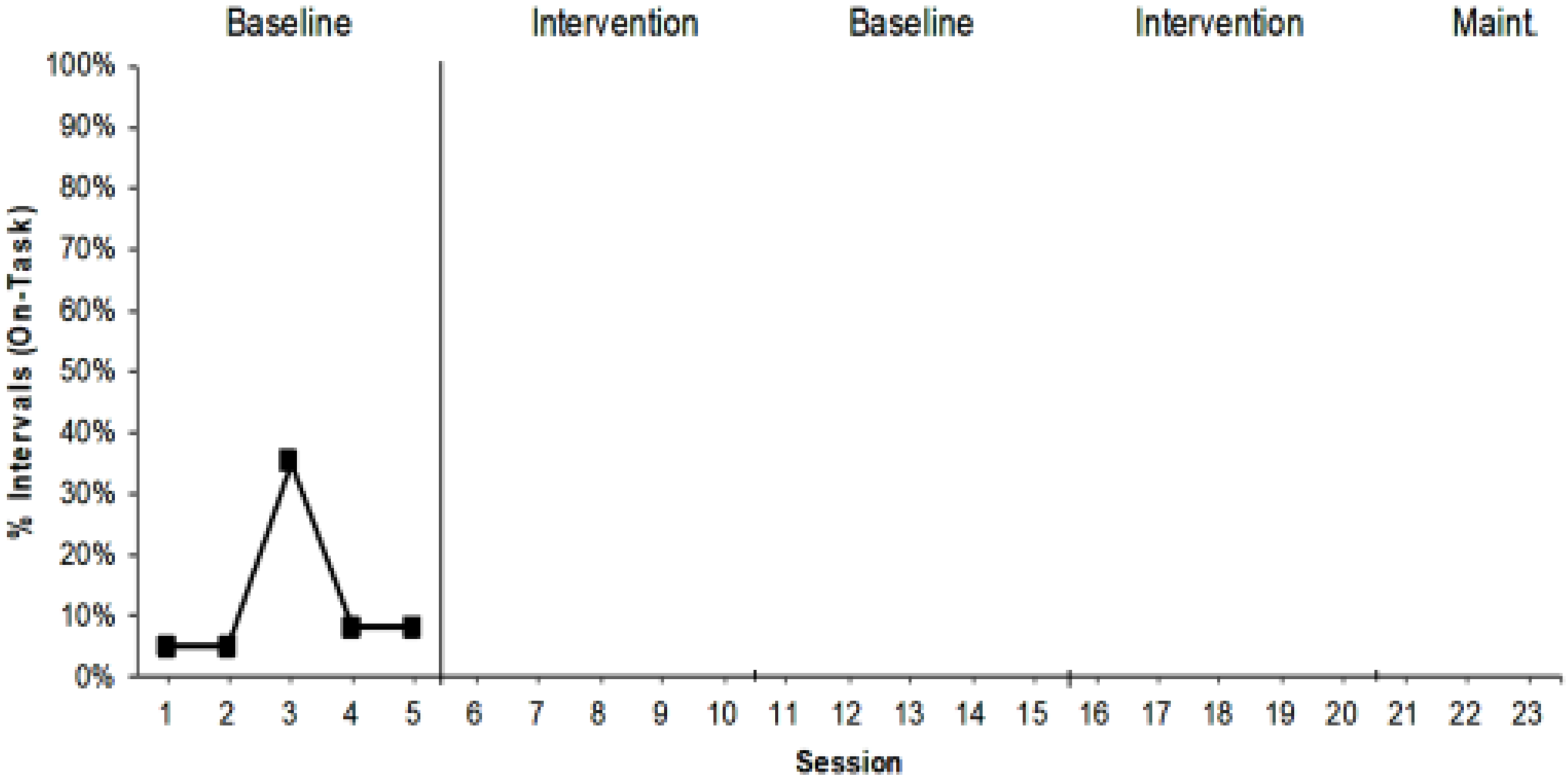
Rosenbloom, R., Mason, R. A., Wills, H. P., & Mason, B. A. (2016). Technology delivered self- monitoring application to promote successful inclusion of an elementary student with autism. *Assistive Technology*, *28*(1), 9-16.

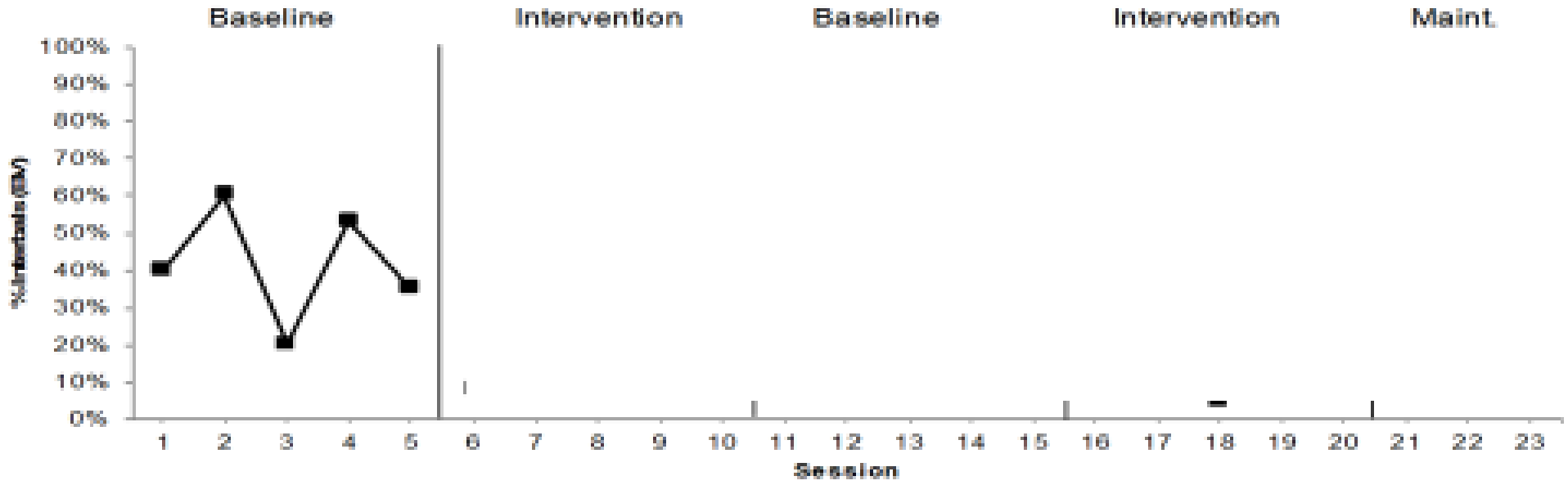
Crutchfield, S. A., Mason, R. A., Chambers, A., Wills, H. P., & Mason, B. A. (2015). Use of a self-monitoring application to reduce stereotypic behavior in adolescents with autism: A preliminary investigation of I-Connect. *Journal of Autism and Developmental Disorders*, 45(5), 1146–1155.

Wills, H. P., & Mason, B. A. (2014). *Implementation of a self-monitoring applicati*on to improve on- task behavior: A high school pilot study*. Journal of Behavioral Education*, *23*(4), 421-434.

Carl

Rosenbloom, R., Wills, H. P., & Mason, R. A.




Baseline
Intervention
Baseline
Intervention
Maint.
100%
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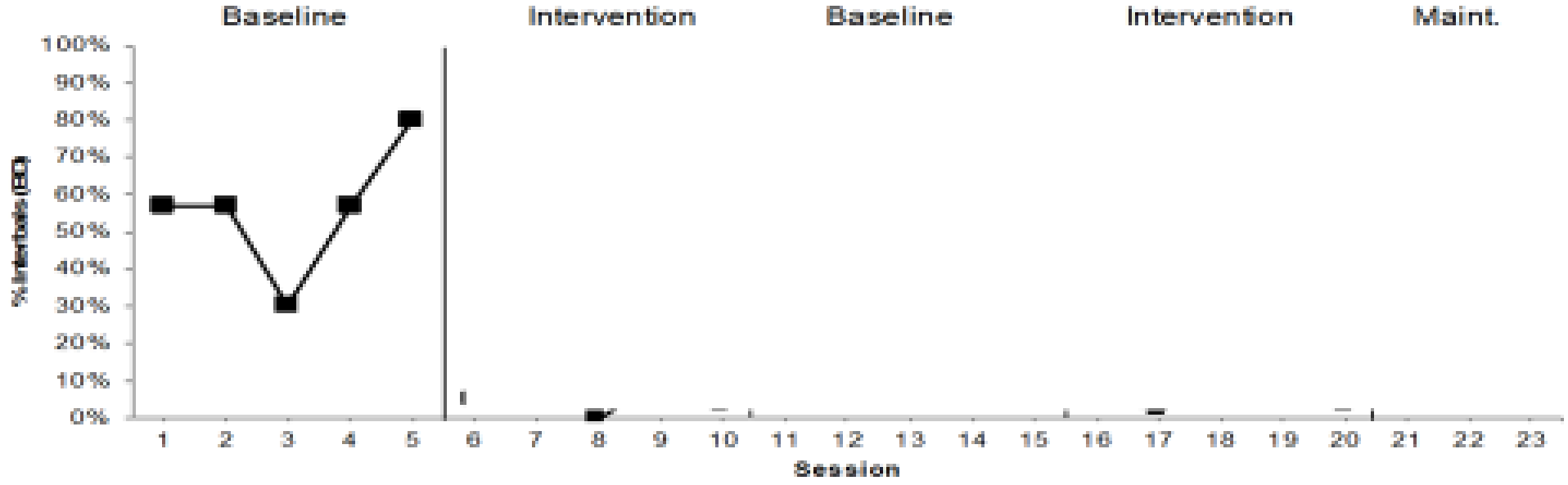
Session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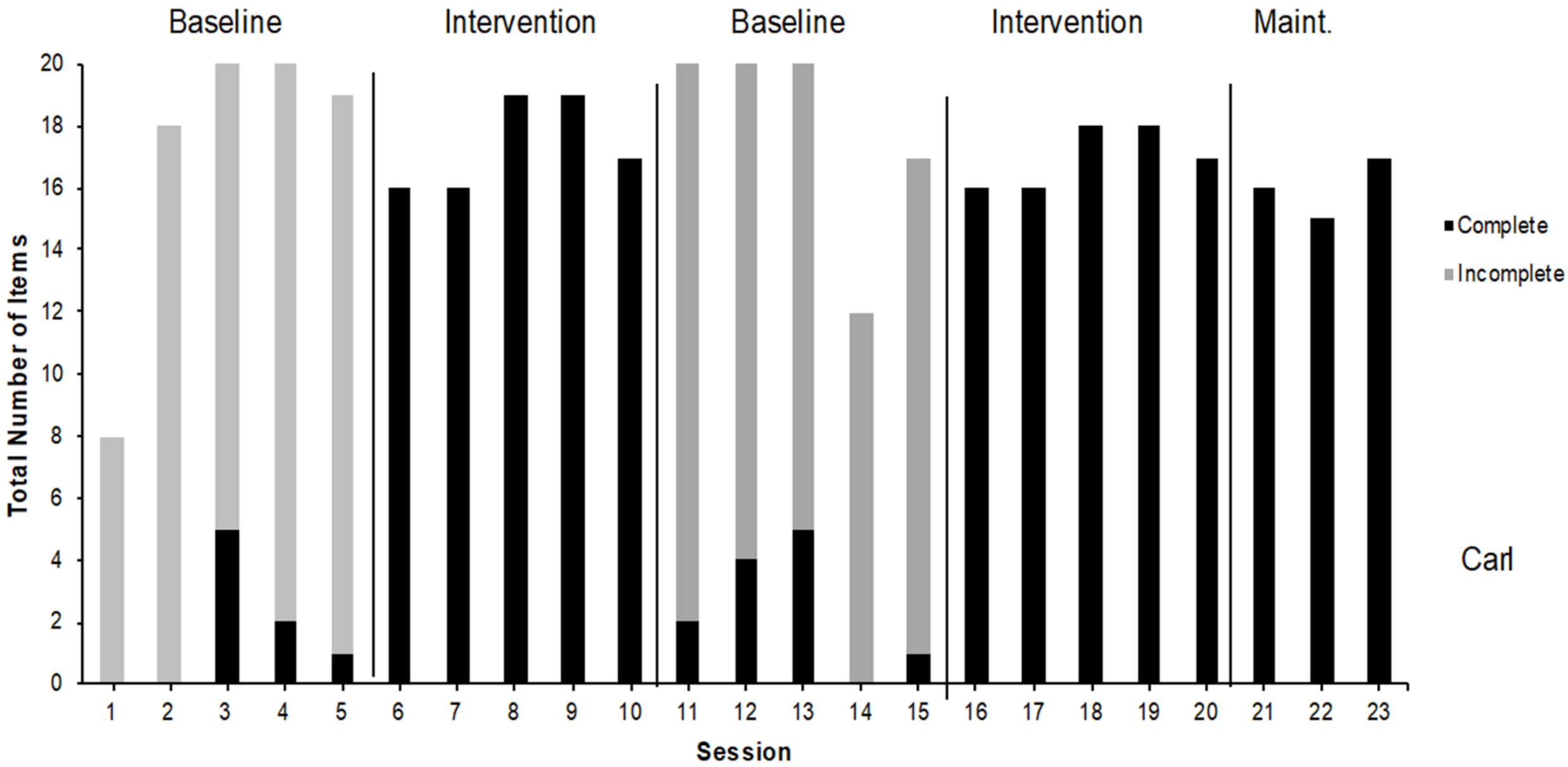
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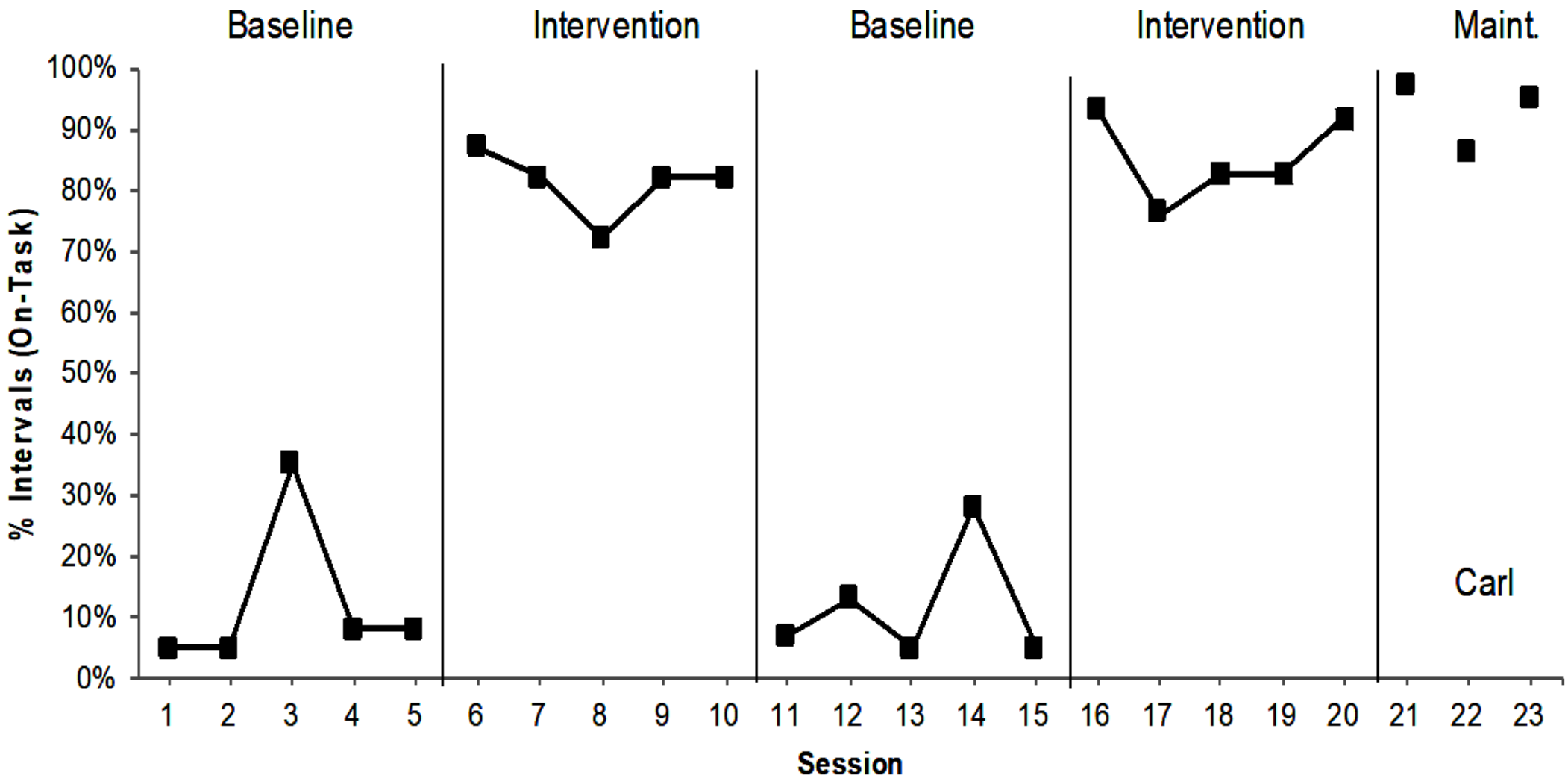
Complete
Incomplete
Carl

Carl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40%
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% Intervals (On-Task)
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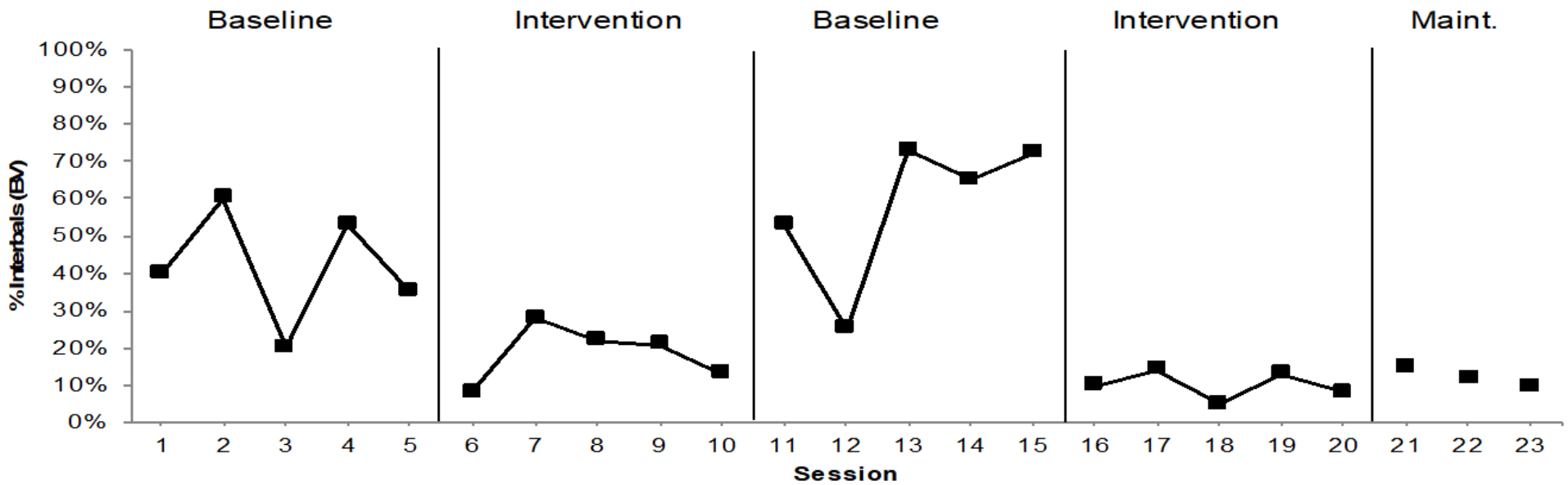
Session
Carl


Baseline
Intervention
Baseline
Intervention
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100%
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60%
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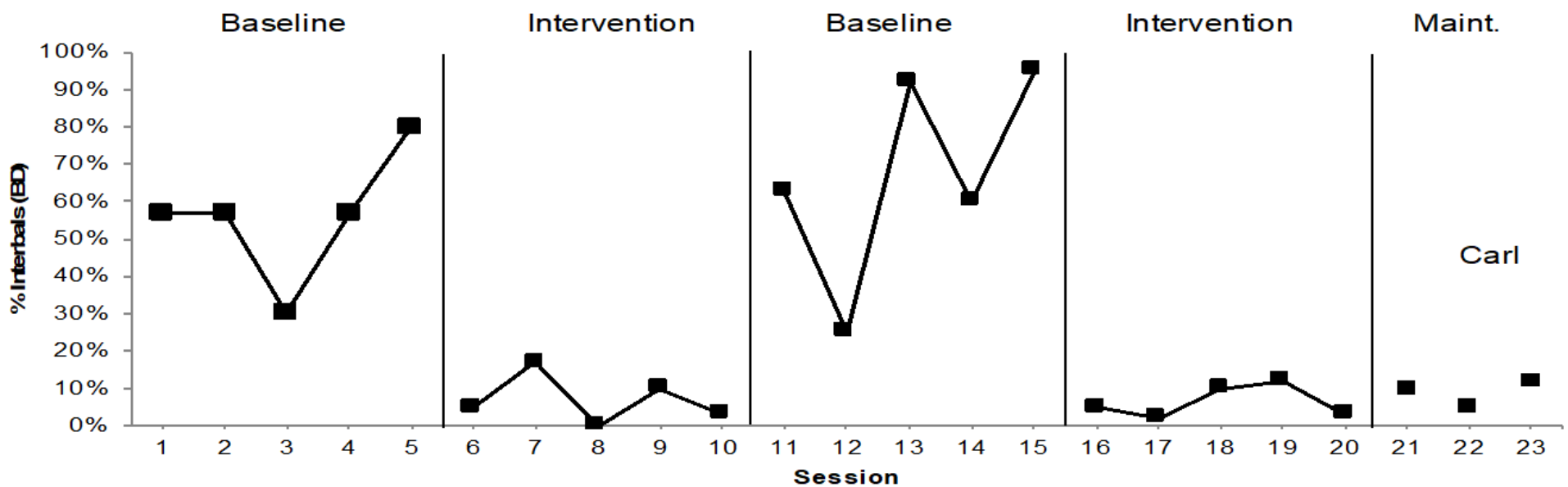
% Interbals (BV)
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23
Session


Baseline
Intervention
Baseline
Intervention
Maint.
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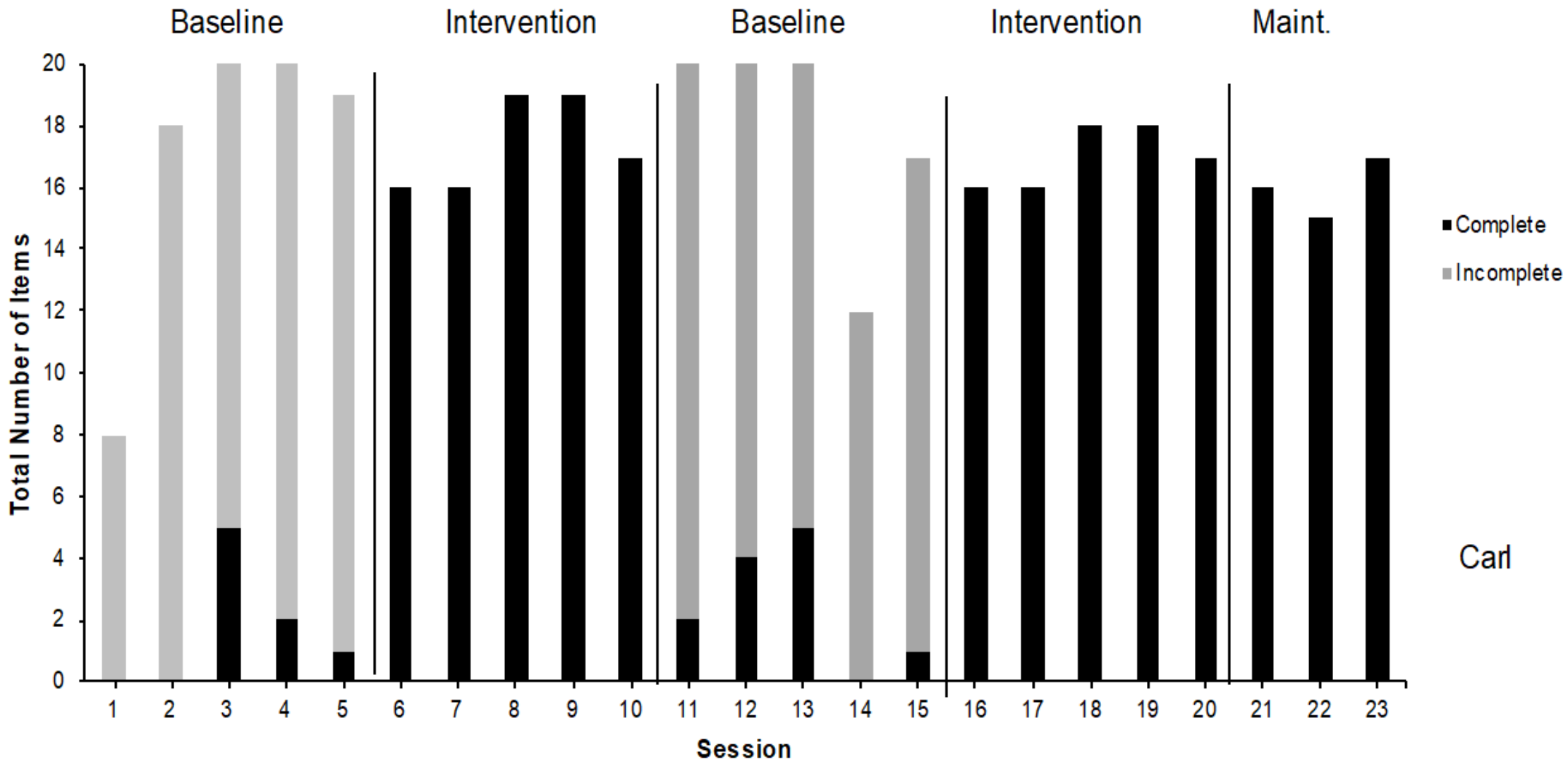
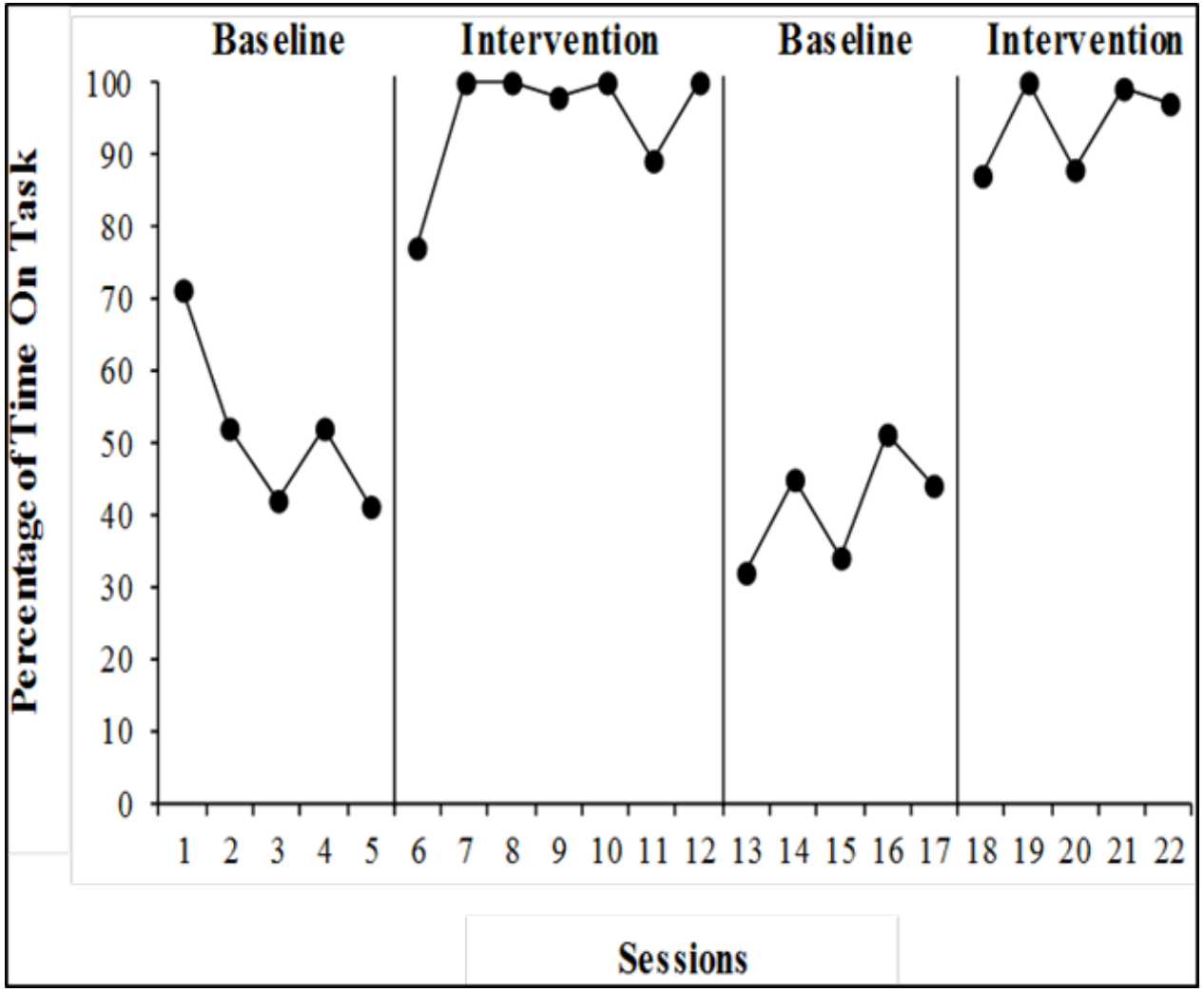
% Interbals (BD)
Carl
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23
Session

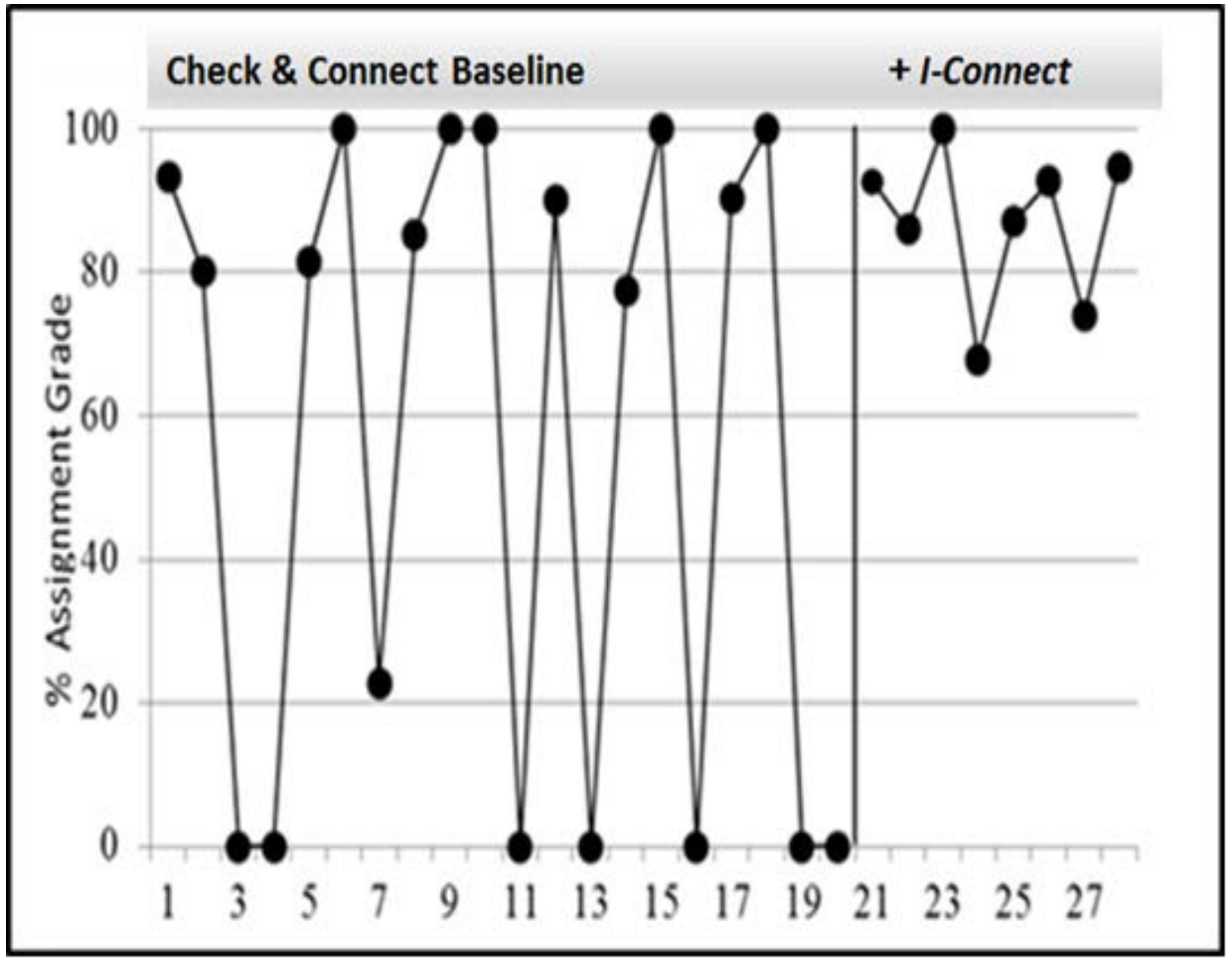

Baseline
Intervention
Baseline
Intervention
Maint.
Total Number of Items
Session
Complete
Incomplete
Carl

EVEIDENCE OF THE TECHNOLOGY'S EFFECTIVENESS FOR TARGETED POPULATION

I-Connect as a single component intervention to improve academic on-task behavior in a general education Biology class for a high-school student with LD and another with ADHD. Both students responded to ***I-Connect*** with immediate improvements



I-Connect was employed as an enhancement to school-based mentoring for a high-school student with a LD who was failing chemistry in an inclusive classroom. The intervention resulted in improvements in on-task behavior and assignment completion with improvements in class grades

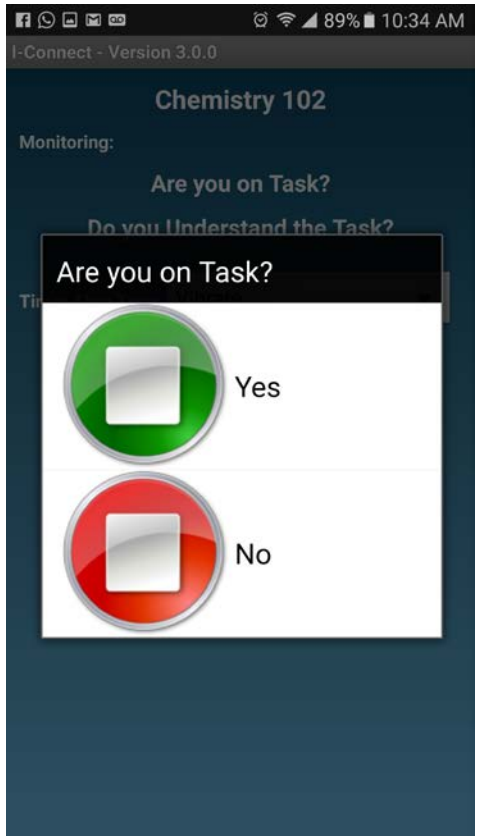


Technology-based Self-Monitoring (TBSM)

- Self-monitoring: self-recording the occurrence or non-occurrence of a behavior
  - Examples:

  On-task?

  Appropriate?



Hammill Institute on Disabilities

Journal of Positive Behavior Interventions
2016, Vol. 18(3) 145–155

DOI: 10.1177/1098300715596134
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Self-Monitoring for High School Students With Disabilities: A Cross-Categorical Investigation of I-Connect

Lachelle L. Clemons, MSEd[1], Benjamin A. Mason, PhD[2], Linda Garrison-Kane, PhD[1], and Howard P. Wills, PhD[2]

Abstract

Self-monitoring interventions are well supported within the empirical literature as improving
for students with disabilities. However, studies implementing self-monitoring interventions in H
rarely conducted despite their potential to improve student academic and behavioral outcome
an unobtrusive, self-monitoring application loaded on a handheld device, classroom engagement
benefits were assessed in a withdrawal design for three high school students with different disa
disability, autism, and intellectual disability) in varied instructional arrangements. Direct observat
intervention as effective in improving classroom engagement for all three students during interv
phases.

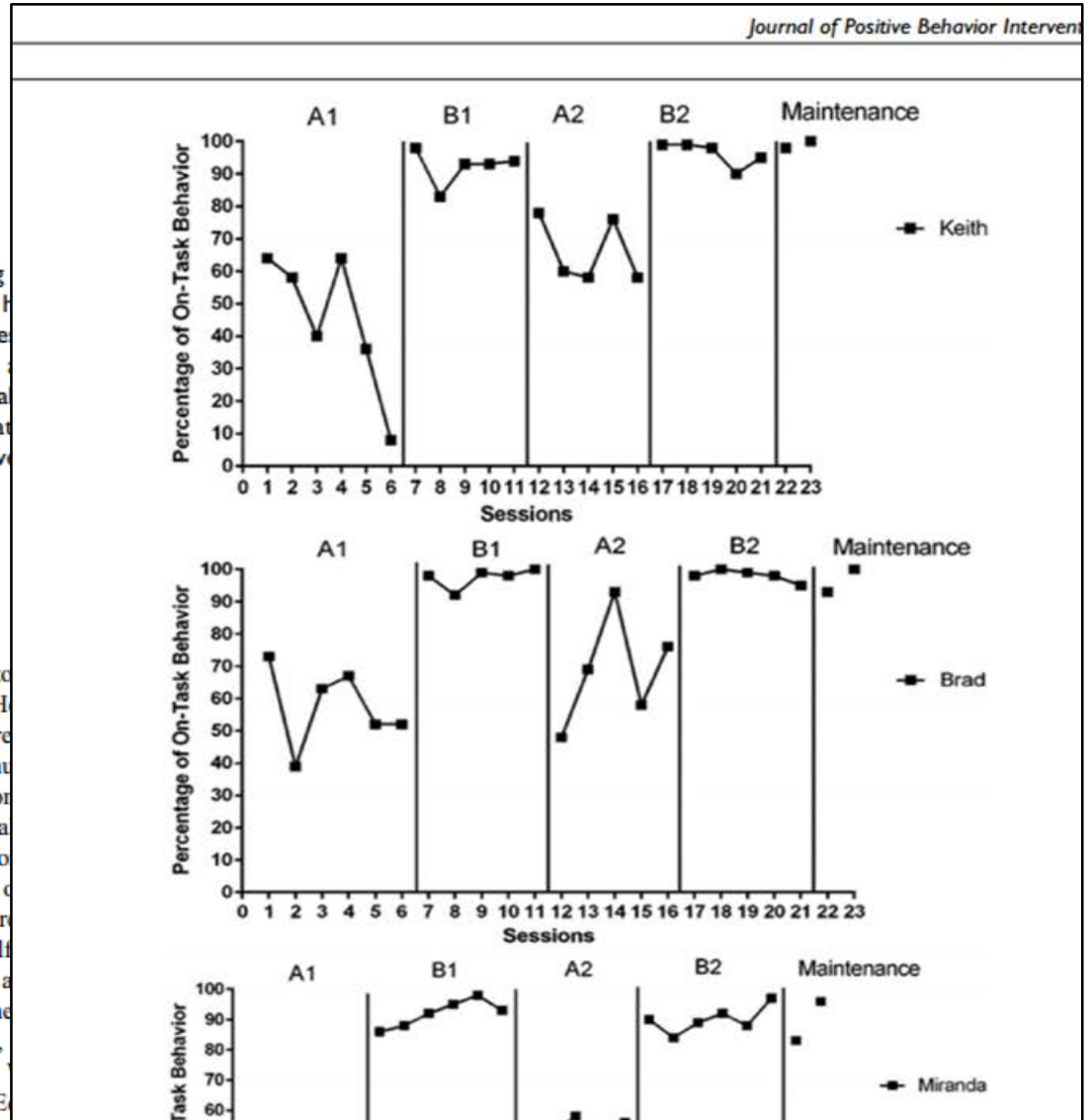
Keywords

self-management, classroom, intervention(s), adolescent, positive behavior support(s)

High school students with disabilities represent a critically underserved population for intervention research. Despite advances within school-wide positive behavior support (SWPBIS) literature (Bradshaw, Mitchell, & Leaf, 2010; Lewis & Sugai, 1999; Sugai & Horner, 2009), the majority of studies investigating universal and secondary behavioral interventions have been conducted within elementary classrooms. Structural characteristics common to high school settings may contribute to the lack of empirical research. First, high school teachers may feel unequipped to intervene, particularly for challenging behavior (Baker, 2005). Second, the number of classes, compartmentalization of departments, and administrative structures inherent to high schools may require adjustments to interventions and programs (Flannery, Sugai, & Anderson, 2009). Third, support provided to high

self-directed behavior strategies to
desired way (Cooper, Heron, & H
self-management interventions are
nent and encompass a large nu
(Fantuzzo & Polite, 1990), self-mon
monly incorporated element typica
management interventions. Self-mo
behavior strategy that consists of
one's own behavior (Mace, Belfior

Several studies have shown self
academic performance in middle a
including (a) reading comprehe
Kozminsky & Kozminsky, 2001),
and math assignments (Cancio,
Shimabukuro, Prater, Jenkins, & E



Authors	Students	Setting	Disability	Target Behavior
Wills & Mason[2013]	1 HS	Chemistry	SLD	Engagement
Wills et al[2013]	1 HS	Algebra	EBD	Engagement
Wills & Mason[2014]	2 HS	Biology	SLD, ADHD	Engagement, Disruptives
Bunch-Crump[2015]	1 ES	GE	At-risk	Engagement, Disruptives
Crutchfield et al[2015]	2 MS	SC	ASD	Stereotypy
Rosenbloom et al[2016]	1 ES	Math	ASD	Engagement
Beckman et al[2016]	2 ES	SC	ASD	Engagement, Productivity
Clemons et al [2015]	3 HS	Multiple	SLD, ASD, ID	Engagement
Rosenbloom[2017]	3MS, 1HS	Multiple	ASD	Engagement, Productivity

Table 1. *Studies Demonstrating the Effects of **I-Connect***
Note: ASD = Autism Spectrum Disorder; EBD= Emotional/Behavioral Disorder;

LOW OR NO TECH OPTIONS

Dr. Gail Fitzgerald
University of Missouri

Kids Tools and Strategy Tools

Future Directions, Next Steps

Contact Us to set up

Will Need (Wifi and Android.. until Late August)

- Human Interaction
  - Do not neglect, nor replace the human element of self-monitoring
    - Use of Data in Connecting with Others

Time for Questions

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