
Title Registration for a Systematic Review: Self-Monitoring Interventions for Reducing Challenging Behaviors among School-Age Students: A Systematic Review

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Date Submitted: 4 December 2012

Date Revision Submitted: 20 December 2012

Approval Date: 31 January 2013

Publication Date: 1 March 2013

TITLE OF THE REVIEW

Self-Monitoring Interventions for Reducing Challenging Behaviors among School-Age Students:
A Systematic Review

BACKGROUND

The Problem

Most parents and teachers agree that students need to exhibit appropriate social behaviors in order to achieve academic goals (Agenda, 2004; Bushaw & Lopez, 2010). However, approximately 20% of students repeatedly display challenging social behaviors that interfere with normal academic and social development (American Academy of Pediatrics Committee on School Health [AAP], 2004; Brauner & Stephens, 2006; Walker, Ramsey, & Gresham, 2004). Challenging behaviors put students with such behaviors at increased risk for school failure and social and emotional maladjustment over the life course, interfere with the learning of their peers, increase stress and burnout for teachers, and erode the quality of a learning environment.

Challenging student behaviors are defined as acts that (a) interfere with social and academic functioning; (b) harm a child, his or her peers, or adults; and (c) place a child at risk for later developmental problems. Because research often distinguishes between subtypes of challenging behaviors, we specify several subtypes: (a) direct and indirect forms of aggression (Crick & Grotpeter, 1995; Dodge & Coie, 1987; Parke & Slaby, 1983); (b) overt and covert antisocial behaviors (e.g., stealing, bullying, lying, betrayal; Kaiser & Rasminsky, 2009); and (c) common acts of insubordination (e.g., disrespect, arguing, noncompliance, withdrawal, refusal to cooperate).

The Population

The review will include any direct study of a self-monitoring intervention targeting students with challenging behaviors (regardless of sex, race, or ethnicity) who: are of school age (i.e., 5-21 years), of regular or special education status, and attend an elementary, middle, or secondary school program (i.e., public, alternative, special education, charter, or private school).

The Intervention

The review will focus on the effectiveness of school-based self-monitoring (SM) interventions, a widely used behavioral strategy for both children and adolescents (Lane, Menzies, Bruhn, & Crnabori, 2011; Shapiro & Cole, 1994). Although SM is referred to by a myriad of terms (e.g., self-management, self-control, self-report, self-regulation; Briesch & Chafouleas, 2008; Lane et

al., 2011; Mooney, Ryan, Uhing, Reid, & Epstein, 2005), SM is comprised of distinct stages or elements that define it as a specific behavioral intervention. In short, SM is defined as a cognitive behavioral intervention comprised of four separate stages: self-assessment, self-observation, self-recording, and self-evaluation (Hallahan & Kauffman, 2000; Rutherford, Quinn, & Mathur, 2004; Vaughn, Bos, & Schumm, 2000).

During the self-assessment stage, students identify, define, and set a reasonable performance goal for a target behavior. Using observable and measurable terms (i.e., frequency, duration, and/or severity of the behavior), the behavior is defined as a goal on an interval recording schedule. During the self-observation stage, students prompt themselves, reflect upon their performance, and discriminate between whether the target behavior occurred during the interval. During the self-recording stage, students mark the interval recording schedule to indicate the presence or absence of the target behavior. During the self-evaluation stage, students aggregate the interval observations and compare their performance with their predetermined goal. The self-evaluation stage may also include graphing or charting the interval observations, comparing current data with prior self- or current teacher observations, and should utilize the data to inform a new performance goal. The stages are repeated iteratively to afford students with opportunities to practice the skills and behaviors necessary to reflect his or her goal.

Three prior “systematic” reviews of SM strategies for students with challenging behaviors currently exist. Two of the reviews examine the effects of SM on behavioral outcomes and one examines academic performance as an outcome. The first review examined the effects of SM on behavioral outcomes for 817 students across 42 studies, 90% of which were single-system designs (Fantuzzo & Polite, 1990). In the second review on the effects of SM for behavioral outcomes, Briesch and Chafouleas (2008) followed the Fantuzzo review to examine the effects of SM for 106 students across 30 studies; 70% of the studies were single-case designs. A third review examined the effects of SM on academic performance (Mooney et al., 2005). In this review, Mooney and colleagues (2005) located 22 studies that examined SM with a total of 78 students. Again, the majority of the studies relied upon single-case designs. The three systematic reviews, taken together, strongly suggest that SM interventions may be an effective intervention impacting desirable behavioral and academic outcomes. However, the three studies have limitations that prompt the current proposed systematic review and meta-analysis.

The most noteworthy limitation of prior reviews of SM is focused on procedures used to generate effect size estimates. The studies not only used different approaches for estimating effect sizes, but the estimation procedures may have inflated effect size estimates as evidenced, in part, by estimates ranging anywhere from 4.19 to 30.25 (Briesch & Chafouleas, 2008; Fantuzzo & Polite, 1990; Mooney et al., 2005). However, more recently validated meta-analytic methods for estimating effect sizes across single-case studies now exist (Hedges, Pustejovsky, &

Shadish, 2012). Another limitation of the prior reviews is the failure to use comprehensive and exhaustive search procedures. Authors for all three of the prior reviews employed the same search engines, used the same search terms, and did not include steps to capture “gray” literature (published and unpublished sources that are not commercially controlled). Lastly, the prior reviews did not fully take advantage of meta-analytic techniques. That is, the reviews did not test moderation models to examine whether outcomes varied by important student characteristics (e.g., gender, age, grade, race or ethnicity, regular or special education status, etc.) or subtypes of challenging behavior (i.e., direct and indirect forms of aggression, overt and covert antisocial, and common acts of insubordination). Furthermore, although two of the prior reviews did attempt to link the specific SM intervention components to the effect size estimates generated from the studies (Briesch & Chaffouleas, 2008; Fantuzzo & Polite, 1990), the authors did not take advantage of mediation models to examine whether student participation in each of the independent SM components (i.e., self-assessment, self-observation, self-recording, and self-evaluation stages) mediated intervention outcomes. Such moderation and mediation models would make a contribution to our current understanding surrounding the effects of SM.

Outcomes: What are the intended effects of the intervention?

The intended effect of a SM intervention is to reduce challenging classroom behavior, or increase or maintain adaptive positive social behavior in the classroom.

OBJECTIVES

The objectives of the current proposal include:

- Provide an updated review on the effects of SM strategies for behavioral outcomes that includes the use of updated meta-analytic techniques to estimate effect size metrics more appropriate for single-case designs.
- Extend prior efforts to capture all available studies by conducting comprehensive and exhaustive search procedures, including a thorough effort to capture unpublished “gray” literature.
- Examine whether student or intervention characteristics (e.g., sex, race/ethnicity, grade, dosage, regular or special education status, etc.) moderate the success of SM for behavioral outcomes.
- Examine whether behavioral subtypes (i.e., direct and indirect forms of aggression, overt and covert antisocial behavior, and common acts of insubordination) moderate the success of SM interventions for behavioral outcomes.

- Examine whether student participation in each of the independent SM components (i.e., self-assessment, self-observation, self-recording, and self-evaluation stages) mediates intervention outcomes.

METHODOLOGY

Inclusion criteria: There are no geographic restrictions. Studies need to be available in English and meet the criteria as follows.

1. Type of intervention:
 - Studies must involve a self-monitoring (SM) intervention, defined as a cognitive behavioral intervention comprised of four separate stages: self-assessment, self-observation, self-recording, and self-evaluation.
 - Studies must be conducted in a school setting, including public, alternative, charter, regular, or special education settings.
2. Type of design:
 - Studies must use one of the following research designs: experimental, quasi-experimental, multiple group, or single subject.
3. Type of participants:
 - Studies must involve students with challenging behaviors (regardless of sex, race, or ethnicity) who: are of school age (i.e., 5-21 years), of regular or special education status (e.g., emotionally disturbed, learning disabled, other health impaired, etc.), and attend an elementary, middle, or secondary school program (i.e., public, alternative, special education, charter, or private school).
4. Studies must include one of the following types of outcomes:
 - behavioral outcomes including direct and indirect forms of aggression; overt and covert antisocial behaviors; maladaptive thoughts and feelings that disrupt academic progress, and common acts of insubordination;
 - academic performance outcomes (grades or testing performance).
5. Studies must include adequate information necessary to estimate effect sizes.

Exclusion criteria:

Self-monitoring studies of students who do not present challenging behaviors—that is, challenging behavior is not the main reason for the intervention—will not be included in the review. In addition, because SM requires the use of cognitive strategies, studies of SM that indicate participants may exhibit cognitive impairments will be excluded (i.e., intellectual disability).

Your method of synthesis

Two reviewers will independently conduct searches, starting with electronic searches of bibliographic databases, followed by a search of dissertation and thesis databases, and finally gray literature searches. Hand searches will be conducted with sources that are not available electronically. Applying the inclusion and exclusion criteria (to be outlined with greater detail in the systematic review protocol), reviewers will make initial screenings based on information in abstracts and an in-depth review of the article as needed. Any discrepancies between the two independent reviewers will be submitted to the study review team where a majority rule decision will be made regarding the inclusion or exclusion of the study. Included studies will be managed in a file using EndNote. A separate file will be kept to manage any study titles where a discrepancy between team members existed regarding the inclusion of the study.

Once the list of included studies is finalized, information from all of the selected studies will be extracted using a preformatted abstract form (to be submitted with systematic review protocol). Information to be extracted, if available, will likely include demographic data of all study participants, types of challenging behavior, type of school setting, study design, information about measures used, count data reflecting the number of SM intervention procedures engaged in by students (i.e., self-assessment, self-observation, self-recording, and self-evaluation stages), whether teacher monitoring accompanied student self-monitoring, degree of intervention fidelity, measures used to capture intervention fidelity, intervention agents, outcome measures and reliability estimates (e.g., alphas, kappas, test-retest correlations, etc.), data analysis approach used, and reported data pertaining to pretest, posttest, and followup measures on outcomes of interest (e.g., means, standard deviations, *t*-tests, χ^2 -tests, *F*-tests, *p*-values, degrees of freedom, etc.). Two reviewers will review and abstract each study. The study team will cross-reference all results and discrepancies will be submitted to the review team for resolution by majority rule.

Once available data from relevant studies are abstracted, the data will be entered into a spreadsheet program (e.g., SPSS, Stata, SAS). Effect size estimates will be generated for all included studies. The manner in which effect sizes will be calculated will depend upon study design or the type of test used to examine outcome data in each independent study. To account for the anticipated substantial number of single case studies, the standardized mean difference

effect size for single case designs introduced by Hedges et al. (2012) will be used. A statistical meta-analysis will then be conducted on the combined quantitative results. Meta-analysis will examine moderation models using aggregated participant demographic data to examine whether self-management outcomes differ by student characteristics (e.g., age, gender, grade, race/ethnicity, regular or special education status, socioeconomic status, etc.). Moderation analyses may also examine whether the type of data collection approach is related to the success of SM strategies for behavioral outcomes (i.e., standardized versus observational studies). Mediation models will examine whether student participation in each of the independent SM components (i.e., self-assessment, self-observation, self-recording, and self-evaluation stages) mediated intervention outcomes.

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ROLES AND RESPONSIBILITIES

Aaron M. Thompson has worked as a school-based practitioner, educator, and public school administrator. Thompson has published several studies on self-monitoring, including one single subject design and one randomized control design of a manualized self-monitoring intervention. Thompson has also published a review of classroom-based interventions for children with challenging behaviors.

Brandy R. Maynard is currently a postdoctoral fellow at the Meadows Center for Preventing Educational Risk in Austin, Texas, an Assistant Research Professor at Saint Louis University, and is on the editorial board of the Education Coordinating Group of the Campbell Collaboration. Brandy recently completed a Campbell systematic review on the effectiveness of indicated truancy interventions and has a review protocol under review with the Campbell's Education Coordinating Group to examine the effects interventions for school refusal behavior. Brandy is experienced in systematic review methods and meta-analytic strategies.

Natasha K. Bowen has extensive experience with assessment and evaluation of school-based programs. She is a primary developer of the Elementary School Success Profile Model of Assessment and Prevention, a social-environmental assessment and intervention system to improve the context of school settings. Thompson, Maynard, and Bowen are experienced in research and information retrieval, information synthesis using a variety of statistical programs (e.g., Stata, SAS, MPLUS, SPSS) and methodologies (e.g., Regression, Latent Variable, Latent Variable Growth Curve, Multi-level, and Person-Centered Models).

Michael Pelts has a master's degree in social work and is currently receiving doctoral training to be a researcher. Michael has a range of practice and research related experiences with programs that aim to improve the resiliency of youth who are considered at-risk.

- Content: Aaron M. Thompson
- Systematic review methods: Brandy R. Maynard
- Statistical analysis: Statistical analysis will be conducted by Aaron Thompson and Michael Pelts with consultation from Natasha Bowen and Brandy R. Maynard.
- Information retrieval: Aaron M. Thompson and Michael Pelts, in consultation with the University of Missouri's social sciences librarian and Brandy R. Maynard, will conduct all search procedures to be outlined in the search protocol. Natasha K. Bowen and Brandy R. Maynard will resolve discrepancies for study inclusion criteria using the study protocol.

All team members will contribute with generating a final report to disseminate the findings.

DECLARATIONS OF INTEREST

None.

REQUEST SUPPORT

The review team welcomes any support from the educational editorial group with regard to any and all aspects of the proposed study (methodology, statistics, systematic searches, field expertise, review manager etc.). At this time, the review team does not have a meta-analyst and welcomes any and all recommendations.

SOURCES OF SUPPORT

Internal funding:

\$1,000.00 of internal funding has been dedicated as a research start up fund to support the review and any purchasing costs that may be incurred. In addition, a one-half appointment of a PhD student (50%: \$8,000.00) will be dedicated to the timely completion of the project for the 2013-2014 academic calendar.

External funding:

No external funding will be sought to support the proposed review.

PRELIMINARY TIMEFRAME

January, 2013 – January, 2014

- Date you plan to submit a draft protocol: 1 April 2013
- Date you plan to submit a draft review: 1 October 2013

DECLARATION

Authors' responsibilities

By completing this form, you accept responsibility for preparing, maintaining, and updating the review in accordance with Campbell Collaboration policy. The Coordinating Group will provide as much support as possible to assist with the preparation of the review.

A draft protocol must be submitted to the Coordinating Group within one year of title acceptance. If drafts are not submitted before the agreed deadlines, or if we are unable to contact you for an extended period, the Coordinating Group has the right to de-register the title or transfer the title to alternative authors. The Coordinating Group also has the right to de-register or transfer the title if it does not meet the standards of the Coordinating Group and/or the Campbell Collaboration.

You accept responsibility for maintaining the review in light of new evidence, comments and criticisms, and other developments, and updating the review every five years, when substantial new evidence becomes available, or, if requested, transferring responsibility for maintaining the review to others as agreed with the Coordinating Group.

Publication in the Campbell Library

The support of the Coordinating Group in preparing your review is conditional upon your agreement to publish the protocol, finished review and subsequent updates in the Campbell Library. Concurrent publication in other journals is encouraged. However, a Campbell systematic review should be published either before, or at the same time as, its publication in other journals. Authors should not publish Campbell reviews in journals before they are ready for publication in the Campbell Library. Authors should remember to include a statement mentioning the published Campbell review in any non-Campbell publications of the review.

I understand the commitment required to undertake a Campbell review, and agree to publish in the Campbell Library. Signed on behalf of the authors:

Form completed by: Aaron M Thopson

Date: 30 Jan 2013