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ABSTRACT

This study tested effects of a program that offers teachers universal classroom management strategies, on teachers' burnout symptoms and self-efficacy, and their teaching behaviors. Data were collected from 147 teachers (mean age = 38.4 years, SD = 10.8) in 15 special secondary education schools for students with emotional and behavioral problems, at the start and end of the school year. Schools were randomly assigned to the experimental condition or a care-as-usual condition. Results show that the program impacted beneficially on self-reported levels of emotional exhaustion, and self-efficacy in engaging students and in classroom management, but not on teaching behaviors. Implications of this study for the professional development of teachers in special education and research are discussed.

Despite the fact that additional resources are available for teachers in segregated settings for special education, teaching students with special educational needs is challenging (e.g. Billingsley, 2004; McLeskey, Tyler, & Flipping, 2004). In these settings, teachers educate students who cannot attend general education because of specific problems, such as high levels of emotional and/or behavioral problems (Meijer, 2003). In the Netherlands, many students who are referred to segregated special education cope with psychiatric disorders and associated disruptive behaviors (Meijer, 2003). Such behaviors may compromise two aspects fundamental to teachers' occupational well-being. First, teachers' sense of competence in dealing with disruptive behaviors is affected (Collie, Shapka, & Perry, 2012), and teachers may experience symptoms of burnout such as emotional exhaustion (Evers, Tomic, & Brouwers, 2004), thereby increasing the risk of dropping out (Martin, Sass, & Schmitt, 2012). Research has indeed shown that dropout rates of teachers in special education are a cause for concern (e.g. Billingsley, 2004). Second, these behaviors may affect teachers'

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use of teaching behaviors such as the frequent use of reprimands, instead of praise toward their students (Wehby, Lane, & Falk, 2003), which may be less effective in managing these behaviors (Mainhard, Brekelmans, & Wubbels, 2011).

To support teachers in handling difficult behavior by introducing positive behavior modification strategies may contribute to important aspects of teachers' occupational well-being, such as their levels of self-efficacy and symptoms of burnout, and teaching behaviors. The goal of this study is therefore to examine the effects of the Good Behavior Game (GBG), a classroom behavioral management program that promotes such strategies, on burnout symptoms, self-efficacy, and teaching behaviors of teachers in Dutch special education settings for adolescent students with emotional and behavioral problems.

The GBG

The GBG is a behavioral management program developed by Barrish, Saunders, and Wolf (1969). It offers teachers practical tools to manage and structure their classroom, using praise instead of reprimands, thereby promoting on-task and prosocial classroom interactions and reducing discipline problems. These tools may reduce important sources of stress that are identified by teachers, including negative teacher–student relationships, inadequate classroom management styles, and negative classroom interactions (Grayson & Alvarez, 2008), and may thereby promote important aspects of teachers' occupational well-being. In its most widely applied form, teachers start the GBG with dividing their students into two teams and setting up classroom rules that should be followed to win (Tingstrom, Sterling-Turner, & Wilczynski, 2006). These two teams compete each other; each team receives a mark on the school board when the teacher observes student behavior that violates the classroom rules. Students win and receive a reward when their team acquires the fewest number of marks; the other team looses.

The original version of the GBG has been modified to fit various educational settings, including schools providing education to children with special needs (e.g. Lastrapes, 2014; Tingstrom et al., 2006), and diverse cultural backgrounds outside the United States, as presented in studies conducted in Belgium (Leflot, van Lier, Onghena, & Colpin, 2013) and the Netherlands (van Lier, Muthén, van der Sar, & Crijnen, 2004), and Belize (Nolan, Filter, & Houlihan, 2013). In the form as applied in Belgium and the Netherlands, the competition element is removed, as this does not fit well with the Dutch educational system (Leflot, van Lier, Onghena, & Colpin, 2010; van Lier et al., 2004; van der Sar & Goudswaard, 2001). Teachers formulate no more than three rules in a positive manner, such as 'we work in silence' instead of 'when at work, you do not talk'. Teachers are trained to discourage disruptive behaviors, use praise to draw their attention mostly to students who show prosocial or on-task behaviors, and thereby reinforce behaviors that are in line with the classroom rules. When starting the game, each team receives a fixed number of cards. Students, who act out, lose one card. To maintain a positive atmosphere, teachers provide all students with a large enough number of cards so each team will finish the game holding on to at least one card. Afterward, students can exchange their cards for small materials (e.g. pens, paper notebooks) or activities (e.g. computer time, making pizza with teacher and peers). Further details of the Dutch adaption of the GBG are described by Leflot and colleagues (2010) and van Lier and colleagues (2004).

The impact of the GBG was examined extensively on student outcomes, such as student behavioral problems (e.g. Ialongo, Poduska, Werthamer, & Kellam, 2001; Leflot et al., 2010) and social relationships with peers (Witvliet, van Lier, Cuijpers, & Koot, 2009). For a review on several studies on the impact of the GBG on student outcomes, see Nolan, Houlihan, Wanzek, and Jenson (2013). However, studies on the impact on teachers are scarce. This may be surprising given that in the GBG, the teacher is the mode of intervention, and the expected impact of the program on students is, at least in part, likely due to the impact on teaching behaviors. Although not primarily focusing on the impact of the GBG on teachers, two studies did report on teacher benefits. In a study by Leflot and colleagues (2010), primary education teachers were observed on their teaching behaviors, including use of praise and reprimands. They found no impact on use of praise, but a reduction in use of reprimands when compared to control group teachers.

Two studies examined the effect of the GBG on teachers in special education (Breeman et al., 2015; Griffioen & Kroesbergen, 2009). The study by Griffioen and Kroesbergen (2009) showed that compared to the start of the school year, teachers' use of praise increased, and use of reprimands decreased. However, their results need to be interpreted with care, as this study was conducted among only five teachers and did not include a control condition. With regard to the impact of GBG on aspects of teachers' well-being, Breeman and colleagues (2015) included 58 teachers in a study using a cluster RCT design and found that while no impact of the GBG was found on teachers' burnout symptoms, the GBG did impact their sense of efficacy in student engagement.

More promising evidence is available on the effectiveness of the GBG in combination with other interventions. For example, the PAX-GBG intervention, which combines the GBG program and strategies that promote students' social-emotional competence (e.g. Domitrovich et al., 2015; Embry, 2002), has a beneficial impact on an important aspect of teachers' occupational well-being. For instance, in 15 novice teachers, levels of efficacy were higher compared to 11 teachers who were assigned to a control group in which education was provided as usual (Fruth & Huber, 2015). This result is in line with results of a study by Domitrovich and colleagues in a sample of 350 more experienced teachers (2016). They also found that teachers' sense of personal accomplishment increased during the school year, compared to teachers who did not implement the intervention. Results from the studies described above add to the likely usefulness of the GBG to teachers in need of support when addressing severe levels of emotional and behavioral problems in students. To gain insight into the potential effects of the GBG on teachers, it is important to test its impact among larger samples of teachers. Also, to further explore the potential of the GBG among special education teachers', the focus of prior studies can be expanded by including more diverse outcomes related to important aspects of teachers' occupational well-being.

Teacher's occupational well-being and teaching behaviors

An important element of teachers' occupational well-being is their experience of burnout. Burnout is defined by Maslach and Jackson (1981) as symptoms of emotional exhaustion and depersonalization and lack of personal accomplishment. These symptoms are the result of unsuccessfully coping with occupational stress and often seen in professionals working intensively with people, including health care employees, social workers, and teachers (Maslach & Jackson, 1981). They are related to several adverse outcomes, such as depression

(Bakker et al., 2000; Steinhardt, Smith Jaggars, Faulk, & Gloria, 2011), and intention to leave their job (Klassen & Chiu, 2011; Leung & Lee, 2006).

Another construct related to occupational well-being is teachers' sense of self-efficacy, which refers to their beliefs in their ability to affect student outcomes (e.g. Tschannen-Moran & Woolfolk Hoy, 2001). Teachers with high levels of self-efficacy feel they can be effective even with challenging behaviors, while their peers with low levels feel less able to affect students' behavior and face more discipline problems. Self-efficacy is related to important teacher characteristics, such as the expectations that teachers have of their students (Allinder, 1995) and their job satisfaction (Klassen & Chiu, 2010). Also important in teaching students with challenging behaviors are teachers' behavioral management strategies. Teachers use various strategies intending to shape students' behaviors as desired, such as praise as a response to desired behavior, and reprimands to undesired behavior. While reprimanding extensively is related to high levels of disruptive behaviors (Lewis, Romi, Qui, & Katz, 2005), the use of praise is more effective in adjusting behavior (Embry & Biglan, 2008). Albeit an effective strategy to impact student outcomes, such as motivation (Cameron & Pierce, 1994) and classroom behaviors (Reinke, Lewis Palmer, & Merrell, 2008), praise is underutilized by teachers (Beaman & Wheldall, 2000), especially in those educating students with high levels of emotional and behavioral problems (Sutherland, Wehby, & Copeland, 2000). This appears to be a missed opportunity because it is proposed that praise effectively engages specifically students with emotional and behavioral problems into their schoolwork (Sutherland, Wehby, & Yoder, 2002; Sutherland et al., 2000). Providing teachers with new strategies intended to increase the use of praise and reduce the use of reprimands may therefore be beneficial in special education schools that accommodate education to these vulnerable students.

Teachers may find it challenging to apply evidence-based behavioral management strategies during their daily curriculum, especially when they are under pressure due to students' challenging behaviors. Several school interventions based on behavioral management models contain clear guidelines and are effective on important student outcomes that are known for their disruptive impact, such as aggression (Wilson, Lipsey, & Derzon, 2003) or hyperactivity (DuPaul, 2007). Implementing these programs may allow teachers to deliver such strategies without experiencing additional burden on their daily tasks. Also, following clear guidelines may impact directly on teachers' confidence on how to address students' challenging behaviors, and they may therefore experience higher levels of efficacy. It is therefore expected that such interventions have a positive impact important aspects of teachers' occupational well-being as well. Indeed, several behavioral management programs have a beneficial impact on their self-efficacy (Kelm & McIntosh, 2012), burnout symptoms (Ross, Romer, & Horner, 2012), and use of reprimands (Forster, Sundell, Morris, Karlberg, & Melin, 2012). As the GBG provides clear procedures for teachers on how to handle students' disruptive behaviors (Barrish et al., 1969; Dutch revision by van der Sar & Goudswaard, 2001, 2002; and van der Sar & van Wermerskerken, 2007), a successful implementation of the program would be expected to impact on teachers' sense of self-efficacy, burnout symptoms, and teaching behaviors.

The present study

The aim of this study is to examine to what extent special secondary education teachers can benefit from the GBG when working with adolescent students with emotional and behavioral problems. We thereby focus on their levels of occupational burnout symptoms, self-efficacy, and use of praise and reprimands toward students. Our first research question is whether the GBG has an effect on special education teacher's burnout symptoms. Our second research question is whether the GBG has an effect on special education teachers' self-efficacy. As the GBG offers teachers tools to manage their classroom, and effective classroom management is associated with important aspects of teachers' occupational well-being (Domitrovich et al., 2016; Fruth & Huber, 2015), we expected that it would reduce teachers' burnout symptoms and positively impact their self-efficacy. Our third research question is whether the GBG has an effect on teacher behaviors. Based on previous results (Griffioen & Kroesbergen, 2009; Leflot et al., 2010), we expected an increase of teachers' use of praise, and a decrease of reprimands when compared with teachers in the control condition.

Method

Design

To test intervention effects on teacher outcomes, a study was used based on a cluster randomized controlled trial, with the exception of three schools that were non-randomly distributed. Before the school year 2009/2010 started, fifteen special secondary schools located throughout the Netherlands were first matched based on their profile with regard to school size and their students' main psychiatric disorders. The school profiles were determined by the principal investigator of this study (last author) after consulting the managers and school psychologists affiliated with the participating schools. After matching, schools were randomly assigned to either the experimental condition (*n* = 8 schools) or the care-as-usual control condition (*n* = 7 schools). Three schools were excluded from the study after randomization. One school in the control condition was excluded, because informed consent could not be obtained from the teachers. Two schools in the experimental condition were also excluded because the basic preconditions needed to implement the GBG were not met, including frequent presence of students in the classrooms and stable class compositions. Because these three schools dropped out, three additional schools were included during the following school year (2010/2011). One of these schools was assigned to the experimental condition, because the associated primary education division was already randomly assigned to this condition in a similar study (Breeman et al., 2015). The matching partner was assigned to the control condition. A final school was added to the experimental condition, to balance the number of participants. In sum, fifteen schools participated in the study, with eight schools in the experimental condition and seven schools in the control condition.

Data were collected across one school year, in October/November (pretest) and June (posttest). Depending on when teachers started their teaching job at a school participating in this study, they participated in the two measurement occasions during either school year 2009/2010 (*n* = 86 teachers) or 2010/2011 (*n* = 68 teachers). The study was approved by the Dutch Medical Ethics Committee for Mental Health Care (METiGG). It is registered in the Dutch Trial Register under number 2123 http://www.trialregister.nl/trialreg/ admin/ rctview.asp?TC=2123.

Participants

Schools were first sent a short email on the study. When schools were interested, a meeting took place between the director of the school, some teachers, and the principal investigator in which schools were given more information on the study. After school management teams decided to participate, the school team was given a presentation on the study. For teachers in the control condition, this regarded a presentation (1 h) on the project and procedures regarding the measurement occasions. For teachers in the experimental condition, this regarded an additional workshop on the GBG training (4 h). Afterward, teachers were given information leaflets and consent forms. Fifteen schools participated.

Participating schools were located in rural to urban communities in the Netherlands, populations of the communities ranging from 11,000 to 600,000. Small schools (containing less than 60 students: $n = 4$ schools) as well as larger schools (containing 60 students or more: $n = 11$ schools) participated, as well as a diverse population of students was represented within the sample, with a wide range of psychiatric disorders, including attention deficit and/or hyperactivity disorder, behavioral disorders, anxiety, and depressive disorder. Although research is limited with regard to the special education population in the Netherlands, given the diversity of this sample and that this population is in line with previous studies in special education, albeit mostly in the primary division (Breeman et al., 2015; Visser, Singer, van Geert, & Kunnen, 2009), our sample can therefore be considered representative for a special education sample.

Aside from the variety and size, these schools for special education all had similar working conditions that differ from those in regular education, such as small-sized classes (each containing approximately twelve students) and support from school psychologists. All schools had clear ties with mental health care institutions, as most students received additional treatment elsewhere, targeted at their psychiatric disabilities.

A total of 176 teachers (40% male) from the fifteen allocated schools were eligible for participation. Among these teachers, 158 teachers worked at the schools from the start of the school year, whereas 18 teachers began their teaching job during the school year. Written informed consent was obtained for 154 teachers (41% male; response rate: 88%). Figure 1 shows their participation in this study. They were aged between 22.3 and 62.8 years ($M = 38.4$ years, SD = 10.8) and assigned to either the control group ($n = 74$ teachers) or the experimental group ($n = 80$). Out of these 80 teachers, seven did not attend the introductory meeting nor implemented the GBG and were therefore excluded from further analyses.

Out of the 147 teachers included in our analyses, data were missing for 21 teachers at the pretest assessment, because teachers either started working at the schools after the pretest was completed ($n = 14$), refused to participate at pretest, but revised their informed consent with respect to their participation at posttest ($n = 5$), or became ill during pretest and reported better at posttest ($n = 2$). Missing data at pretest were not related to teachers' sex, $\chi^2(1, N = 147) = .05$, $p = .83$, or posttest scores of symptoms of emotional exhaustion $F(1, 110) = 1.76$, $p = .19$, depersonalization, $F(1, 112) = .08$, $p = .78$, lack of personal accomplishment, $F(1, 112) = 1.27$, $p = .26$, use of praise, $F(1, 100) = .23$, $p = .63$, or use of reprimands, $F(1, 100) = 2.47$, $p = .12$. Teachers who missed their pretest assessment had lower levels of efficacy in student engagement at posttest, $F(1, 113) = 8.27$, $p < .01$, $d = -.64$, efficacy in classroom management, $F(1, 113) = 6.90$, $p < .05$, $d = -.57$, and efficacy in instructional strategies, $F(1, 113) = 5.91$, $p < .05$, $d = -.59$, than teachers with complete data.
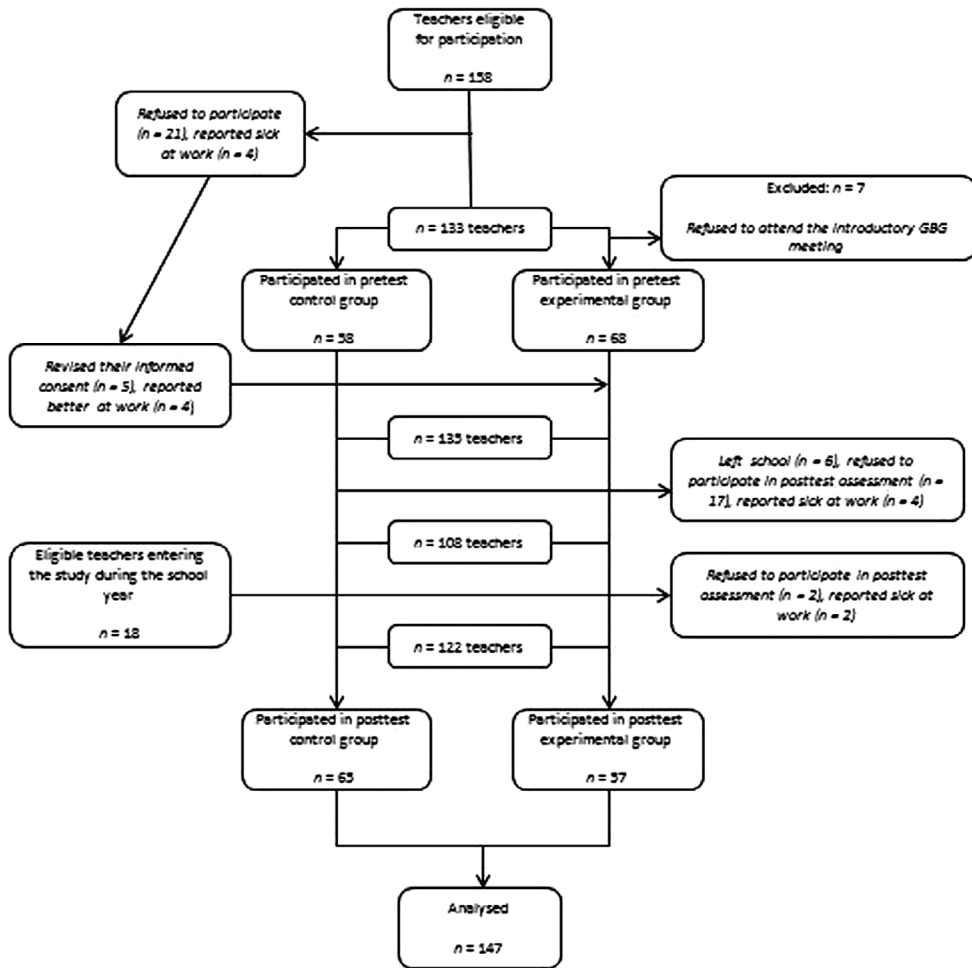
Figure 1. Flow diagram of teachers participating in this study.

Out of the same group of 147 teachers, data were missing for 25 teachers at the posttest assessment, because they withdrew their informed consent ($n = 16$), left school ($n = 5$) or were ill ($n = 4$). Missing data at posttest were not related to teachers' gender, $\chi^2(1, N = 147) = .10$, $p = .76$, or pretest scores of symptoms of emotional exhaustion, $F(1, 117) = .00$, $p = .96$, depersonalization, $F(1, 118) = .08$, $p = .78$, lack of personal accomplishment, $F(1, 181) = 1.48$, $p = .23$, efficacy in classroom management $F(1, 117) = 1.96$, $p = .16$, efficacy in instructional strategies, $F(1, 117) = 2.33$, $p = .13$, use of praise, $F(1, 101) = .73$, $p = .40$, or use of reprimands, $F(1, 101) = 1.65$, $p = .20$. Teachers who did not complete the posttest assessment had lower levels of efficacy in student engagement at baseline, $F(1, 117) = 7.56$, $p < 01$, $d = -.55$, than teachers with complete data.

Intervention

A Dutch adaptation of the Good Behavior Game (GBG; Barrish et al., 1969; Dutch revision by van der Sar & Goudswaard, 2001, 2002; and van der Sar & van Wermerskerken, 2007)

was implemented. The GBG is a classroom-based behavioral management program that provides teachers with behavior modification skills that focus on positive interaction and praise and encourage teachers to use effective classroom rules. In this study, the GBG was implemented after the pretest assessment until the end of the school year. Teachers were informed about its key elements during an introductory course of half a day. This course was provided by an in-service teacher trainer. After this introduction, every teacher received the GBG box containing materials for conducting the program. Teachers first observed their students' behaviors, so they could equally divide students who showed more prosocial behaviors, and students who showed more challenging behaviors over the teams.

Over the course of the school year, teachers' training in executing the GBG consisted of a program of recurring coaching meetings, including peer group meetings and individual consultations. During peer group meetings, teachers assembled with their colleagues for one hour per meeting and exchanged their expectations and experiences on playing the GBG. One or two in-service trainers guided the teachers' learning processes during these meetings. These trainers also observed teachers while implementing the GBG. After these individual consultations, they evaluated the session with the specific teacher. In total, 73 teachers executed on average 18.81 GBG sessions (SD = 22.21, median = 10 GBG sessions, ranging from 0 to 71) between the pretest and the posttest. During that period, they attended 6.38 GBG coaching meetings (SD = 4.37, median = 6 meetings, ranging from 1 to 15).

Measures

We examined burnout symptoms and levels of self-efficacy using widely used self-report questionnaires that are proven to be valid and reliable in previous research (e.g. Fives & Buehl, 2010). Next to self-reports, we used classroom observations that have been conducted in previous studies on teacher behaviors (Griffioen & Kroesbergen, 2009; Leflot et al., 2010) to tally pre-established categories of teaching behaviors (i.e. teachers' use of reprimands and praise toward students) by trained research assistants. Research assistants were also present at school meetings during which teachers filled out their questionnaires. The content of the self-report data and observation scheme used in this study are online available in the supplemental material (S1). To thank teachers for participating in the study, their school team received a gift certificate that could be swapped for one team activity (e.g. organized barbeque, making a boat trip).

Teachers rated their symptoms of burnout using three scales of the Maslach Burnout Inventory—Teacher Form (MBI; Dutch version by Schaufeli & van Dierendonck, 2000). The factor structure of the MBI has often been confirmed (e.g. Lee & Ashforth, 1990). The convergent validity (Jackson & Maslach, 1982) and the test-retest reliability (Rosse, Boss, Johnson, & Crown, 1991) are adequate. The MBI assesses symptoms of emotional exhaustion, depersonalization, and reduced personal accomplishment. Teachers rated symptoms on a seven-point Likert scale ranging from 'never' (0) to 'every day' (6). The emotional exhaustion scale contains eight items (e.g. 'I feel emotionally drained from my work'), Cronbach's alphas of the two measurement occasions ranged from .87 to .90; the depersonalization scale contained seven items (e.g. 'I have become more callous toward people since I took this job'), Cronbach's alphas ranged from .50 to .64; the personal accomplishment scale contained seven items (e.g. 'I feel I am positively influencing other people's lives through my work'), Cronbach's alphas ranged from .80 to .85. We used mean scores on the three scales.

Teacher-ratings of their self-efficacy were assessed using the Teachers' Sense of Efficacy Scale (TSES; Tschannen-Moran & Woolfolk Hoy, 2001). The validity and reliability of the TSES are well examined (Tschannen-Moran & Woolfolk Hoy, 2001). Teachers rated their levels of self-efficacy on a nine-point Likert scale, ranging from 'nothing' (0) to 'a great deal' (8). They filled out 12 items representing three subscales, each referring to a different domain in which teachers could feel efficacious. All scales contained four items, but after reliability analyses were conducted, one item of the student engagement scale was removed from further analyses (i.e. 'How much can you assist families in helping their child do well in school?'). Cronbach's alphas of the two measurement occasions ranged from .61 to .78 for this scale (e.g. 'How much can you do to motivate students who show low interest in schoolwork?'), from .81 to .87 for the classroom management scale (e.g. 'How much can you do to get children to follow classroom rules?'), and from .62 to .78 for the instructional strategies scale (e.g. 'To what extent can you provide an alternative explanation or example when students are confused?'). We used mean scores on these three scales.

Teaching behaviors were rated using an observational instrument developed for measuring GBG-effects (e.g. de Groof, Leflot, Onghena, & Colpin, 2008; Leflot et al., 2010; van der Sar & van Wermerskerken, 2007). The observation scheme and procedures can be found online in the supplemental material (S1). Research assistants observed teachers before noon while teaching their tutor-class. Two categories were pre-established, i.e. teachers' use of praise and reprimands. Research assistants observed teaching behaviors for 20 s and recorded the following 10 s the number of times that teachers used praise and reprimands as feedback toward student behavior. Then, the next round of observing teacher behavior started, again for 20 s, followed by 10 s of recording time, until teachers were observed for at least 20 rounds. Research assistants received extensive training; the introduction course consisted of one day of training, homework assignments, and five live classroom observations together with a master coder. They needed to acquire a rating agreement of 80% or higher with the master coder. Mean scores of number of times the behaviors were tallied during twenty time intervals were calculated.

Teacher's sex was dummy coded (0 = female, 1 = male), as was their intervention status (0 = control condition, 1 = experimental condition). To control for possible differences between schools assessed in different school years, we included group status as a dummy-coded variable in our analyses (0 = school year 2010/2011, 1 = school year 2009/2010).

Data analysis

To test for intervention effect on the outcomes, we first regressed the posttest scores on the number of GBG sessions that were executed by teachers (i.e. dosage), other covariates (i.e. teacher's sex and group status), and pretest scores. In the second step, the outcome variables were regressed on intervention status to test for GBG impact on outcomes above and beyond control variables, and adjusted for variations in number of GBG sessions played.

Models were fitted in Mplus version 5.1 (Muthén & Muthén, 1998–2007). An MLR estimator (maximum likelihood with robust standard errors) was used to control for possible non-normality of the data. Full information maximum likelihood (FIML) was used to account for missing data. FIML uses all available data to estimate the parameters of the models. Using the cluster sampling module in Mplus, nesting of the data within schools was accounted for, such that standard errors were adjusted for school-level variation (Williams,

2000). We calculated standardized mean difference effect sizes (Cohen's *d*) based on the means of the posttest scores, adjusted for the covariates and for the pretest scores. Effect sizes were considered small when $d = .20$, medium when $d = .50$, and large when $d = .80$ (Cohen, 1992).

Results

Descriptive statistics

Table 1 shows raw means and standard deviations of the study variables. Despite the fact that schools were randomly assigned to one of two conditions, teachers in the experimental condition reported higher levels of pretest scores on depersonalization symptoms than teachers in the control condition.

Effects of the Good Behavior Game

With regard to the effect of the GBG on teachers' symptoms of burnout (Research question 1), while controlling for variance in number of GBG sessions executed by teachers (step 1), adding GBG status to the analyses (step 2) showed that teachers in the experimental condition reported lower levels of emotional exhaustion, $\beta = -.19$, $d = -.13$, than teachers in the control condition (see Table 2). No effect was found on depersonalization symptoms or sense of personal accomplishment.

With regard to the effect of the GBG on teachers' levels of self-efficacy (Research question 2), results of our analyses showed that teachers in the experimental condition had beneficial changes from pretest to posttest in their reported levels of self-efficacy in student engagement, $\beta = .27$, $d = .23$, and classroom management, $\beta = .19$, $d = .17$, when compared to teachers in the control condition. We found no impact of the GBG on teachers' levels of self-efficacy in instructional strategies.

With regard to the effect of the GBG on teaching behaviors (Research question 3), results are displayed in Table 3. No effects were found on their use of praise or reprimands.

Discussion

This study tested if the GBG could impact important aspects of the occupational well-being and teaching behaviors of teachers of adolescents with emotional and behavioral problems. We found no impact on teaching behaviors, but a significant, albeit modest impact on self-reported levels of burnout symptoms and self-efficacy. Three main findings need further discussion.

The first finding in need of discussion is that this study found that the GBG had an impact on burnout symptoms, more specifically on self-reported symptoms of emotional exhaustion. The effect size of this impact on teachers' levels of emotional exhaustion was small ($d = -.13$). However, even when considered small, reducing feelings of emotional exhaustion may have important consequences for classroom practices and even for society. Studies among professionals found that burnout symptoms are related to high numbers of sickness absenteeism from work (Toppinen-Tanner, Ojajärvi, Väänänen, Kalimo, & Jäppinen, 2005). More specific in teachers, these symptoms are related to increases in staff turnover rates

Table 1. Means, standard deviations, and pretest differences of special education teachers' burnout symptoms, levels of self-efficacy, and teaching behaviors.

| | Control condition | | | | Experimental condition | | | | Test of pretest differences | | |
| | Pretest | | Posttest | | Pretest | | Posttest | | | | |
	M	SD	M	SD	M	SD	M	SD	F	p	d
Emotional exhaustion	1.37	.97	1.37	.83	1.66	.82	1.47	.75	3.18	.08	.32
Depersonaliza-tion	.68	.49	.86	.58	.93	.63	.95	.65	5.95	.02	.44
Personal accom-plishment	4.74	.77	4.74	.72	4.66	.76	4.79	.64	.34	.56	−.10
Student engage-ment	5.86	.74	5.89	.68	5.56	.94	6.03	.67	3.68	.06	−.35
Classroom man-agement	6.08	.98	6.21	.87	5.88	.83	6.33	.84	1.49	.22	−.22
Instructional strategies	6.02	.88	6.14	.78	5.94	.78	6.25	.69	.23	.63	−.10
Praise	17.34	17.63	11.22	12.21	21.33	12.95	12.93	11.36	1.75	.19	.25
Reprimands	11.13	12.38	8.94	11.63	17.60	21.25	8.86	10.97	3.34	.07	.37

Table 2. Results of regression analyses in the effects of the Good Behavior Game on special education teachers' burnout symptoms and self-efficacy.

	Emotional exhaustion			Depersonalization			Personal accomplishment			Student engagement			Classroom management			Instructional strategies		
	B	SE B	β	B	SE B	β	B	SE B	β	B	SE B	β	B	SE B	β	B	SE B	β
Step 1																		
Sex	.10	.16	.05	**.35**	.09	.27	−.16	.13	−.11	−.06	.12	−.05	−.05	.10	−.03	**−.28**	.11	−.18
Group	.07	.14	.03	−.04	.12	−.03	**.25**	.08	.18	.24	.14	.17	**.31**	.12	.17	**.21**	.08	.14
Pretest	**.83**	.06	.76	**.49**	.10	.45	**.46**	.08	.52	**.45**	.08	.56	**.69**	.07	.74	**.50**	.07	.55
Dosage	.00	.00	.07	**.00**	.00	.13	.00	.00	.03	.00	.00	.05	.00	.00	.04	.00	.00	.04
Step 2																		
Sex	.10	.12	.06	**.35**	.09	.28	−.16	.13	−.12	−.09	.11	−.06	−.07	.09	−.04	**−.29**	.11	−.19
Group	.10	.09	.06	−.01	.11	−.01	**.23**	.09	.16	.18	.14	.13	**.26**	.09	.14	**.20**	.09	.13
Pretest	**.68**	.07	.77	**.49**	.10	.45	**.47**	.08	.52	**.48**	.08	.60	**.71**	.06	.74	**.50**	.07	.55
Dosage	**.01**	.00	.18	**.01**	.00	.21	−.00	.00	−.03	−.00	.00	−.11	−.00	.00	−.08	.00	.00	.00
GBG	**−.31**	.12	−.19	−.17	.11	−.13	.14	.12	.10	**.38**	.14	.27	**.34**	.11	.19	.10	.11	.07

Note: Significant standardized coefficients are in bold ($p < .05$). Sex = teacher's sex (0 = female, 1 = male), Group = group status (0 = start school year 2010/2011, 1 = start school year 2009/2010), Pretest = pretest score, Dosage = number of GBG sessions executed in the classroom, GBG = intervention status (0 = control condition, 1 = experimental condition). The model fits could not be assessed because the models were just-identified with zero degrees of freedom.

Table 3. Results of regression analyses in the effects of the Good Behavior Game on special education teachers' teaching behaviors.

	Praise			Reprimands		
	B	SE B	β	B	SE B	β
Step 1						
Sex	−.15	1.21	−.01	1.17	1.80	.05
Group	.62	2.34	.03	−1.62	2.31	−.07
Pretest	**.41**	.11	.54	**.26**	.11	.42
Dosage	.09	.05	.14	−.07	.04	−.12
Step 2						
Sex	.08	1.20	.00	1.11	1.81	.05
Group	.89	2.50	.04	−1.74	2.34	−.08
Pretest	**.41**	.11	.54	**.26**	.10	.42
Dosage	**.12**	.05	.19	−.09	.07	−.13
GBG	−2.07	2.60	−.09	.57	2.19	.03

Note: Significant standardized coefficients are in bold ($p < .05$). Sex = teacher's sex (0 = female, 1 = male), Group = group status (0 = start school year 2010/2011, 1 = start school year 2009/2010), Pretest = pretest score, Dosage = number of GBG sessions executed in the classroom, GBG = intervention status (0 = control condition, 1 = experimental condition). The model fits could not be assessed because the models were just-identified with zero degrees of freedom.

(Klassen & Chiu, 2011) and declines in job satisfaction (Klassen & Chiu, 2010). Job-related illness or burnout symptoms are associated with high economic costs (European Agency for Safety & Health at Work, 2014). Even when modest, accomplishing reduced levels of burnout symptoms is meaningful and may add to the cost-effectiveness of the GBG, as it is considered a relatively modest investment (Embry, 2002). It is important to note that other components of burnout, including depersonalization and reduced sense of personal accomplishment, were not affected by teachers' assignment to the experimental condition. A possible explanation for this lack of impact may be the relative short time that the GBG was conducted by teachers in our study. Perhaps they needed more time than one school year, to fully experience the beneficial effects on such more distal aspects of well-being.

However, when comparing our data to a normative sample (Schaufeli & van Dierendonck, 2000), we found that within our sample the number of teachers who dealt with serious levels of burnout problems was limited (pre-evaluation: 8%; post-evaluation: 5%) and did not differ significantly between the control group and experimental group (pre-evaluation: $\chi^2(1,132) = 1.04$, $p = .31$; post-evaluation: $\chi^2(1,99) = .22$, $p = .64$). No significant increase over the year was seen in the control group (pre-evaluation: 6%; post-evaluation: 5%; $t(30) = .57$, $p = .57$), nor in the experimental group (pre-evaluation: 10%; post-evaluation: 6%; $t(47) = .44$, $p = .66$). This confirms that our findings need to be interpreted with caution, as the clinical relevance of the effect of the GBG that we found may be limited.

A second important finding is the beneficial impact on teacher-reports of their self-efficacy in student engagement and classroom management. This suggests that some of the important goals of the GBG were achieved, i.e. offering teachers tools to promote on-task behaviors and regulate discipline problems. The effects' sizes were small (d's were .17–.23), but noteworthy. Enhancing teachers' self-efficacy may contribute in due time to improving other effective teaching strategies, such as setting more challenging goals for their students (Allinder, 1995). The lack of effect on self-efficacy in instructional strategies seems plausible, as the GBG does not specifically focus on changing technical instructional strategies.

The third finding that warrants further discussion is that we did not find effects on teachers' use of praise or reprimands. This is not only inconsistent with an important goal

of the GBG to improve teachers' use of praise and positive reinforcement (van der Sar & Goudswaard, 2001, 2002), but also with earlier findings in teachers of younger children (Griffioen & Kroesbergen, 2009; Leflot et al., 2010). The fact that the impact on the use of praise was not replicated in this study may be related to students' age, as a study by Hester and colleagues (2009) found that teachers may consider praise a less appropriate strategy to provide feedback on behavior of adolescent students when compared to younger children.

An explanation for the lack of impact on teachers' use of reprimands may be the complexity of the student population. Disobedient behavior of students regarded by teachers as challenging elicit more negative teacher responses than similar behavior of typically developing students (Nelson & Roberts, 2000; Shores et al., 1993). These results support the possibility that teachers in our study, who teach students with severe emotional and behavioral problems, may have experienced difficulties in reducing their use of reprimands. Additional guidance may be needed to support them in being aware of their own responses to disobedient behavior of this challenging population and encourage them to reduce their use of reprimands. Nevertheless, while no effects were found on teaching behaviors, the impact on teacher burnout and self-efficacy adds to the notion that the GBG provides teachers with tools intending to improve their occupational well-being.

Limitations & recommendations

Some limitations of this study may guide future research. First, as the policies for education provided to students with emotional and behavioral problems vary worldwide (Meijer, 2003), it is unclear whether our results can be generalized to special education teachers in other countries. Our study should therefore be repeated in samples of teachers from other countries. Second, because the internal consistency of one of our measures for burnout symptoms was quite low (i.e. depersonalization), future studies may consider using other measures related to these constructs. For instance, observers could rate the levels of burnout symptoms (e.g. Leitner & Resch, 2005). Third, teachers who did not complete the posttest assessment had lower levels of pretest scores on self-efficacy in student engagement than teachers with complete data. This selective dropout may have influenced our results, as teachers who feel less competent in engaging students may benefit more from professional guidance in doing so than teachers who already feel competent.

With some caution because of the aforementioned limitations, future use of the GBG in special secondary education may benefit from our results. It should be examined if the beneficial impact on teacher well-being in turn positively affects student outcomes, including social, emotional, and behavioral problems, or if the GBG influences these outcomes directly. Gaining more knowledge about the working mechanisms underlying the impact of the GBG on teachers and students in special secondary education may help to establish whether teacher behavior or student behavior profits the most from the GBG. We also recommend to include more qualitative information on the topics teachers discussed during the training meeting. Moreover, the results of our effect study call for a qualitative follow-up study focusing on teachers' experiences with the GBG in special secondary education. Our results indicate that the GBG can be beneficial for important teacher outcomes related to their occupational well-being, even in this complex educational setting. However, as observable teaching behaviors seemed to stay unaffected by the implementation of the GBG, this raises the question how teachers work with the GBG and behavioral principles,

and under which preconditions. Identifying preconditions was not within the scope of the present study, as this was primarily a quantitative study that focused on the benefits of this program from an outcome-focused point of view. However, several barriers and facilitators to the implementation have been discussed with the in-service trainers affiliated with this study. The trainers' views on which factors facilitated the implementation of the GBG and which factors made it more difficult may help directing future efforts of taking a more qualitative approach when examining the effectiveness of the GBG in special secondary education. The factors mentioned by in-service trainers included, but were not limited to (lack of), positive team climate, willingness of students and teachers to participate in the game, teachers' ability to reflect on their own professional development, the quality of the relationship between in-service trainer and teacher, and the extent to which school management or paraprofessionals were involved. A more qualitative examination of such factors may support an effective implementation of the GBG. It may also shed more light on the challenges of special education and the potential benefits of classroom-based management programs in general.

With regard to directions for practice, the beneficial impact we found suggests that the GBG may be effective, but that additional programs may be indicated. In fact, it suggests that the GBG should be regarded as a low intensive, universal component of a more intensified prevention effort. If students with severe emotional and behavioral problems may in fact benefit from the GBG as well, the impact of the GBG on teachers that was shown by the present study may be important in its own right, both in terms of feasibility and cost-effectiveness. The additional impact on important teacher outcomes that we presented may hopefully contribute to teachers' existing efforts to create a positive environment for children, which has to be examined in long-term studies. However, solely as an intervention to promote teacher behavior and impact important aspects of their occupational well-being, the GBG may be not enough. When teachers get acquainted with the GBG, it is easily blended into daily class routine, as teachers conduct the GBG while teaching, thereby not using curriculum time. It may well be used in conjunction with other, more intensive and specialized prevention techniques, intending to meet the specific needs of teachers who guide and teach students with emotional and behavioral problems.

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Disclosure statement

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References

Allinder, R. M. (1995). An examination of the relationship between teacher efficacy and curriculum-based measurement and student achievement. *Remedial and Special Education, 16*, 247–254.

Bakker, A. B., Schaufeli, W. B., Demerouti, E., Janssen, P. P. M., Van Der Hulst, R., & Brouwer, J. (2000). Using equity theory to examine the difference between burnout and depression. *Anxiety, Stress, and Coping, 13*, 247–268.

Barrish, H. H., Saunders, M., & Wolf, M. M. (1969). Good behavior game: Effects of individual contingencies for group consequences on disruptive behavior in a classroom. *Journal of Applied Behavior Analysis, 2*, 119–124.

Beaman, R., & Wheldall, K. (2000). Teachers' use of approval and disapproval in the classroom. *Educational Psychology: An International Journal of Experimental Educational Psychology, 20*, 431–446.

Billingsley, B. S. (2004). Special education teacher retention and attrition: A critical analysis of the research literature. *The Journal of Special Education, 38*, 39–55.

Breeman, L. D., van Lier, P. A. C., Wubbels, T., Verhulst, F. C., van der Ende, J., Maras, A., & Tick, N. T. (2015). Effects of the good behavior game on the behavioral, emotional, and social problems of children with psychiatric disorders in special education settings. *Journal of Positive Behavior Interventions. 18,* 156–167. doi:10.1177/1098300715593466

Cameron, J., & Pierce, W. D. (1994). Reinforcement, reward, and intrinsic motivation: A metaanalysis. *Review of Educational Research, 64*, 363–423.

Cohen, J. (1992). A power primer. *Psychological Bulletin, 112*, 155–159.

Collie, R. J., Shapka, J. D., & Perry, N. E. (2012). School climate and social-emotional learning: Predicting teacher stress, job satisfaction, and teaching efficacy. *Journal of Educational Psychology, 104*, 1189–1204.

Domitrovich, C. E., Bradshaw, C. P., Berg, J. K., Pas, E. T., Becker, K. D., Musci, R., … Ialongo, N. (2016). How do school-based prevention programs impact teachers? Findings from a randomized trial of an integrated classroom management and social-emotional program. *Prevention Science, 17*, 325–337.

Domitrovich, C. E., Pas, E. T., Bradshaw, C. P., Becker, K. D., Keperling, J. P., Embry, D. D., & Ialongo, N. (2015). Individual and school organizational factors that influence implementation of the PAX good behavior game intervention. *Prevention Science, 16*, 1064–1074.

DuPaul, G. J. (2007). School-based interventions for students with attention deficit hyperactivity disorder: Current status and future directions. *School Psychology Review, 36*, 183–194.

Embry, D. D. (2002). The good behavior game: A best practice candidate as a universal behavioral vaccine. *Clinical Child and Family Psychology Review, 5*, 273–297.

Embry, D. D., & Biglan, A. (2008). Evidence-based kernels: Fundamental units of behavioral influence. *Clinical Child and Family Psychology Review, 11*, 75–113.

European Agency for Safety and Health at Work (2014). *Calculating the cost of work-related stress and psychosocial risks: A literature review*. Luxembourg: Publications Office of the European Union.

Evers, W. J. G., Tomic, W., & Brouwers, A. (2004). Burnout among teachers: Students' and teachers' perspectives compared. *School Psychology International, 25*, 131–148.

Fives, H. & Buehl, M. M. (2010). Examining the factor structure of the Teachers' Sense of Efficacy Scale. *The Journal of Experimental Education, 78*, 118–134.

Forster, M. F., Sundell, K., Morris, R. J., Karlberg, M., & Melin, L. (2012). A randomized controlled trial of a standardized behavior management intervention for students with externalizing behavior. *Journal of Emotional and Behavioral Disorders, 20*, 169–183.

Fruth, J. D. & Huber, M. J. (2015). Teaching prevention: The impact of a universal preventive intervention on teacher candidates. *Journal of Education and Human Development, 4*, 245–254.

Grayson, J. L., & Alvarez, H. K. (2008). School climate factors relating to teacher burnout: A mediator model. *Teaching and Teacher Education, 24*, 1349–1363.

Griffioen, I., & Kroesbergen, E. H. (2009). De invloed van Taakspel op het gedrag van leerlingen en leerkrachten in het SBO [The impact of the Good Behavior Game on the behavior of students and teacher in special primary education]. *Tijdschrift voor Orthopedagogiek, 48*, 67–78.

de Groof, M., Leflot, G., Onghena, P., & Colpin, H. (2008). *Uitwerking observatie-instrument Taakspel.* (Intern onderzoeksrapport). [Adaptation observational instrument Good behavior game: Intern report]. Katholieke Universiteit Leuven: Centrum voor Schoolpsychologie.

Ialongo, N., Poduska, J., Werthamer, L., & Kellam, S. (2001). The distal impact of two first-grade preventive interventions on conduct problems and disorder in early adolescence. *Journal of Emotional and Behavioral Disorders, 9*, 146–160.

Jackson, S. E., & Maslach, C. (1982). After-effects of job-related stress: Families as victims. *Journal of Occupational Behaviour, 3*, 63–77.

Kelm, J. L., & McIntosh, K. (2012). Effects of school-wide positive behavior support on teacher self-efficacy. *Psychology in the Schools, 49*, 137–147.

Klassen, R. M., & Chiu, M. M. (2010). Effects on teachers' self-efficacy and job satisfaction: Teacher gender, years of experience, and job stress. *Journal of Educational Psychology, 102*, 741–756.

Klassen, R. M., & Chiu, M. M. (2011). The occupational commitment and intention to quit of practicing and pre-service teachers: Influence of self-efficacy, job stress, and teaching context. *Contemporary Educational Psychology, 36*, 114–129.

Lastrapes, R. E. (2014). Using the good behavior game in an inclusive classroom. *Intervention in School and Clinic, 49*, 225–229.

Lee, R. T., & Ashforth, B. E. (1990). On the meaning of Maslach's three dimensions of burnout. *Journal of Applied Psychology, 75*, 743–747.

Leflot, G., van Lier, P. A. C., Onghena, P., & Colpin, H. (2010). The role of teacher behavior management in the development of disruptive behaviors: An intervention study with the good behavior game. *Journal of Abnormal Child Psychology, 38*, 869–882.

Leflot, G., van Lier, P. A. C., Onghena, P., & Colpin, H. (2013). The role of children's on-task behavior in the prevention of aggressive behavior development and peer rejection: A randomized controlled study of the good behavior game in Belgian elementary classrooms. *Journal of School Psychology, 51*, 187–199.

Leitner, K., & Resch, M. G. (2005). Do the effects of job stressors on health persist over time? A longitudinal study with observational stressor measures. *Journal of Occupational Health Psychology, 10*, 18–30.

Leung, D. Y. P., & Lee, W. W. S. (2006). Predicting intention to quit among Chinese teachers: Differential predictability of the component of burnout. *Anxiety, Stress, and Coping, 19*, 129–141.

Lewis, R., Romi, S., Qui, X., & Katz, Y. J. (2005). Teachers' classroom discipline and student misbehavior in Australia, China, and Israel. *Teaching and Teacher Education, 21*, 729–741.

van Lier, P. A. C., Muthén, B. O., van der Sar, R. M., & Crijnen, A. M. (2004). Preventing disruptive behavior in elementary schoolchildren: Impact of a universal classroom-based intervention. *Journal of Consulting and Clinical Psychology, 72*, 467–478.

Mainhard, M. T., Brekelmans, M., & Wubbels, T. (2011). Coercive and supportive teacher behaviour: Within- and across-lesson associations with the classroom social climate. *Learning and Instruction, 21*, 345–354.

Martin, N. K., Sass, D. A., & Schmitt, T. A. (2012). Teacher efficacy in student engagement, instructional management, student stressors, and burnout: A theoretical model using in-class variables to predict teachers' intent-to-leave. *Teaching and Teacher Education, 28*, 546–559.

Maslach, C., & Jackson, S. E. (1981). The measurement of experienced burnout. *Journal of Occupational Behaviour, 2*, 99–113.

McLeskey, J., Tyler, N. C., & Flipping, S. S. (2004). The supply of and demand for special education teachers: A review of research regarding the chronic shortage of special education teachers. *The Journal of Special Education, 38*, 5–21.

Meijer, C. J. W. (2003). *Special education across Europe in 2003: Trends in provision in 18 European countries*. Middelfart: European Agency for Development in Special Needs Education.

Muthén, L. K., & Muthén, B. O. (1998–2007). *Mplus user's guide*. (5th ed.). Los Angeles, CA: Muthén & Muthén.

Nelson, J. R., & Roberts, M. L. (2000). Ongoing reciprocal teacher-student interactions involving disruptive behaviors in general education classrooms. *Journal of Emotional and Behavioral Disorders, 8*, 27–37.

Nolan, J. D., Filter, K. J., & Houlihan, D. (2013). Preliminary report: An application of the good behavior game in the developing nation of Belize. *School Psychology International. 35*, 421–428. doi:10.1177/0143034313498958

Nolan, J. D., Houlihan, D., Wanzek, M., & Jenson, W. R. (2013). The good behavior game: A classroom-behavior intervention effective across cultures. *School Psychology International. 35*, 191–205. doi:10.1177/0143034312471473

Hester, P. P., Hendrickson, J. M., & Gable, R. A. (2009). Forty years later: The value of praise, ignoring, and rules for preschoolers at risk for behavior disorders. *Education and Treatment of Children, 32*, 513–535.

Reinke, W. M., Lewis Palmer, T., & Merrell, K. (2008). The classroom check-up: A classwide teacher consultation model for increasing praise and decreasing disruptive behavior. *School Psychology Review, 37*, 315–332.

Ross, S. W., Romer, N., & Horner, R. H. (2012). Teacher well-being and the implementation of school-wide positive behavior interventions and supports. *Journal of Positive Behavior Interventions, 14*, 118–128.

Rosse, J. G., Boss, R. W., Johnson, A. E., & Crown, D. F. (1991). Conceptualizing the role of self-esteem in the burnout process. *Group & Organization Management, 16*, 428–451.

van der Sar, A. M., & Goudswaard, M. (2001). *Docentenhandleiding taakspel voor basisonderwijs* [Good behavior game teacher manual for primary education]. Rotterdam: CED-group.

van der Sar, A. M., & Goudswaard, M. (2002). *Implementatiehandboek taakspel voor begeleiders* [Good behavior game implementation manual for supervisors]. Rotterdam: CED-group.

van der Sar, A. M., & van Wermerskerken, L. (2007). *Docentenhandleiding taakspel voor geVOrderden* [Good behavior game teacher manual for secondary education]. Rotterdam: CED-group.

Schaufeli, W. B., & van Dierendonck, D. (2000). *Utrechtse burnout schaal: Handleiding* [Utrecht burnout scale: Manual]. Lisse: Swets Test Publishers.

Shores, R. E., Jack, S. L., Gunter, P. L., Ellis, D. N., DeBriere, T. J., & Wehby, J. H. (1993). Classroom interactions of children with behavior disorders. *Journal of Emotional and Behavioral Disorders, 1*, 27–39.

Steinhardt, M. A., Smith Jaggars, S. E., Faulk, K. E., & Gloria, C. T. (2011). Chronic work stress and depressive symptoms: Assessing the mediating role of teacher burnout. *Stress and Health, 27*, 420–429.

Sutherland, K. S., Wehby, J. W., & Copeland, S. R. (2000). Effect of varying rates of behavior-specific praise on the on-task behavior of students with EBD. *Journal of Emotional and Behavioral Disorders, 8*, 2–8, 26.

Sutherland, K. S., Wehby, J. W., & Yoder, P. J. (2002). Examination of the relationship between teacher praise and opportunities for students with EBD to respond to academic requests. *Journal of Emotional and Behavioral Disorders, 10*, 5–13.

Tingstrom, D. H., Sterling-Turner, H. E., & Wilczynski, S. (2006). The good behavior game: 1969–2002. *Behavior Modification, 30*, 225–253.

Toppinen-Tanner, S., Ojajärvi, A., Väänänen, A., Kalimo, R., & Jäppinen, P. (2005). Burnout as a predictor of medically certified sick-leave absences and their diagnosed causes. *Behavioral Medicine, 31*, 18–32.

Tschannen-Moran, M., & Woolfolk Hoy, A. (2001). Teacher efficacy: Capturing and elusive construct. *Teaching and Teacher Education, 17*, 783–805.

Visser, M., Singer, E., van Geert, P. L. C., & Kunnen, S. E. (2009). What makes children behave aggressively? The inner logic of Dutch children in special education. *European Journal of Special Education, 24*, 1–20.

Wehby, J. H., Lane, K. L., & Falk, K. B. (2003). Academic instruction for students with emotional and behavioral disorders. *Journal of Emotional and Behavioral Disorders, 11*, 194–197.

Williams, R. L. (2000). A note on robust variance estimation for cluster-correlated data. *Biometrics, 56*, 645–646.

Wilson, S. J., Lipsey, M. W., & Derzon, J. H. (2003). The effects of school-based intervention programs on aggressive behavior: A meta-analysis. *Journal of Consulting and Clinical Psychology, 71*, 136–149.

Witvliet, M., van Lier, P. A. C., Cuijpers, P., & Koot, H. M. (2009). Testing links between childhood positive peer relations and externalizing outcomes through a randomized controlled intervention study. *Journal of Consulting and Clinical Psychology, 77*, 905–915.